Preliminary Site Investigation

523 Raymond Terrace Road, Chisholm, NSW

Prepared for: ACG Clovelly Road Pty Ltd C/- ADW Johnson Pty Ltd
EP3045.002 18 April 2023

APPROVED COMPANY ISO 9001 Quality Management Systems QMS Certification Services

APPROVED COMPANY AS/NZS 4801 Occupational Health & Safety Management Systems QMS Certification Services

APPROVED COMPANY ISO 14001 Environmental Management Systems QMS Certification Services

EP RISK

Preliminary Site Investigation

523 Raymond Terrace Road, Chisholm, NSW

ACG Clovelly Road Pty Ltd C/- ADW Johnson Pty Ltd
7/335 Hillsborough Road,
Warners Bay, NSW 2282

18 April 2023

Our Ref: EP3045.002

LIMITATIONS

This Preliminary Site Investigation was conducted on the behalf of ACG Clovelly Road Pty Ltd C/- ADW Johnson Pty Ltd for the purpose/s stated in **Section 1**.

EP Risk has prepared this document in good faith but is unable to provide certification outside of areas over which EP Risk had some control or were reasonably able to check. The report also relies upon information provided by third parties. EP Risk has undertaken all practical steps to confirm the reliability of the information provided by third parties and do not accept any liability for false or misleading information provided by these parties.

It is not possible in a Preliminary Site Investigation to present all data, which could be of interest to all readers of this report. Readers are referred to any referenced investigation reports for further data.

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QUALITY CONTROL

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Executive Summary

Introduction

EP Risk was engaged by ACG Clovelly Road Pty Ltd C/- ADW Johnson Pty Ltd to undertake a Preliminary Site Investigation (PSI) for the proposed residential development at a Site located at 523 Raymond Terrace Road, Chisholm, NSW. It is understood the Site is proposed to be redeveloped into a residential development (the Proposed Development) and the PSI is required to assess any contamination on the Site and to support the Development Application (DA) to Maitland City Council for the proposed residential subdivision. The Site is legally described as Lot 100 in deposited plan (DP) 847510.

Objective

The PSI was required to assess whether any contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk under the proposed land use (residential).

Summary of Findings

The summary of findings of the Preliminary Site Investigation are as follows:

- The surrounding land use and/or environmental setting consisted of rural and residential subdivision properties zoned as general residential surrounding all sides of the Site and environmental management zoned land to the north.
- Based on the review of the historical information, the Site was historically used for rural living. From 1967 to 1990 the Site was owned by a Farmer and from 1980 to 1995 the Site was owned by a haulage contractor. It's understood the Site is currently used for rural living. The surrounding land use comprised rural / agricultural land use.
- The subsurface conditions encountered in the test pits across the Site are detailed in the attached test pit logs. These should be read in conjunction with the general notes proceeding them, which explain the descriptive terms and classification methods used in the report. In general, the subsurface conditions in the test pits can be summarised as follows:
    - TOPSOIL: Sandy CLAY, Low to medium plasticity, grey, fine to medium grained sand
    - RESIDUAL SOIL: Sand/silty CLAY Low to high plasticity, brown, grey, orange, red, fine to medium grained sand
    - EXTREMELY WEATHERED SANDSTONE/SILTSTONE: Sandy/Clayey SILT, low plasticity, grey and orange, fie to medium grained sand with ferruginous cementations (50mm-100mm)
- Groundwater was not observed in any of the test pits at the time of the investigation. It should be noted the groundwater conditions may vary with seasonal and weather conditions along with construction related site conditions. Detailed soil profile logs are attached as **Appendix E.**
- Based on the NATA accredited laboratory analytical results, no soil exceedances above the adopted human health or ecological criteria were reported in any of the samples analysed from across the Site.
- Based on the background searches for the Site and nearby land areas, onsite observations, and analytical soil sampling results there is:
    - Low risk to future onsite or offsite receptors from impacted soil.
    - Low risk of background issues associated with the Site.

- Low risk of chemical mixtures associated with the Site.
- Low risk for migration of contaminants from the Site.
- There are aesthetics issues related to anthropogenic material stockpiling on the Site.
- Contamination at a level warranting management or remediation was not identified.

The Site is considered to pose a low risk of contamination to the proposed future land users. However, there were two possible but low to medium consequence source-pathway-receptor linkages related to the imported fill material utilised for historical onsite dam construction and the existing structures not being assessed for the presence of hazardous materials.

Conclusion and Recommendations

Based on the results of the Site history review, site inspection and analytical results, the Site is considered to present a low risk of contamination. The reported results are at levels that would not preclude the Proposed Development, subject to completion of the following recommended works:

- High potential salinity soils were identified onsite as part of the desktop review. A Salinity management should be included as part of the construction environmental management plan for the Site.
- Anthropogenic material within stockpiles and across the Site should be removed from the Site prior to any vegetation clearance or earthworks activities.
- A HAZMAT survey should be completed for all structures present on the Site prior to demolition and removal of anthropogenic materials originating from these structures.
- Anthropogenic material from the demolition of the existing buildings and infrastructure should be removed from the Site prior to any vegetation clearance or earthworks activities.
- Soil sampling of imported fill materials used for the construction of the three historical dams onsite should be completed prior to reuse or disposal of this material.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.

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1 Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by ACG Clovelly Road Pty Ltd C/- ADW Johnson Pty Ltd (ACG) to undertake a Preliminary Site Investigation for a property located at 523 Raymond Terrace Road, Chisholm, New South Wales (NSW) (the Site). It is understood the Site is proposed to be redeveloped into a residential subdivision including residential lots, roads and detention basins (Proposed Development) and the PSI is required to support the Development Application (DA) to Maitland City Council for the proposed residential subdivision.

1.1 Site Identification

The Site identification details are presented in **Table 1**.

Table 1 – Site Identification

Item	Description
Address	523 Raymond Terrace Road, Chisholm, NSW (**Figure 1**)
Legal description	The Site is legally described as Lot 100 in deposited plan (DP) 847510.
Approximate Area	Approximately 10.17 hectares (ha).
Municipality	Maitland City Council (Council)
Zoning	The Maitland Environment Plan (LEP) 2011 identifies the Site as R1 – General Residential.

1.2 Proposed Development

The Proposed Development comprises of the following main features:

- 111 Residential Allotments
- Internal roads
- Two drainage reserves.

Concept plans of the proposed development are provided as **Appendix A**.

1.3 Objective

The PSI was required to assess whether any contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk under the proposed land use.

1.4 Scope of Work

The scope of work completed to achieve the objective was:

- Undertake a desktop study for a Site history review, based upon:
    - Council and regulatory records;
    - Historical and current land title records;
    - Historical aerial photographs;
    - Regulatory searches, including NSW Environmental Protection Authority (EPA) Notified, Contaminated and Investigation Sites; and
    - Geological and hydrological information.
- Undertake a Site visit to observe onsite and offsite conditions.
- Identify potentially contaminating activities that have occurred at the Site and develop a preliminary site conceptual model (CSM).
- Prepare all work health and safety documentation and procure dial before you dig information.
- Advance 14 test pits within the Site boundary to the maximum depth of 3.0 metres below ground level (m BGL) or prior rock refusal.
- Collect samples from the 14 Locations and submit to a National Association of Testing Authorities (NATA) accredited laboratory for analysis.
- Preparation of a report in accordance with the NSW Environment Protection Authority (NSW EPA) (2020) *Guideline for Consultants Reporting on Contaminated Land* and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM 2013).

1.5 Technical Framework

The PSI was conducted in general accordance with:

- ASC NEPM (2013).
- NSW EPA (2017) Guidelines for the NSW Auditor Scheme (3rd Edition) (NSW Auditor Guidelines).
- NSW EPA (2020) Contaminated Land Guidelines – Consultants Reporting on Contaminated Sites.
- Protection of the Environment Operations (POEO) Act 1997.
- The Maitland LEP (2011).
- State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP)
- AS 4482.2-1999: Guide to the investigation and sampling of sites with potentially contaminated soil, Part 2: Volatile substances.
- Department of Urban Affairs and Planning and Environment Protection Authority (EPA) (1998) *Managing Land Contamination, Planning Guidelines, SEPP 55 – Remediation of Land.*
- Department of Environment and Conservation NSW (DEC) (2007) *Guidelines for the Assessment and Management of Groundwater Contamination.*
- Friebel, E & Nadebaum, P 2011, Health Screening Levels for Petroleum Hydrocarbons in soil and Groundwater. Part 1: Technical development document, CRC CARE Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment (CRC CARE), Adelaide, Australia.
- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia.
- National Health and Medical Research Council (NHMRC) (2008) *Guidelines for Managing Risk in Recreational Waters.*
- NHMRC and National Resource Management Ministerial Council (NHMRCC) (2011) National Water Quality Management Strategy, Australian Drinking Water Guidelines 6, 2011 (version 3.5 updated August 2018) (ADWG 2011).
- NSW EPA (2022) *Contaminated Land Guidelines*: *Sampling Design part 1 – application*.
- United State Environment Protection Agency (USEPA) (2006) Guidance on Systematic Planning Using the Data Quality Objectives Process, ref: EPA QA/G-4.
- Western Australian (WA) Department of Health (DOH) (2020) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (DOH 2020).
- NSW EPA (2021) Position Statement – WA Guidelines for asbestos contaminated sites.

2 Site Condition and Surrounding Environment

The majority of information provided in the following sections was obtained from Lotsearch Environmental Risk and Planning Report (Lotsearch, 2023) which was obtained for the Site. A copy of the Lotsearch (2023) report is attached as **Appendix B**.

2.1 Land Use and Layout

The Site comprises of a large rectangular shaped portion of land, approximately 10.17 Ha in area. An Environmental Engineer from EP Risk attended the Site on 16th February 2023 to undertake a site walkover and visual inspection. General site features observed are summarised below:

- One residential dwelling was present in the south western corner of the Site.
- Three shed structures are present in the southern portion of the Site.
- Three dams were identified on the Site. Two small dams located in the southern portion of the Site (Dam 1 and Dam 2) and one large dam (Dam 3) was located in the central portion of the Site.
- A drainage channel running west to east connecting Dam 3 in the centre of the Site is a tributary to Francis Greenway Creek to the south east of the Site.
- The Site is predominantly cleared with scattered mature scribbly gum trees positioned across the Site.
- An access track/driveway is located along the western boundary line of the Site.
- Four anthropogenic stockpiles were identified across the Site, consisting of metal, plastic, wood, electrical appliances, mattresses, chemical storage containers and oil containers.
- One raised soil mound was identified on the Site.

Photographs of the Site are attached as **Appendix C**.

2.2 Surrounding Land Use

As of 8th March 2023, surrounding land uses comprised:

- North: Rural living and farmland zoned R1 – General Residential and C3 – Environmental Management.
- South: Residential subdivision dwellings zoned as R1 – General Residential.
- East: Rural living, farmland and residential subdivision dwellings zoned as R1 – General Residential.
- West: Rural living and farmland zoned R1 – General Residential

2.3 Environmental Setting

A summary of the information accessible through publicly available records is summarised in **Table 2** below.

Table 2 – Environmental Setting

Record	Findings
Topography and Hydrology	The majority of the Site is undulating and gently to moderate slopes to the centre of the Site where Dam 3 is located with an elevation of approximately 18 m AHD. The Site elevation peaks on the northern and southern boundary of the Site with an elevation of approximately 27 m AHD. The Site drainage is considered to consist of surface runoff migrating across the Site following surface contours as overland flow towards the onsite Dam 3 in the centre of the Site. A plan showing the topographical contours of the Site is provided within the Lotsearch (2023) Report in **Appendix B**.
Geology	Based on the geological data sourced from the NSW Department of Industry, Resources and Energy (Lotsearch, 2023) the Site is underlain by the Mulbring Siltstone Formation comprising of Guadaluplan aged Siltstone.
Soil Landscapes	Based on the soil landscapes data sourced from the NSW OEH (Lotsearch, 2023) the Site is located within the Kurosol soil order. The soil landscapes are the Beresfield Soil Landscape which covers an area of undulating low hills in the East Maitland Hills region. It includes many varied soil types with a wide range of parent materials resulting from the wide-ranging lithology of the parent rocks from adjacent areas. The main soils are brownish black loam topsoils, reddish and brown Clay subsoils.
Hydrogeology	A search of the NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation undertaken by Lotsearch (2023) indicated there were no registered groundwater bores located on or within 2 km of the site. Review of the Hydrogeology Map of Australia, Lotsearch (2023) identified Fractured or fissured, extensive aquifers of low to moderate productivity on-Site and porous extensive highly productive aquifers 226m north west of the Site. Regional groundwater flow direction of the upper aquifer is expected to be to the north east towards the Hunter River.
Natural Occurring Asbestos Potential	No reported naturally occurring asbestos potential has been identified within 1 km of the Site.
Acid Sulfate Soils	Based upon a review of the Maitland LEP (2011), the Site is located within an area mapped as a Class 5 acid sulfate soil risk area. A search of the Atlas of Australian ASS database completed by Lotsearch (2023) identifies the Site to be within a Class C category for acid sulfate soils. The Class C category is considered to have a extremely low probability (1-5% chance) of ASS occurrence.
Dryland Salinity	With reference to the Dryland Salinity Data sourced from Lotsearch (2023), a small portion of the southern boundary of the Site is located within a high hazard or risk of dryland salinity potential.
Bushfire Prone Area	The site was listed as a bush fire prone area within a Vegetation Buffer (Dam 3) and a small portion within a Vegetation Category 1 and the majority of the Site within a Vegetation Category 3. All the boundaries of the Site are all bordered by bushfire prone areas (Vegetation Category 1 and 3).
Ecology	According to NSW OEH, the majority of the site has no ecological constraints. One (1) low and one (1) moderate groundwater dependent ecosystem (Vegetation) was identified 8m south-east and 7990 m east of the site respectively. No RAMSAR wetlands existed on-site or within 1km of the site.
Waste Management Facilities	No waste management facility was identified within 1 km of the Site.
National Liquid Fuel Facilities	No National Liquid Fuel Facility was identified within 1 km of the Site.
Mining Subsidence	With reference to the Mining Subsidence District Data sourced from Lotsearch (2023), the Site is not located within a mining subsidence district.

Table 2 – Environmental Setting	
Record	**Findings**
Mining and Exploration Titles	A total of seven (7) Historical Mining and Exploration Titles exist within the boundaries of the Site, identified for petroleum. The most recent end date for the titles was 07/06/2015 for Secretary of the Department of planning and Environment for petroleum. The remaining end dates are noted between 1999 and 2015 on-site.
Cattle Dips	No records of cattle dips were recorded at or within 1 km of the Site according to a search of the Department of Primary Industries Data Base and visual observations of the Site.
Former Gasworks	No former gasworks have been identified at or within 1 km of the Site.

2.4 Regulatory Searches

A summary of the regulatory searches performed by Lotsearch (2023) are summarised in **Table 3**.

Table 3 – Regulatory Searches	
Search	Results
Contaminated Land	The Site was not listed as contaminated under the Contaminated Land Management Act (CLM Act) 1997. As of 08.03.23 the Site was not listed on the NSW Environment Protection Authority (NSW EPA) Record for Contaminated Sites notified to the NSW EPA in accordance with the CLM Act 1997. No sites notified to the NSW EPA were located within 1 km of the Site.
Licensed Activities under the Under the Protection of the Environment Operations Act 1997	Licensed activities under the POEO Act at or within 1 km of the Site are: • Other Activities for all waterbodies in the Maitland Local Government Area under the environmental protection license (EPL 10393). The licensed activities are considered to present a low risk of contamination based upon the nature of the activities.
Former Licensed Activities under the POEO Act 1997, now revoked or surrendered	Former licensed activities under the POEO Act, now surrendered identified at or within 1 km of the Site are: There were three (3) records of Former Licensed Activities under the POEO Act 1997, now revoked or surrendered, located within the Site boundary: • Luhrmann Environment Management Pty Ltd, for Waterways Throughout NSW, surrendered for the application of Herbicides, Surrendered 06/09/2000; • Robert Orchard for Various Waterways throughout New South Wales – Sydney NSW 2000, Surrendered 07/09/2000 for Other Activities / Non Scheduled Activity - Application of Herbicides; • Sydney Weed and Pest Management Pty Ltd for Waterways throughout NSW – Prospect NSW 2148. Surrendered 09/11/2000 for Other Activities / Non Scheduled Activity - Application of Herbicides. For further information regarding Former Licensed Activities under the POEO Act 1997 within a 1km radius of the site refer to Lot Search (2023). The former licensed activities are considered to present a low risk of contamination based upon the nature of the activities.
Delicensed Activities Still Regulated by the NSW EPA	No delicensed activities still regulated by the NSW EPA were identified at or within 1 km of the Site.
Coastal Protection Act 1979	The land was not subject to the operation of State Environmental Planning Policy (SEPP) 14 or SEPP 71 of the Coastal Protection Act 1979.
NSW EPA per- and poly-fluoroalkyl substances (PFAS) Investigation and Management Programs	No sites under the NSW PFAS Investigation Program, Defence PFAS Investigation Program, Defence PFAS Management Program or Airservices Australian National PFAS Management Program were identified at or within 1 km of the Site.
Defence 3 Year Regional Contamination Investigation Program	No sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program were identified within 1 km of the Site.
Heritage	No Environmental Planning Instrument ('EPI') heritage items were identified within 1km of the site which were considered to pose a risk to the site or impacted by potential contamination at the site.

3 Site History

The Site history sources utilised during the review included:

- Historical aerial photography.
- Historical business directories.
- Historical title search information.

3.1 Review of Historical Aerial Photos

Aerial photographs from 1954, 1965, 1977, 1984, 1993, 1998, 2007, 2010, 2015, 2019 and 2022 were reviewed to identify past land uses of the Site and surroundings. **Table 4** provides a summary of the review.

Table 4 – Historical Aerial Photograph Review

Year	Description
1954	**Site:** The Site is heavily vegetated with native bushland. No structures are evident at the Site during this time. **Surroundings:** The Site is surrounded by mostly heavily vegetated land, Raymond terrace road is visible adjacent to the southern boundary of the Site.
1965	**Site:** No Significant changes have occurred **Surroundings:** Some land clearing has occurred to the south west of the Site.
1977	**Site:** Significant land clearing has occurred in the southern portion of the Site, a residential dwelling has been constructed in the south west corner of the Site. **Surroundings:** Land clearing has occurred to the east and south east of the Site.
1984	**Site:** The large dam (Dam 3) in the centre of the Site has been constructed, further land clearing of vegetation has occurred in the northern portion of the Site. Additional structures have been constructed in the southern portion of the Site. **Surroundings:** Further land clearing has occurred on the property adjacent to the Site to the east. A large dam has been constructed to the east on the adjacent property. Land clearing has occurred to the north east of the Site.
1993	**Site:** No significant changes have occurred. **Surroundings:** Land clearing has occurred to the west and north of the Site, two large dams have been constructed on the properties to the west of the Site. Multiple structures have been constructed to the west of the Site.
1998	**Site:** No significant changes have occurred. **Surroundings:** No significant changes have occurred.
2007	**Site:** No significant changes have occurred. **Surroundings:** No significant changes have occurred.
2010	**Site:** No significant changes have occurred. **Surroundings:** No significant changes have occurred.
2015	**Site:** No significant changes have occurred. **Surroundings:** No significant changes have occurred.
2019	**Site:** No significant changes have occurred. **Surroundings:** Residential dwelling and subdivision earthworks have occurred to the south east of the Site.
2021	**Site:** No significant changes have occurred.

Table 4 – Historical Aerial Photograph Review	
Year	**Description**
	Surroundings: Land clearing and further construction of residential dwellings and subdivision earthworks have occurred south and south west of the Site.

The aerial photographs reviewed are provided in the Lotsearch (2023) report provided as **Appendix B**.

3.2 Business Directory Search

No business activities were recorded at the Site however multiple business records matched to the area or road predominately including:

- Brick, pipe and tile manufacturers
- Fire clay manufacturers
- Refractory mineral manufacturers and distributors

No records of garages or dry cleaners were recorded onsite or matched to the area or roads.

3.3 Historical Title Search

The historical title search completed by Lotsearch (2023) indicated the land titles were created 1923. Notable owners include farmers, haulage contractor and the current owners Maria Romanelli. The historical title search completed by Lotsearch (2023) is attached as **Appendix D**.

3.4 Summary of Site History

Based on the review of the historical information, the Site was formerly used as cleared land for rural living activities. From 1967 to 1990 the Site was owned by a Farmer and from 1980 to 1995 the Site was owned by a haulage contractor. It's understood the Site is currently used for rural living. The surrounding land use comprised rural / agricultural land use.

4 Sampling and Analysis

4.1 Data Quality Objectives

To assess whether an appropriate sampling strategy was adopted for the PSI, EP Risk adopted the data quality objectives (DQOs) planning process as:

- Recommended in the ASC NEPM 2013.
- Required within the NSW EPA (2017), *Guidelines for the NSW Site Auditors Scheme (3rd edition)*.
- With consideration to technical details outlined in US EPA (2006) *Guidance on Systematic Planning Using the Data Quality Objectives Process, ref: EPA QA/G-4* and AS 4482.1-2005 *Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds*.

Step 1 - State the Problem

Preliminary Conceptual Site Model based on the site history review:

- **Sources** – Buildings, anthropogenic stockpiles, work sheds, imported fill materials.
- **Contaminants** – potentially metals[1], organics (TRHs, BTEX, PAHs, OCPs/OPPs, PCBs)[2], and asbestos fibres/fragments.
- **Media** – The current potential affected media at the Site include soil, surface water and groundwater. Based on the targeted nature of this assessment to support a DA, sampling and reporting is limited to soils on-site.
- **Receptors** – Site maintenance workers and trespassers, as the site is fenced and secured. If developed, site workers (surface and sub-surface), residents and visitors (adults and children), recreational users of parkland. Potential offsite receptors may include terrestrial and/or aquatic fauna and flora downgradient of the Site.
- **Pathways** – dermal contact, inhalation of dust and ingestion have been identified as the pathways of concern.

The PSI was required to assess whether any contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk under the proposed land use.

Step 2, 3 and 5 - Goals of the Study, Required Inputs and Analytic Approach

Given the Site is to be redeveloped into a residential subdivision development, the decision-making process for urban redevelopment Sites provided by the NSW EPA (2017) was considered in the development of the following decisions that need to be addressed.

The decision-making process for assessing urban redevelopment sites was adopted and summarised in **Table 5**.

The inputs required to make the decision are presented in **Table 5.**

The Tier 1 assessment criteria for the contaminants of concern are presented in **Section 5.** These criteria have been adopted to determine whether additional assessment is required and/or whether the Site is suitable for the proposed land use.

[1] Heavy Metals (Arsenic, Chromium, Lead, Zinc, Mercury, Cadmium, Nickel, Copper)
[2] Total Recoverable Hydrocarbons (TRH), Benzene, toluene, ethylbenzene, xylene (BTEX), Organochlorine Pesticides (OCP), Organophosphate Pesticides (OPP), Polycyclic Aromatic Hydrocarbons (PAH), Polychlorinated Biphenyls (PCB).

Confirmation that data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to adopted assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC) as per the data quality indicators (DQIs) established in **Section 4.2**.

Step 4 - Define the Boundaries of the Study

The spatial boundaries of the PSI comprised 523 Raymond Terrace Road, Chisholm, NSW. The legal description of the Site is Lot 100 in DP 847510 covers and area approximately 10.17 Ha in size. The maximum proposed depth for the investigation set at 3.0 m BGL for soil. The approximate boundaries are shown in **Figure 1**.

Due to the project objectives, seasonality was not assessed as part of this investigation. Data was therefore representative of the timing and duration of the current investigation.

Table 5 – Goals of the Study, Required Inputs and Analytic Approach

Decision	Rule	Inputs/Media	Associated AECs	CoPCs
Has soil been assessed against relevant health investigation levels ('HILs') and health screening levels ('HSLs'), and has potential for migration of contamination been considered?	The nature and extent of soil impacts will be assessed, and analytical data will be compared against the adopted health and ecological criteria. The following statistical criteria was adopted with respect to soils: Either: the reported concentrations are all below the adopted site criteria; Or: the average site concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criteria. And: the 95% upper confidence limit ('UCLmean') of the average concentration for each analyte must be below the adopted site criterion. If the statistical criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is Yes, the media has been assessed and No there is no potential for migration of contamination. Otherwise, the decision is No and Yes there is potential for migration of contamination and further assessments may be required to determine the risk at the Site.	Soil sampling and analysis and site observations.	Imported fill materials and former stockpiles of unknown origin and quality. Residential dwelling and structures on the Site. Anthropogenic stockpiles. Chemical and fuel storage containers	Soil - TRH, BTEX, PAH, heavy metals [1], PCB, OCP, OPP and asbestos.
Are there any issues relating to local area background soil concentrations that exceed relevant investigation levels have been adequately addressed in the site assessment report(s)?	If the 95% UCL of natural soils, that are considered to not be impacted by potential sources of contamination, exceed adopted health and ecological criteria, the decision is Yes. Otherwise the decision is No.	Sampling and analysis of natural soils, and site observations.	Imported fill materials and former stockpiles of unknown origin and quality. Residential dwelling and structures on the Site. Anthropogenic stockpiles. Chemical and fuel storage containers	
Are there impacts of chemical mixtures?	Is more than one chemical within a group of contaminants considered to have a similar mode of action present which increase the risk of harm? If there is, a hazard quotient ('HQ') and Hazard Index ('HI') should be calculated from the analytical results for each sample in accordance with NEPM 2013. If the HI is calculated to be greater than 1, the decision is Yes. Otherwise, the decision is No.	Sampling and analysis of soils and site observations.	Imported fill materials and former stockpiles of unknown origin and quality. Anthropogenic stockpiles. Chemical and fuel storage containers	

Table 5 – Goals of the Study, Required Inputs and Analytic Approach

Decision	Rule	Inputs/Media	Associated AECs	CoPCs
Are there any potential ecological risks? If yes, have these been assessed?	Soil impacts will be assessed, and data will be compared to the adopted criteria. The decisions will be made based on Decisions 1 and 2 above. And: If the reported concentrations are all below the adopted site criteria and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.	Soil sampling, analysis and site observations.	Imported fill materials and former stockpiles of unknown origin and quality. Residential dwelling and structures on the Site. Anthropogenic stockpiles. Chemical and fuel storage containers	Soil - TRH, BTEX, PAH, heavy metals [1], PCB, OCP, OPP and asbestos.
Are there any potential human health risks to the identified Site receptors?				
Is there any evidence of, or potential for, migration of contaminants from the site? Has this been appropriately addressed, including potential risks to off-site receptors, and reported to the site owner or occupier?	Are chemical contaminants present within natural soil at concentrations exceeding the adopted site criteria? And: is there a potential transport pathway/mechanism If yes, the answer to the decision is Yes. Otherwise, if contaminants are not chemical in nature and are unable to migrate off-site alone, the answer to the decision is No.			
Are there any aesthetics issues in fill at the site?	If there are any unacceptable staining, odours or significant amounts of anthropogenic fill materials the answer to the decision is Yes. Otherwise, the answer to the decision is No.			
Is there sufficient information to accurately characterise the site contamination?	If the total number of samples collected is greater than or equal to the recommended number of sample points in accordance with NSW EPA (2022) Sampling Design Guidelines; And: the likelihood of on-site soil contamination impacting, surface water and off-site receptors is considered unlikely. And: no areas which exceeded the adopted criteria require further characterisation. Then the decision is Yes, there is sufficient information to accurately characterise the Site contamination Otherwise, the decision is No.			
Is further investigation required?	Is the answer to any of the above decisions Yes? If yes, further investigation may be required to be developed. If no, further investigation may not be required.			
Is a site management strategy required?	Is the answer to any of the above decisions Yes? If yes, a site management strategy may be required to be developed. If no, a site management strategy may not be required.			

Step 6 – Specify Performance or Acceptance Criteria

As per EPA (2022) Step 6 of the DQOs process establishes quantitative criteria known as performance or acceptance criteria:

- for decision problems, these are typically tolerable limits on the probability or chance (risk) of the collected data leading to making an erroneous decision (e.g. confidence levels)
- for estimation problems, these are typically an acceptable uncertainty, for example, the width of an uncertainty band or interval, associated with a point estimate at a desired level of statistical confidence (e.g. confidence intervals).

Specify probability limits for false rejection and false acceptance of decision errors

- Specify the decision rule as a statistical hypothesis test – The null hypothesis is that the material is contaminated and exceeds the adopted criteria. The alternative hypothesis is that the material is not contaminated above the adopted criteria.
- Examine consequences of making incorrect decisions from the test:
    - the material being accepted as suitable for a HIL-A land use when it is not, thereby potentially risking human health or environmental impacts.
- Place acceptable limits on the likelihood of making decision errors, including acceptable alpha (α) and beta (β) risk levels for tated hypotheses:
    - null hypothesis (H_0): the 95% UCL, and other requirements, are > the action level.
    - alternate hypothesis (H_A): the 95% UCL, and other requirements, are ≤ the action level.
    - Potential outcomes include Type I and Type II errors:
        - Type I error of determining the material is acceptable for the proposed HIL-A land use when it is not (wrongly rejects true H_0).
        - Type II error of determining the material is unacceptable for the proposed HIL-A land use when it is acceptable (wrongly accepts false H_0).
    - For performance criteria, the acceptable limits on the likelihood of making decision errors to be applied are:
        - alpha risk (Type I error) of $\alpha = 0.05$
        - beta risk (Type II error) of $\beta = 0.2$.

No previously collected data are available for use, therefore acceptance criteria are not required.

4.2 Data Quality Indicators

The acceptable limit of error for sampling techniques and laboratory analysis was defined by the DQIs as follows:

Precision

A measure of the reproducibility of on measurements under a given set of conditions. The relative percent difference (RPD) has been adopted to assess the precision of data between duplicate sample pairs according to the following equation.

$$RPD\% = \frac{[\mathrm{Cp} - \mathrm{Cd}]}{\mathrm{Cp} + \mathrm{Cd}} \times 200$$

Where:
Cp = Primary sample
Cd = Duplicate Sample

An acceptance criterion of ±50% had been adopted for inorganic field duplicates and triplicates and ±50% for organic field duplicates and triplicates. However, it should be noted that exceedances of these criteria are common for heterogeneous soil or fill or for low analyte concentrations.

Accuracy

A measure of the bias in the analytical results and can often be attributed to field contamination; insufficient preservation or sample preparation; or inappropriate analytical techniques. Accuracy of the analytical data is assessed by consideration of laboratory control samples and laboratory spikes.

The DQOs, requirements and indicators for the assessment are presented in **Table 6**.

Representativeness

Expresses the accuracy and precision with which sample data represents an environmental condition. Data representativeness was achieved by the collection of samples at an appropriate pattern and density as well as consistent and repeatable sampling techniques and procedures.

Completeness

Refers to, the percentage of data that can be considered valid data. Sufficient data was required to enable an assessment of the Decision Rules.

Comparability

A qualitative comparison of the confidence with which one data set can be compared to another. This was achieved through consistent sampling and analytical testing and reporting techniques.

Table 6 – DQI and Requirements		
DQI	**Requirement**	**Data Quality Assessment (DQA) Criteria**
Precision		
Standard operating procedures appropriate and complied with	The sampling methods comply with industry standards and guidelines	Meet requirement
Intra-laboratory duplicates	1 per 20 samples	RPDs < 50%
Inter-laboratory duplicates	1 per 20 samples	RPDs < 50%
Laboratory duplicates	Minimum of 1 per batch per analyte	RPDs < 50%
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte	Recoveries 50% to 150%
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate)	Recoveries 70% to 130%
Laboratory control samples	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Representativeness		
Sampling methodology - preservation	Appropriate for the sample type and analytes	Meet requirement
Calibration of Equipment	Calibration Certificates provided.	Meet requirement
Samples extracted and analysed within holding times	Specific to each analyte	Meet requirement
Laboratory method blanks	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Trip blanks	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Trip spikes	1 per lab batch for volatile analytes	Recoveries 60-100%
Rinsate	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Comparability		
Sampling approach	Consistent for each sample	Meet requirement
Analysis methodology	Consistent methodology for each sample	Meet requirement
Handling conditions and sampler	Consistent for each sample	Meet requirement

Table 6 – DQI and Requirements		
DQI	**Requirement**	**Data Quality Assessment (DQA) Criteria**
Field observations and analytical	Field observations to support analytical results	Meet requirement
Consistent laboratory reporting limit	Consistent between primary and secondary laboratories	Meet requirement
Completeness		
Sampling staff	Consistent sampling staff used.	Meet requirement
Laboratory accreditation	NATA Accredited laboratory for methods used	Meet requirement
Accredited methods	NATA accredited methods used appropriate for each analyte.	Meet requirement
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013).	Meet requirement
Laboratory reporting limit	Laboratory reporting limit consistent and appropriate	Meet requirement
Consistent weather / field conditions	Consistent	Meet requirement
Chain of custody documentation	Appropriately completed	Meet requirement
Field sampling documentation	Appropriately completed	Meet requirement
Overall data set quality	95% of the data must satisfy the DQIs of both field and laboratory data.	

5 Sampling Design and Methodology (Step 7)

Various strategies for developing a statistically based sampling plan are identified in EPA (2022)[3], including judgemental, random, systematic and stratified sampling patterns. Random sampling is not considered appropriate. The specific scope is discussed below.

EP Risk used ALS Global and Eurofins MGT as the primary and secondary laboratories, both of which are NATA accredited for the required analysis. The laboratory analysis was undertaken in accordance with **Table 7**.

Soil Sampling

The minimum recommended sampling density in Table A of NSW EPA (2022) Sampling Design Part 1 recommended a sampling density for a Site 10.17 Ha in size of approximately 118 sampling Locations. Due to the historical land use of the Site being primarily rural living and the preliminary nature of the contamination assessment, a reduced sampling density is considered appropriate for the Preliminary Site Investigation. It is proposed to collect samples at 12% of the NSW EPA (2022) minimum sampling density (14 soil locations) on an approximate systematic grid across the Site.

This sampling quantity will provide a robust preliminary data set to inform statistical analysis to assess the presence and extent of contamination with 95% confidence. However, it should be noted that depending upon the results of the assessment, additional sampling and testing may be required to comprehensively delineate contamination, which is outside the scope of work provided.

Proposed soil sampling locations are provided as **Figure 2** attached and the scope is detailed in **Table 7** below.

[3] NSW EPA (2022) *Sampling Design Guidelines part 1.*

Table 7 – Sampling and Analysis Plan and Methodology

Media	Scope of Work (Inputs)	Number of Sampling Locations	Samples and Analysis	Adopted Tier 1 Criteria
Soil	The methodology for soil sampling was as follows: • Soil samples were collected from 14 test pit/borehole locations. • Collection of soil samples from 0.1 m below ground level ('mBGL'), 0.5 mBGL, 1.0 mBGL and every 1.0 m thereafter until a target depth of 3.0 mBGL or refusal on rock (whichever is encountered first). • Test pits were advanced via a 14-tonne excavator fitted with a 600 mm bucket to a maximum depth of 3.0 m BGL or prior rock refusal. • Boreholes were advanced via a handauger direct push tube with dedicated liners to a maximum depth of 0.5 m BGL. • Soils were logged for type, colour, texture, other characteristics and indications of contamination as presented in the test pit logs attached as **Appendix E**. • Screening of soil samples using a photoionisation detector ('PID'). • A dedicated pair of nitrile gloves was used for each sample to prevent cross contamination. • Sufficient soil samples were collected and placed into laboratory prepared sampling jars with a unique sample ID added to the label on each jar. • The sample jars were preserved on ice immediately after sampling and during shipment to a NATA accredited laboratories for analysis. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.	Thirteen (13) test pits and one (1) borehole	Analytical testing by a National Association Testing Authorities ('NATA') accredited laboratory of one (1) selective soil samples per sampling location (maximum 14 samples) for the following: • Heavy metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc) / Organochlorine pesticides (OCP) / Organophosphorus pesticides (OPP) - 14 • Total Recoverable Hydrocarbons (TRH) / Benzene, toluene, xylene, ethylbenzene, Naphthalene (BTEXN) / Polyaromatic Hydrocarbons (PAH) / Polychlorinated biphenyls (PCB) – 14 • Asbestos w/w % - 5 • NEPM Screen for Soil Classification – 1 QA/QC Samples as follows: • Duplicates / triplicates (as per primary) – 1 • Rinsate (as per primary) – 1 - Metals, TRH, PAH, BTEX, PAHs • Trip Blank and Spike- BTEX, TRH C6-C9 - 1	For the purposes of assessing the results of analytical testing of soil at the Site, the following guidelines will be considered: • **Health-based Criteria** for the current and proposed land use: ASC NEPM 2013 Health-based Investigation Levels (HILs) and Health Based Screening Levels (HSLs) for residential land and the CRC Care (2011) HSLs for intrusive maintenance worker (shallow trench) and direct contact. • **Ecological Criteria**: ASC NEPM 2013 Ecological-based Investigation Levels (EILs) and Ecological based Screening Levels (ESLs) for urban residential. • **Management Limits**: ASC NEPM 2013 management limits are based upon the physical properties of petroleum hydrocarbons to form observable light non-aqueous phase liquid (LNAPL); create fire and explosion hazards or penetrate or damage underground services. The management limits for residential land based on coarse/fine soil have been adopted. • **Aesthetics**: The consultant should also consider the need for remediation based on the 'aesthetic' contamination as outlined in Schedule B (1) of the ASC NEPM 2013 that states that 'there are no numeric Aesthetic Guidelines however site assessment requires balanced consideration of the quality, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity'. Soil odour, discolouration and the presence of anthropogenic materials will need to be assessed during the assessment. The adopted soil criteria for the site are presented below:

Guidelines	COPC	Adopted Criteria
ASC NEPM 2013	Heavy metals/OCP/PCB/ Phenols / Asbestos	• HIL A (residential land)
	Heavy metals/OCP/PAH	• EIL (urban residential); < 2 m
	TRH and BTEXN	• Vapour intrusion HSL A (residential land); 0 - <1m; silt/clay • ESLs (urban residential); <2m
	TRH	• Management limits (urban residential); fine and coarse soil.
CRC Care (2011)	TRH and BTEXN	• Direct contact and intrusive maintenance workers HSLs. • Vapour Intrusion HSLs for Intrusive Maintenance Workers (Shallow Trench).

6 Quality Assurance and Quality Control (QA/QC)

An assessment of the field and laboratory DQI results is presented in **Table 8**.

Table 8 – DQI Results Summary

DQI	Requirement	DQA
Precision		
Standard operating procedures appropriate and complied with	The sampling methods comply with industry standards and guidelines.	Yes
Field duplicates	• 1 per 20 samples; and • RPDs < 50%.	Yes Yes[4]
Field triplicates	• 1 per 20 samples; and • RPDs < 50%.	Yes Yes[5]
Laboratory duplicates	• Minimum of 1 per batch per analyte; • RPDs < 50%; and • >10%, laboratory specified.	Yes Yes Yes
Accuracy		
Laboratory matrix spikes	• 1 per batch per volatile/semi-volatile analyte; and • Recoveries >70% to 130%	Yes Yes
Laboratory surrogate spikes	• 1 per volatile/semi-volatile analyte sample (as appropriate); and • Recoveries 70% to 130%	Yes Yes
Laboratory control samples	• At least 1 per batch for analyte tested; and • 70-130%	Yes Yes
Representativeness		
Sample collection - preservation	Appropriate for the sample type and analytes	Yes
Calibration of Equipment	Calibration certificates provided in **Appendix F**.	
Decontamination procedures	All sampling equipment to be decontaminated between each sample	Yes
Holding times	Samples extracted and analysed within laboratory prescribed holding times	Yes
Trip blanks	• 1 per field laboratory reporting limit	Yes Yes
Trip spikes	• 1 per field batch for volatile analytes; and • Recoveries 70-130%	Yes Yes
Rinsate	• 1 per field batch for volatile analytes; and • Result < laboratory reporting limit	Yes Yes

[4] Three soil duplicate analytes exceeded the adopted quality control criteria. The soil exceedances are attributed to the heterogenous nature of the soil samples. It is considered that these exceedances of the quality control criteria have not affected the usability of the data set collected in this investigation.
[5] Three Soil triplicate analytes exceeded the adopted quality control criteria. The soil exceedances are attributed to the heterogenous nature of the soil sample. It is considered that these exceedances of the quality control criteria have not affected the usability of the data set collected in this investigation.

Table 8 – DQI Results Summary		
DQI	**Requirement**	**DQA**
Laboratory Method Blanks	• At least 1 per batch per analyte tested for; and • Result < laboratory reporting limit	Yes Yes
Completeness		
Sample logs and surface water field sheets	Provided	Yes
Chain of custody	Provided	Yes
Sample receipt acknowledgement	Provided	Yes
Laboratory reports	Provided	Yes
Comparability		
Sampling staff	Consistent sampling staff used	Yes
Laboratory accreditation	NATA accredited laboratory for methods used	Yes
Accredited methods	NATA accredited methods used appropriate for each analyte	Yes
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013)	Yes
Laboratory reporting limit consistent and appropriate	Meet Requirement	Yes
Consistent weather / field conditions	Consistent	Yes
Overall data set quality	95% of the data must satisfy the DQIs of both field and laboratory data	Yes

On the basis of the information provided in **Table 8**, EP Risk considers that the DQIs for the project have been met and the data is appropriate for the purposes of this assessment.

7 Results

7.1 Subsurface Conditions

The subsurface conditions encountered in the test pits across the Site are detailed in the attached test pit logs. These should be read in conjunction with the general notes proceeding them, which explain the descriptive terms and classification methods used in the report. In general, the subsurface conditions in the test pits can be summarised as follows:

- TOPSOIL: Sandy CLAY, Low to medium plasticity, grey, fine to medium grained sand
- RESIDUAL SOIL: Sand/silty CLAY Low to high plasticity, brown, grey, orange, red, fine to medium grained sand
- EXTREMELY WEATHERED SANDSTONE/SILTSTONE: Sandy/Clayey SILT, low plasticity, grey and orange, fie to medium grained sand with ferruginous cementations (50mm-100mm)

Groundwater was not observed in any of the test pits at the time of the investigation. It should be noted the groundwater conditions may vary with seasonal and weather conditions along with construction related site conditions. Detailed soil profile logs are attached as **Appendix E.**

Soil Vapour Screening

No signs of visual staining or odours were observed in any sample collection with PID readings all recorded at <1 ppm.

7.2 Soil Analytical Testing

The results of soil analytical testing are contained in the analytical summary tables section at the rear of the report and the laboratory Certificates of Analysis (COA) are attached as **Appendix G.**

Asbestos

During the Site walkover and intrusive investigation no asbestos was observed.

Soil samples were obtained from five (5) soil samples within the upper topsoil/fill profile to assess the presence of friable asbestos. No friable asbestos fibres were identified above the limit of reporting and no exceedances of the adopted asbestos HSL was reported.

Metals / BTEXN / PAH / OCP / OPP / TPH

All BTEXN / PAH / OCP / OPP / Metals and TPH concentrations of the soil samples analysed were reported below the adopted human health and ecological criteria and / or laboratory limit of reporting (LOR).

TRH

All TRH concentrations of the soil samples analysed were reported below the adopted human health and ecological criteria and / or laboratory LOR.

Aesthetics

No anthropogenic materials were present in the soil profile and no significant fill was identified across the Site except fill material likely imported for the construction of the three dams onsite. Four anthropogenic stockpiles were identified across the Site consisting of metal, plastic, chemical containers, mattresses and tyres, the locations of these stockpiles are shown in **Figure 2**.

8 Discussion

Based on the decision-making process for assessing urban redevelopment sites detailed in EPA (2017) and present in **Table 5**, the decisions required to be made are detailed below.

Are there any unacceptable risks to future onsite or offsite receptors from impacted soil?

The results of the soil analytical testing have been compared against the relevant health-based and ecological criteria and a summary of the exceedances is presented below.

Health-Based and Ecological Soil Criteria Exceedances

There were no exceedances to the adopted health or ecological criteria in soil samples.

The results indicate there were no elevated levels of the contaminants of potential concern at the sampling locations targeted in this investigation. Due to no exceedances to the adopted health and ecological criteria being encountered there is considered to be a low risk to future onsite or offsite receptors from impacted soil.

Are there any background issues?

Based on the background searches for the Site and nearby land areas, onsite observations, and analytical soil sampling results there is considered to be a low risk of background issues associated with the Site.

Are there impacts of chemical mixtures?

Based on the background searches for the Site and nearby land areas, onsite observations, and analytical soil sampling results there is considered to be a low risk of impacts of chemical mixtures on the Site.

Is there any evidence of, or potential for, migration of contaminants from the Site?

Based on the background searches for the Site and nearby land areas, onsite observations, and analytical soil sampling results there is considered to be no evidence or potential for migration of contaminants from the Site.

Are there any aesthetics issues in fill at the site?

Minimal fill was reported across the Site mainly utilised for the construction of the onsite dams. There were four observed stockpiles of anthropogenic materials across the Site. There are multiple structures located in the south western portion of the Site that have the potential to have asbestos containing material (ACM), therefore a HAZMAT assessment of these structures is recommended.

Based on the above observations the decision is yes, there are aesthetics issues in fill at the Site.

Is Further Investigation Required?

No exceedances to the adopted health and ecological criteria were reported in the analytical soil results. Low risk of background issues, low risk of impacts from chemical mixtures and no evidence of contaminant migration offsite was observed at the Site. Therefore, no further investigation is required with respect to contamination.

Aesthetic issues related to anthropogenic stockpiles were observed onsite and multiple structures were identified in the southern portion of the Site not assessed for the presence of asbestos.

Is a Site Management Strategy Required?

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- High potential salinity soils were identified onsite as part of the desktop review. A Salinity management plan should be included as part of the construction environmental management plan for the Site.
- Anthropogenic material within stockpiles access the Site and within existing buildings and infrastructure should be removed from the Site prior to any vegetation clearance or earthworks activities.
- A HAZMAT assessment should be undertaken for each of the structures located in the southern portion of the Site.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.

Is there sufficient information to characterise the Site?

Yes, EP Risk has adopted a preliminary assessment and based on the historical land use the Site presents a low risk of soil contamination. The PSI met the adopted data quality objectives and is therefore considered sufficient for the purposes of assessing contamination associated with the historical land use.

9 Refined Conceptual Site Model

A refined conceptual site model (CSM) has been developed based upon the information provided in previous sections of this report.

Contaminating activities based on the Site inspection and review of historical records, the following activities have occurred at the Site which may have resulted in the potential for contamination. These activities are summarised as follows:

- Clearing of land with potential use of herbicides and pesticides.
- Rural agricultural land use.
- Anthropogenic material stockpiling on Site.
- Work shed.
- Imported fill material for dams.
- Residential dwellings and structures.

9.1 Affected Media

The potential affected media at the Site are considered to be soil.

9.2 Human and Ecological Receptors

Sensitive receptors identified at and near the Site were considered to be:

- Future recreational users at the Site including potential users of residential buildings (ASC NEPM 2013 HIL A and HSL A).
- Future construction and sub-surface maintenance workers at the Site (ASC NEPM 2013 HIL D and HSL D – commercial/industrial; CRC CARE 2011 Direct contact and intrusive maintenance workers HSLs and Vapour Intrusion HSLs for Intrusive Maintenance Workers (Shallow Trench)).
- Terrestrial and/or aquatic fauna and flora at the Site and on adjoining land (ASC NEPM EIL and ESLs).

9.3 Potential and Complete Exposure Pathways

An analysis of the potential exposure pathways between the COPC and the identified human and ecological receptors are presented in **Table 9.**

Overall, based on this assessment and the conceptual site model for the proposed development there are no likely complete source-pathway-receptor linkages.

Table 9 – Source-Pathway-Receptor Linkages

Sources				Pathways	Receptors	Linkages	Summary of Findings and Comments
Primary	**Secondary**	**Contaminants**	**Affected Media**	**Exposure Pathways**			
Clearing of land	Potential use of herbicides and pesticides	OCP and OPP	Soil	Human Health • Dermal contact • Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future residential/recreational users.	Unlikely	All results recorded below health and ecological criteria.
				Ecological: • Uptake by flora and fauna	• Terrestrial fauna and flora at the Site and on adjoining land. • Ecosystems dependant on the downgradient Creeks and Rivers		
Rural agricultural land use	Use of machinery and storage of equipment	TRH, BTEX, PAH and heavy metals	Soil	Human Health • Dermal contact • Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future residential/recreational users.	Unlikely	All results recorded below health and ecological criteria.
				Ecological: • Uptake by flora and fauna	• Terrestrial fauna and flora at the Site and on adjoining land. • Ecosystems dependant on the downgradient Creeks and Rivers		
Work shed	Leaching into soil and spills.	TRH, BTEX, PAH, Metals, PCBs, OCP and OPP.	Soil	Human Health • Dermal contact • Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future residential/recreational users.	Unlikely	All results recorded below health and ecological criteria.
				Ecological: Uptake by flora and fauna	• Terrestrial fauna and flora at the Site and on adjoining land. • Ecosystems dependant on the downgradient Creeks and Rivers		
Anthropogenic material stockpiles	Potential storage of chemicals, leaching into soil. Aesthetic issue.	TRH, BTEX, PAH, Metals, PCBs, OCP, OPP, Asbestos.	Soil	Human Health • Dermal contact Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future residential/recreational users.	Unlikely	All results recorded below health and ecological criteria. **Anthropogenic material stockpiles present an aesthetic issue onsite and will need to be removed offsite as general solid waste material prior to earthworks for the proposed development.**
				Ecological: Uptake by flora and fauna	• Terrestrial fauna and flora at the Site and on adjoining land. • Ecosystems dependant on the downgradient Creeks and Rivers		
Residential dwelling and structures	Potential use of hazardous materials during construction.	Asbestos	-	Human Health • Dermal contact Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future residential/recreational users.	Possible with a medium consequence	The structures onsite have not been visually inspected for the presence of asbestos. **A HAZMAT inspection is required prior to demolition of any structures onsite.**

Table 9 – Source-Pathway-Receptor Linkages

Sources				Pathways	Receptors	Linkages	Summary of Findings and Comments
Primary	Secondary	Contaminants	Affected Media	Exposure Pathways			
Imported Material for Dams	Potential for foreign materials and chemicals in the imported fill material.	TRH, BTEX, PAH, Metals, PCBs, OCP and OPP, Asbestos.	Soil	<u>Human Health</u> • Dermal contact Incidental ingestion	• Future construction and sub-surface maintenance workers. • Future residential/recreational users.	Possible with a low consequence	No analytical soil testing was completed on the imported material utilised for the construction of the onsite dams. **This material should be tested and analysed during the earthworks of the development to determine suitable reuse or disposal of the material.**
				<u>Ecological</u>: Uptake by flora and fauna	• Terrestrial fauna and flora at the Site and on adjoining land. • Ecosystems dependant on the downgradient Creeks and Rivers		

10 Conclusion and Recommendations

EP Risk was engaged by ACG Clovelly Road Pty Ltd C/- ADW Johnson Pty Ltd to undertake a PSI for the proposed residential development at a Site located at 523 Raymond Terrace Road, Chisholm, NSW. It is understood the Site is proposed to be redeveloped into a residential development and the PSI is required to assess contamination and as part of the DA.

The PSI was required to assess whether any contaminating activities are likely to have occurred at the Site which may present a human health or ecological risk under the proposed land use.

Potentially contaminating activities identified to have been undertaken at the Site include clearing of land with potential use of herbicides and pesticides, rural agricultural land use, Work shed, anthropogenic material stockpiling, imported fill material for onsite dam construction and structures onsite.

During the Site walkover and intrusive investigation no evidence of asbestos containing materials were observed. Three existing structures are present on the Site, no detailed HAZMAT assessment of these structures has been undertaken. Four anthropogenic material stockpiles and three dams were identified on the Site.

Based on the review of the historical information, the Site was formerly used for rural living. From 1967 to 1990 the Site was owned by a Farmer and from 1980 to 1995 the Site was owned by a haulage contractor. The surrounding land use comprised rural / agricultural land use.

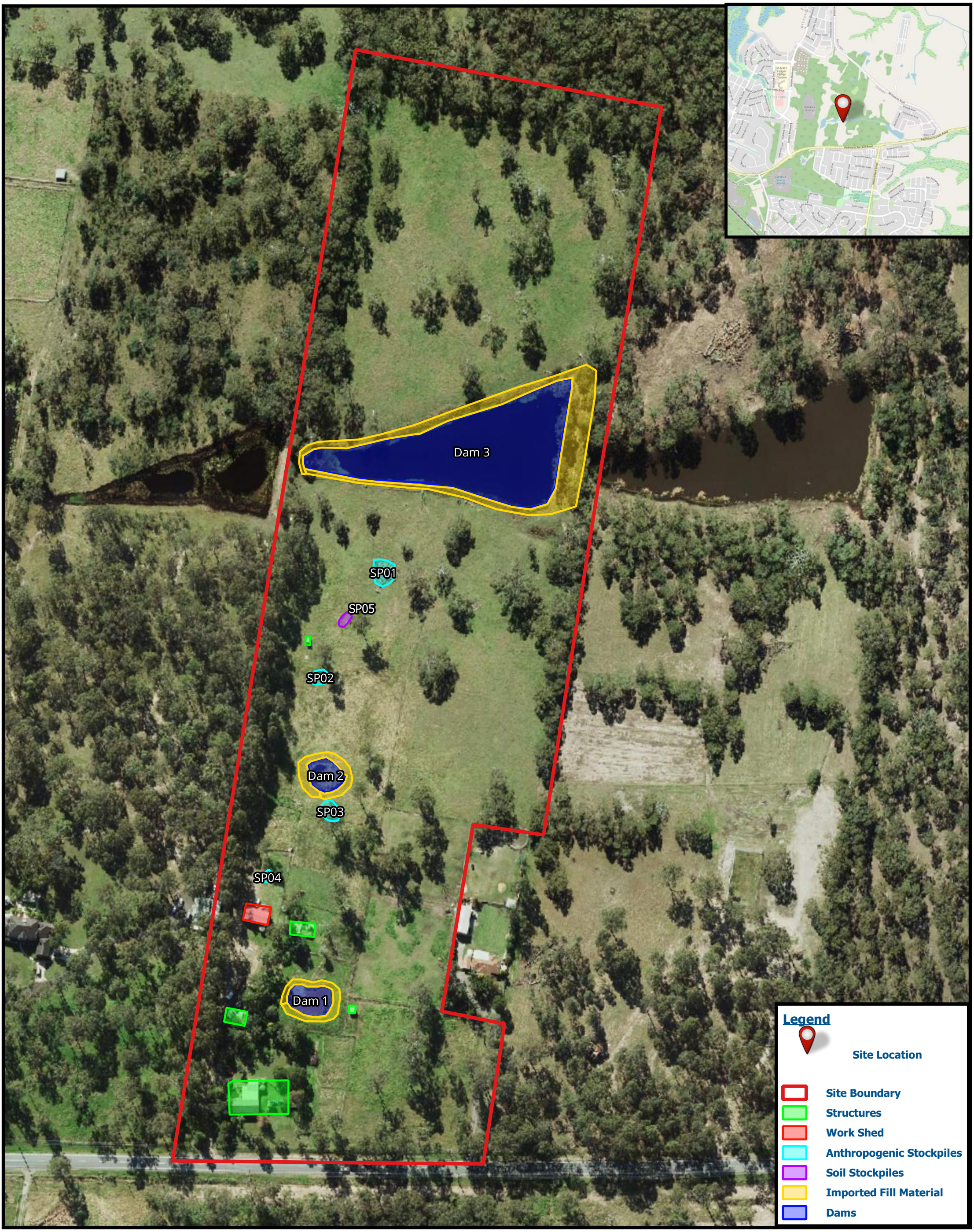
A total of 13 test pits and one (1) borehole were undertaken across the Site to assess soils for contaminants of potential concern.

The Site is considered to pose a low risk of contamination to the proposed future land users. However, there were two possible by low to medium consequence source-pathway-receptor linkages related to the imported fill material utilised for historical onsite dam construction and the existing structures not being assessed for the presence of hazardous materials.

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- High potential salinity soils were identified onsite as part of the desktop review. A Salinity management should be included as part of the construction environmental management plan for the Site.
- Anthropogenic material within stockpiles and across the Site should be removed from the Site prior to any vegetation clearance or earthworks activities.
- A HAZMAT survey should be completed for all structures present on the Site prior to demolition and removal of anthropogenic materials originating from these structures.
- Anthropogenic material from the demolition of the existing buildings and infrastructure should be removed from the Site prior to any vegetation clearance or earthworks activities.
- Soil sampling of imported fill materials used for the construction of the three historical dams onsite should be completed prior to reuse or disposal of this material.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.

Figures



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Preliminary Site Investigation
523 Raymond Terrace Road, Chisholm, NSW

Figure 1 - Site Location and Layout

Job No: EP3045.002
Date: 15/03/2023
Drawing Ref: Fig 1
Version No: v1

N

0 30 60 90 m

Approximate Scale Only

Coordinate System: MGA 56
Drawn by: DW Checked by: LK
Scale of regional map not shown
Source: Near Maps

APPROVED COMPANY ISO 9001 QMS Certification Services
APPROVED COMPANY AS/NZS 4801 QMS Certification Services
APPROVED COMPANY ISO 14001 QMS Certification Services

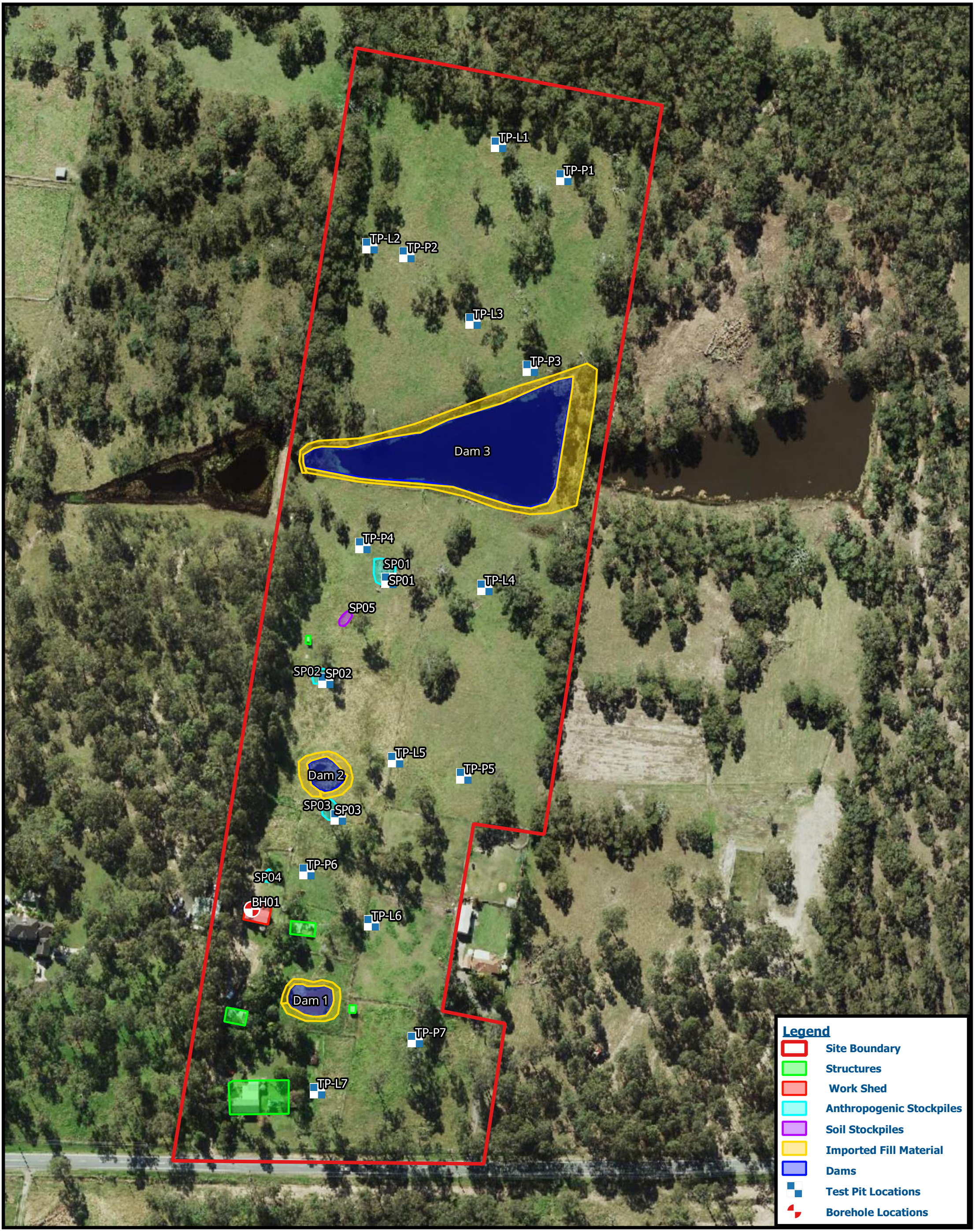

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Figure 2 - Sampling Locations

Job No: EP3045.002
Date: 15/03/2023
Drawing Ref: Fig 2
Version No: v1

N

0 30 60 90 m

Approximate Scale Only

Coordinate System: MGA 56
Drawn by: DW Checked by: LK
Scale of regional map not shown
Source: Near Maps

APPROVED COMPANY ISO 9001 QMS Certification Services
APPROVED COMPANY AS/NZS 4801 QMS Certification Services
APPROVED COMPANY ISO 14001 QMS Certification Services

Analytical Tables

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Table 1A - Soil Metals, PAH and PCB Analytical Summary

EP3045.002
27/03/2023

			Metals							PCBs								PAH																		
			Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCB's (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(b)fluorene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)Pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(b)pyrene TEQ zero (mg/kg	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ zero (Zero)	Total PAH's (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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			2	0.4	2	5	5	0.1	2	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Res A Soil			100	20	100	6,000	300	40	400	7,400								1															3	3	3	300
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																																5						
>=0m, <1m																																5						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand																																3						
>=0m, <1m																																3						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																							0.7															
>=0m, <2m																							0.7															
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																							0.7															
>=0m, <2m																							0.7															
NEPM 2013 Table 1B(5) Generic ESL - Urban Res & Public Open Space			100		760	45	1100		190	180																						170						
Direct Contact HSL A Residential (low density)																																1,400						
Field ID	**Date**	**Depth**																																				
BH_01_0.1	**16 Feb 2023**	**0.1**	**6**	<1	**10**	**20**	**26**	<0.1	**12**	**137**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
QC01	**16 Feb 2023**	**0.1**	**5**	<1	**10**	**10**	**15**	<0.1	**4**	**58**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
QC02	**16 Feb 2023**	**0.1**	**17**	<0.4	**30**	**17**	**28**	<0.1	<5	**130**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
SP01_0.1	**16 Feb 2023**	**0.1**	**11**	<1	**6**	**18**	**21**	**0.1**	**9**	**81**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
SP02_0.1	**16 Feb 2023**	**0.1**	**8**	<1	**7**	**11**	**7**	<0.1	**10**	**45**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
SP03_0.1	**16 Feb 2023**	**0.1**	<5	<1	**9**	**5**	**11**	<0.1	**6**	**72**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_L2_0.1	**16 Feb 2023**	**0.1**	**6**	<1	**9**	<5	**14**	<0.1	**2**	**23**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_L3_0.1	**16 Feb 2023**	**0.1**	<5	<1	**6**	<5	**13**	<0.1	<2	**12**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_L4_0.1	**16 Feb 2023**	**0.1**	**5**	<1	**7**	**10**	**15**	<0.1	**5**	**57**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_L5_0.1	**16 Feb 2023**	**0.1**	<5	<1	**7**	<5	**9**	<0.1	**3**	**19**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_L7_0.1	**16 Feb 2023**	**0.1**	**14**	<1	**22**	<5	**9**	<0.1	<2	**11**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_P2_0.1	**16 Feb 2023**	**0.1**	<5	<1	**11**	<5	**11**	<0.1	<2	**22**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_P3_0.1	**16 Feb 2023**	**0.1**	**7**	<1	**11**	<5	**12**	<0.1	<2	**10**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_P4_0.1	**16 Feb 2023**	**0.1**	**11**	<1	**18**	<5	**12**	<0.1	<2	**7**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_P6_0.1	**16 Feb 2023**	**0.1**	**18**	<1	**26**	<5	**19**	<0.1	**2**	**33**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
TP_P7_0.1	**16 Feb 2023**	**0.1**	**8**	<1	**14**	<5	**11**	<0.1	**2**	**11**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
Statistics																																						
Number of Results			**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**
Number of Detects			**12**	**0**	**16**	**7**	**16**	**1**	**10**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**16**	**0**	**0**
Minimum Concentration			**5**	**<0.4**	**6**	**5**	**7**	**0.1**	**2**	**7**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**0.6**	**1.2**	**<0.5**	**<0.5**
Minimum Detect			**5**	ND	**6**	**5**	**7**	**0.1**	**2**	**7**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.6**	**1.2**	ND	ND
Maximum Concentration			**18**	**<1**	**30**	**20**	**28**	**0.1**	**12**	**137**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**0.6**	**1.2**	**<0.5**	**<0.5**
Maximum Detect			**18**	ND	**30**	**20**	**28**	**0.1**	**12**	**137**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.6**	**1.2**	ND	ND
Average Concentration *			**7.9**	**0.48**	**13**	**7.1**	**15**	**0.053**	**3.9**	**46**								**0.05**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.6**	**1.2**	**0.25**	**0.25**
Median Concentration *			**6.5**	**0.5**	**10**	**2.5**	**12.5**	**0.05**	**2.25**	**28**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.05**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.6**	**1.2**	**0.25**	**0.25**
Standard Deviation *			**5.1**	**0.075**	**7.4**	**6.4**	**6**	**0.012**	**3.6**	**42**								**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
95% UCL (Student's-t) *			**10.09**	**0.514**	**15.94**	**9.889**	**17.21**	**0.0586**	**5.466**	**63.72**								**0.05**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.6**	**1.2**	**0.25**	**0.25**
% of Detects			**75**	**0**	**100**	**44**	**100**	**6**	**62**	**100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**100**	**100**	**0**	**0**		
% of Non-Detects			**25**	**100**	**0**	**56**	**0**	**94**	**38**	**0**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**0**	**0**	**100**	**100**		

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

2013, NEPM 2013 Table 1A(1) HILs Res A Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay
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 1B(6) ESLs for Urban Res, Fine Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil

EP RISK

Table 2A - Soil Pesticides Analytical Summary

EP3045.002
27/03/2023

			Organochlorine Pesticides																																					
			Organochlorine pesticides EPA Vic	Other organochlorine pesticides EPA Vic	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+ DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	Endrin ketone	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Fokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Zipmeton-O
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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			0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.2	0.05	0.2	0.05	0.05	0.05	0.05	0.05	2	0.2
NEPM 2013 Table 1A(1) HILs Res A Soil								6		50						240		270						10		6		10	300	20						160			
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space															180																								
Field ID	**Date**	**Depth**																																						
BH_01_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
QC01	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
QC02	**16 Feb 2023**	**0.1**	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2
SP01_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
SP02_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
SP03_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_L2_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_L3_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_L4_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_L5_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_L7_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_P2_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_P3_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_P4_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_P6_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
TP_P7_0.1	**16 Feb 2023**	**0.1**	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
Statistics																																							
Number of Results			**1**	**1**	**16**	**16**	**16**	**16**	**16**	**16**	**15**	**15**	**16**	**16**	**16**	**16**	**16**	**15**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**1**	**1**	**16**	**1**	**15**	**15**	**16**	**16**	**16**	**1**	**1**
Number of Detects			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration			**<0.1**	**<0.1**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.5**	**<0.2**	**<0.05**	**<0.2**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<2**	**<0.2**
Minimum Detect			**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
Maximum Concentration			**<0.1**	**<0.1**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.1**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.2**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.5**	**<0.2**	**<0.2**	**<0.2**	**<0.05**	**<0.05**	**<0.05**	**<0.2**	**<0.2**	**<2**	**<0.2**
Maximum Detect			**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
Average Concentration *					**0.025**	**0.025**	**0.025**	**0.025**	**0.027**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.095**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.095**			**0.03**		**0.025**	**0.025**	**0.03**	**0.03**	**0.03**		
Median Concentration *			**0.05**	**0.05**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.1**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.1**	**0.25**	**0.1**	**0.025**	**0.1**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**1**	**0.1**
Standard Deviation *					**0**	**0**	**0**	**0**	**0.0062**	**0**	**0**	**0**	**0**	**0**	**0.019**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.019**			**0.019**		**0**	**0**	**0.019**	**0.019**	**0.019**		
95% UCL (Student's-t) *					**0.025**	**0.025**	**0.025**	**0.025**	**0.0293**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.104**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.104**			**0.0379**		**0.025**	**0.025**	**0.0379**	**0.0379**	**0.0379**		
% of Detects			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% of Non-Detects			**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay
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 1B(6) ESLs for Urban Res, Fine Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil

EP RISK

Table 2A - Soil Pesticides Analytical Summary

EP3045.002
27/03/2023

			Organophosphorous Pesticides																													
			Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethoprop	Fenthion	Fenamiphos	Fenitrothion	Fensulfothion	Fenthion	EPN	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pirimiphos-ethyl	Pyrazophos	Prothiofos	Sulfotep	Terbufos	Trichloronate	Tetrachlorvinphos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.2	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.05	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2
NEPM 2013 Table 1A(1) HILs Res A Soil																																
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space																																
Field ID	**Date**	**Depth**																														
BH_01_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
QC01	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
QC02	**16 Feb 2023**	**0.1**	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2
SP01_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
SP02_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
SP03_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_L2_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_L3_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_L4_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_L5_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_L7_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_P2_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_P3_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_P4_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_P6_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
TP_P7_0.1	**16 Feb 2023**	**0.1**	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
Statistics																																
Number of Results			**1**	**15**	**16**	**16**	**16**	**1**	**1**	**16**	**15**	**1**	**1**	**16**	**1**	**16**	**1**	**16**	**1**	**16**	**1**	**1**	**16**	**1**	**1**	**15**	**1**	**15**	**1**	**1**	**1**	**1**
Number of Detects			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration			**<0.2**	**<0.05**	**<0.05**	**<0.05**	**<0.05**	**<0.2**	**<0.2**	**<0.05**	**<0.05**	**<0.2**	**<0.2**	**<0.05**	**<0.2**	**<0.05**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<2**	**<0.2**	**<0.2**	**<0.2**	**<0.05**	**<0.2**	**<0.05**	**<0.2**	**<0.2**	**<0.2**	**<0.2**
Minimum Detect			**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
Maximum Concentration			**<0.2**	**<0.05**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.05**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<0.2**	**<2**	**<0.2**	**<2**	**<0.2**	**<0.2**	**<0.2**	**<0.05**	**<0.2**	**<0.05**	**<0.2**	**<0.2**	**<0.2**	**<0.2**
Maximum Detect			**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
Average Concentration *				**0.025**	**0.03**	**0.03**	**0.03**			**0.03**	**0.025**			**0.03**		**0.03**		**0.1**		**0.16**			**0.1**			**0.025**		**0.025**				
Median Concentration *			**0.1**	**0.025**	**0.025**	**0.025**	**0.025**	**0.1**	**0.1**	**0.025**	**0.025**	**0.1**	**0.1**	**0.025**	**0.1**	**0.025**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**1**	**0.1**	**0.1**	**0.1**	**0.025**	**0.1**	**0.025**	**0.1**	**0.1**	**0.1**	**0.1**
Standard Deviation *				**0**	**0.019**	**0.019**	**0.019**			**0.019**	**0**			**0.019**		**0.019**		**0**		**0.22**			**0**			**0**		**0**				
95% UCL (Student's-t) *				**0.025**	**0.03793**	**0.03793**	**0.03793**			**0.0379**	**0.025**			**0.0379**		**0.0379**		**0.1**		**0.255**			**0.1**			**0.025**		**0.025**				
% of Detects			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% of Non-Detects			**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Res A Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay
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 1B(6) ESLs for Urban Res, Fine Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil

EP RISK

Table 3A - Soil BTEXN, TRH and TPH Analytical Summary

EP3045.002
27/03/2023

			BTEX							TRH							TPH				
			Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	C6-C9	C10-C14	C15-C28	C29-C36	C10-C36 (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.2	0.1	0.3	0.2	10	10	50	50	100	100	50	10	20	50	50	50
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay			5	0.7 | 1 | 2 | 3	480				110 | 310			50 | 90 | 150 | 290		280							
>=0m, <1m			5	0.7	480				110			50		280								
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Sand			3	0.5 | 0.5 | 0.5 | 0.5	160 | 220 | 310 | 540	55			40 | 60 | 95 | 170			45 | 70 | 110 | 200		110 | 240 | 440								
>=0m, <1m			3	0.5	160	55			40			45		110								
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil				50	85	70			105			180	120	120	300	2,800						
>=0m, <2m				50	85	70			105			180	120	120	300	2,800						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil				65	105	125			45			180	120	120	1,300	5,600						
>=0m, <2m						125			45				120	120								
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space			170																			
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil											700		1,000		2,500	10,000						
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil											800		1,000		3,500	10,000						
Direct Contact HSL A Residential (low density)			1,400	100	14,000	4,500			12,000		4,400		3,300		4,500	6,300						
Field ID	**Date**	**Depth**																				
BH_01_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
QC01	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
QC02	**16 Feb 2023**	**0.1**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
SP01_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
SP02_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
SP03_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_L2_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_L3_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_L4_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_L5_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_L7_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_P2_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_P3_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_P4_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_P6_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
TP_P7_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
Statistics																						
Number of Results			**16**	**16**	**16**	**16**	**16**	**16**	**16**	**15**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**16**
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			**<0.5**	**<0.1**	**<0.1**	**<0.1**	**<0.2**	**<0.1**	**<0.3**	**<0.2**	**<10**	**<10**	**<50**	**<50**	**<100**	**<100**	**<50**	**<10**	**<20**	**<50**	**<50**	**<50**
Minimum Detect			**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
Maximum Concentration			**<1**	**<0.2**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.2**	**<20**	**<20**	**<50**	**<50**	**<100**	**<100**	**<100**	**<20**	**<50**	**<100**	**<100**	**<50**
Maximum Detect			**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
Average Concentration *			**0.48**	**0.097**	**0.24**	**0.24**	**0.24**	**0.24**	**0.24**	**0.1**	**5.3**	**5.3**	**25**	**25**	**50**	**50**	**27**	**5.3**	**24**	**48**	**48**	**25**
Median Concentration *			**0.5**	**0.1**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.1**	**5**	**5**	**25**	**25**	**50**	**50**	**25**	**5**	**25**	**50**	**50**	**25**
Standard Deviation *			**0.062**	**0.012**	**0.05**	**0.05**	**0.038**	**0.05**	**0.025**	**0**	**1.2**	**1.2**	**0**	**0**	**0**	**0**	**6.2**	**1.2**	**3.8**	**6.2**	**6.2**	**0**
95% UCL (Student's-t) *			**0.512**	**0.102**	**0.259**	**0.259**	**0.257**	**0.259**	**0.255**	**0.1**	**5.86**	**5.86**	**25**	**25**	**50**	**50**	**29.3**	**5.86**	**25.71**	**51.18**	**51.18**	**25**
% of Detects			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
% of Non-Detects			**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* A Non Detect Multiplier of 0.5 has been applied.

Environmental Standards

2013, NEPM 2013 Table 1A(1) HILs Res A Soil
2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay
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 1B(6) ESLs for Urban Res, Fine Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil

Table 4A - Soil Asbestos Analytical Summary

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			Asbestos								
			Asbestos Type	Asbestos (Trace)	Asbestos (<7mm AF/FA)	Asbestos (ACM >7mm) Estimation	Friable Asbestos (FA & AF)	Weight Used for % Calculation	Synthetic Mineral Fibre	Organic Fibre	Asbestos fibres
			Detect	Fibres	g	g	% (w/w)	kg	--	--	g/kg
EQL				5				0.0001			
NEPM 2013 Table 7 Res A HSL for asbestos in soil							0.001				
Field ID	**Date**	**Depth**									
TP_L6_0.1	**16 Feb 2023**	**0.1**	**N/A**	**No**	<0.0004	<0.0004	<0.001	**0.360**	**No**	**No**	**No**
TP_L7_0.1	**16 Feb 2023**	**0.1**	**N/A**	**No**	<0.0004	<0.0004	<0.001	**0.414**	**No**	**No**	**No**
TP_P3_0.1	**16 Feb 2023**	**0.1**	**N/A**	**No**	<0.0004	<0.0004	<0.001	**0.286**	**No**	**No**	**No**
TP_P6_0.1	**16 Feb 2023**	**0.1**	**N/A**	**No**	<0.0004	<0.0004	<0.001	**0.408**	**No**	**No**	**No**
TP_P7_0.1	**16 Feb 2023**	**0.1**	**N/A**	**No**	<0.0004	<0.0004	<0.001	**0.417**	**No**	**No**	**No**

Environmental Standards

NEPM 2013 Table 7 Res A HSL for asbestos in soil

Table 5A - Soil NEPM Screen for Soil Classification Analytical Summary

EP3045.002
27/03/2023

			Inorganics											Particulates
			Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Potassium	Exchangeable Sodium	Exchangeable Sodium Percent	pH (CaCl2)	pH (Lab)	CEC	Electrical Conductivity (Lab)	Iron	TOC	Organic Matter
			meq/100g	meq/100g	meq/100g	meq/100g	%	-	-	meq/100g	µS/cm	%	%	%
EQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1			0.5
Field ID	**Date**	**Depth**												
TP_L6_0.5	**16 Feb 2023**	**0.5**	**2.6**	**7.5**	**0.2**	**1.2**	**10.6**	**4.2**	**5.6**	**11.9**	**83**	**0.943**	<0.5	**0.8**

			BTEX								TRH							TPH					Metals								PCBs															
			Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	C6-C9	C10-C14	C15-C28	C29-C36	C10-C36 (Sum of total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.1	0.1	0.1	0.2	0.1	0.3	0.2	10	10	50	50	100	100	50	10	20	50	50	50	2	0.4	2	5	5	0.1	2	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Field ID	**Date**	**Depth**																																													
BH_01_0.1	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	**6**	<1	**10**	**20**	**26**	<0.1	**12**	**137**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QC01	**16 Feb 2023**	**0.1**	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50	**5**	<1	**10**	**10**	**15**	<0.1	**4**	**58**	-	-	-	-	-	-	-	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
RPD %			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**18.18%**	0.00%	**0.00%**	**66.67%**	**53.66%**	0.00%	**100.00%**	**81.03%**	-	-	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
QC02	**16 Feb 2023**	**0.1**	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50	**17**	<0.4	**30**	**17**	**28**	<0.1	<5	**130**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
RPD %			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	**95.65%**	0.00%	**100.00%**	**16.22%**	**7.41%**	0.00%	**82.35%**	**5.24%**	-	-	-	-	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Table 1B - Soil Quality Control Analytical Summary

PAH

Field ID	Date	Depth	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
BH_01_0.1	16 Feb 2023	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
QC01	16 Feb 2023	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
RPD %			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
QC02	16 Feb 2023	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	**1.2**	<0.5	<0.5
RPD %			0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Organochlorine Pesticides

Field ID	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	Endrin ketone	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5
BH_01_0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
QC01	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-
RPD %	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-
QC02	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5
RPD %	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-

Field ID	Tokuthion	Azinophos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	0.05	0.2	0.05	0.05	0.05	0.05
BH_01_0.1	-	<0.05	-	<0.05	<0.05	<0.05	<0.05
QC01	-	<0.05	-	<0.05	<0.05	<0.05	<0.05
RPD %	-	0.00%	-	0.00%	0.00%	0.00%	0.00%
QC02	<0.2	<0.2	<0.2	-	-	<0.2	<0.2
RPD %	-	0.00%	-	-	-	0.00%	0.00%

			Organophosphorous Pesticides																																	
			Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethoprop	Etrimfos	Fenamiphos	Fenitrothion	Fensulfothion	Fenthion	EPN	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pirimiphos-ethyl	Pyrazophos	Prothiofos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	2	0.2	0.2	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.05	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2
Field ID	**Date**	**Depth**																																		
BH_01_0.1	**16 Feb 2023**	**0.1**	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
QC01	**16 Feb 2023**	**0.1**	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	-	-	<0.05	-	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	-	<0.05	-	<0.05	-	-	-	-
RPD %			0.00%	-	-	-	0.00%	0.00%	0.00%	0.00%	-	-	0.00%	0.00%	-	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	0.00%	-	-	0.00%	-	0.00%	-	-	-	-
QC02	**16 Feb 2023**	**0.1**	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2
RPD %			0.00%	-	-	-	-	0.00%	0.00%	0.00%	-	-	0.00%	-	-	-	0.00%	-	0.00%	-	0.00%	-	0.00%	-	-	0.00%	-	-	-	-	-	-	-	-	-	-

Table 1C - Soil Trip Spike and Trip Blank Analytical Summary

EP3045.002
15/03/2023

			BTEX								TRH		TPH
			Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C6-C9
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.005	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.02	0.02	0.02
Field ID	**Date**	**Depth**											
TRIP BLANK	**13 Feb 2023**		<0.005	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.02	<0.02	<0.02
TRIP SPIKE	**13 Feb 2023**		**0.017**	**0.014**	**0.014**	**0.015**	**0.014**	**0.015**	**0.029**	**0.072**	-	-	-

Table 1D - Soil Rinsate Analytical Summary

			BTEX								TRH							TPH					Metals							Phenols														
			Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)	C6-C9	C10-C14	C15-C28	C29-C36	C10-C36 (Sum of total)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.005	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.02	0.02	0.1	0.1	0.1	0.1	0.1	0.02	0.05	0.1	0.05	0.05	0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.005	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001
Field ID	**Date**	**Depth**																																									
RW01	16 Feb 2023		<0.005	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.02	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.02	<0.05	<0.1	<0.05	<0.05	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010

Table 1D - Soil Rinsate Analytical Summary

			PCBs	PAH																	Organochlorine Pesticides																															
			PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ (Zero)	PAHs (Sum of total)	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	Endrin ketone	Endrin	g-BHC (lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.001	0.001	0.001	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002
Field ID	**Date**	**Depth**																																															
RW01	16 Feb 2023		<0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0020	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0020

			Organophosphorous Pesticides																			
			Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Malathion	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL			0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.002	0.002	0.002	0.0005	0.0005
Field ID	**Date**	**Depth**																			
RW01	**16 Feb 2023**		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0020	<0.0020	<0.0020	<0.0005	<0.0005

Appendix A
CONCEPT DEVELOPMENT PLANS

190873-MP-002[D]

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

LEGEND

- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- FUTURE LOT BOUNDARY
- MAJOR CONTOURS
- MINOR CONTOURS
- LOTS
- DRAINAGE RESERVE
- PROPOSED ROAD WIDENING
- RESIDUE LOTS

201 605m² | 202 681m² | 203 601m² | 204 601m² | 205 601m² | 206 512m² | 207 601m² | 208 512m² | 209 512m² | 210 554m² | 211 717m² | 212 658m² | 213 497m² | 214 502m² | 215 503m² | 216 503m² | 217 558m² | 218 510m² | 219 554m² | 220 557m² | 221 561m² | 222 561m² | 223 561m² | 224 561m² | 225 714m² | 226 844m² | 227 611m² | 228 604m² | 229 631m² | 230 810m² | 231 601m² | 232 502m² | 233 601m² | 234 601m² | 235 583m² | 236 505m² | 237 503m² | 238 1100m² | 239 601m² | 240 601m² | 241 502m² | 242 601m² | 101 600m² | 102 721m² | 103 569m² | 104 569m² | 105 569m² | 111 640m² | 112 604m² | 113 502m² | 114 505m² | 115 508m² | 116 511m² | 117 514m² | 118 523m² | 119 587m² | 120 577m² | 121 567m² | 122 556m² | 123 546m² | 124 535m² | 125 628m² | 141 6028m²

ROAD 1 | ROAD 2 | ROAD 3 (4.5-8-4.5) | ROAD 4 (4.5-8-4.5) | ROAD 5 (4.5-11-4.5) | ROAD 6 (4.5-8-4.5) | ROAD 7 (4.5-8-4.5)

A.6.00 | A.4.00 | A.7.99 | A.10.10

FOR CONTINUATION REFER SHEET 102

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
D	18.04.23	INITIAL ISSUE	L.K.	N.D.	DATUM: N/A CONTOUR INTERVAL: N/A	A1 1:500 · 0 · 12.5 · 25.0m · A3 1:1000	

working beyond expectations

drawing title:
MASTER PLAN
OPTION 2
SHEET 1

location: 523 RAYMOND TERRACE ROAD CHISHOLM

council: MCC

dwg ref: 190873-MP-002

client: ACG CLOVELLY ROAD PTY LTD

adw johnson
central coast office ph: (02) 4305 4300
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sydney office ph: (02) 8046 7411
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• urban design • visualisation • development feasibility • surveying • town planning • social impact • superintendency • infrastructure • civil engineering • project management

Plotted By: Nathan Delaney Plot Date: 18/04/23 9:07:15 AM Cad File: S:\190873\DWG\PLANNING\MP\190873-MP-002[D].DWG

This plan includes coloured information. If you have a black and white copy you do not have all of the information. This note is coloured RED.

190873-MP-002[D]

FOR CONTINUATION REFER SHEET 102

LEGEND

- PROPOSED LOT BOUNDARY
- EXISTING LOT BOUNDARY
- FUTURE LOT BOUNDARY
- MAJOR CONTOURS
- MINOR CONTOURS
- LOTS
- DRAINAGE RESERVE
- PROPOSED ROAD WIDENING
- RESIDUE LOTS

ROAD 5 (4.5-11-4.5)

ROAD 6 (4.5-8-4.5)

ROAD 7 (4.5-8-4.5)

ROAD 8 (4.5-8-4.5)

ROAD 9 (4.5-8-4.5)

ROAD 10 (4.5-8-4.5)

ROAD 11 (4.5-8-4.5)

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

LOT 662 4816m²

PT.507 299m²

PT.507 78m²

ver.	date	comment	drawn	pm
D	18.04.23	INITIAL ISSUE	L.K.	N.D.

level information: DATUM: N/A; CONTOUR INTERVAL: N/A

scale (A1 original size): A1 1:500; A3 1:1000; 0 12.5 25.0m

notes

drawing title: MASTER PLAN OPTION 2 SHEET 2

location: 523 RAYMOND TERRACE ROAD CHISHOLM

council: MCC

dwg ref: 190873-MP-002

client: ACG CLOVELLY ROAD PTY LTD

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Plotted By: Nathan Delaney Plot Date: 18/04/23 9:06:58AM Cad File: S:\190873\DWG\PLANNING\MP\190873-MP-002[D].DWG

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190873-MP-003[B]

STAGE SUMMARY		
STAGE	NUMBERING	LOT YIELD
1	101 – 141	40 LOTS + 1 DRAINAGE RESERVE (LOT 141)
2	201 – 242	42 LOTS
3	301 – 315	13 LOTS + 1 DRAINAGE RESERVE (LOT 314) + 1 ROAD WIDENING (LOT 315)
4	401 – 407	7 LOTS
5	501 – 507	6 LOTS + 1 RESIDUE LOT (LOT 507)
TOTAL		108 RESIDENTIAL LOTS 2 DRAINAGE RESERVES 1 ROAD WIDENING LOTS 1 RESIDUE LOT

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

PROPOSED DEVELOPMENT

ROAD 1 (4.5-8-4.5)

ROAD 2 (4.5-8-4.5)

ROAD 3 (4.5-8-4.5)

ROAD 4 (4.5-8-4.5)

ROAD 5 (4.5-11-4.5)

ROAD 6 (4.5-8-4.5)

ROAD 7 (4.5-8-4.5)

ROAD 8 (4.5-8-4.5)

ROAD 9 (4.5-8-4.5)

ROAD 10 (4.5-8-4.5)

ROAD 11 (4.5-8-4.5)

LOT 662

PT.507

PT.507

drawing title:

STAGING PLAN

location: 523 RAYMOND TERRACE ROAD CHISHOLM

council: MCC

dwg ref: 190873-MP-003

client: ACG CLOVELLY ROAD PTY LTD

ver.	date	comment	drawn	pm	level information	scale (A1 original size)	notes
B	18.04.23	INITIAL ISSUE	L.K.	N.D.	DATUM: N/A CONTOUR INTERVAL: N/A	A1 1:500 / A3 1:1000 (0, 12.5, 25.0m)	

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Plotted By: Nathan Delaney Plot Date: 18/04/23 9:13:41 AM Cad File: S:\190873\DWG\PLANNING\MP\190873-MP-003[B].DWG

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Appendix B

LOT SEARCH ENVIRONMENTAL REPORT (2023)

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 08 Mar 2023 14:00:16

Reference: LS041247 EP

Address: 523 Raymond Terrace Road, Chisholm, NSW 2322

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	14/02/2023	14/02/2023	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	13/02/2023	10/01/2023	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	06/12/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	13/02/2023	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	14/02/2023	14/02/2023	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	14/02/2023	14/02/2023	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	13/02/2023	13/02/2023	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	1	1	1
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/02/2023	27/02/2023	Monthly	1000m	3	3	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	8	8
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	3
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	16/02/2023	16/02/2023	Quarterly	1000m	0	0	4
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	16/02/2023	31/12/2022	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	1	1	2
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	14/02/2023	14/02/2023	Annually	2000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	7
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	1
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	1	1	5
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	28/02/2023	02/12/2022	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	14/02/2023	14/02/2023	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	13/02/2023	13/02/2023	Monthly	1000m	5	5	7
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/12/2022	02/12/2022	Monthly	1000m	1	1	14
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	28/02/2023	17/02/2023	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	27/02/2023	25/10/2022	Weekly	1000m	3	3	4
Lower Hunter and Central Coast Regional Vegetation Survey	NSW Office of Environment & Heritage	28/02/2015	16/11/2009	Annually	1000m	4	4	10
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	1	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	1	3
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	27/02/2023	27/02/2023	Weekly	10000m	-	-	-

Site Diagram

523 Raymond Terrace Road, Chisholm, NSW 2322

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 103173m²

Total Perimeter: 1.67km

Scale: 0 25 50 100 150 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 08 March 2023

Contaminated Land

523 Raymond Terrace Road, Chisholm, NSW 2322

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

523 Raymond Terrace Road, Chisholm, NSW 2322

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

523 Raymond Terrace Road, Chisholm, NSW 2322

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
N/A	No records in buffer										

PFAS Investigation & Management Programs

523 Raymond Terrace Road, Chisholm, NSW 2322

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

523 Raymond Terrace Road, Chisholm, NSW 2322

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

523 Raymond Terrace Road, Chisholm, NSW 2322

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

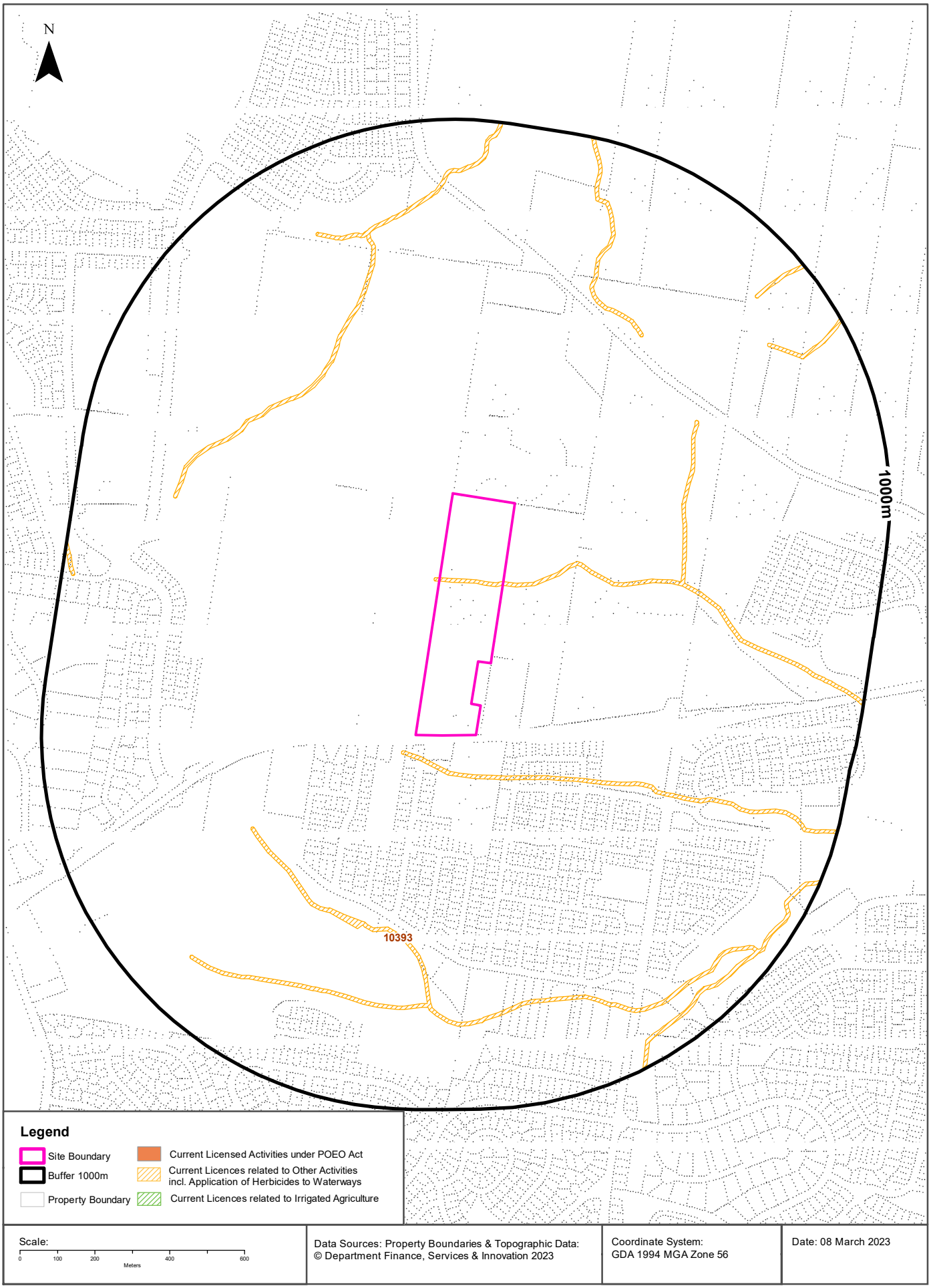
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

Current EPA Licensed Activities

523 Raymond Terrace Road, Chisholm, NSW 2322



EPA Activities

523 Raymond Terrace Road, Chisholm, NSW 2322

Licensed Activities under the POEO Act 1997

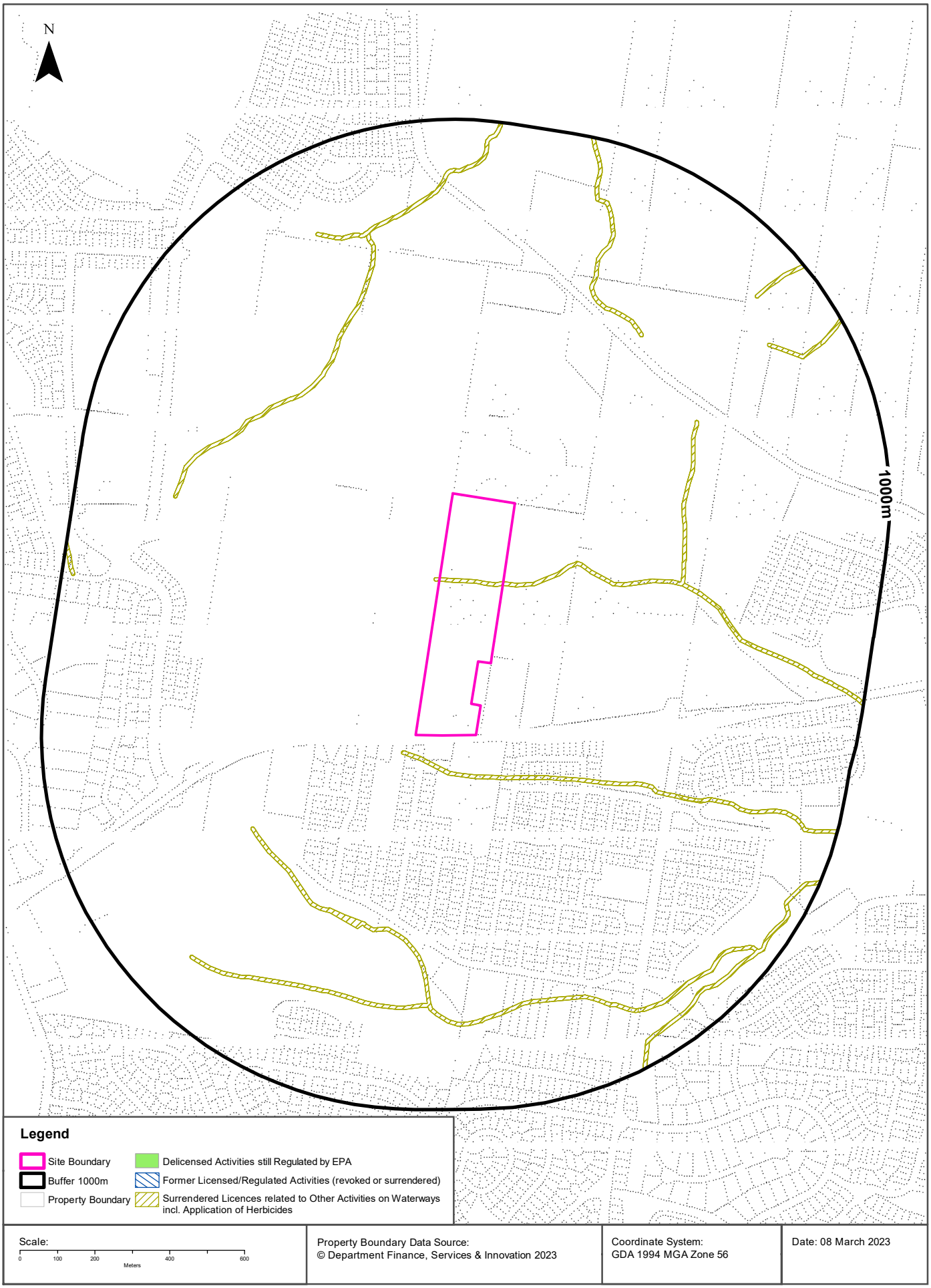
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10393	MAITLAND CITY COUNCIL	ALL WATERBODIES IN THE MAITLAND LOCAL GOVERNMENT AREA	.	MAITLAND	Other activities	Network of Features	0m	On-site

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

523 Raymond Terrace Road, Chisholm, NSW 2322



EPA Activities

523 Raymond Terrace Road, Chisholm, NSW 2322

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

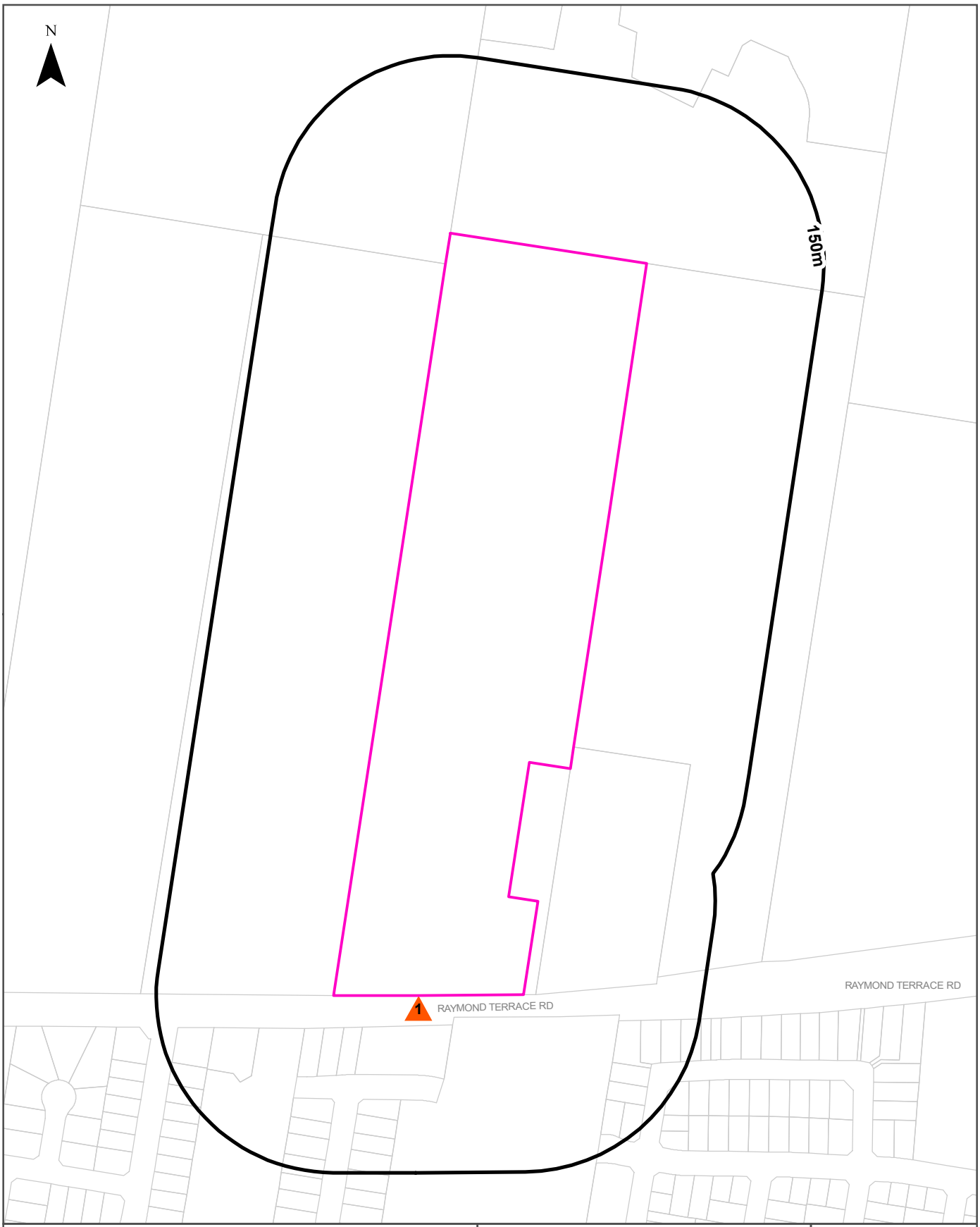
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
12439	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	Soil Conservation Service, Waterways within the Hunter Valley Flood Mitigation Scheme, MAITLAND	Surrendered	13/02/2007	Other Activities - Application of Herbicides	Network of Features	521m	East

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

523 Raymond Terrace Road, Chisholm, NSW 2322



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 60 120 180 240 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 March 2023

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

523 Raymond Terrace Road, Chisholm, NSW 2322

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	BRICK MFRS. &/OR DISTS.	Thornton Fire & Building Brick Co. Pty. Ltd., Raymond Terrace Rd., Thornton 2322	167859	1982	Road Match	0m
	BRICK, PIPE & TILE MANUFACTURERS	Raymond Terrace, Thornton	638185	1970	Road Match	0m
	BRICK, PIPE & TILE MANUFACTURERS	Terrace Rd., Thornton	638183	1970	Road Match	0m
	BRICK, PIPE & TILE MANUFACTURERS	Thornton Fire & Building Brick Co. Pty. Ltd., Raymond Terrace Rd., Thornton	638184	1970	Road Match	0m
	FIRE CLAY MFRS.	Thornton Fire & Building Brick Co. Pty. Ltd., Raymond Terrace, Thornton	638477	1970	Road Match	0m
	REFRACTORY MATERIALS MFRS. &/OR DISTS.	Thornton Fire & Building Brick Co. Pty. Ltd., Raymond Terrace, Thornton	639081	1970	Road Match	0m
	BRICK, PIPE & TILE MANUFACTURERS	Thornton Fire & Building Co. Pty. Ltd., Raymond Terrace Rd., Thornton	638182	1970	Road Match	0m
	BRICK, PIPE & TILE MANUFACTURERS	Thornton Fire and Building Brick Co. Pty. Ltd., Raymond Terrace Rd., Thornton	174273	1961	Road Match	0m

Historical Business Directories

523 Raymond Terrace Road, Chisholm, NSW 2322

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Aerial Imagery 2022

523 Raymond Terrace Road, Chisholm, NSW 2322

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 08 March 2023
0 50 100 150 200 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2019

523 Raymond Terrace Road, Chisholm, NSW 2322

Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 08 March 2023

Aerial Imagery 2015

523 Raymond Terrace Road, Chisholm, NSW 2322

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 08 March 2023
0 50 100 150 200 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2010

523 Raymond Terrace Road, Chisholm, NSW 2322

Aerial Imagery 2007

523 Raymond Terrace Road, Chisholm, NSW 2322

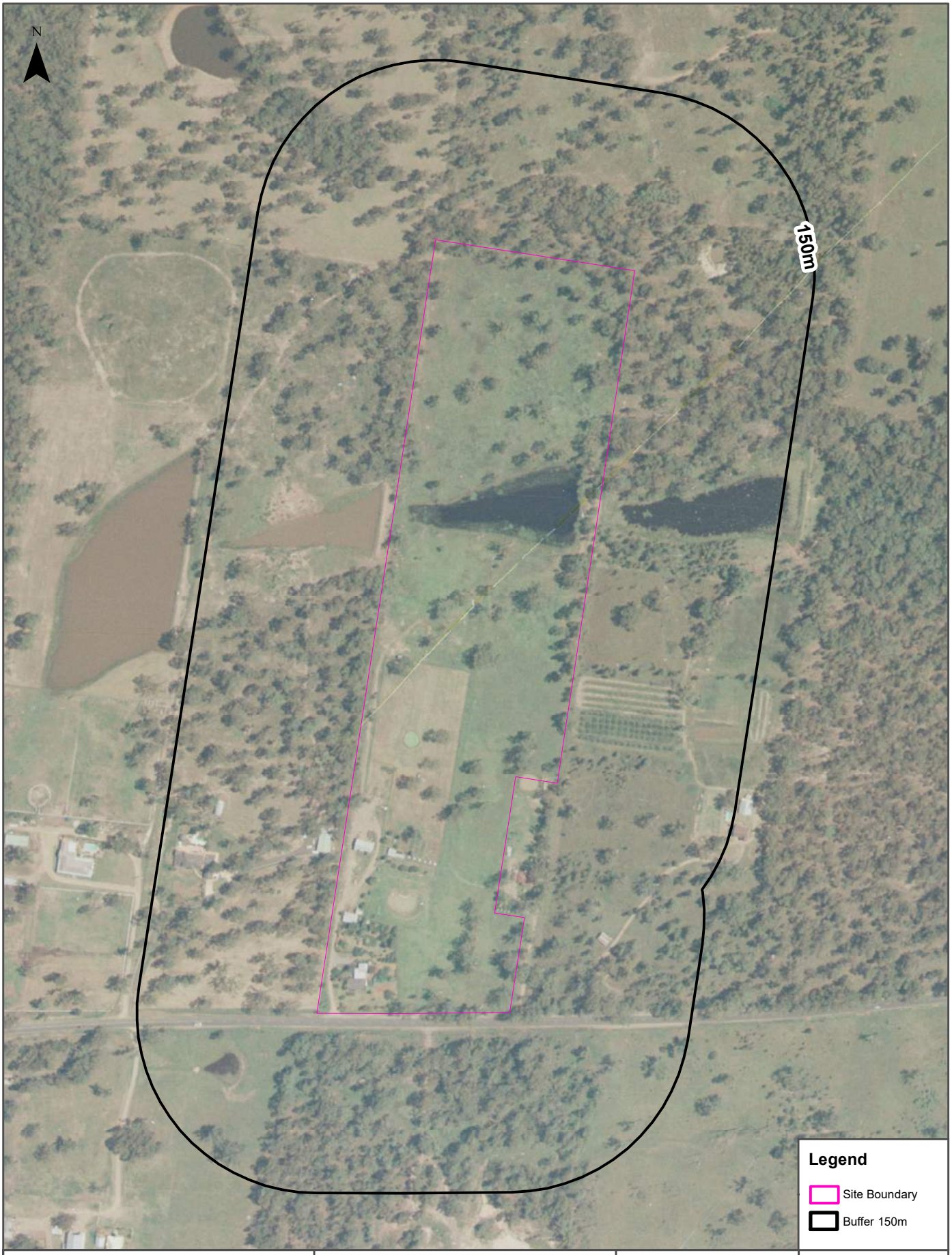
Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 08 March 2023

Aerial Imagery 1998

523 Raymond Terrace Road, Chisholm, NSW 2322

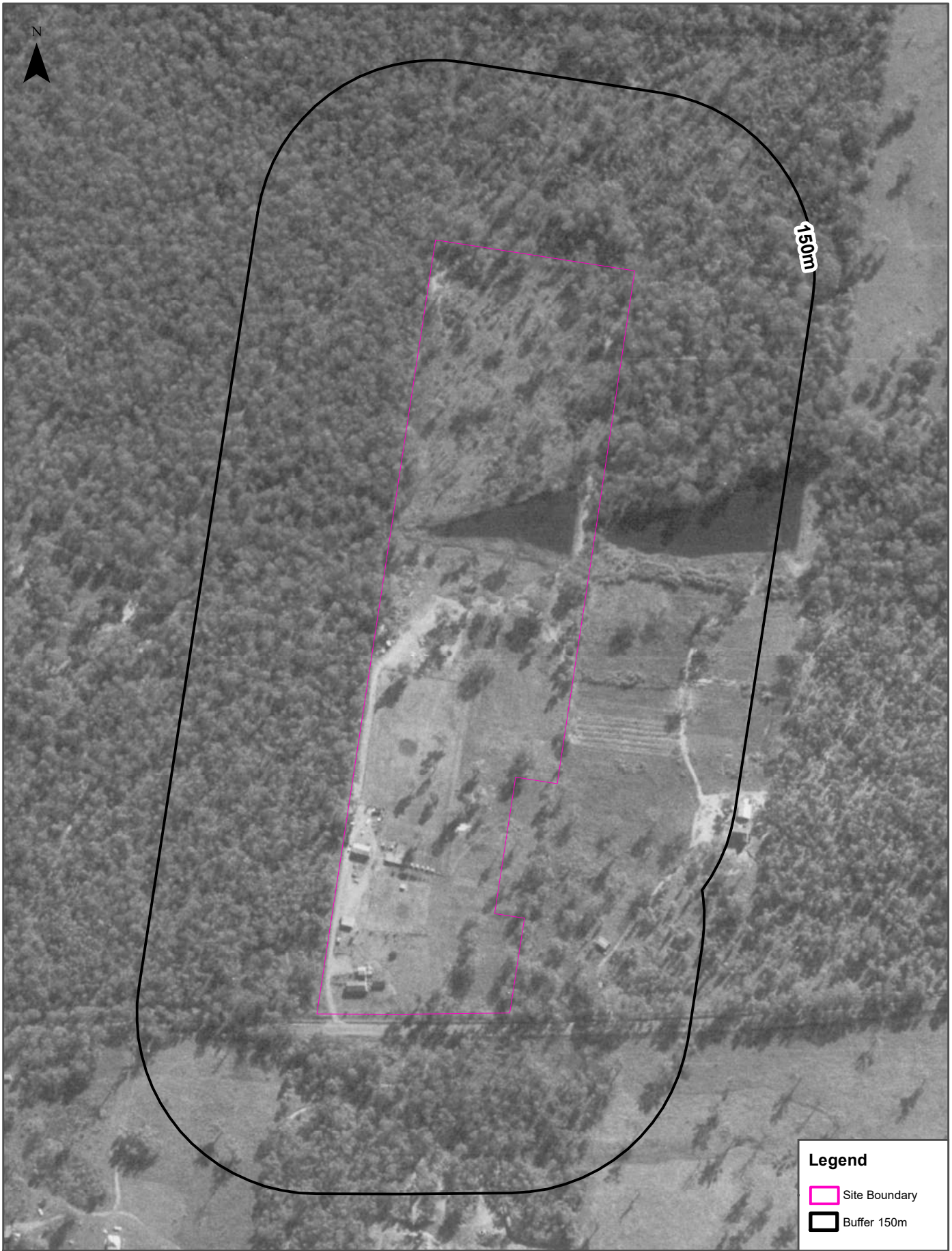
Aerial Imagery 1993

523 Raymond Terrace Road, Chisholm, NSW 2322



Aerial Imagery 1984

523 Raymond Terrace Road, Chisholm, NSW 2322

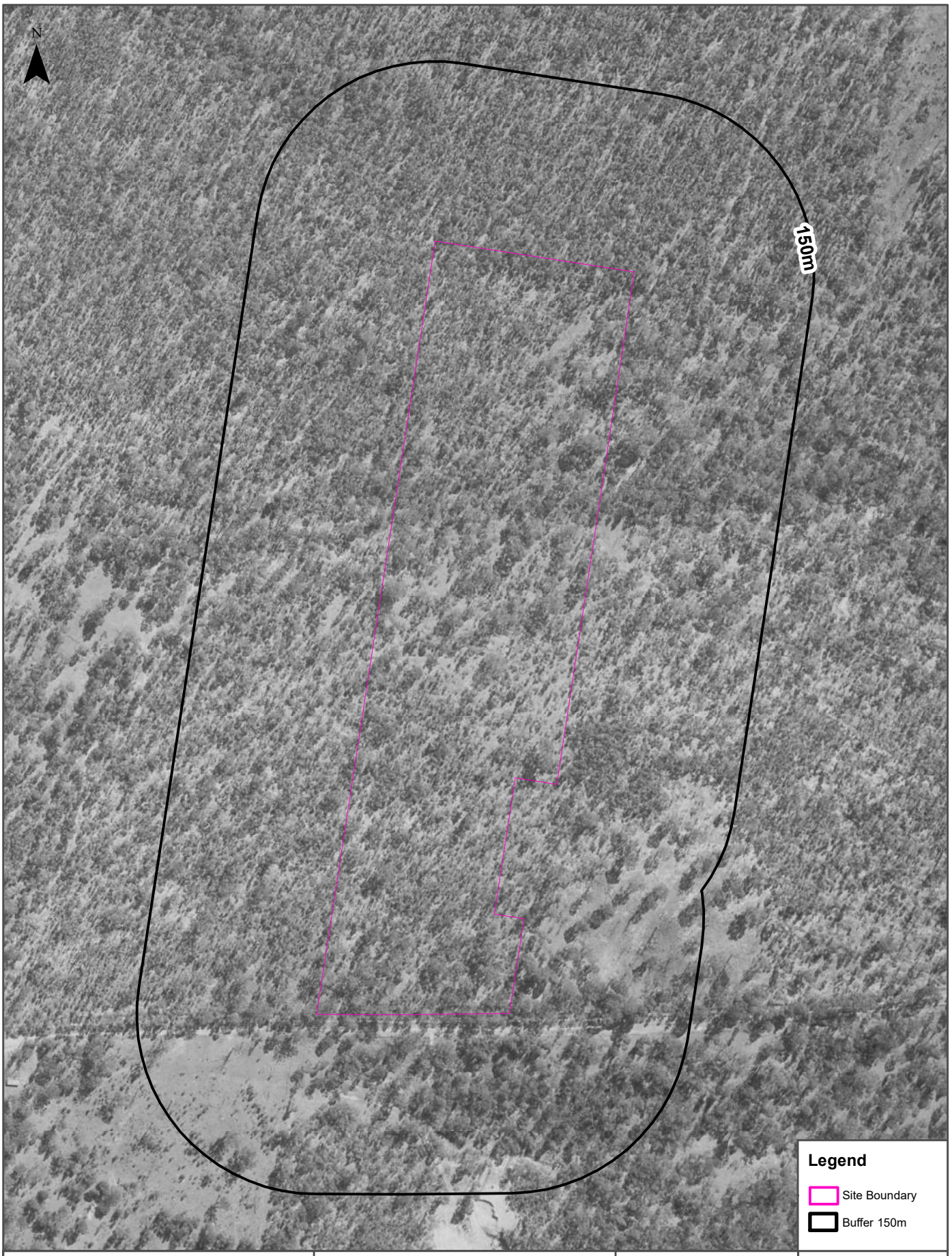


Aerial Imagery 1977

523 Raymond Terrace Road, Chisholm, NSW 2322

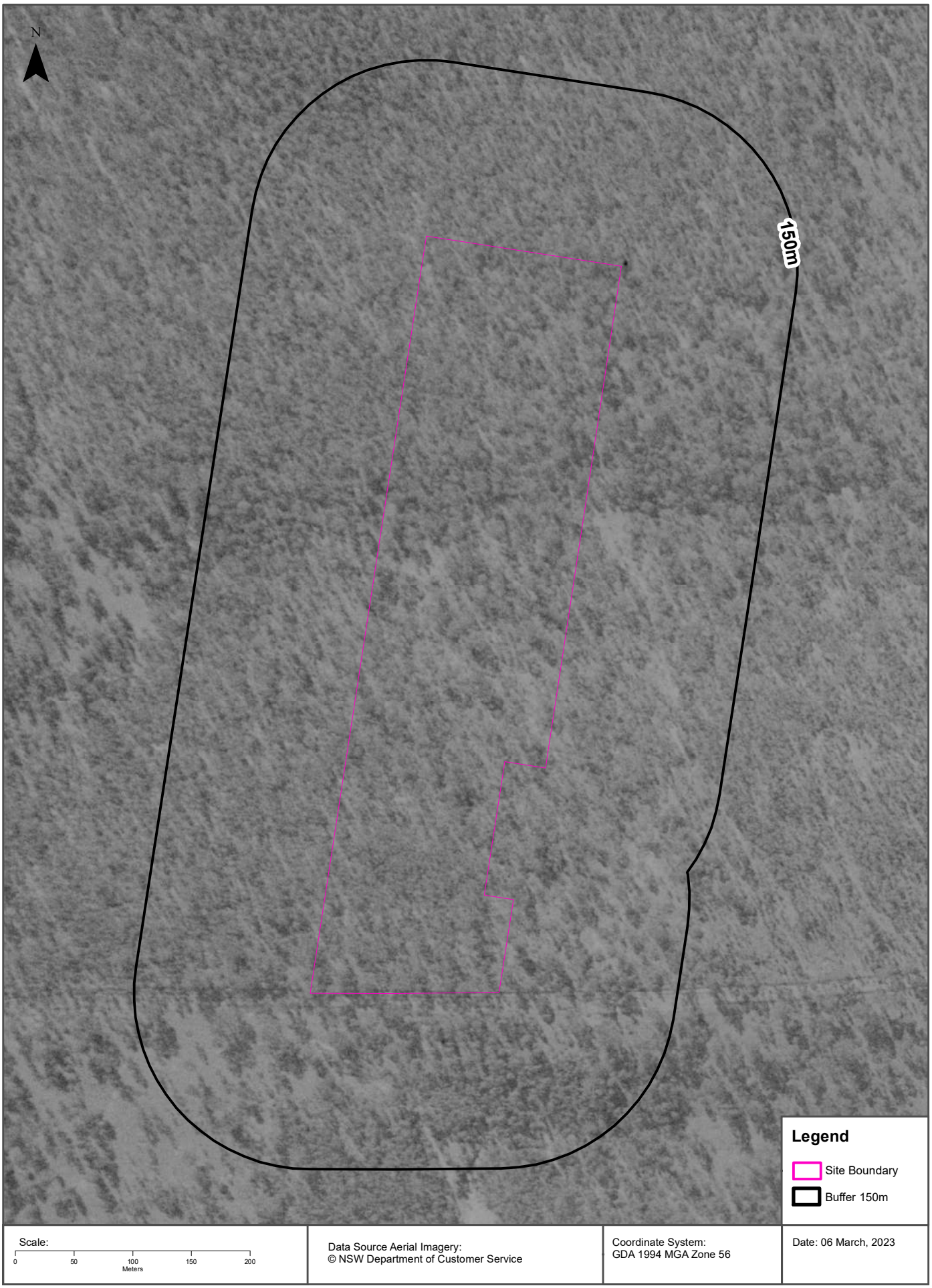
Aerial Imagery 1965

523 Raymond Terrace Road, Chisholm, NSW 2322



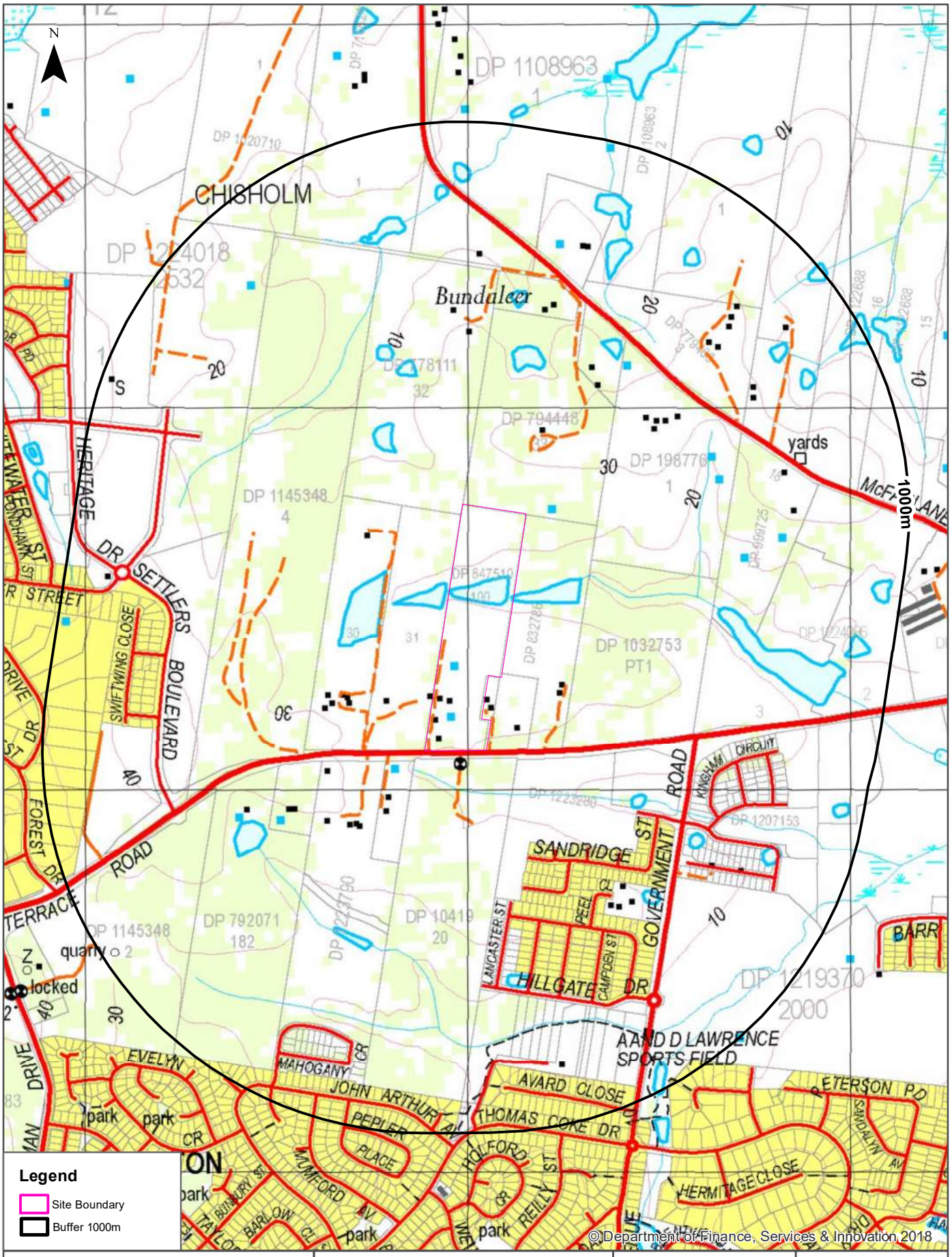
Aerial Imagery 1954

523 Raymond Terrace Road, Chisholm, NSW 2322



Topographic Map 2015

523 Raymond Terrace Road, Chisholm, NSW 2322



Historical Map 1981

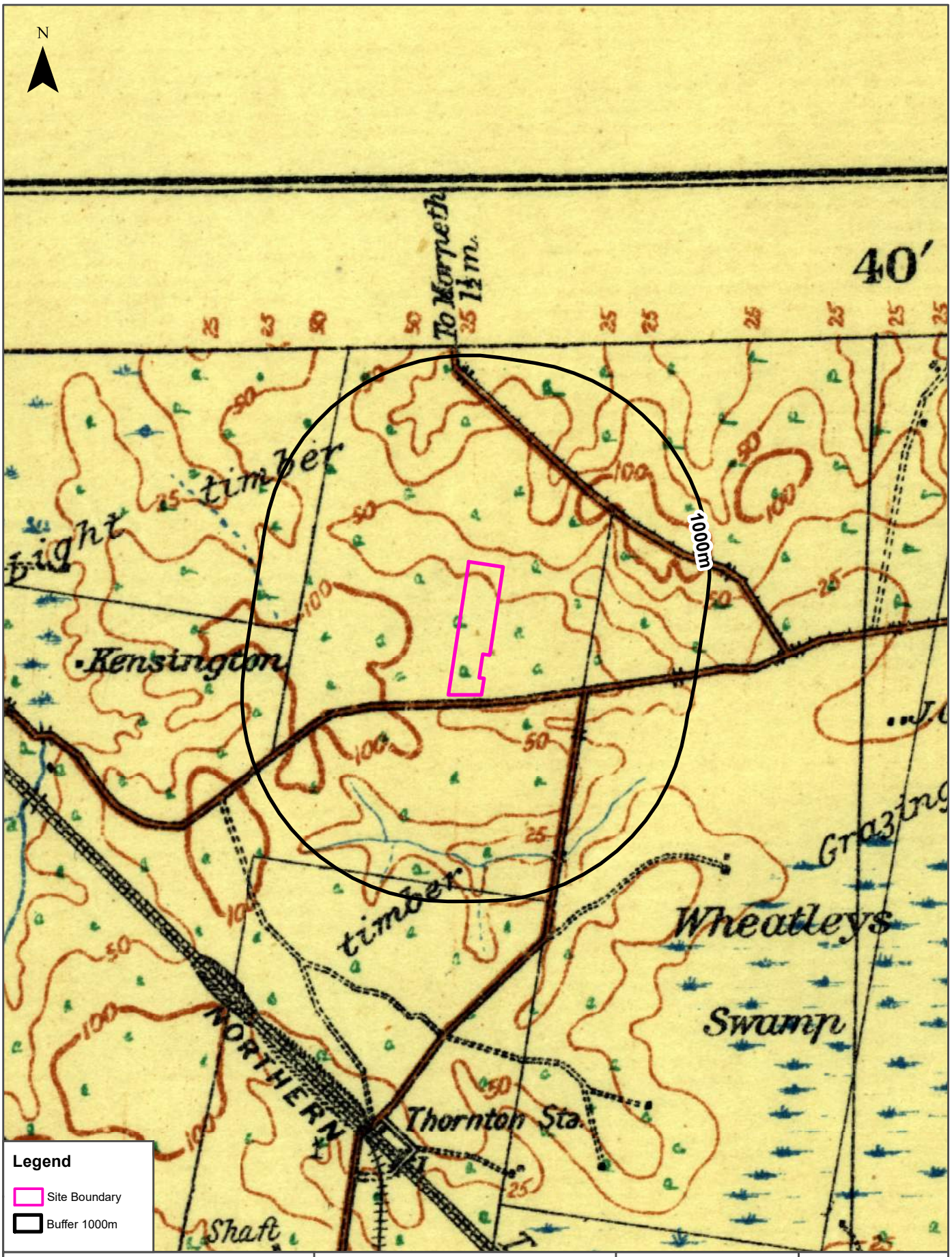
523 Raymond Terrace Road, Chisholm, NSW 2322

Historical Map c.1941

523 Raymond Terrace Road, Chisholm, NSW 2322

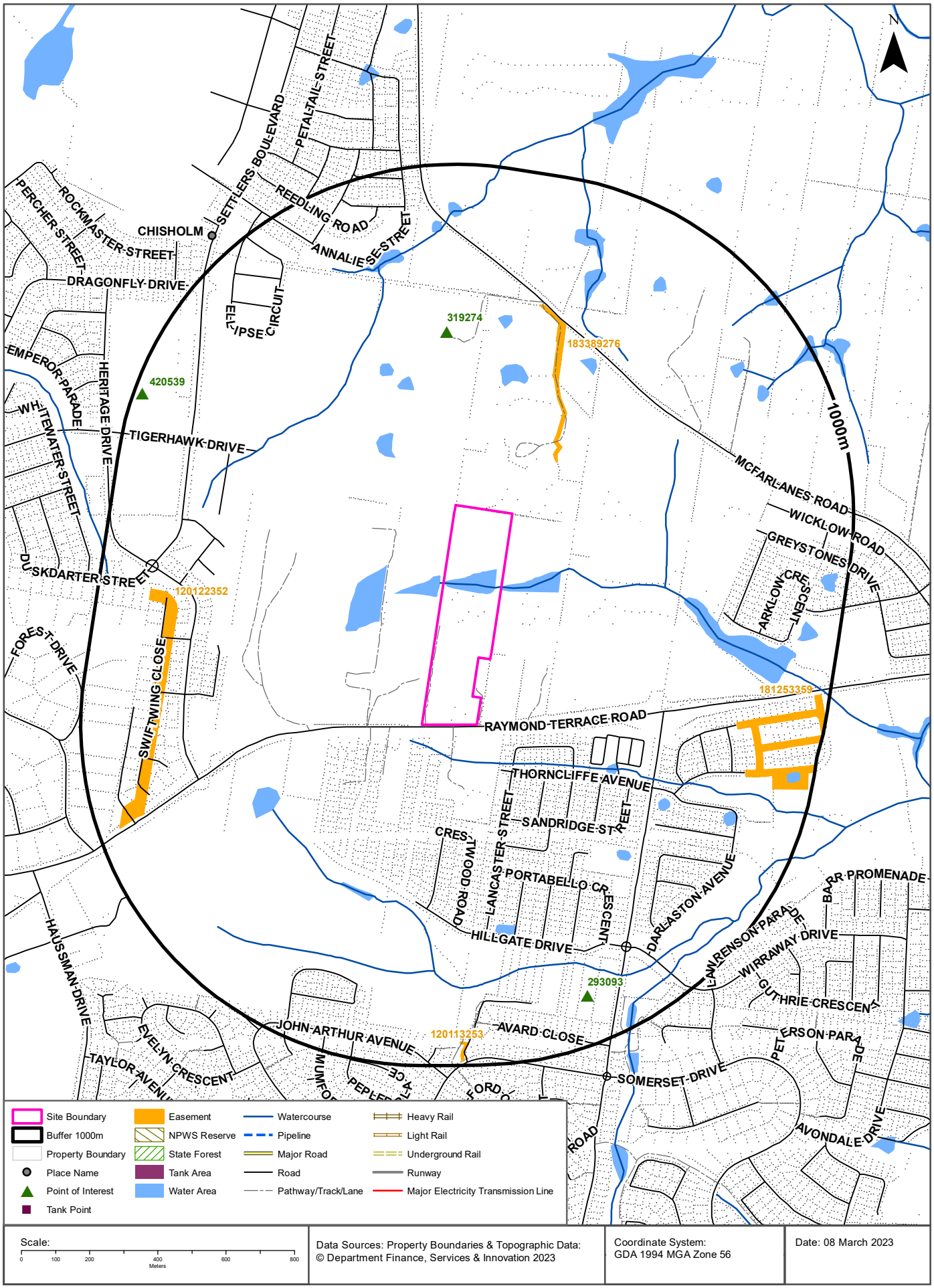
Historical Map c.1913

523 Raymond Terrace Road, Chisholm, NSW 2322



Topographic Features

523 Raymond Terrace Road, Chisholm, NSW 2322



Scale: 0 100 200 400 600 800 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 March 2023

Topographic Features

523 Raymond Terrace Road, Chisholm, NSW 2322

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
319274	Homestead	BUNDALEER	510m	North
293093	Sports Field	A AND D LAWRENCE SPORTS FIELD	859m	South
420539	Primary School	ST ALOYSIUS CATHOLIC PRIMARY SCHOOL	975m	North West

Topographic Features

523 Raymond Terrace Road, Chisholm, NSW 2322

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
183389276	Primary	Right of way	8,8.31,15m &var	201m	North
181253359	Primary	Right of way	Variable	747m	South East
120122352	Primary	Undefined		760m	West
120113253	Primary	Undefined		931m	South

Topographic Features

523 Raymond Terrace Road, Chisholm, NSW 2322

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

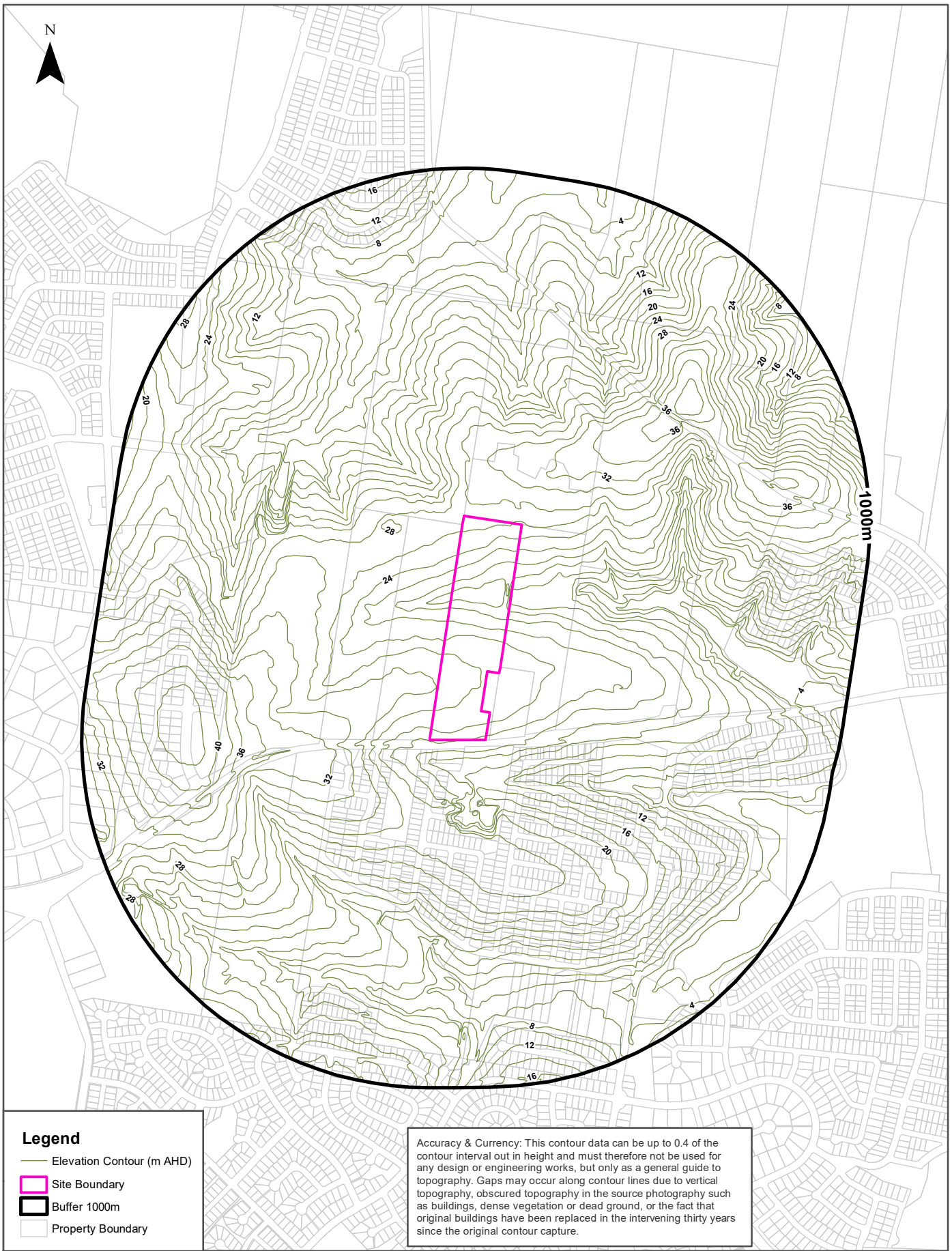
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

Elevation Contours (m AHD)

523 Raymond Terrace Road, Chisholm, NSW 2322



Hydrogeology & Groundwater

523 Raymond Terrace Road, Chisholm, NSW 2322

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site
Porous, extensive highly productive aquifers	226m	North West

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Hydrogeology & Groundwater

523 Raymond Terrace Road, Chisholm, NSW 2322

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
N/A												

Hydrogeology & Groundwater

523 Raymond Terrace Road, Chisholm, NSW 2322

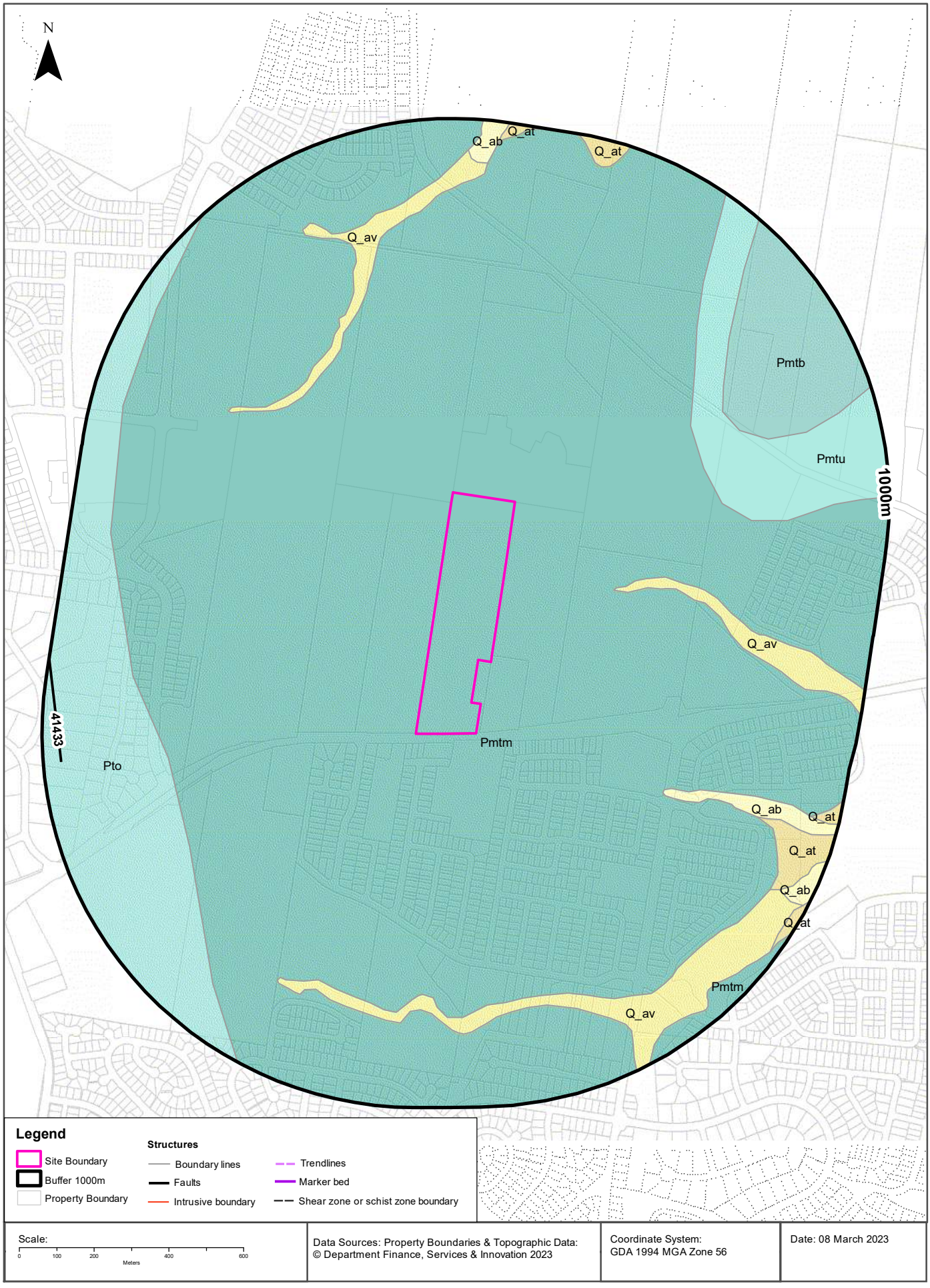
Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
No related drill log data			

Geology

523 Raymond Terrace Road, Chisholm, NSW 2322



Geology

523 Raymond Terrace Road, Chisholm, NSW 2322

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pmtm	Mulbring Siltstone	Medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils.	/Maitland Group//Mulbring Siltstone//	Guadalupian (base) to Guadalupian (top)	Siltstone	0m
Q_av	Alluvial valley deposits	Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel.	/Alluvium//Alluvial valley deposits//	Quaternary (base) to Now (top)	Clastic sediment	295m
Pmtu	Muree Sandstone	Fine- to coarse-grained sandstone, conglomerate, minor claystone.	/Maitland Group//Muree Sandstone//	Roadian (base) to Roadian (top)	Sandstone	508m
Q_ab	Alluvial backswamp deposits	Organic-rich mud, peat, silt, clay.	/Alluvium//Alluvial backswamp deposits//	Quaternary (base) to Now (top)	Organic rich sediment	524m
Pmtb	Branxton Formation	Conglomerate, sandstone, siltstone.	/Maitland Group//Branxton Formation//	Roadian (base) to Roadian (top)	Conglomerate	606m
Pto	Tomago Coal Measures	Very fine- to medium-grained grey lithic sandstone, (sporadically interbedded with) laminated to carbonaceous shale and mudstone, siltstone, coal with sporadic interbeds of carbonaceous shale, claystone, sideritic bands, rare pebble paraconglomerate	Singleton Supergroup/Tomago Coal Measures////	Lopingian (base) to Lopingian (top)	Sandstone	659m
Q_at	Alluvial terrace deposits	Silt, clay, (fluvially-deposited) fine- to medium-grained quartz-lithic sand, polymictic gravel.	/Alluvium//Alluvial terrace deposits//	Quaternary (base) to Now (top)	Clastic sediment	786m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
41433	Faulted boundary	Fault, position accurate	Newcastle Coalfield 1:100,000 Regional Geology	952m

Naturally Occurring Asbestos Potential

523 Raymond Terrace Road, Chisholm, NSW 2322

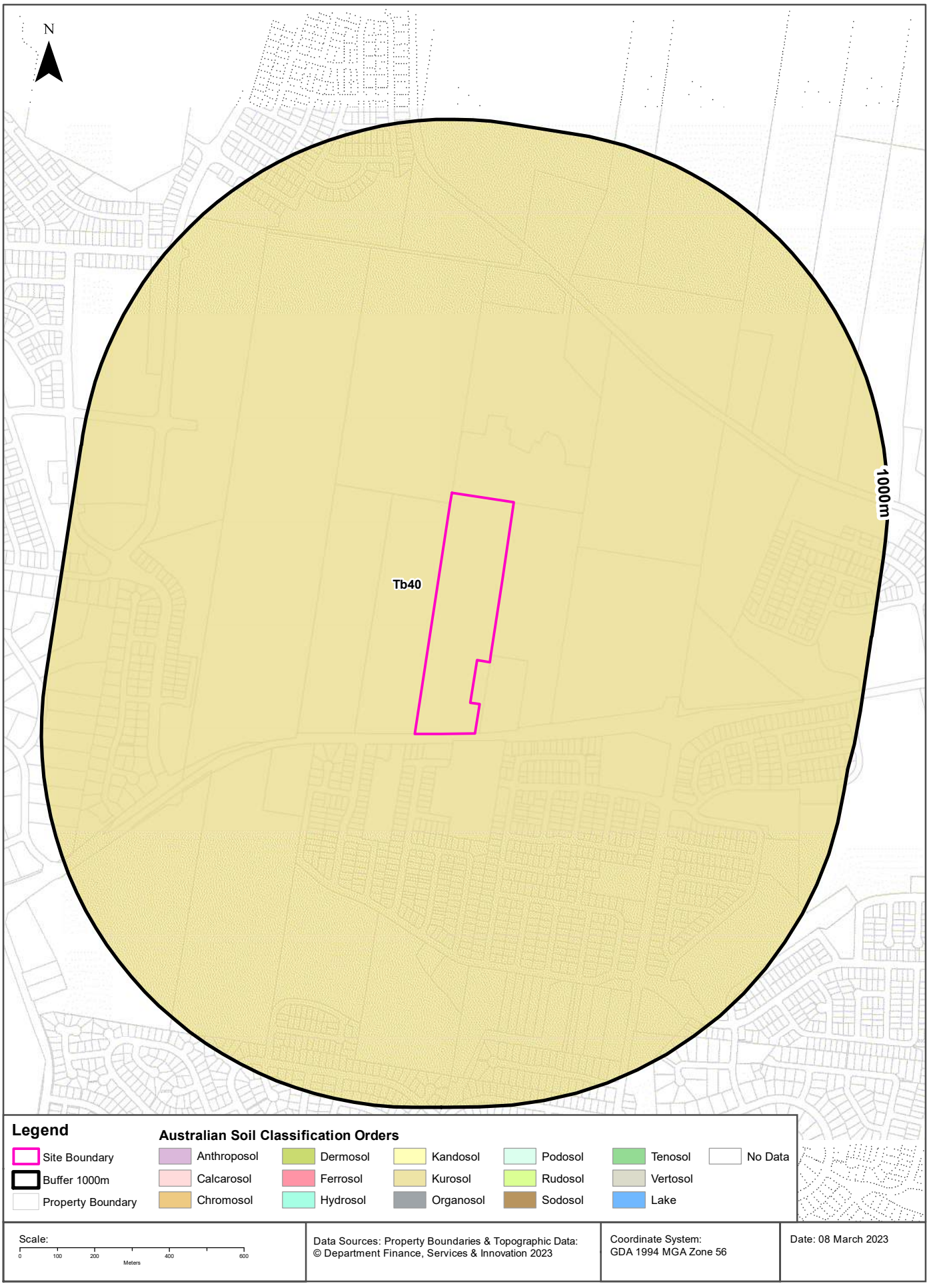
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Atlas of Australian Soils

523 Raymond Terrace Road, Chisholm, NSW 2322



Soils

523 Raymond Terrace Road, Chisholm, NSW 2322

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Tb40	Kurosol	Undulating to hilly areas with some steep slopes and cliffs, rock outcrops, and narrow terraced valleys: chief soils are hard acidic yellow mottled soils (Dy3.41) with some shallow soils such as (Um4.1) and (Uc4.1) on the steeper slopes. Associated are: (Gn2.2) soils and (Dd1) soils, both of which occur on slopes; undescribed soils in the valleys; and some (Dy5) and (Uc1 .2) soils along the coast. As mapped, small areas of units Gb10 and Cb28 are included.	0m	On-site

Soil Landscapes of Central and Eastern NSW

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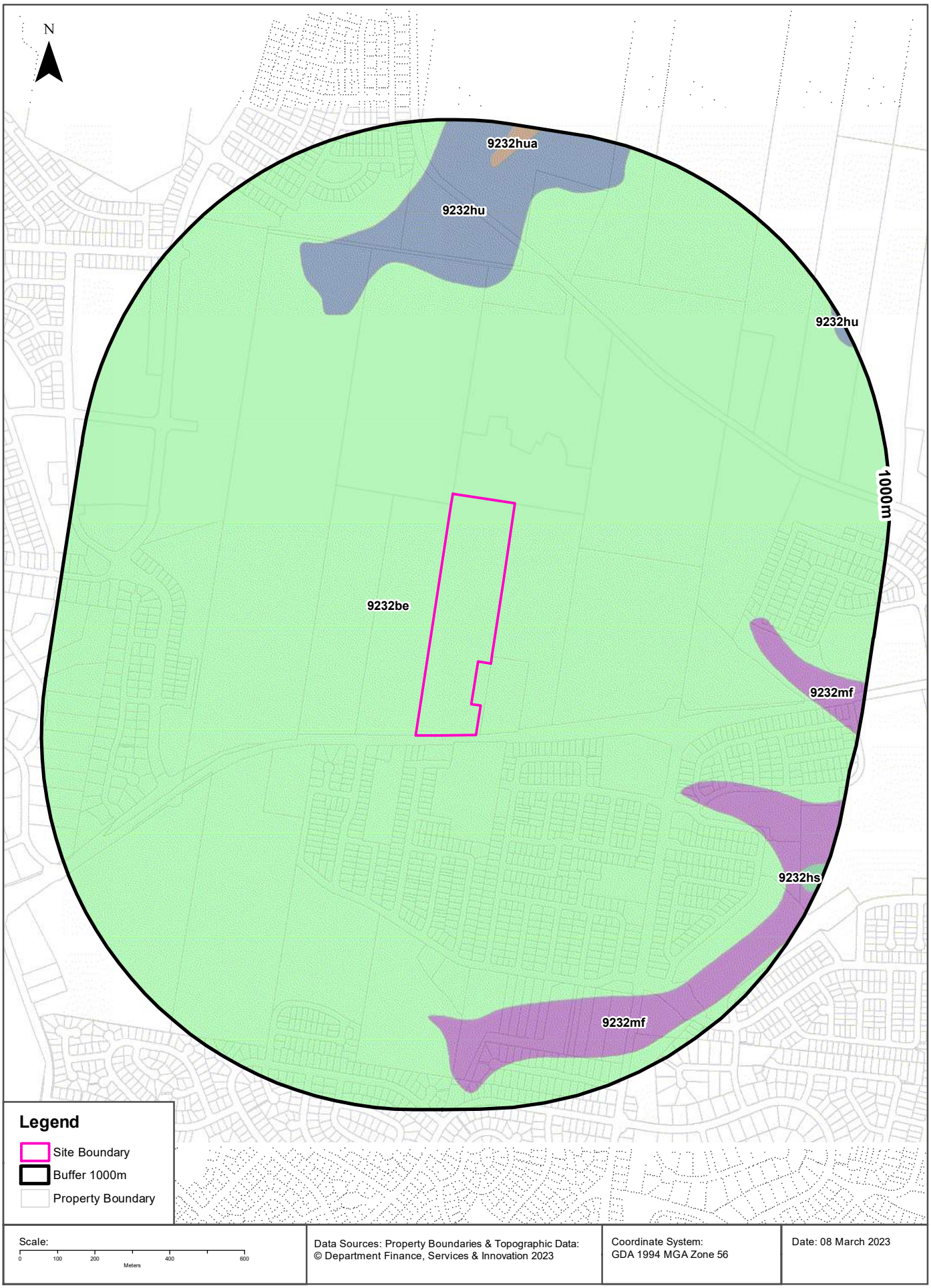

Soils

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Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
9232be	Beresfield	0m	On-site
9232hu	Hunter	557m	North
9232mf	Millers Forest	567m	South East
9232hua	Hunter variant a	880m	North
9232hs	Hexham Swamp	938m	South East

Acid Sulfate Soils

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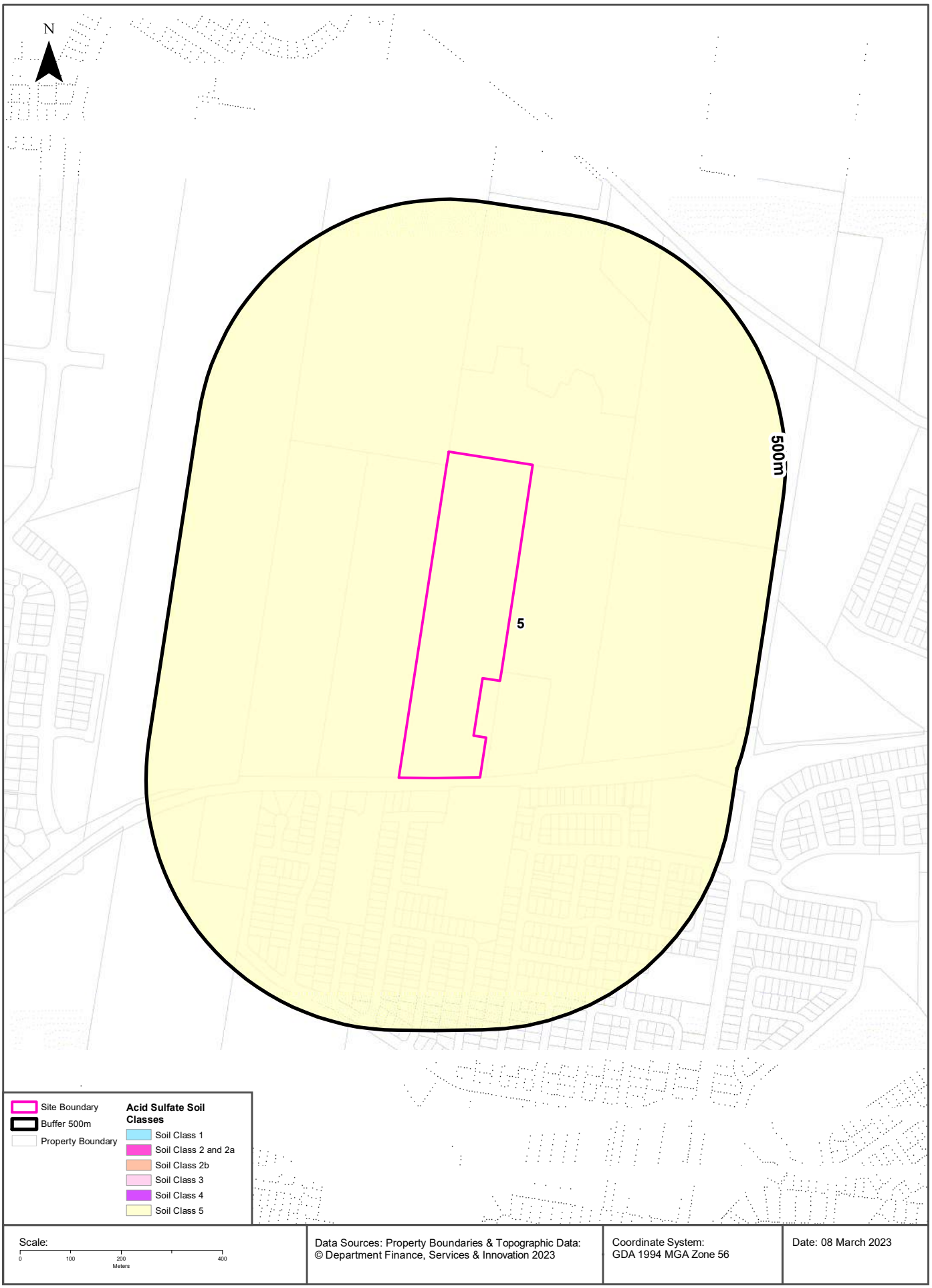

Acid Sulfate Soils

523 Raymond Terrace Road, Chisholm, NSW 2322

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Maitland Local Environmental Plan 2011

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
None				

Atlas of Australian Acid Sulfate Soils

523 Raymond Terrace Road, Chisholm, NSW 2322

Acid Sulfate Soils

523 Raymond Terrace Road, Chisholm, NSW 2322

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	867m	North

Dryland Salinity

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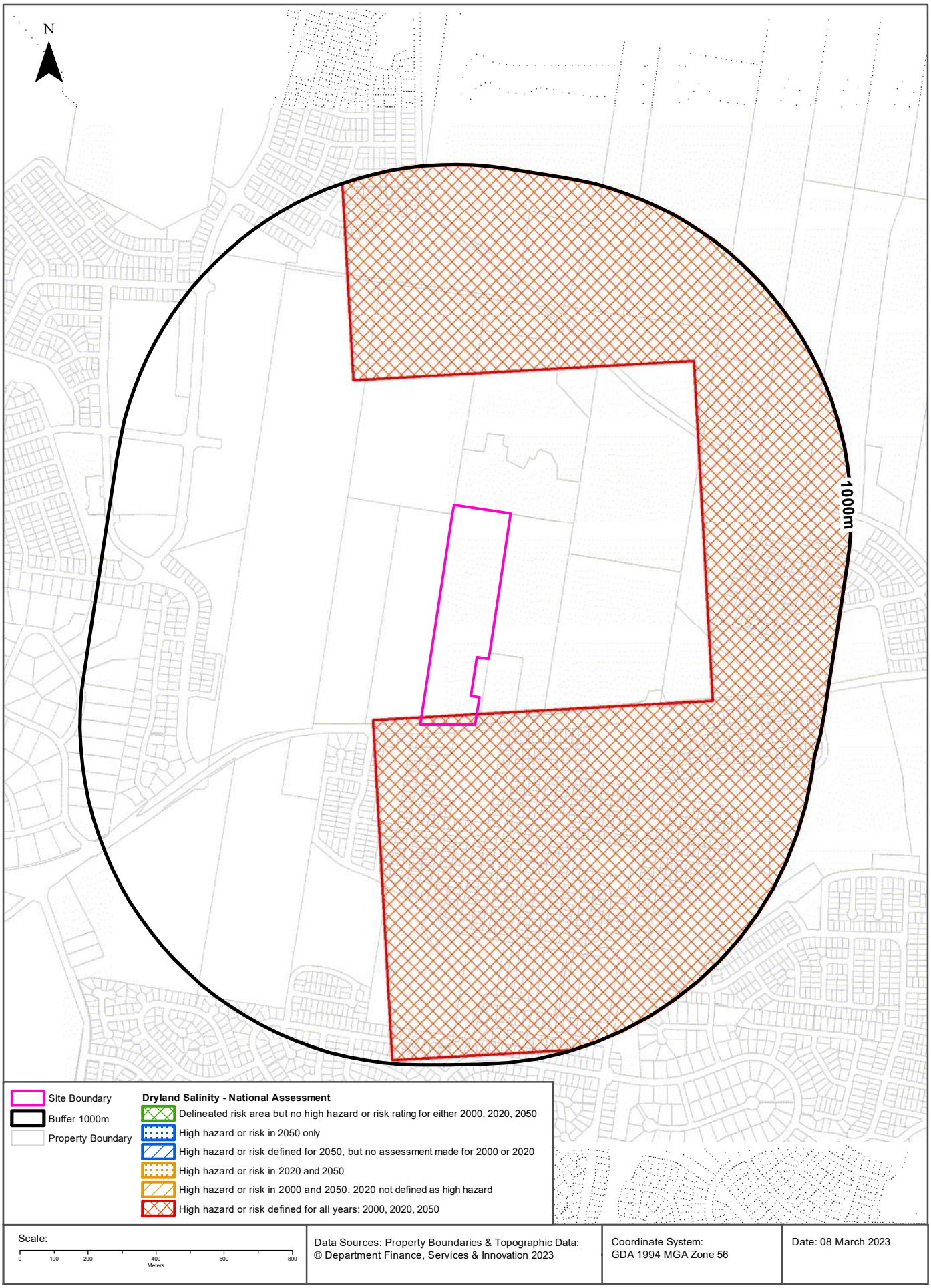

Dryland Salinity

523 Raymond Terrace Road, Chisholm, NSW 2322

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

Is there Dryland Salinity - National Assessment data within the dataset buffer?

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	On-site

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

523 Raymond Terrace Road, Chisholm, NSW 2322

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining & Exploration Titles

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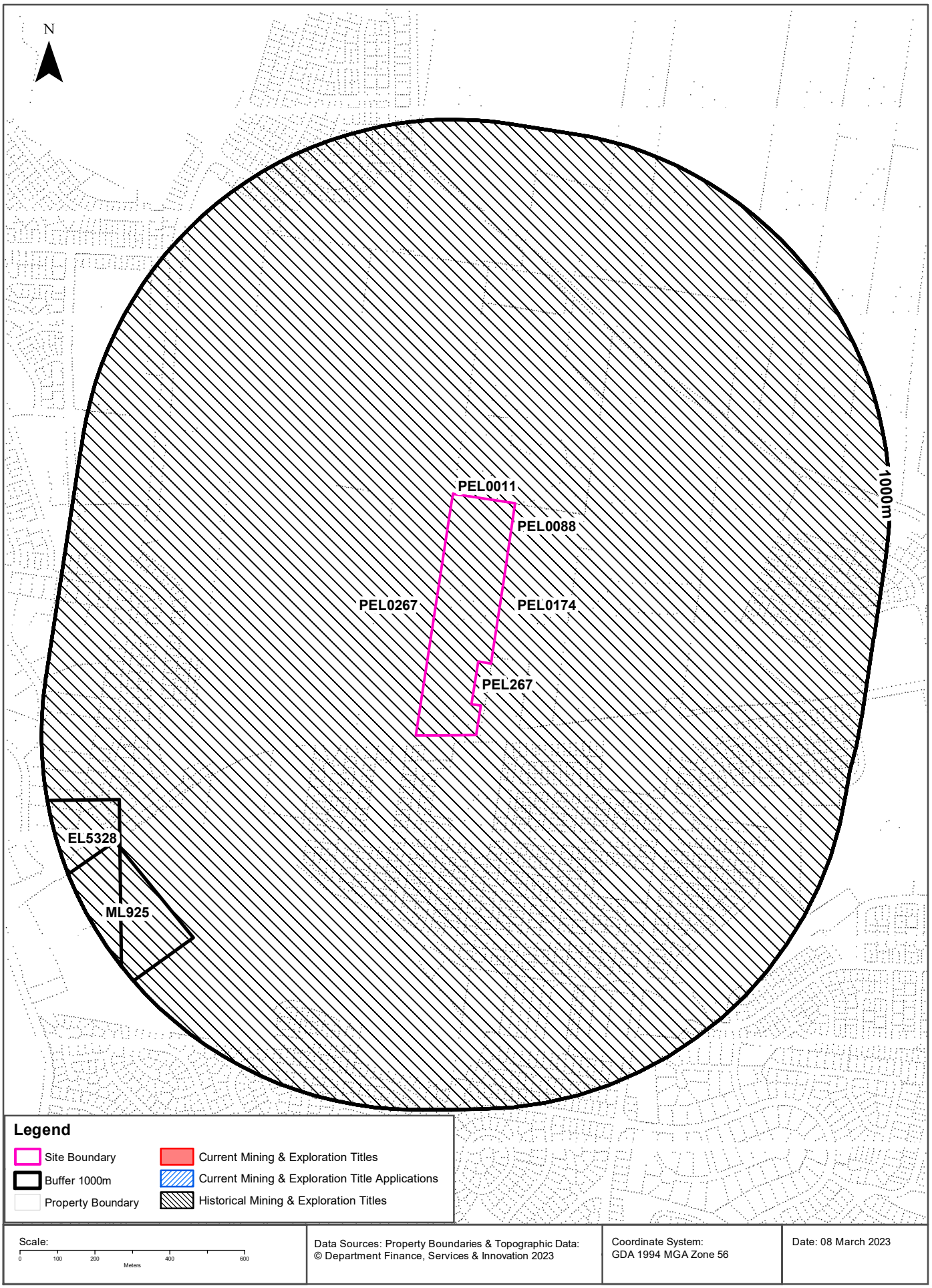

Mining

523 Raymond Terrace Road, Chisholm, NSW 2322

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

523 Raymond Terrace Road, Chisholm, NSW 2322

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0174	NSW OIL AND GAS COMPANY NL			PETROLEUM	Petroleum	0m	On-site
PEL0011	PLANET EXPLORATION COMPANY PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL0267	SYDNEY OIL CO (NSW) PTY LTD, MANVANE PTY LTD AUSTRALIA NL, BASE RESOURCES LTD, SEAHAWK OIL AUSTRALIA NL, READING & BATES	19850801	20150607	PETROLEUM	Petroleum	0m	On-site
PEL267	AGL UPSTREAM INVESTMENTS PTY LIMITED	19930413	19991205	MINERALS		0m	On-site
PEL0088	PLANET EXPLORATION COMPANY PTY LTD			PETROLEUM	Petroleum	0m	On-site
ML925	CSR BUILDING PRODUCTS LIMITED	19810318	20020317	MINERALS		802m	South West
EL5328	MONIER PGH HOLDINGS LIMITED	19970805	19990804	MINERALS	Brick clay	810m	South West

State Environmental Planning Policy

523 Raymond Terrace Road, Chisholm, NSW 2322

State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

EPI Planning Zones

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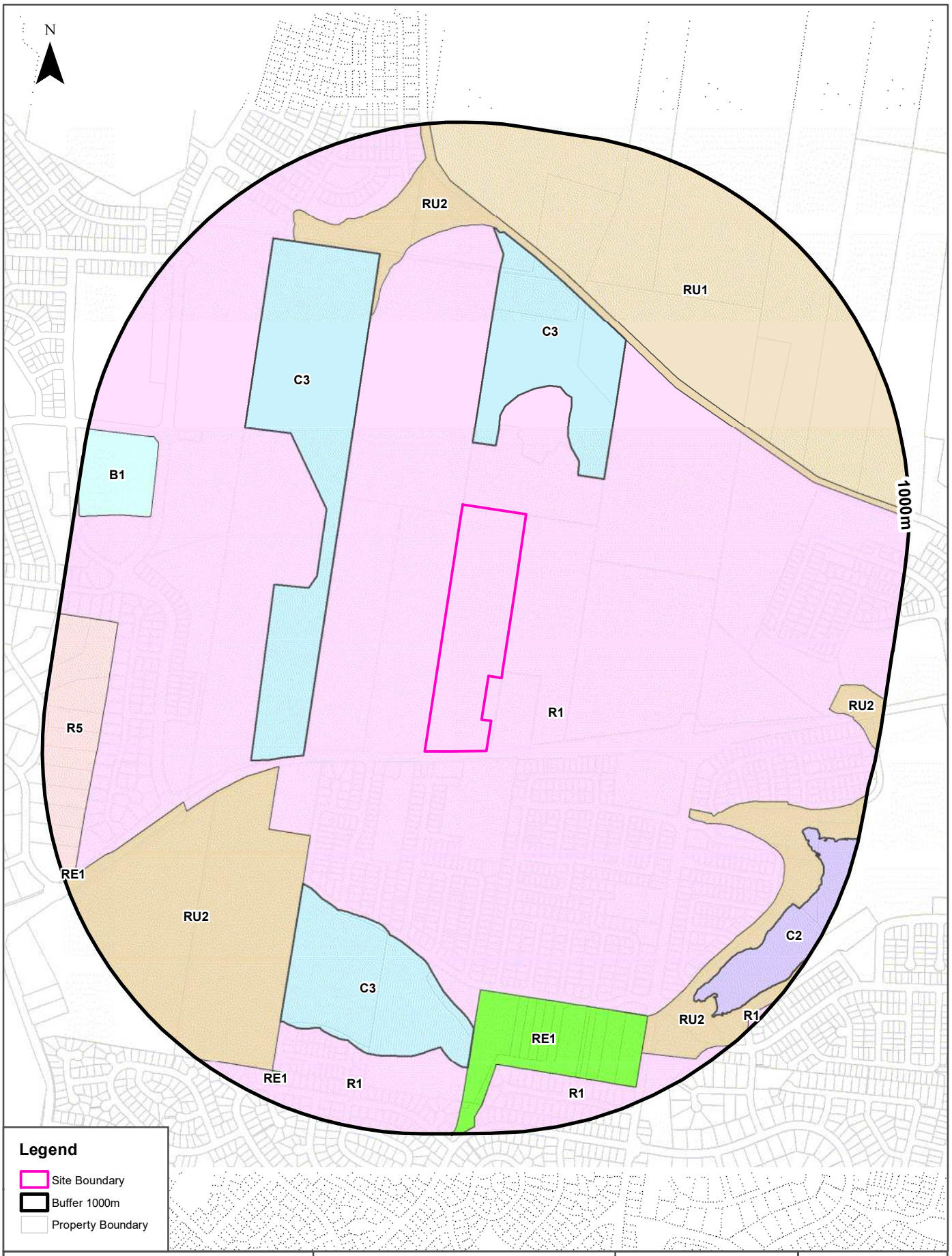

Environmental Planning Instrument

523 Raymond Terrace Road, Chisholm, NSW 2322

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R1	General Residential		Maitland Local Environmental Plan 2011	25/11/2016	25/11/2016	09/09/2022	Amendment No 20	0m	On-site
C3	Environmental Management		Maitland Local Environmental Plan 2011	05/11/2021	01/12/2021	09/09/2022	Standard Instrument (Local Environmental Plans) Amendment (Land Use Zones) Order 2021	164m	North
C3	Environmental Management		Maitland Local Environmental Plan 2011	05/11/2021	01/12/2021	09/09/2022	Standard Instrument (Local Environmental Plans) Amendment (Land Use Zones) Order 2021	313m	North West
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	25/11/2016	25/11/2016	09/09/2022	Amendment No 20	372m	South West
C3	Environmental Management		Maitland Local Environmental Plan 2011	05/11/2021	01/12/2021	09/09/2022	Standard Instrument (Local Environmental Plans) Amendment (Land Use Zones) Order 2021	461m	South
RU1	Primary Production		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	09/09/2022	Amendment No 21	530m	North East
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	14/01/2022	14/01/2022	09/09/2022	Amendment No 32	552m	South East
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	09/09/2022		621m	South
R1	General Residential		Maitland Local Environmental Plan 2011	14/01/2022	14/01/2022	09/09/2022	Amendment No 32	772m	South
B1	Neighbourhood Centre		Maitland Local Environmental Plan 2011	28/07/2017	28/07/2017	09/09/2022	Amendment No 22	803m	North West
C2	Environmental Conservation		Maitland Local Environmental Plan 2011	05/11/2021	01/12/2021	09/09/2022	Standard Instrument (Local Environmental Plans) Amendment (Land Use Zones) Order 2021	832m	South East
R5	Large Lot Residential		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	09/09/2022		844m	West
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	09/09/2022		920m	South West
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	09/09/2022		970m	South West

Heritage

523 Raymond Terrace Road, Chisholm, NSW 2322

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
N/A	No records in buffer								

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards - Bush Fire Prone Land

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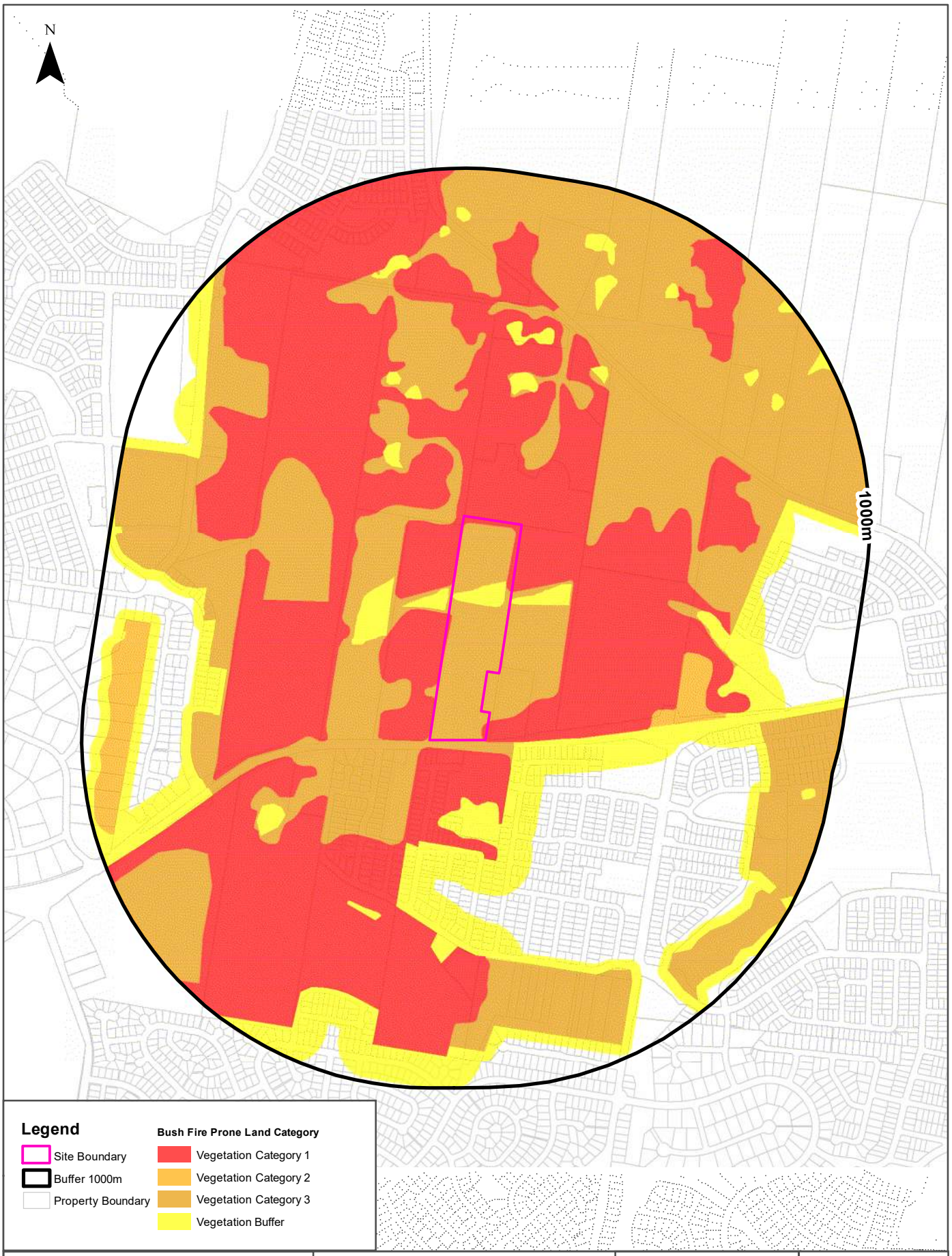

Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2023. Property Boundaries: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 March 2023

Natural Hazards

523 Raymond Terrace Road, Chisholm, NSW 2322

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 1	0m	On-site
Vegetation Category 3	0m	On-site
Vegetation Buffer	0m	On-site
Vegetation Category 2	455m	East

Ecological Constraints - Vegetation & Ramsar Wetlands

523 Raymond Terrace Road, Chisholm, NSW 2322

Ecological Constraints

523 Raymond Terrace Road, Chisholm, NSW 2322

Lower Hunter and Central Coast Regional Vegetation Survey

What vegetation from the Lower Hunter and Central Coast Regional Survey exists within the dataset buffer?

Map Id	Unit Desc	Canopy Code	Canopy Cover	Species	Distance	Direction
17	Lower Hunter Spotted Gum - Ironbark Forest	OW	Very Sparse (Open Woodland) 10-20% cover	C. maculata / E. fibrosa / E. punctata	0m	On-site
17	Lower Hunter Spotted Gum - Ironbark Forest	WO	Sparse (Woodland) 20-<50% cover	C. maculata / E. fibrosa / E. punctata	0m	On-site
17	Lower Hunter Spotted Gum - Ironbark Forest	OF	Mid Dense (Open Forest) 50-<100% cover	C. maculata / E. fibrosa / E. punctata	0m	On-site
5	Alluvial Tall Moist Forest	OF	Mid Dense (Open Forest) 50-<100% cover	E. saligna / S. glomulifera / Glochidion ferdinandi	0m	On-site
17	Lower Hunter Spotted Gum - Ironbark Forest	W	Wetland	C. maculata / E. fibrosa / E. punctata	569m	South East
5	Alluvial Tall Moist Forest	WO	Sparse (Woodland) 20-<50% cover	E. saligna / S. glomulifera / Glochidion ferdinandi	585m	East
37	Swamp Mahogany - Paperbark Forest	W	Wetland	Melaleuca quinquinervia / E. robusta / C. glauca	620m	South East
37	Swamp Mahogany - Paperbark Forest	OF	Mid Dense (Open Forest) 50-<100% cover	Melaleuca quinquinervia / E. robusta / C. glauca	744m	South
5	Alluvial Tall Moist Forest	W	Wetland	E. saligna / S. glomulifera / Glochidion ferdinandi	847m	South East
46	Freshwater Wetland Complex	W	Wetland	Ludwigia peploides subsp montevidensis / Paspalum distichum / Eleocharis sphacelata / Juncus usitatus	953m	South East

Lower Hunter and Central Coast Regional Vegetation Survey: NSW Office of Environment and Heritage

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

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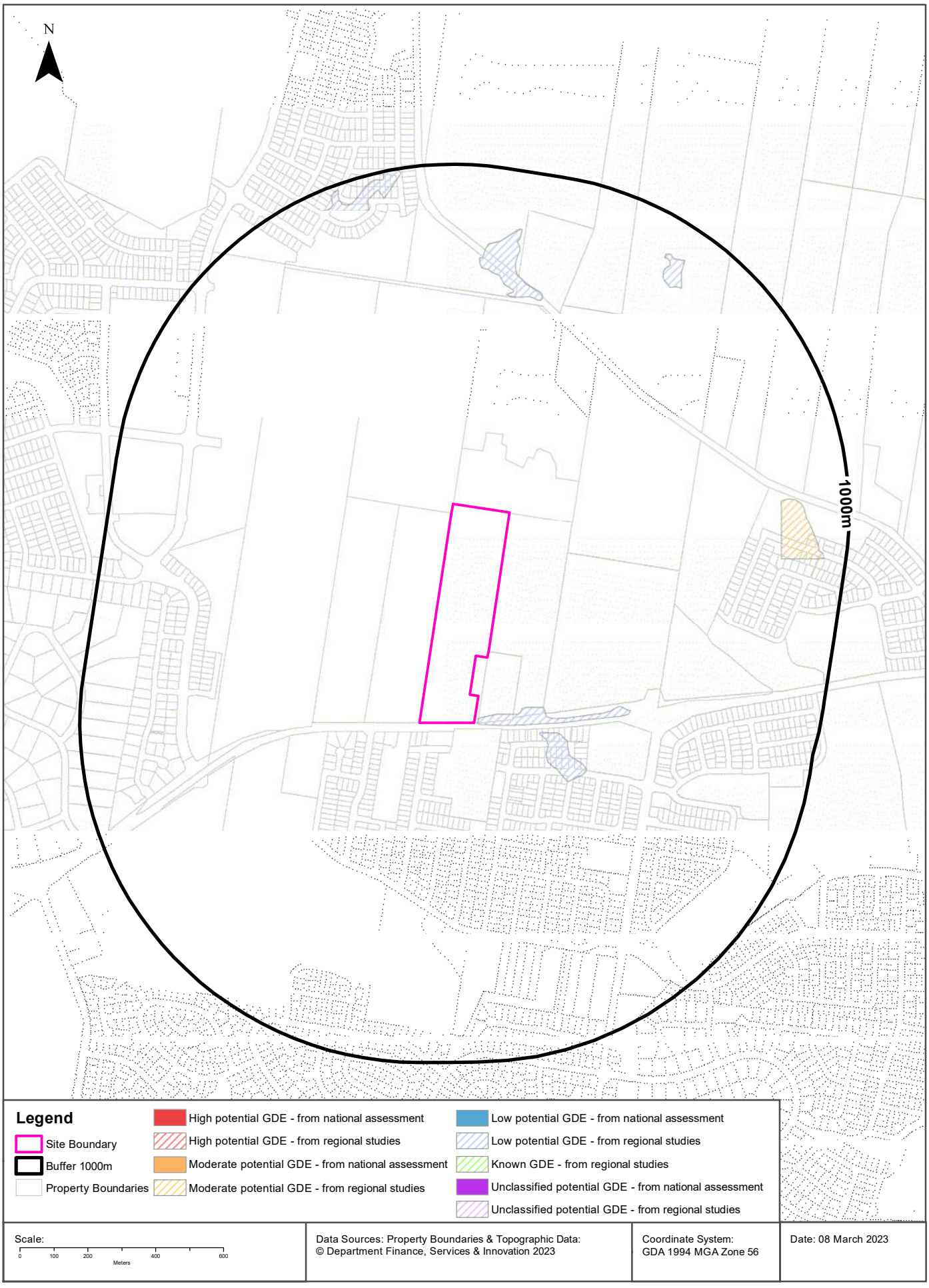

Ecological Constraints

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Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		8m	South East
Terrestrial	Moderate potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		799m	East

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

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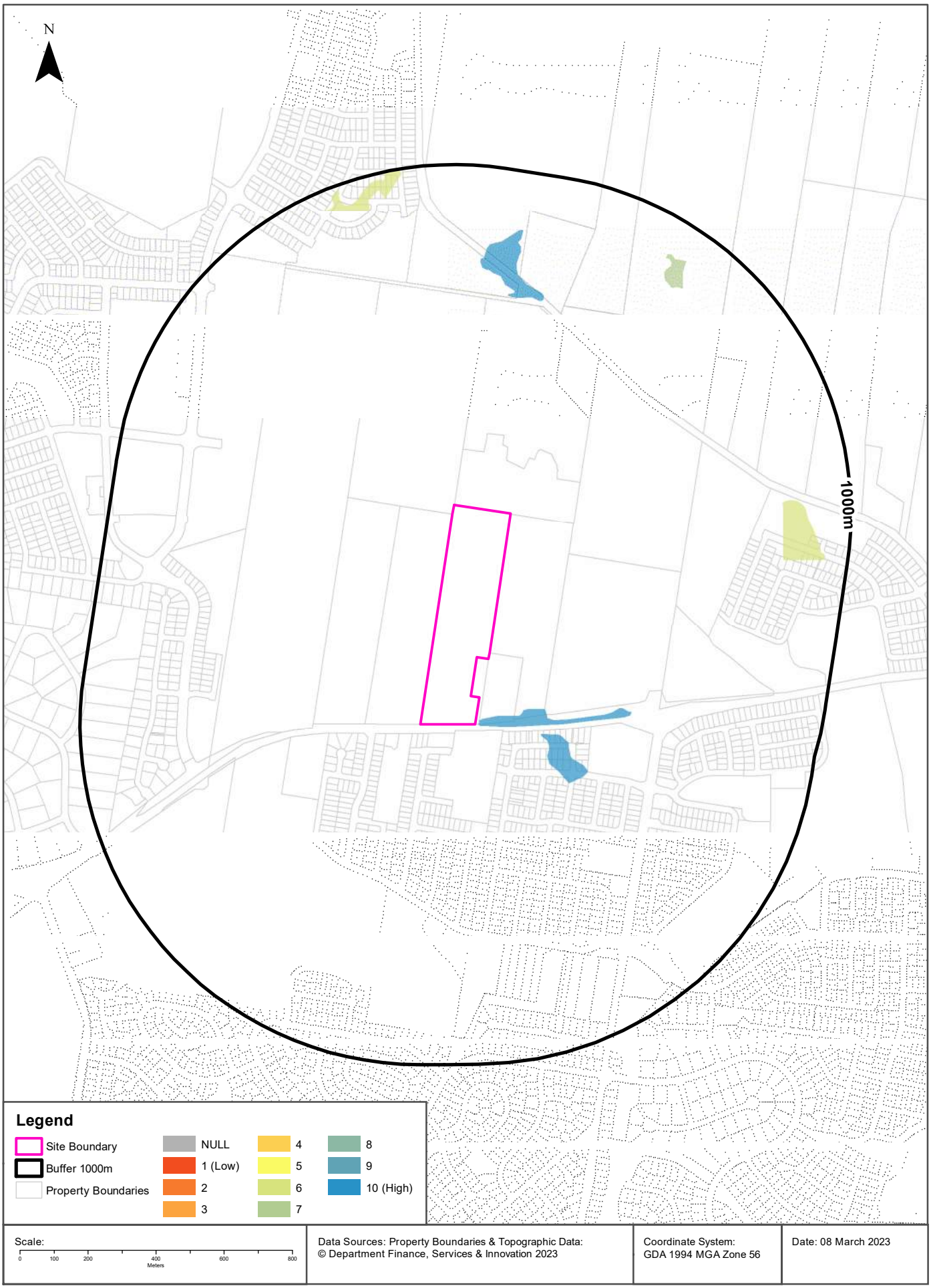

Ecological Constraints

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Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	10	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		8m	South East
Terrestrial	6	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		799m	East
Terrestrial	7	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		815m	North East

Ecological Constraints

523 Raymond Terrace Road, Chisholm, NSW 2322

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Crinia tinnula	Wallum Froglet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	Uperoleia mahonyi	Mahony's Toadlet	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Ardenna tenuirostris	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris canutus	Red Knot	Not Listed	Not Sensitive	Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris melanotos	Pectoral Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Vulnerable	Category 3	Endangered	
Animalia	Aves	Calyptorhynchus banksii samueli	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Charadrius veredus	Oriental Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Chlidonias leucopterus	White-winged Black Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cuculus optatus	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Fregata minor	Great Frigatebird	Not Listed	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Gelochelidon nilotica	Gull-billed Tern	Not Listed	Not Sensitive	Not Listed	CAMBA
Animalia	Aves	Glareola maldivarum	Oriental Pratincole	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haematopus longirostris	Pied Oystercatcher	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hamirostra melanosternon	Black-breasted Buzzard	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Irediparra gallinacea	Comb-crested Jacana	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Motacilla flava	Yellow Wagtail	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala inornata	Gilbert's Whistler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pterodroma leucoptera leucoptera	Gould's Petrel	Vulnerable	Not Sensitive	Endangered	
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus superbus	Superb Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Southern Greater Glider	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aspidites ramsayi	Woma	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Commersonia prostrata	Dwarf Kerrawang	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Cynanchum elegans	White-flowered Wax Plant	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Dillwynia tenuifolia		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Diuris arenaria	Sand Doubletail	Endangered	Category 2	Not Listed	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus parramattensis subsp. decadens		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Maundia triglochinoides		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Persicaria elatior	Tall Knotweed	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Pterostylis chaetophora		Vulnerable	Category 2	Not Listed	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Rhodomyrtus psidioides	Native Guava	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Rutidosis heterogama	Heath Wrinklewort	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Tetratheca juncea	Black-eyed Susan	Vulnerable	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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Appendix C
Site Photographs

	**Plate 1** **Description:** Structures located in the south west corner of the Site. **Date:** 16/02/2023
	**Plate 2** **Description:** Chemical storage shed located along western boundary of the Site. **Date:** 16/02/2023

	**Plate 3** **Description:** Anthropogenic stockpile (SP04) containing plastic, metal, mattresses, tiles tyres. **Date:** 16/02/2023
	**Plate 4** **Description:** Structure located north of dam 1 and east of the chemical storage shed. Two cars and anthropogenic materials located next to structure. **Date:** 16/02/2023

	**Plate 5** **Description:** Dam 1 located in the southern portion of the Site. **Date:** 16/02/2023
	**Plate 6** **Description:** Residential dwelling in the south west corner of the Site. **Date:** 16/02/2023

	**Plate 7** **Description:** Residential dwelling in the south west corner of the Site. **Date:** 16/02/2023
	**Plate 8** **Description:** Anthropogenic stockpile (SP02) containing metal plastic, wood, chemical containers. **Date:** 16/02/2023

	**Plate 9** **Description:** Soil stockpile (SP05). **Date:** 16/02/2023
	**Plate 10** **Description:** Small structure along the central western boundary of the Site. **Date:** 16/02/2023

	**Plate 11** **Description:** Anthropogenic stockpile (SP01) containing cloth, plastic, metal, chemical containers, tyres etc. **Date:** 16/02/2023
	**Plate 12** **Description:** Anthropogenic stockpile (SP01) containing cloth, plastic, metal, chemical containers, tyres etc. **Date:** 16/02/2023

	**Plate 13** **Description:** Dam 3 located in the centre of the Site. **Date:** 16/02/2023
	**Plate 14** **Description:** Imported fill material located along the eastern side of Dam 3. **Date:** 16/02/2023

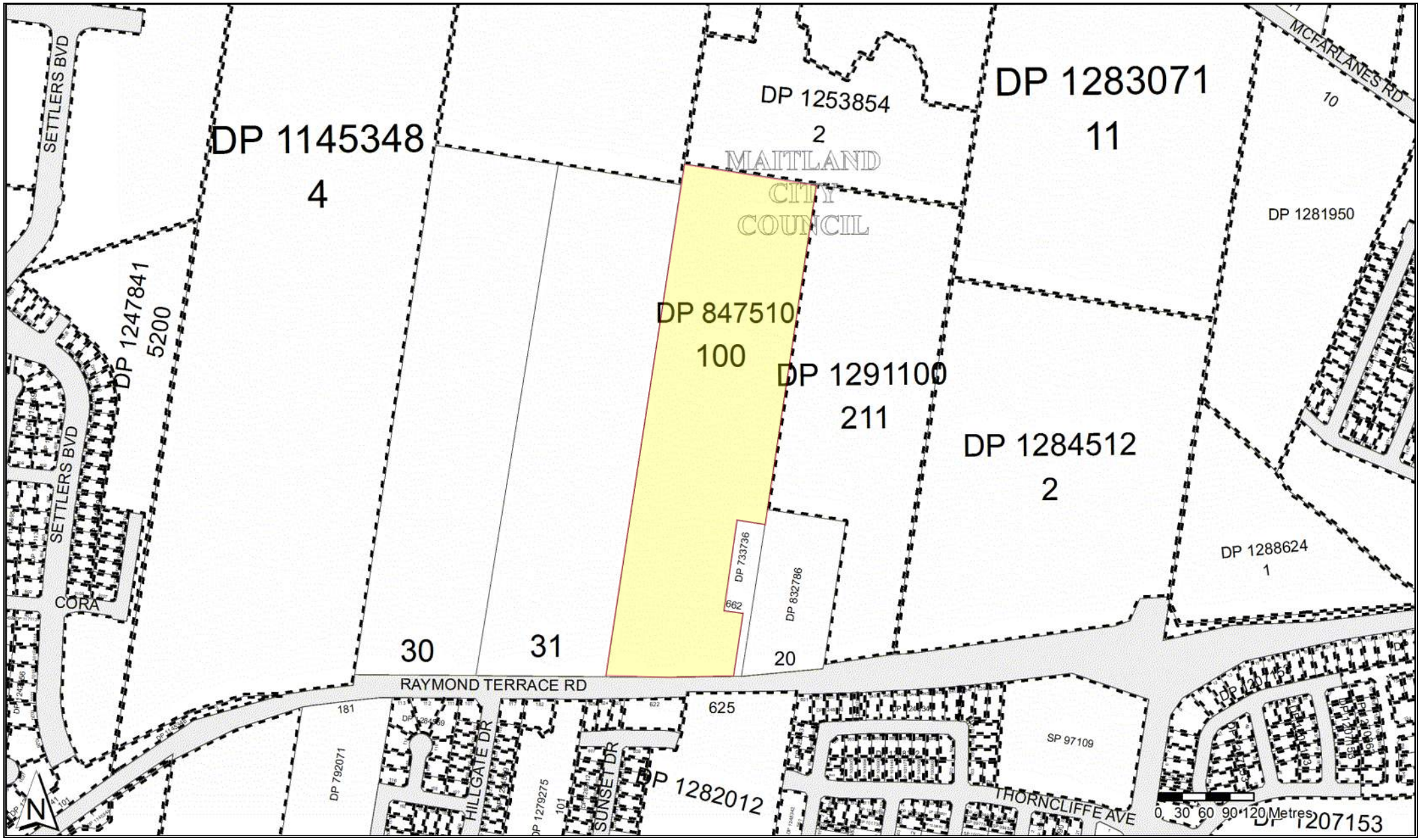
	**Plate 15** **Description:** Dam 2 located in the central western portion of the Site. **Date:** 16/02/2023
	**Plate 16** **Description:** Anthropogenic stockpile (SP03) containing metal, plastic, wood etc. **Date:** 16/02/2023

Appendix D
HISTORICAL TITLE SEARCH

Cadastral Records Enquiry Report : Lot 100 DP 847510

Ref : LS041247_EP - 523 Raymond Terrace

Locality : CHISHOLM
Parish : ALNWICK
LGA : MAITLAND
County : NORTHUMBERLAND

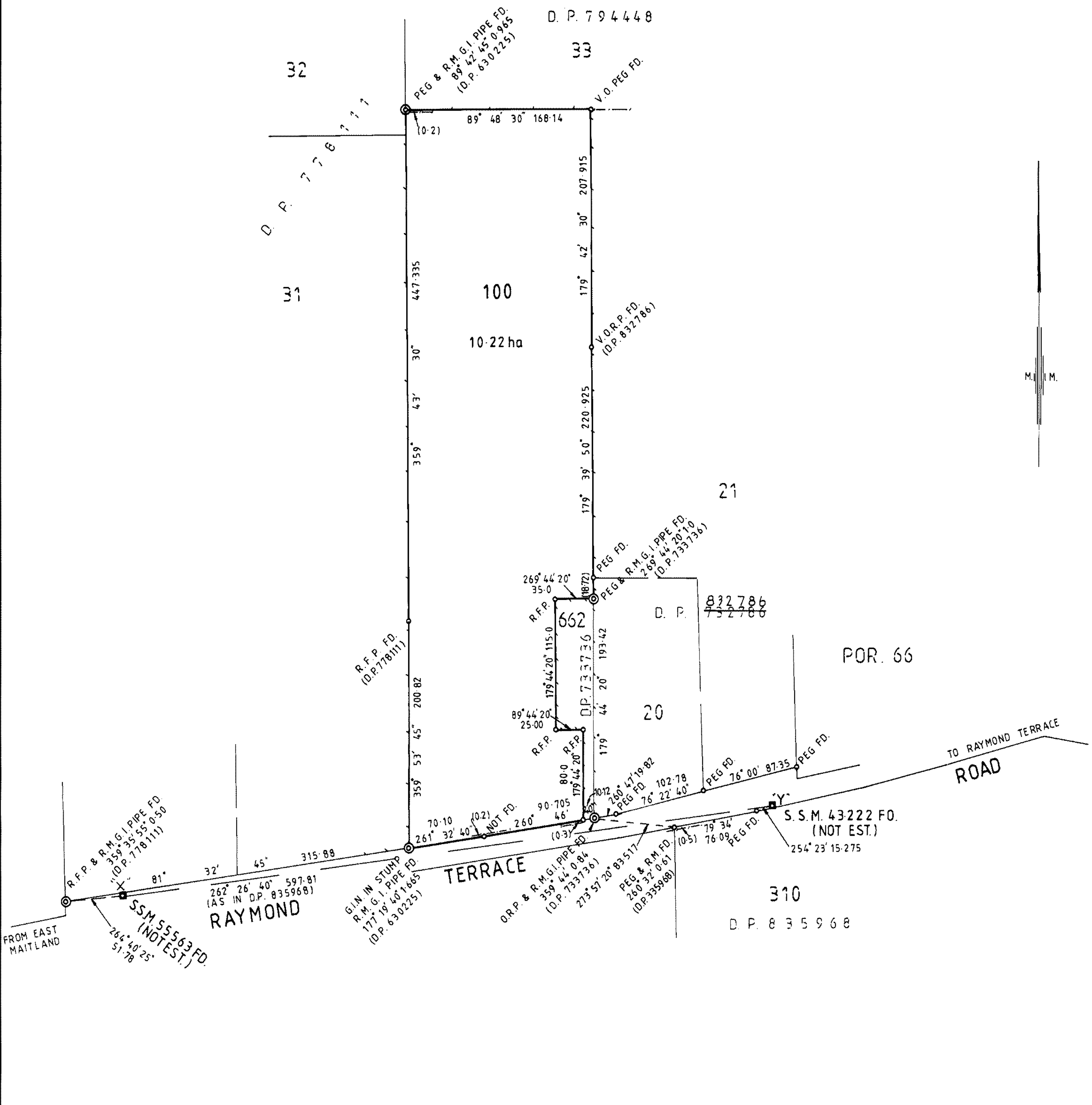


This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps

PLAN FORM 2

SIGNATURE AND SEALS ONLY.

Plan Drawing only to appear in this space



10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | Table of mm | 210 | 220 | 230 | 240 | 250 | 260 | 270 | 280 | 290 | 300 | 310 | 320 | 330 | 340 | 350 | 360 | 370 | 380 | 390

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

*OFFICE USE ONLY

DP 847510

Registered: [seal] 8-3-1995

C.A.

Title System: TORRENS

Purpose: REDEFINITION

Ref. Map: U 5472-9*

Last Plan: DP 733736

PLAN OF LOT 661 IN D. P. 733736

Lengths are in metres. Reduction Ratio 1: 2500

LGA	MAITLAND
Locality:	THORNTON
Parish:	ALNWICK
County:	NORTHUMBERLAND

~~This is sheet 1 of my plan in ... sheets. (Delete if inapplicable).~~

I, RAYMOND PAUL DILLEY
of SCOTT & CRISP MAITLAND P.L.
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulation 1990 and was completed on
14-2-1995
Signature [signature]
Surveyor registered under Surveyors Act, 1929, as amended
Datum Line of Azimuth X-Y
#Insert date of survey.

Plans used in preparation of survey/compilation

D.P. 733736
D.P. 732786
D.P. 778111
D.P. 794448 (EXEMPT PS AREA)

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

[stamp] 1.3.1995

NOOICIA

Crown Lands Office Approval

PLAN APPROVED ....
Authorised Officer
Land District ....
Paper No. ....
Field Book .... pages ....

Council's Certificate

I hereby certify that –

(a) the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

*(b) the requirements of † Part 3 Division 2 of the Water Board Act 1987, or † Part 5 Division 7 of the Hunter Water Board (Corporatisation) Act 1991.

have been complied with by the applicant in relation to the proposed..............................
(Insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. ....
Date ....
(Signature) ....
General Manager/Authorised Person
Council File No. ....

*This part of certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Water Board and the Hunter Water Corporation Ltd.

†Delete if inapplicable

SURVEYOR'S REFERENCE: 58076 AK 3

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
13/3/2023 12:43PM

FOLIO: 661/733736

First Title(s): OLD SYSTEM
Prior Title(s): CA12385

Recorded	Number	Type of Instrument	C.T. Issue
17/7/1986	CA12385	CONVERSION ACTION	FOLIO CREATED EDITION 1
28/9/1992	E789166	MORTGAGE	EDITION 2
6/2/1995	U993946	DISCHARGE OF MORTGAGE	
6/2/1995	U993947	DISCHARGE OF MORTGAGE	EDITION 3
8/3/1995	DP847510	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Received: 13/03/2023 12:43:36

LAND REGISTRY SERVICES Historical Search

InfoTrack

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

13/3/2023 12:43PM

FOLIO: 100/847510

First Title(s): OLD SYSTEM
Prior Title(s): 661/733736

Recorded	Number	Type of Instrument	C.T. Issue
8/3/1995	DP847510	DEPOSITED PLAN	FOLIO CREATED EDITION 1
19/4/1995	O169332	TRANSFER	EDITION 2
31/5/1995	O273213	REQUEST	EDITION 3
26/5/2014	AI609152	NOTICE OF DEATH	EDITION 4

*** END OF SEARCH ***

Received: 13/03/2023 12:43:26

97-01T

TRANSFER

Real Property Act, 1900

0
169332 B

Office of S

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

661/733736 NOW 100/847510

(B) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone
376a	LEONARD S HATTERSLEY SOLICITOR 90 PITT STREET SYDNEY 2000 DX 1123 SYDNEY REFERENCE (max. 15 characters):

(C) **TRANSFEROR** RAYMOND JAMES **ADAMS** and JEAN HELENE **ADAMS**

(D) acknowledges receipt of the consideration of $265,000

and as regards the land specified above transfers to the Transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE** T ROCCO **ROMANELLI** and MARIA **ROMANELLI**

(G) **TENANCY:** JOINT

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATED** .....

Signed in my presence by the Transferor Raymond James Adams who is personally known to me.

Signature of Witness

J. A. WEEKS
Name of Witness (BLOCK LETTERS)

9 Church St Maitland
Address of Witness

R.J. Adams
Signature of Transferor

SIGNED in my presence by the Transferee JEAN HELENE ADAMS who is personally known to me

Signed in my presence by the Transferee who is personally known to [illegible] RAYMOND [illegible]

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

LEONARD STANLEY HATTERSLEY
90 PITT STREET, SYDNEY - SOLICITOR

Signature of Transferee

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only) AVR

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 100/847510

SEARCH DATE	TIME	EDITION NO	DATE
13/3/2023	12:43 PM	4	26/5/2014

LAND

LOT 100 IN DEPOSITED PLAN 847510
AT THORNTON
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF ALNWICK COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP847510

FIRST SCHEDULE

MARIA ROMANELLI (ND AI609152)

SECOND SCHEDULE (1 NOTIFICATION)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

Re: - 523 Raymond Terrace Road, Chisholm

Description: - Lot 100 D.P. 847510

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
01.09.1923 (1923 to 1967)	John Patrick Hughes	Book 1318 No. 116
21.09.1967 (1967 to 1980)	Mervyn Sydney Scott (Farmer)	Book 2856 No. 634
25.02.1980 (1980 to 1995)	Raymond James Adams (Haulage Contractor) Jean Helene Adams (Married Woman)	Book 3403 No. 857 Then 661/733736 Now 100/847510
19.04.1995 (1995 to 2014)	Rocco Romanelli Maria Romanelli	100/847510
26.05.2014 (2014 to date)	# Maria Romanelli	100/847510

 # Denotes current registered proprietor

Leases and Easements: - NIL

Yours Sincerely
Mark Groll
13 March 2023

Appendix E
SOIL LOGS

Borehole No: BH01

Engineering Log - Borehole

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Drilling	16.2.23	Northing	---	Slope	90°	Equipment	
Completed Drilling	16.2.23	Easting	---	Bearing	---	Ground Level	

DRILLING				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION		
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
HA	Not Encountered				ML	TOPSOIL: Sandy SILT: low plasticity, brown, coarse grained sand	<PL			ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown	~PL				RESIDUAL SOIL
			1			Borehole BH01 Terminated at 0.60 m					Target depth
			2								
			3								

Remarks:

Test Pit No: SP01

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	---	Slope	90°	Equipment	
Completed Excavation	16.2.23	Easting	---	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION		
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				ML	Gravelly SILT: low plasticity, brown, fine to medium grained, sub-angular gravel	<PL			ES	RESIDUAL SOIL
			1			Test Pit SP01 Terminated at 0.50 m					Target depth
			2								
			3								

Remarks:

Test Pit No: SP02

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	---	Slope	90°	Equipment	
Completed Excavation	16.2.23	Easting	---	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION		
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				ML	TOPSOIL: Gravelly SILT: low plasticity, brown, fine to medium grained, sub-angular gravel	<PL			ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown	~PL				RESIDUAL SOIL
			1			Test Pit SP02 Terminated at 0.60 m					Target depth
			2								
			3								

Remarks:

Test Pit No: SP03

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	---	Slope	90°	Equipment	
Completed Excavation	16.2.23	Easting	---	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION		
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				ML	TOPSOIL: Gravelly SILT: low plasticity, brown, fine to medium grained, sub-angular gravel	<PL			ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown	~PL				RESIDUAL SOIL
			1			Test Pit SP03 Terminated at 0.60 m					Target depth
			2								
			3								

Remarks:

Test Pit No: TP-L1

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374700.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373064.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		0		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F to St	2 9 6	ES	TOPSOIL
					CI-CH	Silty CLAY: medium to high plasticity, brown, grey and orange, trace fine to medium grained sand	<PL	VSt and St	6 6 4 4 4 6 5	B	RESIDUAL SOIL
			1						5 5 8 8		
								H	15		
			2		ML	Extremely weathered Siltstone recovered as Sandy SILT, low plasticity, grey and orange, fine to medium grained sand	<<PL		15		EXTREMELY WEATHERED ROCK
						Test Pit TP-L1 Terminated at 2.60 m					Refusal
			3								

Remarks:

Test Pit No: TP-L2

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374639.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	372988.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey and brown, fine to medium grained sand	<<PL	St and VSt	4		TOPSOIL
									6	ES	
									5		
					CI-CH	Silty Sandy CLAY: medium to high plasticity, grey, brown and orange, fine to medium grained sand			7		RESIDUAL SOIL
									6		
									4		
									5		
									4	U50	
									5		
			1		CL-CI	Silty CLAY: low to medium plasticity, pale grey and orange			5		
									5		
									6		
									6	B	
									8		
							<PL		9		
									8		
									14		
									13		
									13		
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, pale grey and orange		H			EXTREMELY WEATHERED ROCK
										D	
						Test Pit TP-L2 Terminated at 2.60 m					Refusal
			3								

Remarks:

Test Pit No: TP-L3

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374595.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373050.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F	3		TOPSOIL
									5	ES	
									8		
					CI-CH	Silty CLAY: medium to high plasticity, grey and red	<PL	VSt to H	9		RESIDUAL SOIL
									8		
									8		
									6		
					SC	Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained, yellow and grey	D	VD and D	8		EXTREMELY WEATHERED ROCK
			1						11		
									12		
									9		
					ML	Extremely weathered Siltstone recovered as Sandy SILT, low plasticity, grey, with ferruginous cementations (50mm-100mm)			8		
									8	B	
									15		
			2				<<PL	VSt to H	14		
			3								

Remarks: Test Pit TP-L3 Terminated at 3.00 m — Target depth

Test Pit No: TP-L4

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374437.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373059.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		1		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F	1 2 8	ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown and orange			7 6 8 11 9 10 10 9 10	B	RESIDUAL SOIL
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (50mm-100mm)	<PL	VSt and H		D	EXTREMELY WEATHERED ROCK
			3			Test Pit TP-L4 Terminated at 2.80 m					Target depth

Remarks:

Test Pit No: TP-L5

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374334.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373007.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				ML	TOPSOIL: Sandy SILT: low plasticity, grey, fine to medium grained sand	<<PL	F	2 5	ES	TOPSOIL
					CL-CI	Silty CLAY: medium to high plasticity, brown and orange, with ferruginous cementations (20mm-50mm)		VSt	9 6 5 7 9		RESIDUAL SOIL
			1				<PL		10 11 12 8 13 12	B U50	
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (70mm-100mm)	<<PL	VSt and H			EXTREMELY WEATHERED ROCK
			3							D	

Remarks: Test Pit TP-L5 Terminated at 3.00 m — Target depth

Test Pit No: TP-L6

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374237.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	372994.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered				CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F	1 7 7		TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, grey and orange		VSt	8 9 7 7 8		RESIDUAL SOIL
			1			Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (50mm-100mm)	<PL	VSt to H	10 11 10	B	EXTREMELY WEATHERED ROCK
			2								
			3							D	

Remarks: Test Pit TP-L6 Terminated at 3.00 m — Target depth

Test Pit No: TP-L7

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374137.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	372963.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		0		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F to St	2 3 8	ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown and orange		VSt	7 7 6 7 8 7 8 5 5 6 9	U50	RESIDUAL SOIL
			1		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (50mm-75mm)	<PL	H	12 15	B	EXTREMELY WEATHERED ROCK
			2								
			3								

Remarks: Test Pit TP-L7 Terminated at 3.00 m — Target depth

Test Pit No: TP-P1

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374681.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373103.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		1		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F	2		TOPSOIL
									6	ES	
					CI-CH	Silty CLAY: medium to high plasticity, grey and orange mottled			10		RESIDUAL SOIL
									6		
									4		
									4		
									4		
								St and VSt	4	B	
									4		
									6		
									6		
									7		
									7		
							<PL		7		
									8		
			2						18		
								H	19		
					ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, pale grey and red with ferruginous cementations (50mm-100mm)					EXTREMELY WEATHERED ROCK
						Test Pit TP-P1 Terminated at 2.43 m					Target depth
			3								

Remarks:

Test Pit No: TP-P2

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374634.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373010.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		1		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey and brown, fine to medium grained sand	<<PL	VSt and H	10 11 11 8	ES	TOPSOIL
					CI-CH	Silty CLAY: medium to high plasticity, grey and orange			7 6		RESIDUAL SOIL
					CL-CI	Sandy CLAY: low to medium plasticity, pale grey and orange, fine to coarse grained sand		St and VSt	3 5 9		
							<PL		11 8 7 10 12 10	B	
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange, with ferruginous cementations (120mm-150mm)		VSt and H	11 13 14		EXTREMELY WEATHERED ROCK
			3			Test Pit TP-P2 Terminated at 2.60 m					Target depth

Remarks:

Test Pit No: TP-P3

Engineering Log - Test Pit

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374538.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373083.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		1		CL	TOPSOIL: Clayey SILT: low plasticity, grey	<<PL	St to VSt	5 10 13	ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, grey and orange, with ferruginous cementations (50mm-100mm)	~PL	St to VSt	5 6		RESIDUAL SOIL
									4 4	B	
								F	2 2 1		
							<PL	St to VSt	2 4 4 4 5 5 6 9		
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey with ferruginous cementations (50mm-75mm)		VSt to H	10		EXTREMELY WEATHERED ROCK
						Test Pit TP-P3 Terminated at 2.00 m					Target depth
			3								

Remarks:

Test Pit No: TP-P4

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374461.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	372986.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION		
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		1		CL-CI	TOPSOIL: Sandy SILT: low to medium plasticity, grey, fine to medium grained sand	<<PL	St and VSt	3 8 8	ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown and orange	<PL		8 6 6 4 5 6 5 3 4 5 8 6	B	RESIDUAL SOIL
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (50mm-100mm)			9 9 8		EXTREMELY WEATHERED ROCK
			3			Test Pit TP-P4 Terminated at 2.10 m					Target depth

Remarks:

Test Pit No: TP-P5

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374325.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373048.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		0		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	F	2		TOPSOIL
									10	ES	
									8		
					CL-CI	Silty CLAY: low to medium plasticity, grey and orange			5		RESIDUAL SOIL
									3		
									4		
									3		
									3		
			1					St and VSt	5		
									5		
									3		
							<PL		3		
					ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (50mm-100mm)			7		EXTREMELY WEATHERED ROCK
									8		
									7		
									6		
			2						12	B	
								H			
						Test Pit TP-P5 Terminated at 2.00 m					Target depth
			3								

Remarks:

Test Pit No: TP-P6

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374267.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	372955.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		1		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	St and VSt	2 13	ES	TOPSOIL
					CL-CI	Silty CLAY: low to medium plasticity, brown and orange			10 7 5 7 5 5 3 4 3 4	B	RESIDUAL SOIL
			2		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (50mm-100mm)	<PL	H	4 6 13		EXTREMELY WEATHERED ROCK
			3			Test Pit TP-P6 Terminated at 2.30 m					Target depth

Remarks:

Test Pit No: TP-P7

Engineering Log - Test Pit

SHEET 1 OF 1

Client	ACG Clovelly Road Pty Ltd c/- ADW Johnson Pty Ltd	Project No.	EP3045
Project	Preliminary Geotechnical and Environmental Investigation	Logged By	OP
Location	523 Raymond Terrace Road Chisholm	Checked By	OP

Started Excavation	16.2.23	Northing	6374168.00	Slope	90°	Equipment	Hitachi 14t Excavator
Completed Excavation	16.2.23	Easting	373021.00	Bearing	---	Ground Level	

EXCAVATION				MATERIAL DESCRIPTION					TESTING, SAMPLING & OTHER INFORMATION			
Method	Water	RL (m)	Depth (m)	Graphic Log	Classification	Description of Soil (soil type: plasticity/grainsize, colour and other components)	Moisture Condition	Consistency	Tests DCP Results (blows/ 100mm)	Samples	Additional Comments (material origin, pocket penetrometer values, investigation observations)
E	Not Encountered		0		CL-CI	TOPSOIL: Sandy CLAY: low to medium plasticity, grey, fine to medium grained sand	<<PL	St	3		TOPSOIL
									10	ES	
					CL-CI	Silty CLAY: low to medium plasticity, brown and orange			8		RESIDUAL SOIL
									7		
									8	B	
									6		
									8		
									7		
			1		ML	Extremely weathered Siltstone recovered as Clayey SILT, low plasticity, grey and orange with ferruginous cementations (75mm-125mm)	<PL	VSt to H	7		EXTREMELY WEATHERED ROCK
									7		
									8		
									8		
									8		
									8		
			2			Test Pit TP-P7 Terminated at 2.00 m					Target depth
			3								

Remarks:

Appendix F
CALIBRATION CERTIFICATES

EP RISK

EP Risk Management Pty Ltd

Photo-ionisation Detector (PID) Calibration Certificate

Project Details		
Date: 16/02/23	Project No.: EP3045	Project Manager: Luke Kerry
Time: 7:30am.	Location: 523 Raymond Terrace Road, Chisholm	
Weather: clear, sunny, slight breeze.		

PID Information				
Calibration	**Actual Value**	**Reading**	**Pass**	
Zero - Fresh Air	0 ppm	0 ppm	✓	
Span - Isobutylene	100 ppm	99.8 ppm	✓	
Set Alarm Limits to	High	10 ppm	Low	5 ppm

Operations Check					
✓	Performance Check (pump, lamp, sensor and battery voltage check)				
✓	Battery Charge	✓	Filters Check	✓	Spare battery voltage (5.5 V min) V
✓	Bump Test	Date: 16/02/23.			

Date: 16/02/23 Check By: Luke Kerry

Signed: _____

Appendix G
NATA ACCREDITED LABORATORY REPORTS

EP3045

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsenviro.com
☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsenviro.com
☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsenviro.com

CLIENT: EP Risk	TURNAROUND REQUIREMENTS: ☑ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE: 3/19 Newcastle East	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes / No / N/A
PROJECT: EP3045	ALS QUOTE NO.: ~~SYBQ-210-16~~ SY-497-20V3	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: EP3045	COC SEQUENCE NUMBER (Circle) COC: (1) 2 3 4 5 6 7 OF: 1 2 3 (4) 5 6 7	Random Sample Temperature on Receipt: 3.6 °C	
PROJECT MANAGER: Mathew CONTACT PH: 0431165533		Other comment:	
SAMPLER: Mathew SAMPLER MOBILE: 0431165533	RELINQUISHED BY: M.Parker DATE/TIME: 17/2/23	RECEIVED BY: DATE/TIME: 17.2.23 8:41	RELINQUISHED BY: DATE/TIME: 17.2.23 5pm
COC emailed to ALS? (YES / (NO) EDD FORMAT (or default): Esdat			RECEIVED BY: DATE/TIME: 17/2/23 1945
Email Reports to (will default to PM if no other addresses are listed): Mathew.Cheshire@eprisk.com.au			
Email Invoice to (will default to PM if no other addresses are listed): accounts@eprisk.com.au			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	EA200F	NEPM pH, CEC, Clay, EC, Fe	W-19				HOLD	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	TP-P4-0.1	16/2/23	S	Jar	1	X							X	
2	TP-P4-0.5		S		1								X	
3	TP-P4-1.0		S		1								X	
4	TP-P4-2.0		S		1								X	
5	TP-L3-0.1		S	Jar	1	X								
6	TP-L3-0.5		S	Jar	1								X	
7	TP-L3-1.0		S	Jar	1								X	
8	TP-L3-2.0		S	Jar	1								X	
9	TP-P3-0.1		S	Jar/Bag	2	X	X							
10	TP-P3-0.5		S	Jar	1								X	
11	TP-P3-1.0		S		1								X	
12	TP-P3-2.0		S		1								X	
13	TP-P2-0.1		S		1	X								
14	TP-P2-0.5		S		1								X	
15	TP-P2-1.0		S		1								X	
16	TP-P2-2.0		S		1								X	
17	TP-L1-0.1		S		1	X								
18	TP-L1-0.5		S		1								X	
19	TP-L1-1.0		S		1								X	
20	TP-L1-2.0		S		1								X	
21	TP-P1-0.1		S		1	X								
22	TP-P1-0.5		S		1								X	
23	TP-P1-1.0		S		1								X	
24	TP-P1-2.0		S		1								X	
					TOTAL									

E-MAILED
LAB OF ORIGIN: NEWCASTLE

ASB@EN
Tray SP143

Environmental Division Sydney
Work Order Reference
ES2305239

Telephone : +61-2-8784 8555

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

CHAIN OF CUSTODY

ALS Laboratory: **please tick** →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsenviro.com
☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsenviro.com
☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com
☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsenviro.com
☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsenviro.com
☐ Adelaide: 2-4 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsenviro.com

CLIENT:	EP RISK MANAGEMENT PTY LTD	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT **(List due date):**
OFFICE:	NEWCASTLE		☐ Non Standard or urgent TAT **(List due date):**
PROJECT:		**ALS QUOTE NO.:**	
ORDER NUMBER:			
PROJECT MANAGER:		**CONTACT PH:**	
SAMPLER:		**SAMPLER MOBILE:**	
COC emailed to ALS? (YES / NO)		**EDD FORMAT (or default):**	
Email Reports to (will default to PM if no other addresses are listed):			
Email Invoice to (will default to PM if no other addresses are listed):			

COC SEQUENCE NUMBER (Circle)
COC: 1 (2) 3 4 5 6 7
OF: 1 2 3 (4) 5 6 7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	DATE/TIME: 17-2-23 8:41	DATE/TIME: 17.2.23 5pm	DATE/TIME: 17/2/23 1645

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS (MATRIX: Solid(S) Water(W))			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price). Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	8-16	EA200F	NEPM PAH, CEC, clay, pH, Fe						Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
25	TP-P6_1.0	16/2/23	S	Jar	1									
26	TP-P6_2.0				1									
27	TP-LS_0.1				1	X								
28	TP-LS_0.5				1									
29	TP-LS_1.0				1									
30	TP_LS_2.0				1									
31	TP-PS_0.1				1	X								
32	TP_PS_0.5				1									
33	TP-PS_1.0				1									
34	TP-PS_2.0				1									
35	TP-L4-0.1				1	X								
36	TP-L4_0.5				1									
37	TP_L4_1.0				1									
38	TP-L4_2.0				1									
				TOTAL										

E-MAILED
LAB OF ORIGIN:
NEWCASTLE

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

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ Sydney: 277 Woodpark Rd, Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsenviro.com

☐ Newcastle: 5 Rosegum Rd, Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsenviro.com

☐ Brisbane: 32 Shand St, Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com

☐ Townsville: 14-15 Desma Ct, Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsenviro.com

☐ Melbourne: 2-4 Westall Rd, Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsenviro.com

☐ Adelaide: 2-1 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsenviro.com

CLIENT: EP Risk	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle)	
OFFICE:	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact?	Yes / No / N/A
PROJECT:	ALS QUOTE NO.: SYBQ-210-16	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle) COC: 1 2 (3) 4 5 6 7	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: CONTACT PH:	OF: 1 2 3 (4) 5 6 7	Other comment:	

SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):			
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME: 17.2.23 8:41	DATE/TIME: 17.2.23 5pm
Email Invoice to (will default to PM if no other addresses are listed):				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:	RECEIVED BY: SOS/AS DATE/TIME: 17/2/23 1945

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	EA200F	NSW pH, CEC, clay TOC, Fe	CORR-7 Aggressivity				HOLD	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc. Send to Seconday Lab (S-16)
39	TP-L7_0.1	16/2/23	S	Jar/Bag	2	X	X							
40	TP-L7_0.5		S	Jar	1								X	
41	TP-P7-0.1		S	Jar/Bag	2	X	X							
42	TP-P7_0.5		S	Jar	1								X	
43	TP-L6-0.1		S	Jar/Bag/Bag	3		X	XX						
44	TP-L6-0.5		S	Jar/Bag	2			XX						
45	TP-P6-0.1		S	Jar/Bag	2	X	X							
46	TP-P6_0.5		S	Jar	1								X	
47	TP-L2_0.1		S	Jar	1	X							X	
48	TP_L2_0.5		S	Jar	1								X	
49	TP-L2-1.0		S	Jar	1								X	
50	TP-L2-2.0		S	Jar	1								X	
51	TP-L2_2.4-2.6		S	Jar	1				X					
52	TP-L4_2.5		S	Jar	1				X					
53	TP-L5_2.5		S	Jar	1				X					
54	TP-L6_2.5-3.0		S	Jar	1				X					
55	SPO1_0.1		S	Jar [illegible]	[illegible]1								X	
56	SPO1_1.0		S	Jar	1								X	
57	SPO2_0.1		S	Jar/Bag	2								X	
58	SPO2_1.0		S	Jar	1								X	
59	SPO3_0.1		S	Jar	1								X	
60	SPO3_0.5		S	Jar	1								X	
61	BH01_0.1		S	Jar/Bag	2								X	
62	QC01		S	Jar	1	X								
63	QC02		S											X
				TOTAL										

E-MAILED
LAB OF ORIGIN:
NEWCASTLE

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

CHAIN OF CUSTODY

ALS Laboratory: **please tick** →

☐ **Sydney:** 277 Woodpark Rd, Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsenviro.com

☐ **Newcastle:** 5 Rosegum Rd, Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsenviro.com

☐ **Brisbane:** 32 Shand St, Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsenviro.com

☐ **Townsville:** 14-15 Desma Ct, Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsenviro.com

☐ **Melbourne:** 2-4 Westall Rd, Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsenviro.com

☐ **Adelaide:** 2-1 Burma Rd, Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsenviro.com

CLIENT: EPRisk	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT (List due date):		**FOR LABORATORY USE ONLY (Circle)**
OFFICE:	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):		Custody Seal Intact? Yes / No / N/A
PROJECT:	**ALS QUOTE NO.:** SYBQ-210-16	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes / No / N/A
ORDER NUMBER:		COC: 1 2 3 (4) 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	**CONTACT PH:**	OF: 1 2 3 (4) 5 6 7	Other comment:

SAMPLER:	**SAMPLER MOBILE:**	**RELINQUISHED BY:**	**RECEIVED BY:**	**RELINQUISHED BY:** / **RECEIVED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**			
Email Reports to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME: 17-2-23 8:41	DATE/TIME: 17·2·23 5pm / DATE/TIME: 17/2/23 19:45
Email Invoice to (will default to PM if no other addresses are listed):				

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS (MATRIX: Solid(S) Water(W))			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price). Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	EA200F	W-19	TRH (FA) BTEXN				HOLD	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
64	RW01	16/2/23	W	Bottles	5			X						
65	TRP/BLK	16/2/23							X					
					TOTAL									

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

E-MAILED

LAB OF ORIGIN: NEWCASTLE

Phoung Tran

From: Jason Dighton
Sent: Monday, 20 February 2023 11:56 AM
To: Phoung Tran
Cc: Helen Simpson
Subject: ES2305239, Secondary lab

QCO2 / Eurofins

Subcon / Forward Lab / Split WO
Lab / Analysis:
Organised By / Date:
Relinquished By / Date:
Connote / Courier:
WO No:
Attached By PO / Internal Sheet:

Hi Phoung!

Please see below! QC is to go to Eurofins ☺

Best regards,

right solutions. right partner.

Jason Dighton
Client Services Officer, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8509
Jason.Dighton@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

Environmental Division
Sydney
Work Order Reference
ES2305239

Telephone : +61-2-8784 8555

From: Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Sent: Monday, 20 February 2023 11:51 AM

To: Jason Dighton <jason.dighton@ALSGlobal.com>
Subject: [EXTERNAL] - RE: ALS Workorder ES2305239, Project EP3045

Hey Jason,

Eurofins will be fine.

Cheers,

Mathew Cheshire
Graduate Environmental Scientist
M 0431165533 | E Mathew.Cheshire@eprisk.com.au

View my profile on LinkedIn

EP Risk Management Pty Ltd | ABN 81 147 147 591
3/19 Bolton Street | Newcastle NSW 2300
T +61240482845 | W eprisk.com.au

EP RISK | NEWCASTLE SYDNEY MELBOURNE

From: Jason Dighton <jason.dighton@ALSGlobal.com>
Sent: Monday, 20 February 2023 10:53 AM
To: Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Subject: ALS Workorder ES2305239, Project EP3045

Good Morning Mathew,

I hope you had a great weekend!

Regarding the aforementioned workorder, would you be able to advise which secondary lab to forward analysis on to? 😊

Best regards,

right solutions. right partner.

Jason Dighton
Client Services Officer, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8509
Jason.Dighton@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

Phoung Tran

From: Luke Kerry <Luke.Kerry@eprisk.com.au>
Sent: Monday, 20 February 2023 1:40 PM
To: Jason Dighton
Cc: ALSEnviro Sydney; Mathew Cheshire
Subject: [EXTERNAL] - ES2305239

Hey Jason,

Can I please have the following amendments made to the COC from ES2305239.

- TP-L6-0.1 does not need to be analysed for the NEPM screen for soil classification, this analysis needs to be removed.
- Remove analysis for the following samples: TP_P5_0.1, TP-L1-0.1 and TP-P1-0.1
- Can we please have suite S-16 analysed for samples SP01_0.1, SP02_0.1 and SP03_0.1.

Let me know if there are any issues.

Kind Regards

Luke Kerry
Environmental Engineer
M 0432 266 617 | **E** Luke.kerry@eprisk.com.au

EP Risk Management Pty Ltd | **ABN** 81 147 147 591
Level 4, 73 Walker Street | North Sydney NSW 2060
T +61 2 9922 5021 | **W** www.eprisk.com.au

Phoung Tran

From: Luke Kerry <Luke.Kerry@eprisk.com.au>
Sent: Tuesday, 21 February 2023 2:17 PM
To: Jason Dighton
Cc: ALSEnviro Sydney; Mathew Cheshire
Subject: [EXTERNAL] - Re: ES2305239

Hey Jason,

Can we get BH01_0.1 analysed for suite S-16 as well please.

Thanks

Kind regards

Luke kerry

Get Outlook for Android

From: Luke Kerry
Sent: Monday, February 20, 2023 1:40:18 PM
To: Jason Dighton <jason.dighton@ALSGlobal.com>
Cc: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Subject: ES2305239

Hey Jason,

Can I please have the following amendments made to the COC from ES2305239.

- TP-L6-0.1 does not need to be analysed for the NEPM screen for soil classification, this analysis needs to be removed.

- Remove analysis for the following samples: TP_P5_0.1, TP-L1-0.1 and TP-P1-0.1
- Can we please have suite S-16 analysed for samples SP01_0.1, SP02_0.1 and SP03_0.1.

Let me know if there are any issues.

Kind Regards

Luke Kerry
Environmental Engineer
M 0432 266 617 | **E** Luke.kerry@eprisk.com.au

EP Risk Management Pty Ltd | **ABN** 81 147 147 591
Level 4, 73 Walker Street | North Sydney NSW 2060
T +61 2 9922 5021 | **W** www.eprisk.com.au

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2305239**

Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: MR Mathew Cheshire	Contact	: Jason Dighton
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: mathew.cheshire@eprisk.com.au	E-mail	: jason.dighton@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: EP3045	Page	: 1 of 4
Order number	: EP3045	Quote number	: ES2020EPRISK0006 (SY/497/20 V3 Primary analysis only)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Mathew Cheshire		

Dates

Date Samples Received	: 17-Feb-2023 08:41	Issue Date	: 21-Feb-2023
Client Requested Due Date	: 24-Feb-2023	Scheduled Reporting Date	: **24-Feb-2023**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 5	Temperature	: 3.6'c - Ice present
Receipt Detail	:	No. of samples received / analysed	: 65 / 27

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- 20/02/2023: This is an updated SRN which indicates sample QC02 to be forwarded to Eurofins, NEPM Screen removed for sample TP-L6-0.1, analysis removed for sample TP_P5_0.1, TP-L1-0.1 and TP-P1-0.1 and S-16 added to sample SP01_0.1, SP02_0.1 and SP03_0.1.
- 21/02/2023: This is an updated SRN which indicates suite S-16 added to sample BH01_0.1 for this work order.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Asbestos and PSD analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

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

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2305239-056 : [16-Feb-2023] : SP01_1.0 - received as SP01_0.5

Summary of Sample(s) and Requested Analysis

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

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - Corr. Schedule 2 Soil on Steel & Concrete Piles (AS2159-2009)	SOIL - EA055-103 Moisture Content	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by	SOIL - P-22 (WA/SYD) NEPM Screen for Soil Classification WA	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES2305239-001	16-Feb-2023 00:00	TP_P4_0.1			✓			✓
ES2305239-002	16-Feb-2023 00:00	TP_P4_0.5	✓					
ES2305239-003	16-Feb-2023 00:00	TP_P4_1.0	✓					
ES2305239-004	16-Feb-2023 00:00	TP_P4_2.0	✓					
ES2305239-005	16-Feb-2023 00:00	TP_L3_0.1			✓			✓
ES2305239-006	16-Feb-2023 00:00	TP_L3_0.5	✓					
ES2305239-007	16-Feb-2023 00:00	TP_L3_1.0	✓					
ES2305239-008	16-Feb-2023 00:00	TP_L3_2.0	✓					
ES2305239-009	16-Feb-2023 00:00	TP_P3_0.1			✓	✓		✓
ES2305239-010	16-Feb-2023 00:00	TP_P3_0.5	✓					
ES2305239-011	16-Feb-2023 00:00	TP_P3_1.0	✓					
ES2305239-012	16-Feb-2023 00:00	TP_P3_2.0	✓					
ES2305239-013	16-Feb-2023 00:00	TP_P2_0.1			✓			✓
ES2305239-014	16-Feb-2023 00:00	TP_P2_0.5	✓					
ES2305239-015	16-Feb-2023 00:00	TP_P2_1.0	✓					
ES2305239-016	16-Feb-2023 00:00	TP_P2_2.0	✓					
ES2305239-018	16-Feb-2023 00:00	TP_L1_0.5	✓					
ES2305239-019	16-Feb-2023 00:00	TP_L1_1.0	✓					
ES2305239-020	16-Feb-2023 00:00	TP_L1_2.0	✓					
ES2305239-022	16-Feb-2023 00:00	TP_P1_0.5	✓					
ES2305239-023	16-Feb-2023 00:00	TP_P1_1.0	✓					
ES2305239-024	16-Feb-2023 00:00	TP_P1_2.0	✓					
ES2305239-025	16-Feb-2023 00:00	TP_P6_1.0	✓					
ES2305239-026	16-Feb-2023 00:00	TP_P6_2.0	✓					
ES2305239-027	16-Feb-2023 00:00	TP_L5_0.1			✓			✓
ES2305239-028	16-Feb-2023 00:00	TP_L5_0.5	✓					
ES2305239-029	16-Feb-2023 00:00	TP_L5_1.0	✓					
ES2305239-030	16-Feb-2023 00:00	TP_L5_2.0	✓					
ES2305239-032	16-Feb-2023 00:00	TP_P5_0.5	✓					
ES2305239-033	16-Feb-2023 00:00	TP_P5_1.0	✓					
ES2305239-034	16-Feb-2023 00:00	TP_P5_2.0	✓					
ES2305239-035	16-Feb-2023 00:00	TP_L4_0.1			✓			✓
ES2305239-036	16-Feb-2023 00:00	TP_L4_0.5	✓					

			(On Hold) SOIL No analysis requested	SOIL - Corr. Schedule 2 Soil on Steel & Concrete Piles (AS2159-2009)	SOIL - EA055-103 Moisture Content	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by	SOIL - P-22 (WA/SYD) NEPM Screen for Soil Classification WA	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES2305239-037	16-Feb-2023 00:00	TP_L4_1.0	✓					
ES2305239-038	16-Feb-2023 00:00	TP_L4_2.0	✓					
ES2305239-039	16-Feb-2023 00:00	TP_L7_0.1			✓	✓		✓
ES2305239-040	16-Feb-2023 00:00	TP_L7_0.5	✓					
ES2305239-041	16-Feb-2023 00:00	TP_P7_0.1			✓	✓		✓
ES2305239-042	16-Feb-2023 00:00	TP_P7_0.5	✓					
ES2305239-043	16-Feb-2023 00:00	TP_L6_0.1				✓		
ES2305239-044	16-Feb-2023 00:00	TP_L6_0.5			✓		✓	
ES2305239-045	16-Feb-2023 00:00	TP_P6_0.1			✓	✓		✓
ES2305239-046	16-Feb-2023 00:00	TP_P65_0.5	✓					
ES2305239-047	16-Feb-2023 00:00	TP_L2_0.1			✓			✓
ES2305239-048	16-Feb-2023 00:00	TP_L2_0.5	✓					
ES2305239-049	16-Feb-2023 00:00	TP_L2_1.0	✓					
ES2305239-050	16-Feb-2023 00:00	TP_L2_2.0	✓					
ES2305239-051	16-Feb-2023 00:00	TP_L2_2.4-2.6		✓	✓			
ES2305239-052	16-Feb-2023 00:00	TP_L4_2.5		✓	✓			
ES2305239-053	16-Feb-2023 00:00	TP_L5_2.5		✓	✓			
ES2305239-054	16-Feb-2023 00:00	TP_L6_2.5-3.0		✓	✓			
ES2305239-055	16-Feb-2023 00:00	SP01_0.1			✓			✓
ES2305239-056	16-Feb-2023 00:00	SP01_1.0 received a...	✓					
ES2305239-057	16-Feb-2023 00:00	SP02_0.1			✓			✓
ES2305239-058	16-Feb-2023 00:00	SP02_1.0	✓					
ES2305239-059	16-Feb-2023 00:00	SP03_0.1			✓			✓
ES2305239-060	16-Feb-2023 00:00	SP03_0.5	✓					
ES2305239-061	16-Feb-2023 00:00	BH_01_0.1			✓			✓
ES2305239-062	16-Feb-2023 00:00	QC01			✓			✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-19T TRH/BTEXN/PAH/Phenols/OC/OP/PCB/8 metals
ES2305239-064	16-Feb-2023 00:00	RW01	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP080 BTEXN	WATER - W-18 TRH(C6 - C9)/BTEXN
ES2305239-065	13-Feb-2023 00:00	TRIP BLANK		✓
ES2305239-066	13-Feb-2023 00:00	TRIP SPIKE	✓	

Proactive Holding Time Report

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

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	accounts@eprisk.com.au

Mathew Cheshire

- *AU Certificate of Analysis - NATA (COA)	Email	mathew.cheshire@eprisk.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	mathew.cheshire@eprisk.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	mathew.cheshire@eprisk.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	mathew.cheshire@eprisk.com.au
- Attachment - Report (SUBCO)	Email	mathew.cheshire@eprisk.com.au
- Chain of Custody (CoC) (COC)	Email	mathew.cheshire@eprisk.com.au
- EDI Format - ENMRG (ENMRG)	Email	mathew.cheshire@eprisk.com.au
- EDI Format - ESDAT (ESDAT)	Email	mathew.cheshire@eprisk.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2305239**	Page	: 1 of 34
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: MR Mathew Cheshire	Contact	: Jason Dighton
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: EP3045	Date Samples Received	: 17-Feb-2023 08:41
Order number	: EP3045	Date Analysis Commenced	: 20-Feb-2023
C-O-C number	: ----	Issue Date	: 24-Feb-2023 20:21
Sampler	: Mathew Cheshire		
Site	: ----		
Quote number	: SY/497/20 V3 Primary analysis only		
No. of samples received	: 65		
No. of samples analysed	: 27		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- Corrosion assessment for Concrete and Steel piles in soil per Australian Standard AS2159-2009 uses a combination of soil and groundwater data (Tables 6.4.2 C & 6.5.2 C). In the absence of groundwater data, assessment has been made against soil criteria only. Refer to AS2159-2009 section 6.4 for further interpretation of corrosion assessment. ALS is not NATA accredited for Corrosion Assessment comments
- EA167: Soil Condition A – High permeability soils (e.g. sands and gravels) which are in groundwater
- EA167: Soil Condition B – Low permeability soils (e.g. silts and clays) or all soils above groundwater
- EG005T: Poor precision was obtained for Iron on sample ES2305239 # 043. Confirmed by re-digestion and reanalysis.
- EG035: Positive Mercury result ES2305239 #55 has been confirmed by reanalysis.
- EP080: Sample TRIP SPIKE contains volatile compounds spiked into the sample containers prior to dispatch from the laboratory. BTEXN compounds spiked at 20 ug/L.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.

- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P4_0.1	TP_L3_0.1	TP_P3_0.1	TP_P2_0.1	TP_L1_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-001	ES2305239-005	ES2305239-009	ES2305239-013	ES2305239-017
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	7.5	6.0	9.0	9.2	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	----	----
Asbestos Type	1332-21-4	-	--	----	----	-	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	No	----	----
Sample weight (dry)	----	0.01	g	----	----	286	----	----
Synthetic Mineral Fibre	----	-	--	----	----	No	----	----
Organic Fibre	----	-	--	----	----	No	----	----
APPROVED IDENTIFIER:	----	-	--	----	----	A. SMYLIE	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	<0.0004	----	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	<0.001	----	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	0.286	----	----
ø Fibrous Asbestos >7mm	----	0.0004	g	----	----	<0.0004	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	<5	7	<5	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	18	6	11	11	----
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	----
Lead	7439-92-1	5	mg/kg	12	13	12	11	----
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	----
Zinc	7440-66-6	5	mg/kg	7	12	10	22	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_P4_0.1	TP_L3_0.1	TP_P3_0.1	TP_P2_0.1	TP_L1_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-001	ES2305239-005	ES2305239-009	ES2305239-013	ES2305239-017
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P4_0.1	TP_L3_0.1	TP_P3_0.1	TP_P2_0.1	TP_L1_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-001	ES2305239-005	ES2305239-009	ES2305239-013	ES2305239-017
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P4_0.1	TP_L3_0.1	TP_P3_0.1	TP_P2_0.1	TP_L1_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-001	ES2305239-005	ES2305239-009	ES2305239-013	ES2305239-017
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**75.5**	**72.4**	**74.8**	**72.9**	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**95.8**	**80.4**	**85.8**	**71.1**	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**99.6**	**102**	**101**	**101**	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**88.0**	**95.6**	**92.2**	**94.9**	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**84.0**	**92.4**	**88.5**	**91.1**	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**81.3**	**99.1**	**95.7**	**101**	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**102**	**108**	**104**	**107**	----
Anthracene-d10	1719-06-8	0.5	%	**98.6**	**108**	**104**	**108**	----
4-Terphenyl-d14	1718-51-0	0.5	%	**92.7**	**98.3**	**95.1**	**96.7**	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**95.2**	**93.8**	**94.7**	**109**	**103**
Toluene-D8	2037-26-5	0.2	%	**85.3**	**85.9**	**77.6**	**92.1**	**88.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_P4_0.1	TP_L3_0.1	TP_P3_0.1	TP_P2_0.1	TP_L1_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-001	ES2305239-005	ES2305239-009	ES2305239-013	ES2305239-017
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**92.1**	**89.2**	**84.3**	**96.0**	**91.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P1_0.1	TP_L5_0.1	TP_P5_0.1	TP_L4_0.1	TP_L7_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-021	ES2305239-027	ES2305239-031	ES2305239-035	ES2305239-039
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	13.7	----	12.5	11.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	No
Asbestos Type	1332-21-4	-	--	----	----	----	----	-
Asbestos (Trace)	1332-21-4	5	Fibres	----	----	----	----	No
Sample weight (dry)	----	0.01	g	----	----	----	----	414
Synthetic Mineral Fibre	----	-	--	----	----	----	----	No
Organic Fibre	----	-	--	----	----	----	----	No
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	A. SMYLIE
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	----	----	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	----	----	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	----	0.414
ø Fibrous Asbestos >7mm	----	0.0004	g	----	----	----	----	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	<5	----	5	14
Cadmium	7440-43-9	1	mg/kg	----	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg	----	7	----	7	22
Copper	7440-50-8	5	mg/kg	----	<5	----	10	<5
Lead	7439-92-1	5	mg/kg	----	9	----	15	9
Nickel	7440-02-0	2	mg/kg	----	3	----	5	<2
Zinc	7440-66-6	5	mg/kg	----	19	----	57	11
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	----	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_P1_0.1	TP_L5_0.1	TP_P5_0.1	TP_L4_0.1	TP_L7_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-021	ES2305239-027	ES2305239-031	ES2305239-035	ES2305239-039
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_P1_0.1	TP_L5_0.1	TP_P5_0.1	TP_L4_0.1	TP_L7_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-021	ES2305239-027	ES2305239-031	ES2305239-035	ES2305239-039
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		----	**0.6**	----	**0.6**	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		----	**1.2**	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		----	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	----	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P1_0.1	TP_L5_0.1	TP_P5_0.1	TP_L4_0.1	TP_L7_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-021	ES2305239-027	ES2305239-031	ES2305239-035	ES2305239-039
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	----	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	----	<0.2	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	----	<1	----	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	**72.5**	----	**76.3**	**82.4**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	**76.6**	----	**78.5**	**91.8**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	**93.9**	----	**103**	**91.9**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	**96.1**	----	**92.6**	**88.2**
2-Chlorophenol-D4	93951-73-6	0.5	%	----	**92.2**	----	**86.8**	**84.1**
2.4.6-Tribromophenol	118-79-6	0.5	%	----	**95.4**	----	**93.0**	**87.9**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	**109**	----	**103**	**99.6**
Anthracene-d10	1719-06-8	0.5	%	----	**109**	----	**104**	**99.7**
4-Terphenyl-d14	1718-51-0	0.5	%	----	**98.3**	----	**93.3**	**90.1**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**107**	**98.8**	**83.6**	**102**	**93.1**
Toluene-D8	2037-26-5	0.2	%	**91.9**	**81.3**	**102**	**86.4**	**88.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P1_0.1	TP_L5_0.1	TP_P5_0.1	TP_L4_0.1	TP_L7_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-021	ES2305239-027	ES2305239-031	ES2305239-035	ES2305239-039
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
4-Bromofluorobenzene	460-00-4	0.2	%	**93.5**	**86.3**	**108**	**86.5**	**92.7**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P7_0.1	TP_L6_0.1	TP_L6_0.5	TP_P6_0.1	TP_L2_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-041	ES2305239-043	ES2305239-044	ES2305239-045	ES2305239-047
				Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	----	0.1	pH Unit	----	----	4.2	----	----
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	----	5.6	----	----
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	83	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	46.8	----	----
Moisture Content	----	1.0	%	11.9	----	----	12.0	7.6
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	67	----	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	2.49	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	----
Asbestos Type	1332-21-4	-	--	-	-	----	-	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	No	----
Sample weight (dry)	----	0.01	g	417	360	----	408	----
Synthetic Mineral Fibre	----	-	--	No	No	----	No	----
Organic Fibre	----	-	--	No	No	----	No	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	----	A. SMYLIE	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	----	<0.0004	----
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	----	<0.001	----
ø Weight Used for % Calculation	----	0.0001	kg	0.417	0.360	----	0.408	----
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	----	<0.0004	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	----	6.6	2.6	----	----
Exchangeable Magnesium	----	0.1	meq/100g	----	1.8	7.5	----	----
Exchangeable Potassium	----	0.1	meq/100g	----	0.4	0.2	----	----
Exchangeable Sodium	----	0.1	meq/100g	----	0.1	1.2	----	----
Cation Exchange Capacity	----	0.1	meq/100g	----	8.8	11.9	----	----
Exchangeable Sodium Percent	----	0.1	%	----	1.2	10.6	----	----
EG005(ED093)T: Total Metals by ICP-AES								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P7_0.1	TP_L6_0.1	TP_L6_0.5	TP_P6_0.1	TP_L2_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-041	ES2305239-043	ES2305239-044	ES2305239-045	ES2305239-047
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Iron	7439-89-6	0.005	%	----	----	**0.943**	----	----
Arsenic	7440-38-2	5	mg/kg	**8**	----	----	**18**	**6**
Cadmium	7440-43-9	1	mg/kg	<1	----	----	<1	<1
Chromium	7440-47-3	2	mg/kg	**14**	----	----	**26**	**9**
Copper	7440-50-8	5	mg/kg	<5	----	----	<5	<5
Lead	7439-92-1	5	mg/kg	**11**	----	----	**19**	**14**
Nickel	7440-02-0	2	mg/kg	**2**	----	----	**2**	**2**
Zinc	7440-66-6	5	mg/kg	**11**	----	----	**33**	**23**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	<0.1	<0.1
EP004: Organic Matter								
Organic Matter	----	0.5	%	----	----	**0.8**	----	----
Total Organic Carbon	----	0.5	%	----	----	<0.5	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_P7_0.1	TP_L6_0.1	TP_L6_0.5	TP_P6_0.1	TP_L2_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-041	ES2305239-043	ES2305239-044	ES2305239-045	ES2305239-047
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_P7_0.1	TP_L6_0.1	TP_L6_0.5	TP_P6_0.1	TP_L2_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-041	ES2305239-043	ES2305239-044	ES2305239-045	ES2305239-047
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	----	**0.6**	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	----	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_P7_0.1	TP_L6_0.1	TP_L6_0.5	TP_P6_0.1	TP_L2_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-041	ES2305239-043	ES2305239-044	ES2305239-045	ES2305239-047
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**74.5**	----	----	**79.4**	**99.5**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**73.6**	----	----	**78.7**	**102**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**79.1**	----	----	**95.4**	**126**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**90.8**	----	----	**92.8**	**95.4**
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.9**	----	----	**88.9**	**90.4**
2.4.6-Tribromophenol	118-79-6	0.5	%		**87.6**	----	----	**92.3**	**91.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**100**	----	----	**105**	**108**
Anthracene-d10	1719-06-8	0.5	%		**100**	----	----	**104**	**107**
4-Terphenyl-d14	1718-51-0	0.5	%		**90.5**	----	----	**96.0**	**98.0**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**101**	----	----	**99.1**	**101**
Toluene-D8	2037-26-5	0.2	%		**92.6**	----	----	**85.0**	**82.4**
4-Bromofluorobenzene	460-00-4	0.2	%		**90.5**	----	----	**89.3**	**88.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_L2_2.4-2.6	TP_L4_2.5	TP_L5_2.5	TP_L6_2.5-3.0	SP01_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-051	ES2305239-052	ES2305239-053	ES2305239-054	ES2305239-055
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	5.0	5.0	4.9	5.2	----
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	382	577	488	367	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	13.1	11.9	11.6	13.0	----
Moisture Content	----	1.0	%	----	----	----	----	9.8
EA080: Resistivity								
Resistivity at 25°C	----	1	ohm cm	2620	1730	2050	2720	----
EA167: Corrosion Classification (per AS2159-2009)								
Ø Exposure Classification - Concrete Piles Soil Condition A	----	-	-	Moderate	Moderate	Moderate	Moderate	----
Ø Exposure Classification - Concrete Piles Soil Condition B	----	-	-	Mild	Mild	Mild	Mild	----
Ø Exposure Classification - Steel Piles Soil Condition A	----	-	-	Mild	Mild	Mild	Non Aggressive	----
Ø Exposure Classification - Steel Piles Soil Condition B	----	-	-	Non Aggressive	Non Aggressive	Non Aggressive	Non Aggressive	----
ED040S: Soluble Major Anions								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	320	460	210	210	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	410	780	700	450	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	----	----	11
Cadmium	7440-43-9	1	mg/kg	----	----	----	----	<1
Chromium	7440-47-3	2	mg/kg	----	----	----	----	6
Copper	7440-50-8	5	mg/kg	----	----	----	----	18
Lead	7439-92-1	5	mg/kg	----	----	----	----	21
Nickel	7440-02-0	2	mg/kg	----	----	----	----	9
Zinc	7440-66-6	5	mg/kg	----	----	----	----	81
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	----	0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_L2_2.4-2.6	TP_L4_2.5	TP_L5_2.5	TP_L6_2.5-3.0	SP01_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-051	ES2305239-052	ES2305239-053	ES2305239-054	ES2305239-055
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_L2_2.4-2.6	TP_L4_2.5	TP_L5_2.5	TP_L6_2.5-3.0	SP01_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-051	ES2305239-052	ES2305239-053	ES2305239-054	ES2305239-055
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	----	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	----	----	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP_L2_2.4-2.6	TP_L4_2.5	TP_L5_2.5	TP_L6_2.5-3.0	SP01_0.1
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit	ES2305239-051	ES2305239-052	ES2305239-053	ES2305239-054	ES2305239-055
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	mg/kg	----	----	----	----	<50
C15 - C28 Fraction	----	100	mg/kg	----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	----	----	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	----	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	----	----	<10
>C10 - C16 Fraction	----	50	mg/kg	----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg	----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg	----	----	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	----	----	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg	----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg	----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg	----	----	----	----	<0.5
Naphthalene	91-20-3	1	mg/kg	----	----	----	----	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	----	**81.6**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	----	----	----	----	**83.7**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	----	----	----	**95.9**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	----	----	----	**75.9**
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	----	----	**85.4**
2.4.6-Tribromophenol	118-79-6	0.5	%	----	----	----	----	**92.9**
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP_L2_2.4-2.6	TP_L4_2.5	TP_L5_2.5	TP_L6_2.5-3.0	SP01_0.1
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00
Compound	CAS Number	LOR	Unit		ES2305239-051	ES2305239-052	ES2305239-053	ES2305239-054	ES2305239-055
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	----	----	101
Anthracene-d10	1719-06-8	0.5	%		----	----	----	----	93.8
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	----	----	111
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	----	102
Toluene-D8	2037-26-5	0.2	%		----	----	----	----	88.4
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	----	86.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SP02_0.1	SP03_0.1	BH_01_0.1	QC01	----
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2305239-057	ES2305239-059	ES2305239-061	ES2305239-062	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	4.4	8.2	11.4	9.6	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	<5	6	5	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	7	9	10	10	----
Copper	7440-50-8	5	mg/kg	11	5	20	10	----
Lead	7439-92-1	5	mg/kg	7	11	26	15	----
Nickel	7440-02-0	2	mg/kg	10	6	12	4	----
Zinc	7440-66-6	5	mg/kg	45	72	137	58	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SP02_0.1	SP03_0.1	BH_01_0.1	QC01	----
			Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	----
Compound	CAS Number	LOR	Unit	ES2305239-057	ES2305239-059	ES2305239-061	ES2305239-062	--------
				Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SP02_0.1	SP03_0.1	BH_01_0.1	QC01	----
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2305239-057	ES2305239-059	ES2305239-061	ES2305239-062	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SP02_0.1	SP03_0.1	BH_01_0.1	QC01	----
				Sampling date / time	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	16-Feb-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2305239-057	ES2305239-059	ES2305239-061	ES2305239-062	--------
					Result	Result	Result	Result	----
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		107	77.2	93.6	74.0	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		107	72.9	90.5	73.4	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		122	87.9	94.6	88.1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		74.5	76.1	96.6	84.8	----
2-Chlorophenol-D4	93951-73-6	0.5	%		84.9	86.6	87.0	79.5	----
2.4.6-Tribromophenol	118-79-6	0.5	%		83.9	91.2	77.7	77.9	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		102	103	102	94.7	----
Anthracene-d10	1719-06-8	0.5	%		94.4	95.4	99.9	94.1	----
4-Terphenyl-d14	1718-51-0	0.5	%		113	114	99.2	85.6	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		97.5	106	103	108	----
Toluene-D8	2037-26-5	0.2	%		90.7	91.0	107	92.2	----
4-Bromofluorobenzene	460-00-4	0.2	%		93.7	97.2	106	98.7	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW01	TRIP BLANK	TRIP SPIKE	----	----
				Sampling date / time	16-Feb-2023 00:00	13-Feb-2023 00:00	13-Feb-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2305239-064	ES2305239-065	ES2305239-066	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
^ **Total Polychlorinated biphenyls**	----	1	µg/L		<1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ **Total Chlordane (sum)**	----	0.5	µg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW01	TRIP BLANK	TRIP SPIKE	----	----
				Sampling date / time	16-Feb-2023 00:00	13-Feb-2023 00:00	13-Feb-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2305239-064	ES2305239-065	ES2305239-066	--------	--------
					Result	Result	Result	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	----	----	----	----
2-Chlorophenol	95-57-8	1.0	µg/L		<1.0	----	----	----	----
2-Methylphenol	95-48-7	1.0	µg/L		<1.0	----	----	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L		<2.0	----	----	----	----
2-Nitrophenol	88-75-5	1.0	µg/L		<1.0	----	----	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L		<1.0	----	----	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L		<1.0	----	----	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L		<1.0	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L		<1.0	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L		<1.0	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L		<1.0	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW01	TRIP BLANK	TRIP SPIKE	----	----
				Sampling date / time	16-Feb-2023 00:00	13-Feb-2023 00:00	13-Feb-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2305239-064	ES2305239-065	ES2305239-066	--------	--------
					Result	Result	Result	----	----
EP075(SIM)A: Phenolic Compounds - Continued									
Pentachlorophenol	87-86-5	2.0	µg/L		<2.0	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW01	TRIP BLANK	TRIP SPIKE	----	----
				Sampling date / time	16-Feb-2023 00:00	13-Feb-2023 00:00	13-Feb-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2305239-064	ES2305239-065	ES2305239-066	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	14	----	----
Toluene	108-88-3	2	µg/L		<2	<2	14	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	15	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	14	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	15	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	29	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	72	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	17	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		60.8	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		71.7	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		96.4	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		24.2	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		46.1	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		52.6	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		53.2	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		54.9	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		54.5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		100	98.4	101	----	----
Toluene-D8	2037-26-5	2	%		89.4	84.0	95.1	----	----
4-Bromofluorobenzene	460-00-4	2	%		88.5	87.2	99.1	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP_P3_0.1 - 16-Feb-2023 00:00	Soil sample.
EA200: Description	TP_L7_0.1 - 16-Feb-2023 00:00	Soil sample.
EA200: Description	TP_P7_0.1 - 16-Feb-2023 00:00	Soil sample.
EA200: Description	TP_L6_0.1 - 16-Feb-2023 00:00	Soil sample.
EA200: Description	TP_P6_0.1 - 16-Feb-2023 00:00	Soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	45	134
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates - Continued			

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

(SOIL) EA200N: Asbestos Quantification (non-NATA)

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2305239**	Page	: 1 of 28
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: MR Mathew Cheshire	Contact	: Jason Dighton
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
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Project	: EP3045	Date Samples Received	: 17-Feb-2023
Order number	: EP3045	Date Analysis Commenced	: 20-Feb-2023
C-O-C number	: ----	Issue Date	: 24-Feb-2023
Sampler	: Mathew Cheshire		
Site	: ----		
Quote number	: SY/497/20 V3 Primary analysis only		
No. of samples received	: 65		
No. of samples analysed	: 27		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, 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.

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4885158)									
ES2305239-043	TP_L6_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	4	<1	129	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	21	17.7	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	16	9	57.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	35	8	123	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	30	22	30.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	298	332	10.8	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	9.66 %	# 38000	87.1	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4888403)									
ES2305218-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	17	18	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	15900	15600	1.8	0% - 20%
ES2305226-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	63	55	12.9	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	12	12	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	18	18	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	21	22	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	32	41	24.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	33	32	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4888403) - continued									
ES2305226-002	Anonymous	EG005T: Iron	7439-89-6	50	mg/kg	47000	48700	3.6	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4888405)									
ES2305239-031	TP_P5_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	11	24.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	<2	57.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	<5	50.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	12	6	70.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	14	<5	92.7	No Limit
ES2305239-062	QC01	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	8	23.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	4	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	13	25.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	15	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	58	78	30.0	0% - 50%
EA002: pH 1:5 (Soils) (QC Lot: 4885155)									
ES2305239-053	TP_L5_2.5	EA002: pH Value	----	0.1	pH Unit	4.9	5.0	0.0	0% - 20%
EA010: Conductivity (1:5) (QC Lot: 4885156)									
ES2305239-053	TP_L5_2.5	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	488	435	11.5	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4888409)									
ES2305218-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.4	14.4	6.7	0% - 50%
ES2305239-005	TP_L3_0.1	EA055: Moisture Content	----	0.1	%	6.0	6.6	9.3	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4888410)									
ES2305239-041	TP_P7_0.1	EA055: Moisture Content	----	0.1	%	11.9	7.2	49.9	0% - 50%
ES2305370-004	Anonymous	EA055: Moisture Content	----	0.1	%	21.9	22.6	3.0	0% - 20%
ED007: Exchangeable Cations (QC Lot: 4890595)									
ES2305239-043	TP_L6_0.1	ED007: Exchangeable Sodium Percent	----	0.1	%	1.2	1.2	0.0	0% - 50%
		ED007: Exchangeable Calcium	----	0.1	meq/100g	6.6	6.5	0.0	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	1.8	1.8	0.0	0% - 50%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.4	0.4	0.0	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.1	0.1	0.0	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	8.8	8.8	0.0	0% - 20%
ED040S: Soluble Major Anions (QC Lot: 4885157)									
ES2305239-054	TP_L6_2.5-3.0	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	210	200	0.0	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 4885154)									
ES2305239-054	TP_L6_2.5-3.0	ED045G: Chloride	16887-00-6	10	mg/kg	450	440	0.0	0% - 20%
ES2305239-053	TP_L5_2.5	ED045G: Chloride	16887-00-6	10	mg/kg	700	710	1.8	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4888402)									
ES2305218-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2305226-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4888404)									
ES2305239-031	TP_P5_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2305239-062	QC01	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP004: Organic Matter (QC Lot: 4887105)									
ES2305239-044	TP_L6_0.5	EP004: Organic Matter	----	0.5	%	0.8	0.8	0.0	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4881970)									
ES2305239-001	TP_P4_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2305239-041	TP_P7_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4883472)									
ES2305239-055	SP01_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4887217)									
ES2305239-061	BH_01_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4881969)									
ES2305239-001	TP_P4_0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2305239-041	TP_P7_0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4881969) - continued									
ES2305239-041	TP_P7_0.1	EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4883471)									
ES2305239-055	SP01_0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4883471) - continued									
ES2305239-055	SP01_0.1	EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4887216)									
ES2305239-061	BH_01_0.1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4881969)									
ES2305239-001	TP_P4_0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4881969) - continued									
ES2305239-001	TP_P4_0.1	EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2305239-041	TP_P7_0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4883471)									
ES2305239-055	SP01_0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4883471) - continued									
ES2305239-055	SP01_0.1	EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4887216)									
ES2305239-061	BH_01_0.1	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4881968)									
ES2305239-001	TP_P4_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4881968) - continued									
ES2305239-001	TP_P4_0.1	EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2305239-041	TP_P7_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4883470)									
ES2305239-055	SP01_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4883470) - continued									
ES2305239-055	SP01_0.1	EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4887215)									
ES2305239-061	BH_01_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4881967)									
ES2305239-001	TP_P4_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2305239-041	TP_P7_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4883469)									
ES2305239-055	SP01_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4884444)									
ES2305239-001	TP_P4_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2305239-031	TP_P5_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4887106)									
ES2305218-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2305218-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4887214)									
ES2305239-061	BH_01_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4881967)									
ES2305239-001	TP_P4_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2305239-041	TP_P7_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4883469)									
ES2305239-055	SP01_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4884444)									
ES2305239-001	TP_P4_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2305239-031	TP_P5_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4887106)									
ES2305218-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2305218-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4887214)									
ES2305239-061	BH_01_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 4884444)									
ES2305239-001	TP_P4_0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2305239-031	TP_P5_0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4884444) - continued									
ES2305239-031	TP_P5_0.1	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 4887106)									
ES2305218-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2305218-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4884115)									
ES2305011-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2305123-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4885425)									
ES2305096-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2305218-009	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4882181)									
ES2305123-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2305227-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4882181)									
ES2305123-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2305227-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4882181)									
ES2305123-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2305227-007	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	3	4	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	9	9	0.0	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4885158)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.7	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	92.9	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	109	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	105	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	108	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	95.6	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	97.6	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	90.6	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4888403)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	92.2	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	92.2	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	97.9	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.4	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	100	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	93.8	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	89.5	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	85.8	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4888405)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	95.2	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	100	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	96.9	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	103	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	101	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	96.4	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	93.3	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	88.4	66.0	133
EA002: pH 1:5 (Soils) (QCLot: 4885155)								
EA002: pH Value	----	----	pH Unit	----	4 pH Unit	101	98.8	101
				----	7 pH Unit	100	98.8	101
EA010: Conductivity (1:5) (QCLot: 4885156)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	100	92.0	108
ED007: Exchangeable Cations (QCLot: 4890595)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	104	75.8	120
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	100	74.9	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
ED007: Exchangeable Cations (QCLot: 4890595) - continued								
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	100	80.0	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	104	80.0	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
ED007: Exchangeable Sodium Percent	----	0.1	%	<0.1	----	----	----	----
ED040S: Soluble Major Anions (QCLot: 4885157)								
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	750 mg/kg	93.3	80.0	120
ED045G: Chloride by Discrete Analyser (QCLot: 4885154)								
ED045G: Chloride	16887-00-6	10	mg/kg	<10	250 mg/kg	95.0	75.0	125
				<10	5000 mg/kg	98.1	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4888402)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	94.6	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4888404)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	111	70.0	125
EP004: Organic Matter (QCLot: 4887105)								
EP004: Organic Matter	----	0.5	%	<0.5	2.53 %	86.2	82.0	98.0
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.46 %	87.0	81.0	99.0
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4881970)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	105	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4883472)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	80.2	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4887217)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	86.9	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 4881969)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	75.8	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.0	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.1	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	67.0	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4881969) - continued								
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	102	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	98.4	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	82.5	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4883471)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	78.8	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.5	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	83.6	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	94.3	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4887216)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	63.0	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4887216) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	93.8	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	102	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4881969)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	72.3	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	58.2	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.1	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	83.3	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.7	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.0	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	75.8	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	77.7	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.5	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4883471)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.3	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	58.6	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	72.0	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4883471) - continued								
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	81.8	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	85.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.5	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4887216)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	106	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	89.0	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	105	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	93.8	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.1	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	98.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.4	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	103	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.2	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4881968)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	108	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	111	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	117	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	114	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	115	75.0	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4881968) - continued								
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	91.0	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	114	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	114	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	99.8	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	109	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	101	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	109	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	101	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	111	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	112	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	102	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4883470)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.2	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	103	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	101	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	105	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	99.3	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	93.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	101	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	99.6	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	104	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	107	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	102	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	105	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	92.4	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.3	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	87.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	94.7	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4887215)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	91.5	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	102	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.9	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	101	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	91.9	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	100	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	100	74.0	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4887215) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	100	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	99.9	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	100	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	95.0	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	94.5	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	70.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	70.3	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	70.3	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4881967)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	99.1	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	97.6	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	97.9	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4883469)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	87.8	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	107	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	108	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4884444)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	103	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4887106)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	127	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4887214)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	92.4	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	99.4	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4881967)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	98.4	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	96.7	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	100	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4883469)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	98.0	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	107	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	110	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4884444)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	104	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4887106)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	128	68.4	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4887214)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	96.2	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	99.7	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	100	63.0	131
EP080: BTEXN (QCLot: 4884444)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	102	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	107	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.8	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	98.5	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	102	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	112	63.0	119
EP080: BTEXN (QCLot: 4887106)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	108	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	117	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	115	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	117	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	116	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	116	63.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 4884115)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.4	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.2	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.8	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.6	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.8	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.4	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4885425)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.9	77.0	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4882005)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	10 µg/L	81.0	68.9	113
EP068A: Organochlorine Pesticides (OC) (QCLot: 4882004)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	88.6	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	85.5	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	101	69.0	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4882004) - continued								
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	87.9	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	92.9	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	99.5	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	84.7	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	73.3	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	87.4	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	99.2	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	95.4	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	93.2	65.2	113
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	101	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	101	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	95.1	67.3	114
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	96.0	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	81.0	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	90.7	65.2	112
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	92.7	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	86.1	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	97.0	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4882004)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	103	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	106	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	34.5	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	89.1	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	92.4	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	99.2	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	106	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	111	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	100	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	97.5	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	97.7	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	85.7	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	# 112	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	89.6	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	108	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	100.0	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	102	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	89.4	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	99.4	51.6	128
EP075(SIM)A: Phenolic Compounds (QCLot: 4882002)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 4882002) - continued								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	32.9	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	61.6	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	56.6	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	52.9	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	66.7	48.0	100
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	49.4	49.0	99.0
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	67.8	53.0	105
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	68.6	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	64.7	53.0	99.0
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	68.6	50.0	106
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	72.6	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	66.0	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4882002)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.5	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	72.9	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.0	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.2	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	78.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	75.3	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	80.6	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	81.2	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	79.4	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	78.9	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	67.7	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	79.6	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	79.2	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	80.8	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	81.3	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	82.8	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4882003)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	78.4	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	77.1	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	108	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4882181)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	82.0	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4882003)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	77.7	53.9	95.5

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4882003) - continued								
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	78.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	84.0	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4882181)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	81.8	75.0	127
EP080: BTEXN (QCLot: 4882181)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	85.0	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	87.1	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	88.6	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	89.0	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	93.1	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	109	70.0	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4885158)							
ES2305239-043	TP_L6_0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	87.7	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	88.9	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	81.2	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	90.8	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.1	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	80.7	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	99.5	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4888403)							
ES2305218-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	99.5	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	106	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	108	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	111	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	107	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	107	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	108	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4888405)							
ES2305239-031	TP_P5_0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	91.6	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4888405) - continued							
ES2305239-031	TP_P5_0.1	EG005T: Cadmium	7440-43-9	50 mg/kg	102	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	92.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	104	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	101	66.0	133
ED045G: Chloride by Discrete Analyser (QCLot: 4885154)							
ES2305239-053	TP_L5_2.5	ED045G: Chloride	16887-00-6	250 mg/kg	122	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4888402)							
ES2305218-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	99.7	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4888404)							
ES2305239-031	TP_P5_0.1	EG035T: Mercury	7439-97-6	5 mg/kg	97.1	70.0	130
EP004: Organic Matter (QCLot: 4887105)							
ES2305239-044	TP_L6_0.5	EP004: Organic Matter	----	0.93 %	93.7	70.0	130
		EP004: Total Organic Carbon	----	0.54 %	94.3	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4881970)							
ES2305239-001	TP_P4_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4883472)							
ES2305239-055	SP01_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	116	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4887217)							
ES2305239-061	BH_01_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	93.3	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4881969)							
ES2305239-001	TP_P4_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	82.6	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	92.2	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	85.7	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	104	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	101	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	88.1	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4883471)							
ES2305239-055	SP01_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	95.0	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	99.3	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	72.4	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	100	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	101	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	105	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4887216)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4887216) - continued							
ES2305239-061	BH_01_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.7	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	94.7	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	99.7	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	109	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	102	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	78.9	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4881969)							
ES2305239-001	TP_P4_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	89.0	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	83.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	86.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	85.3	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	76.3	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4883471)							
ES2305239-055	SP01_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	95.2	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	93.7	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	82.7	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	96.7	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	78.1	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4887216)							
ES2305239-061	BH_01_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	97.5	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	90.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	102	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	96.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	89.7	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4881968)							
ES2305239-001	TP_P4_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	117	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	120	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4883470)							
ES2305239-055	SP01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	101	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	104	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4887215)							
ES2305239-061	BH_01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	87.2	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	105	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4881967)							
ES2305239-001	TP_P4_0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	103	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	112	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	124	52.0	132

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4883469)							
ES2305239-055	SP01_0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	91.4	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	101	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	109	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4884444)							
ES2305239-001	TP_P4_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	101	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4887106)							
ES2305218-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	85.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4887214)							
ES2305239-061	BH_01_0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	118	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	115	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	112	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4881967)							
ES2305239-001	TP_P4_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	99.4	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	118	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	127	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4883469)							
ES2305239-055	SP01_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	95.7	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	106	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	108	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4884444)							
ES2305239-001	TP_P4_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	100	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4887106)							
ES2305218-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	88.1	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4887214)							
ES2305239-061	BH_01_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	114	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	118	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	107	52.0	132
EP080: BTEXN (QCLot: 4884444)							
ES2305239-001	TP_P4_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	92.3	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	91.2	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.0	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	90.4	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.0	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	97.0	70.0	130
EP080: BTEXN (QCLot: 4887106)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4887106) - continued							
ES2305218-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	77.6	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	79.9	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	82.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	84.0	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	87.3	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	85.3	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4884115)							
ES2305011-005	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	122	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	112	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	108	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	115	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	108	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	111	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	116	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4885425)							
ES2305096-004	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4882181)							
ES2305123-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	74.3	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4882181)							
ES2305123-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	76.6	70.0	130
EP080: BTEXN (QCLot: 4882181)							
ES2305123-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	85.6	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	82.4	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	86.6	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	85.4	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	90.1	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	98.3	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2305239**	Page	: 1 of 14
Client	: **EP RISK MANAGEMENT**	Laboratory	: Environmental Division Sydney
Contact	: MR Mathew Cheshire	Telephone	: +61-2-8784 8555
Project	: EP3045	Date Samples Received	: 17-Feb-2023
Site	: ----	Issue Date	: 24-Feb-2023
Sampler	: Mathew Cheshire	No. of samples received	: 65
Order number	: EP3045	No. of samples analysed	: 27

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	ES2305239--043	TP_L6_0.1	**Iron**	7439-89-6	87.1 %	0% - 20%	**RPD exceeds LOR based limits**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP068B: Organophosphorus Pesticides (OP)	QC-4882004-002	----	**Chlorfenvinphos**	470-90-6	112 %	71.8-110%	**Recovery greater than upper control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	4	41	9.76	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method	***Sample Date***	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)		***Date extracted***	Due for extraction	Evaluation	***Date analysed***	Due for analysis	Evaluation

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved (EA001)							
TP_L6_0.5	**16-Feb-2023**	**23-Feb-2023**	23-Feb-2023	✓	**23-Feb-2023**	23-Feb-2023	✓
EA002: pH 1:5 (Soils)							
Soil Glass Jar - Unpreserved (EA002)							
TP_L6_0.5, TP_L2_2.4-2.6, TP_L4_2.5, TP_L5_2.5, TP_L6_2.5-3.0	**16-Feb-2023**	**22-Feb-2023**	23-Feb-2023	✓	**22-Feb-2023**	22-Feb-2023	✓
EA010: Conductivity (1:5)							
Soil Glass Jar - Unpreserved (EA010)							
TP_L6_0.5, TP_L2_2.4-2.6, TP_L4_2.5, TP_L5_2.5, TP_L6_2.5-3.0	**16-Feb-2023**	**22-Feb-2023**	23-Feb-2023	✓	**22-Feb-2023**	22-Mar-2023	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
TP_L6_0.5, TP_L2_2.4-2.6, TP_L4_2.5, TP_L5_2.5, TP_L6_2.5-3.0	**16-Feb-2023**	**----**	----	----	**21-Feb-2023**	02-Mar-2023	✓
Soil Glass Jar - Unpreserved (EA055)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, SP01_0.1, SP02_0.1, SP03_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**----**	----	----	**22-Feb-2023**	02-Mar-2023	✓
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150H)							
TP_L6_0.5	**16-Feb-2023**	**----**	----	----	**23-Feb-2023**	15-Aug-2023	✓
EA152: Soil Particle Density							
Snap Lock Bag (EA152)							
TP_L6_0.5	**16-Feb-2023**	**----**	----	----	**23-Feb-2023**	15-Aug-2023	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
TP_P3_0.1, TP_L7_0.1, TP_P7_0.1, TP_L6_0.1, TP_P6_0.1	**16-Feb-2023**	**----**	----	----	**20-Feb-2023**	15-Aug-2023	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
TP_P3_0.1, TP_L7_0.1, TP_P7_0.1, TP_L6_0.1, TP_P6_0.1	**16-Feb-2023**	**----**	----	----	**20-Feb-2023**	15-Aug-2023	✓
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007)							
TP_L6_0.1, TP_L6_0.5	**16-Feb-2023**	**23-Feb-2023**	16-Mar-2023	✓	**23-Feb-2023**	16-Mar-2023	✓
ED040S: Soluble Major Anions							
Soil Glass Jar - Unpreserved (ED040S)							
TP_L2_2.4-2.6, TP_L4_2.5, TP_L5_2.5, TP_L6_2.5-3.0	**16-Feb-2023**	**22-Feb-2023**	16-Mar-2023	✓	**22-Feb-2023**	22-Mar-2023	✓
ED045G: Chloride by Discrete Analyser							
Soil Glass Jar - Unpreserved (ED045G)							
TP_L2_2.4-2.6, TP_L4_2.5, TP_L5_2.5, TP_L6_2.5-3.0	**16-Feb-2023**	**22-Feb-2023**	16-Mar-2023	✓	**22-Feb-2023**	22-Mar-2023	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
TP_L6_0.5	**16-Feb-2023**	**21-Feb-2023**	15-Aug-2023	✓	**22-Feb-2023**	15-Aug-2023	✓
Soil Glass Jar - Unpreserved (EG005T)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, SP01_0.1, SP02_0.1, SP03_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	15-Aug-2023	✓	**22-Feb-2023**	15-Aug-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, SP01_0.1, SP02_0.1, SP03_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	16-Mar-2023	✓	**23-Feb-2023**	16-Mar-2023	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004)							
TP_L6_0.5	**16-Feb-2023**	**23-Feb-2023**	16-Mar-2023	✓	**23-Feb-2023**	16-Mar-2023	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP066)							
SP01_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	04-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP066)							
SP02_0.1, SP03_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	04-Apr-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, BH_01_0.1	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP068)							
TP_P6_0.1, TP_L2_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP068)							
SP01_0.1, SP02_0.1, SP03_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	04-Apr-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, BH_01_0.1	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP068)							
TP_P6_0.1, TP_L2_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP068)							
SP01_0.1, SP02_0.1, SP03_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	04-Apr-2023	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SP01_0.1, SP02_0.1, SP03_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	04-Apr-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, SP01_0.1, SP02_0.1, SP03_0.1, QC01	**16-Feb-2023**	**21-Feb-2023**	02-Mar-2023	✓	**22-Feb-2023**	02-Mar-2023	✓
Soil Glass Jar - Unpreserved (EP071)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP071)							
SP01_0.1, SP02_0.1, SP03_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	04-Apr-2023	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, SP01_0.1, SP02_0.1, SP03_0.1, QC01	**16-Feb-2023**	**21-Feb-2023**	02-Mar-2023	✓	**22-Feb-2023**	02-Mar-2023	✓
Soil Glass Jar - Unpreserved (EP071)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, BH_01_0.1, QC01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	03-Apr-2023	✓
Soil Glass Jar - Unpreserved (EP071)							
SP01_0.1, SP02_0.1, SP03_0.1	**16-Feb-2023**	**23-Feb-2023**	02-Mar-2023	✓	**24-Feb-2023**	04-Apr-2023	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
TP_P4_0.1, TP_L3_0.1, TP_P3_0.1, TP_P2_0.1, TP_L5_0.1, TP_L4_0.1, TP_L7_0.1, TP_P7_0.1, TP_P6_0.1, TP_L2_0.1, SP01_0.1, SP02_0.1, SP03_0.1, QC01	**16-Feb-2023**	**21-Feb-2023**	02-Mar-2023	✓	**22-Feb-2023**	02-Mar-2023	✓
Soil Glass Jar - Unpreserved (EP080)							
BH_01_0.1	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**23-Feb-2023**	02-Mar-2023	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RW01	**16-Feb-2023**	**21-Feb-2023**	15-Aug-2023	✓	**21-Feb-2023**	15-Aug-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RW01	**16-Feb-2023**	**----**	----	----	**24-Feb-2023**	16-Mar-2023	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**23-Feb-2023**	01-Apr-2023	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**23-Feb-2023**	01-Apr-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068)							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**23-Feb-2023**	01-Apr-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**23-Feb-2023**	01-Apr-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**23-Feb-2023**	01-Apr-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**24-Feb-2023**	01-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
TRIP BLANK	**13-Feb-2023**	**22-Feb-2023**	27-Feb-2023	✓	**22-Feb-2023**	27-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
RW01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**22-Feb-2023**	02-Mar-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
RW01	**16-Feb-2023**	**20-Feb-2023**	23-Feb-2023	✓	**24-Feb-2023**	01-Apr-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
TRIP BLANK	**13-Feb-2023**	**22-Feb-2023**	27-Feb-2023	✓	**22-Feb-2023**	27-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
RW01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**22-Feb-2023**	02-Mar-2023	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
TRIP BLANK, TRIP SPIKE	**13-Feb-2023**	**22-Feb-2023**	27-Feb-2023	✓	**22-Feb-2023**	27-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
RW01	**16-Feb-2023**	**22-Feb-2023**	02-Mar-2023	✓	**22-Feb-2023**	02-Mar-2023	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Chloride Soluble By Discrete Analyser	ED045G	2	4	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Anions - Soluble	ED040S	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	4	41	**9.76**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	21	**19.05**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	20	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	4	20	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	38	**13.16**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	21	**19.05**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chloride Soluble By Discrete Analyser	ED045G	2	4	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Anions - Soluble	ED040S	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	21	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	20	**15.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	2	7	**28.57**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	20	**15.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	38	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	21	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride Soluble By Discrete Analyser	ED045G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Anions - Soluble	ED040S	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	21	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	20	**15.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Polychlorinated Biphenyls (PCB)	EP066	3	20	**15.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	38	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	21	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride Soluble By Discrete Analyser	ED045G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	21	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	20	**15.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	20	**15.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	38	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	21	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	9	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	7	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	7	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl2 extract	EA001	SOIL	In house: Referenced to Rayment and Lyons 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Electrical Conductivity (1:5)	EA010	SOIL	In house: Referenced to Rayment and Lyons 3A1 and APHA 2510. Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Resistivity (1:5)	EA080	SOIL	In house: Calculated from Electrical Conductivity
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1: Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Corrosion Classification for Steel and Concrete Piles	* EA167	SOIL	In house: Exposure classification is determined according to Australian Standard AS2159-2009.
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM with Confirmation of Identification by AS 4964 - Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Major Anions - Soluble	ED040S	SOIL	In house: Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	In house: Referenced to APHA APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM Schedule B(3).
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Lyons method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Fadi Soro

From: Helen Simpson
Sent: Monday, 20 February 2023 12:57 PM
To: Phoung Tran; Ramsen Khoshaba; Fadi Soro
Cc: Jason Dighton
Subject: RE: ES2305239, Secondary lab

Please arrange for QC02 to be forwarded to Eurofins.

@Phoung Tran please add SRN comment and resend SRN

Kind Regards,

6.0
2:27pm
20/2
Received
Courier
Chill

#966186

right solutions.
right partner.

Helen Simpson
Sample Receipt Coordinator, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8535
Helen.Simpson@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Jason Dighton <jason.dighton@ALSGlobal.com>
Sent: Monday, 20 February 2023 11:56 AM
To: Phoung Tran <phoung.tran@alsglobal.com>
Cc: Helen Simpson <helen.simpson@alsglobal.com>
Subject: ES2305239, Secondary lab

Hi Phoung!

Please see below! QC is to go to Eurofins 😊

Best regards,

Jason Dighton
Client Services Officer, Environmental
Sydney, NSW

right solutions.
right partner.

alsglobal.com

From: Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Sent: Monday, 20 February 2023 11:51 AM
To: Jason Dighton <jason.dighton@ALSGlobal.com>
Subject: [EXTERNAL] - RE: ALS Workorder ES2305239, Project EP3045

Hey Jason,

Eurofins will be fine.

Cheers,

Mathew Cheshire

Graduate Environmental Scientist
M 0431165533 | E Mathew.Cheshire@eprisk.com.au

View my profile on LinkedIn

EP Risk Management Pty Ltd | ABN 81 147 147 591
3/19 Bolton Street | Newcastle NSW 2300
T +61240482845 | W eprisk.com.au

EP RISK | NEWCASTLE SYDNEY MELBOURNE

From: Jason Dighton <jason.dighton@ALSGlobal.com>
Sent: Monday, 20 February 2023 10:53 AM
To: Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Subject: ALS Workorder ES2305239, Project EP3045

Good Morning Mathew,

I hope you had a great weekend!

Regarding the aforementioned workorder, would you be able to advise which secondary lab to forward analysis on to? 😊

Best regards,

right solutions.
right partner.

Jason Dighton
Client Services Officer, Environmental
Sydney, NSW

D: +61 2 8784 8555
D: +61 2 8784 8609
Jason.Dighton@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

EP3045

CHAIN OF CUSTODY

CLIENT:	EP Risk	TURNAROUND REQUIREMENTS:	☑ Standard TAT (List due date).
OFFICE	3/19 Newcastle East		☐ Non-standard or urgent TAT (List due date):
PROJECT:	EP3045	ALS QUOTE NO.:	STBQ-Z-10-16
ORDER NUMBER:	EP3045		SY-497-2023
PROJECT MANAGER:	Mathew	CONTACT PH:	0431655533
SAMPLER:	Mathew	SAMPLER MOBILE:	0431655533
COC emailed to ALS?	YES / (NO)	EDD FORMAT (or default):	ESdat
Email Reports to (will default to PM if no other addresses are listed):	Mathew.Crothers@eprisk.com.au		
Email Invoice to (will default to PM if no other addresses are listed):	accounts@eprisk.com.au		

COC SEQUENCE NUMBER (Circle): 1 2 3 4 5 6 7 — 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	(N/A)
Ice bricks / frozen ice packs present upon receipt?	(Yes)	No	N/A
Random Sample Temperature on Receipt	3.6		
Other comment:			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME: 17/2/23	DATE/TIME: 17.2.23 5:41	DATE/TIME: 17.2.23 5pm	DATE/TIME: 17/2/23 1945

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)						ADDITIONAL INFORMATION
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE	TOTAL BOTTLES	S-16	EA200F	Heavy Metals incl Hg, Cr(VI), Fe	W-19		HOLD	
1	TP-P4_0.1	16/2/23	S	Jar	1	X						
2	TP-P4_0.5		S		1						X	
3	TP-P4_1.0		S		1						X	
4	TP-P4_2.0		S		1						X	
5	TP-L3_0.1		S	Jar	1	X						
6	TP-L3_0.5		S	Jar	1						X	
7	TP-L3_1.0		S	Jar	1						X	
8	TP-L3_2.0		S	Jar	1						X	
9	TP-P3_0.1		S	Jar/Bag	2	X	X					
10	TP-P3_0.5		S	Jar	1						X	
11	TP-P3_1.0		S		1						X	
12	TP-P3_2.0		S		1						X	
13	TP-P2_0.1		S		1	X						
14	TP-P2_0.5		S		1						X	
15	TP-P2_1.0		S		1						X	
16	TP-P2_2.0		S		1						X	
17	TP-L1_0.1		S		1	X						
18	TP-L1_0.5		S		1						X	
19	TP-L1_1.0		S		1						X	
20	TP-L1_2.0		S		1						X	
21	TP-P1_0.1		S		1	X						
22	TP-P1_0.5		S		1						X	
23	TP-P1_1.0		S		1						X	
24	TP-P1_2.0		S		1						X	
					TOTAL							

Water Container Codes: [illegible] = Nitric Preserved Plastic; [illegible]

LAB OF ORIGIN: NEWCASTLE

ASB@EN Tray SP143

Environmental Division Sydney

Work Order Reference

ES2305239

Telephone [illegible]

CHAIN OF CUSTODY

ALS Laboratory: please tick →

CLIENT:	EP RISK MANAGEMENT PTY LTD	TURNAROUND REQUIREMENTS	☐ Standard TAT (List due date):		
OFFICE:	NEWCASTLE		☐ Non Standard or urgent TAT (List due date):		
PROJECT:		ALS QUOTE NO.:		COC SEQUENCE NUMBER (Circle) COC: 1 (2) 3 4 5 6 7	
ORDER NUMBER:				OF: 1 2 3 (4) 5 6 7	
PROJECT MANAGER:		CONTACT PH:			
SAMPLER:		SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:	
COC emailed to ALS? (YES / NO)		EDD FORMAT (or default):	DATE/TIME:	DATE/TIME: 17-2-23 841	
Email Reports to (will default to PM if no other addresses are listed):					
Email Invoice to (will default to PM if no other addresses are listed):					
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:					

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:			

RELINQUISHED BY:	RECEIVED BY:
[signature]	[signature]
DATE/TIME: 17 2 23 5pm	DATE/TIME: 17/2/23 (9:41)

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES			Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE	TOTAL BOTTLES	S-16	EA200F	NEPM PH, CEC, Clay TOC, Fe	
25	TP-P6_1.0	16/2/23	S	Jar	1				
26	TP-P6_2.0	↓	↓	↓	1				
27	TP-L5_0.1	↓	↓	↓	1	X			
28	TP-L5_0.5	↓	↓	↓	1				
29	TP-L5_1.0	↓	↓	↓	1				
30	TP_L5_2.0	↓	↓	↓	1				
31	TP-P5_0.1	↓	↓	↓	1	X			
32	TP_P5_0.5	↓	↓	↓	1				
33	TP-P5_1.0	↓	↓	↓	1				
34	TP-P5_2.0	↓	↓	↓	1				
35	TP-L4-0.1	↓	↓	↓	1	X			
36	TP-L4_0.5	↓	↓	↓	1				
37	TP_L4_1.0	↓	↓	↓	1				
38	TP-L4_2.0	↓	↓	↓	1				

LAB OF ORIGIN: NEWCASTLE

Water Container Codes: [illegible]

CHAIN OF CUSTODY

CLIENT: EP Risk	TURNAROUND REQUIREMENTS: ☐ Standard TAT (List due date).	FOR LABORATORY USE ONLY (Circle)	
OFFICE:		Custody Seal Intact?	Yes / No / N/A
PROJECT:	ALS QUOTE NO.: SYBQ-21-16	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER:	COC SEQUENCE NUMBER (Circle): 1 2 (3) 4 5 6 7 8 9 10	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER:	CONTACT PH: 1 2 3 (4) 5 6 7 8 9 10	Other comment:	
SAMPLER:	SAMPLER MOBILE:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	DATE/TIME: 17/2/23 8:11	DATE/TIME: 17/2/23 5pm
Email Reports to (will default to PM if no other addresses are added):		RELINQUISHED BY:	RECEIVED BY:
Email Invoice to (will default to PM if no other addresses are added):		DATE/TIME:	DATE/TIME: 17/2/23 1945

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS (MATRIX: Solid(S) Water(W))			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed in brackets)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	EA200F	NEPM pH, CEC, clay %C	CORR-7 Aggressivity				HOLD	Send to Secondary Lab (S-16)
39	TP-L7_0.1	16/2/23	S	Jar/Bag	2	X	X							
40	TP-L7_0.5		S	Jar	1								X	
41	TP-P7-0.1		S	Jar/Bag	2	X	X							
42	TP-P7_0.5		S	Jar	1								X	
43	TP-L6-0.1		S	Jar/Bag/Bag	3		X	X						
44	TP-L6-0.5		S	Jar/Bag	2			X						
45	TP-P6-0.1		S	Jar/Bag	2	X	X							
46	TP-P6_0.5		S	Jar	1								X	
47	TP-L2_0.1		S	Jar	1	X							X	
48	TP-L2_0.5		S	Jar	1								X	
49	TP-L2_1.0		S	Jar	1								X	
50	TP-L2_2.0		S	Jar	1								X	
51	TP-L2_2.4-2.6		S	Jar	1				X					
52	TP-L4_2.5		S	Jar	1				X					
53	TP-L5_2.5		S	Jar	1				X					
54	TP-L6_2.5-3.0		S	Jar	1				X					
55	SP01_0.1		S	Jar [redacted]	1								X	
56	SP01_1.0		S	Jar	1								X	
57	SP02_0.1		S	Jar/Bag	2								X	
58	SP02_1.0		S	Jar	1								X	
59	SP03_0.1		S	Jar	1								X	
60	SP03_0.5		S	Jar	1								X	
61	BH01_0.1		S	Jar/Bag	2								X	
62	QC01		S	Jar	1	X								
63	QC02													X
				TOTAL										

Water Container Codes: [illegible] S = Sodium

LAB DESCRIPTION: NEWCASTLE

CHAIN OF CUSTODY

CLIENT: EPRisk	TURNAROUND REQUIREMENTS		FOR LABORATORY USE ONLY (Circle)
OFFICE:			Custody Seal intact? Yes No N/A
PROJECT:	ALS QUOTE NO	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 (4) 5 6 7	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		OF: 1 2 3 (4) 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER:	CONTACT PH:		Other comment
SAMPLER:	SAMPLER MOBILE:		
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default)		
Email Reports to (will default to PM if no other addresses are listed)			
Email Invoice to (will default to PM if no other addresses are listed)			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
	[signature]	[signature]	[signature]
DATE/TIME:	DATE/TIME: 17 2 23 8:41	DATE/TIME: 17 2 23 5pm	DATE/TIME: 17/2/23 19:45

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES							Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE	TOTAL BOTTLES	S-16	EA2...	W-19	TRH(F) BTEXN			HOLD	
64	RW01	16/2/23	W	Bottles	5			X					
65	TRP/BLK	16/2/23							X				
					TOTAL								

LAB OF ORIGIN: NEWCASTLE

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd

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Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	EP Risk Management (NSW)
Contact name:	Mathew Cheshire
Project name:	EP3045
Project ID:	EP3045
Turnaround time:	5 Day
Date/Time received	Feb 20, 2023 3:30 PM
Eurofins reference	966184

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✗	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
✗	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Quinn Raw on phone : or by email: QuinnRaw@eurofins.com

Results will be delivered electronically via email to Mathew Cheshire - mathew.cheshire@eprisk.com.au.

Note: A copy of these results will also be delivered to the general EP Risk Management (NSW) email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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6 Monterey Road
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179 Magowar Road
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NATA# 1261 Site# 18217

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Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
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Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

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NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
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Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: EP Risk Management (NSW)
Address: Level 4 73 Walker St
North Sydney
NSW 2060

Project Name: EP3045
Project ID: EP3045

Order No.:
Report #: 966184
Phone: 02 99225021
Fax:

Received: Feb 20, 2023 3:30 PM
Due: Feb 27, 2023
Priority: 5 Day
Contact Name: Mathew Cheshire

Eurofins Analytical Services Manager : Quinn Raw

Sample Detail						Eurofins Suite B15	Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC02	Feb 16, 2023		Soil	S23-Fe0053328	X	X	X
Test Counts						1	1	1

EP Risk Management (NSW)
Level 4 73 Walker St
North Sydney
NSW 2060

Attention: **Mathew Cheshire**

Report **966184-S**
Project name EP3045
Project ID EP3045
Received Date Feb 20, 2023

Client Sample ID			**QC02**
Sample Matrix			**Soil**
Eurofins Sample No.			**S23-Fe0053328**
Date Sampled			**Feb 16, 2023**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	[Q09]INT
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5

Client Sample ID			QC02
Sample Matrix			Soil
Eurofins Sample No.			S23-Fe0053328
Date Sampled			Feb 16, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82
p-Terphenyl-d14 (surr.)	1	%	93
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05
a-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	56
Tetrachloro-m-xylene (surr.)	1	%	85
Organophosphorus Pesticides			
Azinphos-methyl	0.2	mg/kg	< 0.2
Bolstar	0.2	mg/kg	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2
Coumaphos	2	mg/kg	< 2
Demeton-S	0.2	mg/kg	< 0.2
Demeton-O	0.2	mg/kg	< 0.2
Diazinon	0.2	mg/kg	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2

Client Sample ID			QC02
Sample Matrix			**Soil**
Eurofins Sample No.			**S23-Fe0053328**
Date Sampled			**Feb 16, 2023**
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Dimethoate	0.2	mg/kg	< 0.2
Disulfoton	0.2	mg/kg	< 0.2
EPN	0.2	mg/kg	< 0.2
Ethion	0.2	mg/kg	< 0.2
Ethoprop	0.2	mg/kg	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2
Fenthion	0.2	mg/kg	< 0.2
Malathion	0.2	mg/kg	< 0.2
Merphos	0.2	mg/kg	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2
Mevinphos	0.2	mg/kg	< 0.2
Monocrotophos	2	mg/kg	< 2
Naled	0.2	mg/kg	< 0.2
Omethoate	2	mg/kg	< 2
Phorate	0.2	mg/kg	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2
Ronnel	0.2	mg/kg	< 0.2
Terbufos	0.2	mg/kg	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2
Tokuthion	0.2	mg/kg	< 0.2
Trichloronate	0.2	mg/kg	< 0.2
Triphenylphosphate (surr.)	1	%	66
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchlorendate (surr.)	1	%	56
Tetrachloro-m-xylene (surr.)	1	%	85
Heavy Metals			
Arsenic	2	mg/kg	17
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	30
Copper	5	mg/kg	17
Lead	5	mg/kg	28
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	130
Sample Properties			
% Moisture	1	%	10

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Feb 27, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Feb 27, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Feb 27, 2023	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Feb 23, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: EP Risk Management (NSW)
Address: Level 4 73 Walker St
North Sydney
NSW 2060

Project Name: EP3045
Project ID: EP3045

Order No.:
Report #: 966184
Phone: 02 99225021
Fax:

Received: Feb 20, 2023 3:30 PM
Due: Feb 27, 2023
Priority: 5 Day
Contact Name: Mathew Cheshire

Eurofins Analytical Services Manager : Quinn Raw

Sample Detail						Eurofins Suite B15	Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC02	Feb 16, 2023		Soil	S23-Fe0053328	X	X	X
Test Counts						1	1	1

eurofins | Environment Testing

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	91			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	83			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	100			70-130	Pass	
Ethylbenzene	%	95			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total*	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	118			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	127			70-130	Pass	
Acenaphthylene	%	123			70-130	Pass	
Anthracene	%	124			70-130	Pass	
Benz(a)anthracene	%	108			70-130	Pass	
Benzo(a)pyrene	%	111			70-130	Pass	
Benzo(b&j)fluoranthene	%	108			70-130	Pass	
Benzo(g.h.i)perylene	%	99			70-130	Pass	
Benzo(k)fluoranthene	%	119			70-130	Pass	
Chrysene	%	112			70-130	Pass	
Dibenz(a.h)anthracene	%	99			70-130	Pass	
Fluoranthene	%	127			70-130	Pass	
Fluorene	%	129			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	102			70-130	Pass	
Naphthalene	%	126			70-130	Pass	
Phenanthrene	%	112			70-130	Pass	
Pyrene	%	127			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	108			70-130	Pass	
4.4'-DDD	%	116			70-130	Pass	
4.4'-DDE	%	115			70-130	Pass	
4.4'-DDT	%	113			70-130	Pass	
a-HCH	%	110			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	%	109			70-130	Pass	
b-HCH	%	118			70-130	Pass	
d-HCH	%	117			70-130	Pass	
Dieldrin	%	107			70-130	Pass	
Endosulfan I	%	113			70-130	Pass	
Endosulfan II	%	105			70-130	Pass	
Endosulfan sulphate	%	108			70-130	Pass	
Endrin	%	120			70-130	Pass	
Endrin aldehyde	%	103			70-130	Pass	
Endrin ketone	%	105			70-130	Pass	
g-HCH (Lindane)	%	118			70-130	Pass	
Heptachlor	%	130			70-130	Pass	
Heptachlor epoxide	%	106			70-130	Pass	
Hexachlorobenzene	%	113			70-130	Pass	
Methoxychlor	%	101			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	128			70-130	Pass	
Dimethoate	%	124			70-130	Pass	
Ethion	%	108			70-130	Pass	
Fenitrothion	%	106			70-130	Pass	
Methyl parathion	%	117			70-130	Pass	
Mevinphos	%	125			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	115			70-130	Pass	
Aroclor-1260	%	112			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	104			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	108			80-120	Pass	
Lead	%	112			80-120	Pass	
Mercury	%	119			80-120	Pass	
Nickel	%	108			80-120	Pass	
Zinc	%	105			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Fe0053795	NCP	%	96			70-130	Pass	
TRH C10-C14	S23-Fe0062016	NCP	%	79			70-130	Pass	
TRH C6-C10	S23-Fe0053795	NCP	%	95			70-130	Pass	
TRH >C10-C16	S23-Fe0062016	NCP	%	71			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Fe0053795	NCP	%	110			70-130	Pass	
Toluene	S23-Fe0053795	NCP	%	102			70-130	Pass	
Ethylbenzene	S23-Fe0053795	NCP	%	99			70-130	Pass	
m&p-Xylenes	S23-Fe0053795	NCP	%	104			70-130	Pass	
o-Xylene	S23-Fe0053795	NCP	%	106			70-130	Pass	
Xylenes - Total*	S23-Fe0053795	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	S23-Fe0053795	NCP	%	120			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Fe0062003	NCP	%	123			70-130	Pass	
Acenaphthylene	S23-Fe0062003	NCP	%	120			70-130	Pass	
Anthracene	S23-Fe0062003	NCP	%	117			70-130	Pass	
Benz(a)anthracene	S23-Fe0062003	NCP	%	130			70-130	Pass	
Benzo(a)pyrene	S23-Fe0055883	NCP	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Fe0055883	NCP	%	98			70-130	Pass	
Benzo(g.h.i)perylene	S23-Fe0055883	NCP	%	89			70-130	Pass	
Benzo(k)fluoranthene	S23-Fe0055883	NCP	%	109			70-130	Pass	
Chrysene	S23-Fe0055883	NCP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	S23-Fe0055883	NCP	%	88			70-130	Pass	
Fluoranthene	S23-Fe0062003	NCP	%	123			70-130	Pass	
Fluorene	S23-Fe0062003	NCP	%	125			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S23-Fe0055883	NCP	%	90			70-130	Pass	
Naphthalene	S23-Fe0062003	NCP	%	121			70-130	Pass	
Phenanthrene	S23-Fe0062003	NCP	%	128			70-130	Pass	
Pyrene	S23-Fe0062003	NCP	%	123			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S23-Fe0053328	CP	%	88			70-130	Pass	
Ethion	S23-Fe0053328	CP	%	70			70-130	Pass	
Fenitrothion	S23-Fe0053328	CP	%	79			70-130	Pass	
Methyl parathion	S23-Fe0053328	CP	%	88			70-130	Pass	
Mevinphos	S23-Fe0053328	CP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-Fe0043874	NCP	%	91			75-125	Pass	
Cadmium	N23-Fe0043874	NCP	%	99			75-125	Pass	
Chromium	N23-Fe0043874	NCP	%	99			75-125	Pass	
Copper	N23-Fe0043874	NCP	%	97			75-125	Pass	
Lead	N23-Fe0043874	NCP	%	101			75-125	Pass	
Mercury	N23-Fe0043874	NCP	%	108			75-125	Pass	
Nickel	N23-Fe0043874	NCP	%	98			75-125	Pass	
Zinc	N23-Fe0043874	NCP	%	95			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Fe0053483	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Fe0060784	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Fe0060784	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Fe0060784	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S23-Fe0053969	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-Fe0060784	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Fe0060784	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Fe0060784	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Fe0053485	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Fe0053485	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Fe0053485	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Fe0053485	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Fe0053485	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Fe0053485	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Fe0053485	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S23-Fe0062004	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S23-Fe0062004	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S23-Fe0062004	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N23-Fe0050012	NCP	mg/kg	4.8	5.0	3.2	30%	Pass	
Cadmium	N23-Fe0050012	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	N23-Fe0050012	NCP	mg/kg	69	76	9.5	30%	Pass	
Copper	N23-Fe0050012	NCP	mg/kg	140	150	8.3	30%	Pass	
Lead	N23-Fe0050012	NCP	mg/kg	1700	1900	7.4	30%	Pass	
Mercury	N23-Fe0050012	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	N23-Fe0050012	NCP	mg/kg	35	39	10	30%	Pass	
Zinc	N23-Fe0050012	NCP	mg/kg	8400	9300	11	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Fe0053366	NCP	%	5.2	5.6	8.2	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC

Authorised by:

Quinn Raw	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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