



Preliminary Site Investigation

559 Anambah Road, Gosforth, NSW 2320

Prepared for: Thirdi Anambah Pty Ltd
EP3627.001 v1 22 July 2024



Preliminary Site Investigation

559 Anambah Road, Gosforth, NSW 2320

Thirdi Anambah Pty Ltd
53 Hume Street,
Crows Nest, NSW 2065
Via email: jason@varaconsulting.com.au

Attention: Jason McIntosh

29 August 2024

Our Ref: EP3627.001

LIMITATIONS

This Preliminary Site Investigation was conducted on the behalf of Thirdi Anambah Pty Ltd for the purpose/s stated in **Section 1**.

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Brisbane

310 Edward Street
Brisbane QLD 4000
T 07 3506 0233

W www.eprisk.com.au

Newcastle

3/19 Bolton Street
Newcastle NSW 2300
T 02 4048 2845

Sydney

L13, 80 Mount Street
North Sydney NSW 2060
T 02 9922 5021

Melbourne

Unit 22/1 Ricketts Road
Mount Waverley VIC 3149
T 03 7504 3610

ABN 81 147 147 591

Executive Summary

Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by Thirdi Anambah Pty Ltd (Thirdi) to undertake a Preliminary Site Investigation (PSI) for a property located at 559 Anambah Road, Gosforth, New South Wales (NSW) (the Site).

The Project is for a Concept Development Application (CDA) seeking concept approval for the staged development of the concept master plan, and for which detailed proposals for the Site or for separate parts of the site are to be subject of subsequent Development Applications (DAs), apart from stage 1.

The masterplan creates a new urban subdivision within the Anambah Urban Release Area accommodating a mix of housing types with approximately 900 residential lots, and incorporates open space, roads, pedestrian networks, utilities and services, intersection upgrades and drainage infrastructure.

The application includes a development application for stage 1, which is made up of approximately 240 lots. This stage includes the subdivision of the land, construction of the lots including roads, services, bulk earth works and dedication of reserves. The application includes an intersection to provide access into the development via Anambah Road, together with an emergency flood access to be constructed via the unformed River Road.

It is understood the client requires a PSI for a development application approval for a proposed low density residential development as required in State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021.

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 residential land use.

Summary of Findings

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

- Based on the review of the historical information, the Site had been cleared and used as farmland / grazing land.
- As of 16th April 2024, surrounding land uses mostly comprised rural residential lots.
- The refined CSM identified two main Areas of Environmental Concern (AEC):
 - AEC 1 - Rural agricultural land use.
 - AEC 2 – Potential fly tipping / uncontrolled filling
- The Assessment consisted of the advancement of 40 test pits to a maximum depth of 4.0 metres below ground level (m BGL).
- In general, the subsurface conditions comprised:
 - TOPSOIL: Silty CLAY, low to medium plasticity, black to grey.
 - RESIDUAL SOIL: Silty CLAY, medium to plasticity, grey to grey-brown, fine to coarse grained sand.
 - EXTREMELY WEATHERED ROCK: SANDSTONE, recovered as sandy CLAY, medium to high plasticity, yellow-brown; and SANDSTONE, recovered as clayey Gravelly SAND, fine to coarse grained sand, dark brown, low plasticity, dry.

- There were no exceedances to the adopted health or ecological criteria in all analytical soil samples across the Site. No fill was identified in the sampling locations across the Site with the potential for offsite migration of contaminants considered to be low. The PSI met the adopted data quality objectives and is therefore considered sufficient for the purposes of assessing contamination related to historical land use.
- Overall, based on this assessment and the conceptual site model for the proposed development there are no complete source-pathway-receptor linkages within these AECs.

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 and is suitable for residential land use, subject to the development and implementation of an unexpected finds protocol during redevelopment.

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1 Introduction

EP Risk Management Pty Ltd (EP Risk) was engaged by Thirdi Anambah Pty Ltd (Thirdi) to undertake a Preliminary Site Investigation (PSI) for a property located at 559 Anambah Road, Gosforth, New South Wales (NSW) (the Site). It is understood the client requires a PSI for a development application approval for a proposed low density residential development as required in State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021.

1.1 Site Identification

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

Table 1 – Site Identification	
Item	Description
Address	559 Anambah Road, Gosforth, NSW 2320 (Figure 1).
Legal description	The Site is legally described as Lot 55 in deposited plan (DP) 874170 and Part Lot 177 in DP 874171.
Approximate Area	Approximately 69 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 Project is for a Concept Development Application (CDA) seeking concept approval for the staged development of the concept master plan, and for which detailed proposals for the Site or for separate parts of the site are to be subject of subsequent Development Applications (DAs), apart from stage 1.

The masterplan creates a new urban subdivision within the Anambah Urban Release Area accommodating a mix of housing types with approximately 900 residential lots, and incorporates open space, roads, pedestrian networks, utilities and services, intersection upgrades and drainage infrastructure.

The application includes a development application for stage 1, which is made up of approximately 240 lots. This stage includes the subdivision of the land, construction of the lots including roads, services, bulk earth works and dedication of reserves. The application includes an intersection to provide access into the development via Anambah Road, together with an emergency flood access to be constructed via the unformed River Road.

A layout showing the masterplan of the Proposed Development is shown in **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

Based upon a review of the historical information, EP Risk proposed the following scope of work, which was based upon being undertaken in conjunction with the Proposal for a Geotechnical Investigation prepared by EP Risk¹:

- Prepare all the work health and safety documentation and procure before you dig information available for the Site.
- Undertake a desktop site history review including:
 - Aerial photographs.
 - Historical Site proprietors search (based upon information provided in Geotech solutions report);
 - Regulatory searches, including NSW Environment Protection Authority (EPA) Notified, Contaminated and Investigation Sites; and
 - Geological and hydrogeological information.
- Undertake a Site visit to observe onsite and offsite conditions and identify any areas of environmental concern.
- Collection of soil samples from the test pits proposed in the EP Risk (2024) Geotechnical Investigation (40 locations²) to a maximum depth of 4.0 meters below ground level (m BGL) (or prior refusal).
- Collection of soil samples from the top 0.1, 0.5, 1.0 and every meter at each location, or prior to refusal.
- Analytical testing of the soil samples by a National Association of Testing Authorities (NATA) accredited laboratory.
- Identify potentially contaminating activities that have occurred at the Site, areas of environmental concern (AECs) and develop a preliminary conceptual site model (CSM).
- Preparation of the Preliminary Site Investigation (PSI) report in accordance with the NSW EPA (2020) *Guideline for Consultants Reporting on Contaminated Sites* and the National Environmental 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).
- 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*.
- Protection of the Environment Operations (POEO) Act 1997.
- NSW EPA (2017) *Guidelines for the NSW Auditor Scheme (3rd Edition) (NSW Auditor Guidelines)*.
- NSW EPA (2020) *Contaminated Land Guidelines – Consultants Reporting on Contaminated Land*.
- NSW EPA (2022a) *Contaminated Land Guidelines: Sampling Design part 1 – application*.

¹ EP Risk (2024) Proposal for Geotechnical and Environmental Investigation, 559 Anambah Road, Gosforth, NSW 2320, dated 25 March 2024 (ref: EP17828 v1).

² The minimum sampling density prescribed in the NSW EPA (2022) Sampling Design Guidelines for a site 69 ha. in size is 765 sampling locations. The proposed sampling frequency of 40 locations is considered appropriate based upon the preliminary nature of the assessment.

- NSW EPA (2021) Position Statement – WA Guidelines for asbestos contaminated sites.
- State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP).
- The Maitland LEP (2011).
- 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).

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, 2024) which was obtained for the Site. A copy of the Lotsearch (2024) report is attached as **Appendix B**.

2.1 Land Use and Layout

The Site comprises of a large irregular shaped portion of land, approximately 69 Ha in size. An Environmental Scientist from EP Risk attended the Site between the 22nd - 24th April 2024 to undertake a site walkover, visual inspection, and soil sampling. General site features observed are summarised below:

- The Site comprises undulating hills and is currently used for grazing purposes.
- The Site is mostly cleared with a few mature trees scattered around the Site.
- Three large dams located at the Site.
- Timber post and wire fencing surrounds the Site.
- A gully running from the north west of the site downgradient through a dam located on the south eastern portion of the Site.

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

2.2 Surrounding Land Use

As of 16th April 2024, surrounding land uses comprised:

- North: Rural/residential land currently zoned as RU1 – Primary Production and RU2 – Rural Landscape.
- South: Rural/residential land currently zoned as R1- General Residential and C4 – Environmental Living.
- East: Rural/residential land and a quarry currently zoned as RU2 – Rural Landscape.
- West: Rural/residential land currently zoned as RU2- Rural Landscape, Summer Hill and Hunter River beyond.

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	<p>The majority of the Site is undulating and gently to moderate slopes to the southeast and east at an elevation ranging between 20 to 50 m AHD. The Site drainage is considered to consist of surface runoff migrating across the Site following surface contours as overland flow towards the creek lines and dams at the Site (one in the southern portion draining to the east and one in the northern portion draining to the north).</p> <p>A plan showing the topographical contours of the Site is provided within the Lotsearch (2024) Report in Appendix B.</p>
Geology	<p>Based on the geological data sourced from the NSW Department of Industry, Resources and Energy (Lotsearch, 2024) the Site is underlain by the following geological units:</p> <ul style="list-style-type: none"> Lochinvar formation, comprising basalt, siltstone and sandstone in the central and eastern portion of the Site. A band of the Lochinvar Basalt formation comprising amygdaloidal basalt is also noted between the central and eastern portions. Seaham formation, comprising tillite, varved siltstone, tuff, mudstone interbedded with lithic sandstone and conglomerate in the western portion of the Site. <p>A faulted boundary line is also present at the Site between the Seaham formation and Lochinvar formation running northwest to southeast.</p>
Soil Landscapes	<p>Based on the soil landscapes data sourced from the NSW OEH (Lotsearch, 2024) the Site is located within the Tenosol soil order and located within the Rothbury Soil Landscape. The Rothbury Soil Landscape covers undulating and rolling low hills south and south-east of Singleton. Red Podzolic Soils occur on upper slopes with Yellow Podzolic Soils on midslopes. Yellow Solodic Soils and brown Soloths occur on lower slopes. There are Prairie Soils in the drainage lines.</p>
Hydrogeology	<p>A search of the NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation undertaken by Lotsearch (2024) indicated there were no registered groundwater bores located onsite. However, two registered groundwater bores were located within 2 km of the Site, standing water levels were not reported on the bore reports. The groundwater bore information is listed below:</p> <ul style="list-style-type: none"> The authorised purpose of bore GW061253 was for water supply, the salinity was between 3001-7000 ppm and the depth was 25 m BGL. The authorised purpose of bore GW080640 was for water supply and the depth was unknown. <p>Review of the Hydrogeology Map of Australia, Lotsearch (2024) identified porous and extensive highly productive aquifers on the Site. Groundwater flow direction is considered to be in an easterly direction towards the down-gradient Hunter River.</p>
Natural Occurring Asbestos Potential	<p>No reported naturally occurring asbestos potential has been identified within 1 km of the Site.</p>
Acid Sulfate Soils	<p>Based upon a review of the Maitland LEP (2011), the Site is located within a class 5 Acid Sulfate Soils zone. Works within 500m 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 meter AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk.</p> <p>With reference to the CSIRO Atlas of Australian Acid Sulfate Soil, the Site is located in a Class C zone with an extremely low probability of occurrence.</p>

Table 2 – Environmental Setting	
Record	Findings
Dryland Salinity	With reference to the Dryland Salinity Data sourced from Lotsearch (2024), the southern portion of the Site is located within a high hazard or risk defined for all years of dryland salinity potential however the majority of the Site is not located within the high-risk area.
Bushfire Prone Area	The Site was listed as a bush fire prone area within a vegetation category 1, 2 and 3 prone area.
Ecology	According to NSW Office of Environment and Health (OEH), no RAMSAR wetlands were reported within 1 km of the Site and no terrestrial or marine protected areas were reported within 1 km of the Site. Low and medium potential terrestrial groundwater dependant ecosystems (GDEs) were identified on the Site and high potential terrestrial GDEs and moderate and high potential aquatic GDEs are present within 1 km of the Site.
Waste Management Facilities	No waste management facilities were identified within 1 km of the Site.
National Liquid Fuel Facilities	No national liquid fuel facilities were identified within 1 km of the Site.
Mining Subsidence	With reference to the Mining Subsidence District Data sourced from Lotsearch (2024), the Site is not located within a mining subsidence district.
Mining and Exploration Titles	No current mining or exploration titles exist at the Site. A total of eight Historical Mining and Exploration Titles exist within the boundaries of the Site, identified for petroleum and mineral resources. The most recent end date for the titles was 07/06/2015 for Sydney Oil Co Pty Ltd Australia, Base Resources LTD, Seahawk Oil Australia and Reading & Bates. The remaining end dates are noted between 1970 and 1999.
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 (2024) are summarised in **Table 3**.

Table 3 – Regulatory Searches	
Search	Results
Contaminated Land	<p>The Site was not listed as contaminated under the Contaminated Land Management Act (CLM Act) 1997.</p> <p>As of 20.04.24 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.</p> <p>No sites notified to the NSW EPA were located within 1 km of the Site.</p>
Licensed Activities under the Under the Protection of the Environment Operations Act 1997	<p>Licensed activities under the POEO Act at or within 1 km of the Site are:</p> <ul style="list-style-type: none"> • Maitland City Council, all waterbodies in the Maitland local government area for other activities, onsite. • Ditton Properties Pty Ltd, for all land-based extractive activity, 273 m east of the Site. <p>The licensed activities are considered to present a low risk of contamination based upon the nature of the activities, which are common to most waterways in NSW. The land based extractive activity is not considered to be a potential off-site source of contamination due to the separation distance and down gradient location.</p>
Former Licensed Activities under the POEO Act 1997, now revoked or surrendered	<p>There were four records of Former Licensed Activities under the POEO Act 1997, now surrendered, located at or within 1 km of the Site boundary. They are as follows:</p> <ul style="list-style-type: none"> • Luhrmann Environment Management Pty Ltd, for waterways throughout NSW, surrendered for other activities / non-scheduled activity – application of herbicides, surrendered on the 06/09/2000. • Robert Orchard, for various waterways throughout NSW, surrendered for other activities / non-scheduled activity – application of herbicides, surrendered on the 07/09/2000. • Sydney Weed and Pest Management Pty Ltd, for waterways throughout NSW – Prospect NSW, 2148, surrendered for other activities / non-scheduled activity – application of herbicides, surrendered on the 09/11/2000. • State of New South Wales (Department of Primary Industries – Land), for soil conservation service, waterways within the Hunter Valley Flood Mitigation Scheme, Maitland, surrendered for other activities – application of herbicide. <p>The former licensed activities are considered to present a low risk of contamination based upon the nature of the activities, which are common to most waterways in NSW.</p>
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.
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 Previous Investigations

Previous investigation undertaken at the Site include:

- Robert Car Associates (RCA) (2023) Preliminary Geotechnical Assessment, 559 Anambah Road, Anambah, NSW, dated 1st August 2023 (ref: 16742-201/0).

3.1 RCA (2023) – Preliminary Geotechnical Assessment

RCA were engaged by Thirdi Group to prepare a Preliminary Geotechnical Assessment for a proposed land development at the Site. The scope of the assessment included:

- A Site walkover assessment and logging of existing soil and rock exposures.
- Excavation, sampling and logging of eight test pits to a maximum depth of 2.4 m.
- Sampling of subsurface materials for geotechnical laboratory testing.

A summary of the laboratory testing is presented below:

- The Atterberg limits tests indicated the clay soils were of medium to high plasticity.
- The shrink swell tests indicated the clay soils were moderately to highly reactive.
- The soil moisture content of the subgrade samples tested was slightly wet of standard optimum moisture content.
- The CBR tests indicate low subgrade strength parameters with California bearing ratios (CBRs) ranging from 2% to 2.5 %.
- The Emerson Class tests indicate the samples tested are not readily dispersive.
- The soil salinity test results indicate the soils tested are classified as non-saline.

4 Site History

The Site history sources utilised during the review included:

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

4.1 Review of Historical Aerial Photos

Aerial photographs from 1961, 1984, 2004, 2007, 2010, 2015, 2020, 2023 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
1961	Site: The Site appears to be mostly cleared for grazing, no structures are present at the Site. Surroundings: The surrounding area comprises mostly cleared grazing land.
1984	Site: A dam has been constructed in the north east portion of the Site. Surroundings: No significant changes have occurred.
2004	Site: Two additional dams have been constructed in the south and north of the Site (a total of three dams on site). Surroundings: Two rural/residential properties have been constructed to the north and a possible agricultural/cropping activities undertaken in one of the properties.
2007	Site: No significant changes have occurred. Surroundings: No significant changes have occurred.
2010	Site: No significant changes have occurred. Surroundings: An access road has been constructed to the south of the Site.
2015	Site: No significant changes have occurred. Surroundings: No significant changes have occurred.
2020	Site: No significant changes have occurred. Surroundings: The cropping to the north has ceased, another rural/residential property constructed to the north.
2023	Site: No significant changes have occurred. Surroundings: No significant changes have occurred.

The aerial photographs reviewed are provided in the Lotsearch (2024) report provided as **Appendix B**.

4.2 Business Directory Search

No business activities were recorded at the Site or within 1km of the Site. No records of garages or dry cleaners were recorded onsite or matched to the area or roads.

4.3 Historical Title Search

The historical title information indicated the title was created in 1876 and first owned by John Kenneth Mackay (Grazier), since then the title has been transferred eight times and most owners were also Graziers. The current owner was listed as Rodney David Bird who has owned the Site from 1998 to date.

A right of carriageway easement (River Road) was noted at the Site running from north to south in the centre of the Site.

4.4 Summary of Site History

Based on the review of the historical information, the Site was formerly used as cleared farmland / grazing land. No farming sheds, machinery or residential structures properties on the Site were evident from the desktop review. The surrounding land use also comprised rural / agricultural land use.

5 Sampling and Analysis

5.1 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** – Former agricultural/grazing usage and potential filling.
- **Contaminants** – potentially metals (As, Cd, Cr, Cu, Pb, Ni and Zn³), organics (TRHs, TPH, BTEX, PAHs and OCPs/OPPs⁴), and asbestos (bonded (non-friable) asbestos containing material (ACM) / asbestos fines (AF) / fibrous asbestos (FA)).
- **Media** – The current potential affected media at the Site include soil, surface water and groundwater. Based on the preliminary nature of this assessment, sampling and reporting is limited to soils onsite.
- **Receptors** – Current site owners and maintenance workers. Once developed, future site workers (surface and sub-surface), residents and visitors (adults and children).
- **Pathways** – dermal contact, inhalation of dust and ingestion have been identified as the pathways of concern. Further assessment of groundwater and/or soil gas may be considered based on the findings of this investigation.

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 for the current or 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 low-density residential 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 **Table 6**. These criteria have been adopted to determine whether additional assessment is required and/or whether the Site is suitable for the proposed land use.

³ Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, and Zinc.

⁴ Total Recoverable Hydrocarbons, Total Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene and Xylene, Polynuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls, Organochlorine Pesticides and Organophosphorus Pesticides.

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 5.2**.

Step 4 - Define the Boundaries of the Study

The spatial boundaries of the PSI comprised 559 Anambah Road, Gosforth, NSW. The legal description of the Site is Part Lot 177 in DP 874171 and Lot 55 DP 874170 and covers an area approximately 69 ha. The maximum proposed depth for the investigation set at 4.0 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 Analytical Approach				
Decision	Rule	Inputs/Media	Associated AECs	CoPCs
1. Has soil been assessed against relevant health investigation levels (HILs) and health screening levels (HSLs), and has potential for migration of contamination been considered?	<p>The nature and extent of soil impacts will be assessed, and analytical data will be compared against the adopted health and ecological criteria.</p> <p>The following statistical criteria was adopted with respect to soils and groundwater:</p> <p>Either: the reported concentrations are all below the adopted site criteria;</p> <p>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.</p> <p>And: the 95% upper confidence limit ('UCLmean') of the average concentration for each analyte must be below the adopted site criterion.</p> <p>If the statistical criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks then there is no potential for migration of contamination.</p> <p>Otherwise, there is potential for migration of contamination and further assessments may be required to determine the risk at the Site.</p>	Soil sampling and analysis and site observations.	AEC 1 - Rural agricultural land use. AEC 2 – Potential fly tipping/uncontrolled filling	Soil – TRH, TPH, BTEX, PAH, PCB, OCP, OPP, heavy metals, asbestos.
2. 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)?	<p>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.</p> <p>Otherwise, additional assessment of background concentrations will be required.</p>			
3. Are there impacts of chemical mixtures?	<p>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?</p> <p>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.</p> <p>Otherwise, there are impacts of chemical mixtures that will require additional assessment.</p>			
4. Are there any potential ecological risks? If yes, have these been assessed? Are there any potential human health risks to the identified Site receptors?	<p>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.</p> <p>And: If the reported concentrations are all below the adopted site criteria and an assessment of risk indicates no unacceptable risks.</p> <p>Otherwise, potential ecological and human health risks have been adequately assessed.</p>			
5. Is there any evidence of, or potential for, migration of contaminants from the Site? Has this been appropriately addressed, including potential risks to offsite receptors, and reported to the Site owner or occupier?	<p>Are chemical contaminants present within natural soil at concentrations exceeding the adopted site criteria?</p> <p>And: is there a potential transport pathway/mechanism</p> <p>If yes, then there is the potential for offsite migration that will require additional assessment.</p>			
6. Are there any aesthetics issues in fill at the site?	<p>If there are any unacceptable staining, odours, or significant amounts of anthropogenic fill materials then additional assessment or management will be required.</p>			
7. Is there sufficient information to accurately characterise the site contamination?	<p>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;</p> <p>And: the likelihood of onsite soil contamination impacting, groundwater, surface water and offsite receptors is considered unlikely.</p> <p>And: no areas which exceeded the adopted criteria require further characterisation.</p> <p>Then sufficient information to accurately characterise the Site contamination has been provided.</p>			
8. Is further investigation required?	<p>Where indicated in by the answers to any of the above decisions above, further investigation may be required to be developed.</p>			
9. Is a site management strategy required?	<p>Where indicated in by the answers to any of the above decisions above a management strategy may be required to be developed.</p>			

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.
 - unnecessary disposal of the material offsite, imposing needless financial and resource burdens on the development project and resulting in an inappropriate waste classification.
- Place acceptable limits on the likelihood of making decision errors, including acceptable alpha (α) and beta (β) risk levels for the 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 \leq 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.

Step 7 – Sampling Design and Methodology

Various strategies for developing a statistically based sampling plan are identified in EPA (2022)⁵, including judgemental, random, systematic, and stratified sampling patterns. Random sampling is not considered appropriate. The specific scope is discussed below.

⁵ NSW EPA (2022) *Sampling Design Guidelines part 1*.

EP Risk used Australian Laboratory Services (ALS) and Envirolab 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 6**.

Soil Sampling

The minimum recommended sampling density in Table 2 of NSW EPA (2022) is 765 soil samples to assess an area of 69 ha. The proposed sampling frequency of 40 sampling locations is considered appropriate based upon the preliminary nature of the assessment. The main potential contamination is inferred to be usage of pesticides and herbicides across the Site. 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 for a preliminary assessment.

The soil sampling locations are provided as **Figure 1** attached and the scope is detailed in **Table 6** below.

Table 6 – Sampling and Analysis Plan and Methodology

Media	Scope of Work (Inputs)	Number of Sampling Locations	Samples and Analysis	Adopted Tier 1 Criteria														
Soil	<p>The methodology for soil sampling was as follows:</p> <ul style="list-style-type: none"> Soil samples were collected from 40 test pit locations. Collection of soil samples from 0.1 m BGL, 0.5 m BGL, 1.0 m BGL and every 1.0 m thereafter until a target depth of 4.0 m BGL or refusal (whichever is encountered first). Test pits were advanced via a 23.5-tonne excavator fitted with a 400 mm bucket to a maximum depth of 4.0 m BGL or prior rock refusal. Soils were logged for type, colour, texture, other characteristics, and indications of contamination as presented in the test pit logs attached as Appendix D. 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. 	40 Test Pits	<p>Analytical testing by a National Association Testing Authorities (NATA) accredited laboratory of one soil sample per borehole for the following:</p> <ul style="list-style-type: none"> Heavy metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc) / Organochlorine pesticides (OCP) / Organophosphorus pesticides (OPP) – 40 Total Recoverable Hydrocarbons (TRH) / Benzene, toluene, xylene, ethylbenzene, Naphthalene (BTEXN) / Polyaromatic Hydrocarbons (PAH) / Polychlorinated biphenyls (PCB) – 10 Asbestos w/w % - 11 NEPM Screen for Soil Classification – 2 <p>QA/QC Samples as follows:</p> <ul style="list-style-type: none"> Duplicates / triplicates (as per primary) – 2 Rinsate (as per primary) – 1 - Metals, TRH, PAH, BTEX, PAHs - 1 Trip Blank and Spike- BTEX, TRH C6-C9 - 1 	<p>For the purposes of assessing the results of analytical testing of soil at the Site, the following guidelines will be considered:</p> <ul style="list-style-type: none"> 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. <p>The adopted soil criteria for the Site are presented below:</p> <table border="1"> <thead> <tr> <th>Guidelines</th> <th>COPC</th> <th>Adopted Criteria</th> </tr> </thead> <tbody> <tr> <td rowspan="5">ASC NEPM 2013</td> <td>Heavy metals/OCP/PCB/ Phenols</td> <td> <ul style="list-style-type: none"> HIL A (residential land) </td> </tr> <tr> <td>Heavy metals/OCP/PAH</td> <td> <ul style="list-style-type: none"> EIL (urban residential); < 2 m </td> </tr> <tr> <td>TRH and BTEXN</td> <td> <ul style="list-style-type: none"> Vapour intrusion HSL A (residential land); 0 - <1m; silt/clay ESLs (urban residential); <2m </td> </tr> <tr> <td>TRH</td> <td> <ul style="list-style-type: none"> Management limits (urban residential); fine and coarse soil. </td> </tr> <tr> <td>AF/FA and Bonded Asbestos</td> <td> <ul style="list-style-type: none"> HSL A bonded ACM; 0.01% FA and AF Res A; 0.001% </td> </tr> </tbody> </table>	Guidelines	COPC	Adopted Criteria	ASC NEPM 2013	Heavy metals/OCP/PCB/ Phenols	<ul style="list-style-type: none"> HIL A (residential land) 	Heavy metals/OCP/PAH	<ul style="list-style-type: none"> EIL (urban residential); < 2 m 	TRH and BTEXN	<ul style="list-style-type: none"> Vapour intrusion HSL A (residential land); 0 - <1m; silt/clay ESLs (urban residential); <2m 	TRH	<ul style="list-style-type: none"> Management limits (urban residential); fine and coarse soil. 	AF/FA and Bonded Asbestos	<ul style="list-style-type: none"> HSL A bonded ACM; 0.01% FA and AF Res A; 0.001%
Guidelines	COPC	Adopted Criteria																
ASC NEPM 2013	Heavy metals/OCP/PCB/ Phenols	<ul style="list-style-type: none"> HIL A (residential land) 																
	Heavy metals/OCP/PAH	<ul style="list-style-type: none"> EIL (urban residential); < 2 m 																
	TRH and BTEXN	<ul style="list-style-type: none"> Vapour intrusion HSL A (residential land); 0 - <1m; silt/clay ESLs (urban residential); <2m 																
	TRH	<ul style="list-style-type: none"> Management limits (urban residential); fine and coarse soil. 																
	AF/FA and Bonded Asbestos	<ul style="list-style-type: none"> HSL A bonded ACM; 0.01% FA and AF Res A; 0.001% 																

5.2 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.

$$RPD\% = \frac{[C_p - C_d]}{C_p + C_d} \times 200$$

Where:

C_p = Primary sample

C_d = 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 7**.

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 7 – 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
Field duplicates	1 per 20 samples	RPDs < 50%
Field triplicates	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 70% to 130%
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
Decontamination procedures	All sampling equipment to be decontaminated between each sample	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 7 – 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		
Sample receipt acknowledgement	Provided	Yes
Laboratory reports	Provided	Yes
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.	

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	<ul style="list-style-type: none"> 1 per 20 samples; and RPDs < 50%. 	Yes Yes
Field triplicates	<ul style="list-style-type: none"> 1 per 20 samples; and RPDs < 50%. 	Yes Yes
Laboratory duplicates	<ul style="list-style-type: none"> Minimum of 1 per batch per analyte; RPDs < 50%; and >10%, laboratory specified. 	Yes Yes Yes ⁶
Accuracy		
Laboratory matrix spikes	<ul style="list-style-type: none"> 1 per batch per volatile/semi-volatile analyte; and Recoveries >70% to 130% 	Yes ⁷ Yes
Laboratory surrogate spikes	<ul style="list-style-type: none"> 1 per volatile/semi-volatile analyte sample (as appropriate); and Recoveries 70% to 130% 	Yes Yes
Laboratory control samples	<ul style="list-style-type: none"> At least 1 per batch for analyte tested; and Result < laboratory reporting limit 	Yes Yes
Representativeness		
Sample methodology - preservation	Appropriate for the sample type and analytes	Yes
Decontamination procedures	All sampling equipment to be decontaminated between each sample	Yes
Samples extracted and analysed within holding times	Specific to each analyte	Yes ⁸
Laboratory Method Blanks	<ul style="list-style-type: none"> At least 1 per batch per analyte tested for; and Result < laboratory reporting limit 	Yes Yes
Trip blanks	<ul style="list-style-type: none"> 1 per field laboratory reporting limit Result < laboratory reporting limit 	Yes Yes
Trip spikes	<ul style="list-style-type: none"> 1 per field batch for volatile analytes; and Recoveries 60-100% 	Yes Yes

⁶ Frequency outliers were reported for pH (soil), TRH and PAH (water) however is not considered to affect the results as it was not a primary analytical sample.

⁷ No matrix spikes were performed for PAH and TRH in the rinsate sample however it's not considered to affect the results as it was for the rinsate results not a primary analytical sample.

⁸ One analyte was extracted outside the holding time for NEPM screen analysis. However, it's not considered to affect the results as it was not a primary sample.

Table 8 – DQI Results Summary		
DQI	Requirement	DQA
Rinsate	<ul style="list-style-type: none"> 1 per field batch for volatile analytes; and Result < laboratory reporting limit 	Yes Yes
Comparability		
Sampling approach	Consistent sampling approach used	Yes
Analysis methodology	Consistent methodology for each sample	Yes
Handling conditions and sampler	Consistent of each sample	Yes
Field observations and analytical	Field observations to support analytical results	Yes
Consistent laboratory reporting limits	Consistent between primary and secondary laboratories	Yes
Completeness		
Sample receipt acknowledgement	Provided	Yes
Laboratory reports	Provided	Yes
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 limits	Laboratory reporting limit consistent and appropriate	Yes
Consistent weather / field data	Consistent	Yes
Chain of custody documentation	Provided	Yes
Field sampling documentation	Provided	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: Silty CLAY, low to medium plasticity, black to grey.
- RESIDUAL SOIL: Silty CLAY, medium to plasticity, grey to grey-brown, fine to coarse grained sand.
- EXTREMELY WEATHERED ROCK: SANDSTONE, recovered as sandy CLAY, medium to high plasticity, yellow-brown; and SANDSTONE, recovered as clayey Gravelly SAND, fine to coarse grained sand, dark brown, low plasticity, dry.

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 D**.

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 E**.

Bonded Asbestos Containing Material (ACM)

Soil samples collected from 11 sampling locations were screened through a 7mm screen and reported bonded (non-friable) ACM concentrations below the adopted health-based soil criteria HSL (0.05% w/w).

Friable Asbestos (AF / FA)

Soil samples were obtained from 11 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.

Visual Asbestos on Site

During the Site walkover and intrusive investigation, no asbestos was observed on in test pit locations.

Heavy Metals / BTEXN / PAH / OCP / OPP / TPH / TRH

The following exceedances were observed for total chromium exceeding the health investigation levels:

- TP05-P_0.1 – 107 mg/kg
- TP07-P_0.1- 106 mg/kg

The 95% upper confidence limit mean (UCL_{mean}) for chromium was calculated as 65.81 which is below the adopted criteria. The 95% UCL_{mean} calculations are attached as **Appendix F**.

There were no other exceedances to the adopted human health and ecological criteria.

Aesthetics

No anthropogenic materials were present in the soil profile and no significant fill was identified across the Site.

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.

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 individual and / or 95% UCL results of soil analytical testing have been compared against the relevant health-based criteria and there were no exceedances to the adopted criteria.

Are there any issues relating to local area background soil concentrations that exceed relevant investigation levels have been adequately addressed in the Site assessment reports?

No background soil concentration issues were identified at the Site.

Are there impacts of chemical mixtures?

No visual or olfactory impacts were identified across the Site and within test pit / borehole locations. All analytical sample results were recorded below health and ecological criteria.

Are there potential ecological risks? If yes, have these been assessed?

The individual and / or 95% UCL results of soil analytical testing have been compared against the relevant ecological-based criteria and there were no exceedances to the adopted criteria, therefore no assessment was required.

Are there any potential human health risks to the identified site receptors?

There were no human health risks for site receptors identified.

Is there any evidence of, or potential for, migration of contaminants from the Site? Has this been appropriately addressed including potential risks to offsite receptors, and reported to the site owner or occupier?

The potential for migration of contaminants in fill materials offsite is considered low, on account of fill materials not being observed at the sampling locations.

Are there any aesthetics issues in fill at the Site?

Fill was not reported within the sampling locations across the Site and there were no observed stockpiles of anthropogenic materials.

Is there sufficient information to accurately characterise the Site contamination?

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.

Is Further Investigation Required?

Based on the proposed future residential land use for the development, with all analytical sample results recorded below the health and ecological criteria, no further investigation is required with respect to contamination.

Is a Site Management Strategy Required?

While contamination at a level warranting management or remediation was not identified, it is recommended that an unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.

9 Conceptual Site Model

A 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:

- AEC 1 - Rural agricultural land use.
- AEC 2 – Potential fly tipping/uncontrolled filling.

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 residential 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 fauna and flora at the Site and on adjoining land (ASC NEPM EIL and ESLs).
- Ecosystems dependant on the downgradient Creeks and Rivers.

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 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				
AEC 1 - Rural agricultural land use.	Potential use of herbicides and pesticides	OCP and OPP	Soil	<u>Human Health</u> <ul style="list-style-type: none"> • Dermal contact • Incidental ingestion 		<ul style="list-style-type: none"> • Future construction and sub-surface maintenance workers. • Future residential users. 	Not complete.	All results recorded below health and ecological criteria.
				<u>Ecological:</u> <ul style="list-style-type: none"> • Uptake by flora and fauna 				
AEC 2 – Potential fly tipping/uncontrolled filling	Contaminants leaching from uncontrolled fill.	TRH, BTEX, PAH and heavy metals.	Soil	<u>Human Health</u> <ul style="list-style-type: none"> • Dermal contact • Incidental ingestion 		<ul style="list-style-type: none"> • Future construction and sub-surface maintenance workers. • Future residential users. 	Not complete.	All results recorded below health and ecological criteria.
				<u>Ecological:</u> <ul style="list-style-type: none"> • Uptake by flora and fauna 				
	Generation of airborne fibres during soil disturbance	Asbestos.	Soil	<u>Human Health</u> <ul style="list-style-type: none"> • Inhalation 		<ul style="list-style-type: none"> • Future construction and sub-surface maintenance workers. • Future residential users. 	Not complete.	All results recorded below health criteria.

10 Conclusion and Recommendations

EP Risk was engaged by Thirdi Group Pty Ltd to undertake a PSI for a Site located at 559 Anambah Road, Gosforth, NSW. It is understood the client requires a PSI for the development application package for a proposed low density residential development as required in SEPP (Resilience and Hazards) 2021.

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 and potential fly tipping/uncontrolled filling.

During the site walkover and intrusive investigation no evidence of anthropogenic waste or asbestos containing materials were observed at the sampling locations. The Site comprised a large area of vacant grassland, three large dams were present at the Site, and a gully running from the north west of the site downgradient through a dam located on the south eastern portion of the Site.

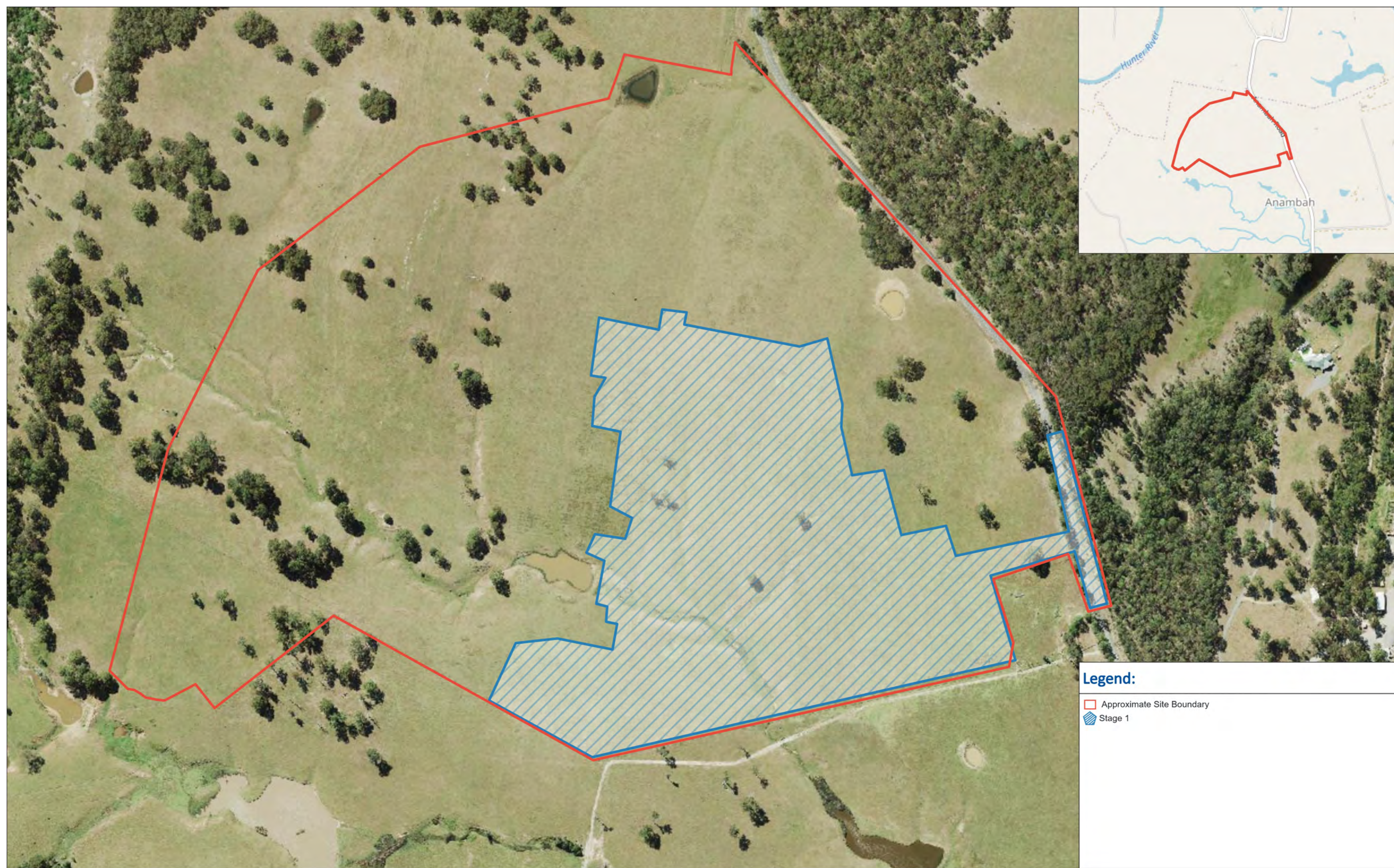
Based on the review of the historical information, the Site was formerly and currently being used as cleared farmland / grazing land. The surrounding land use comprised rural / agricultural land use.

The collection of 40 soil samples from test pits advanced to a maximum depth of 4.0 m BGL (or prior refusal) was undertaken.



The results of analytical testing reported total and / or 95% UCL concentrations below the adopted criteria for residential land use.

Overall, based on this assessment and the conceptual site model for the proposed development there are no complete source-pathway-receptor linkages, subject to the implementation of management activities. 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 and is suitable for residential land use, subject to the development and implementation of an unexpected finds protocol during redevelopment.

Figures



Legend:

-  Approximate Site Boundary
-  Stage 1

Preliminary Site Investigation
559 Anambah Road, Gosforth NSW, Australia

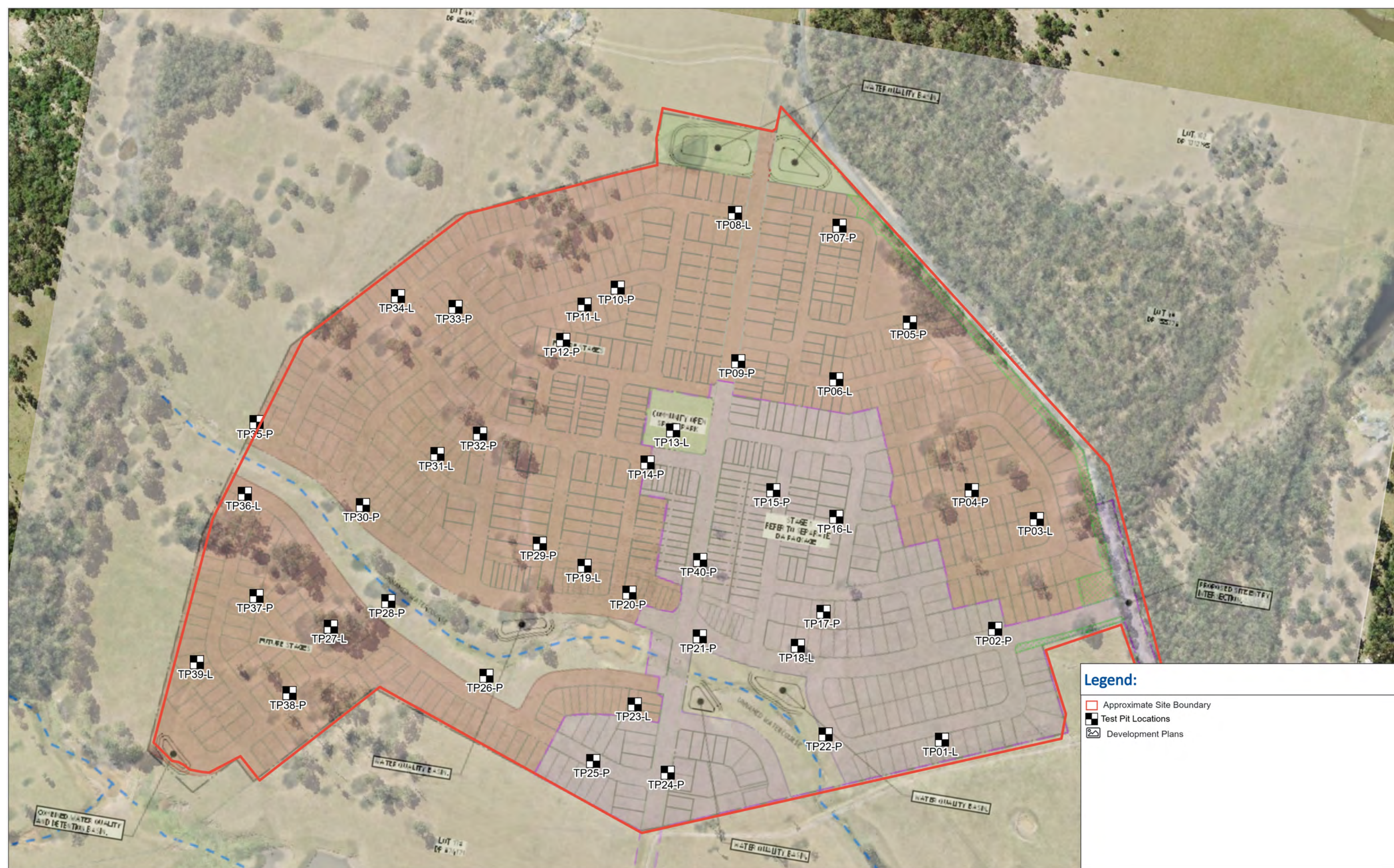
Job No: EP3627
Date: 14-05-2024
Version: v1



0 50 m 100 m
 Approximate Scale Only

Coordinate System: WGS84
Drawn By: MC Checked: NM
 Scale of regional map not shown

1 - Site Location & Layout



Preliminary Site Investigation
559 Anambah Road, Gosforth NSW, Australia

Job No: EP3627
 Date: 14-05-2024
 Version: v1



0 50 m 100 m
 Approximate Scale Only

Figure 2 - Test Pit Locations

Coordinate System: WGS 84
 Drawn By: MC Checked By: NM
 Scale of regional map not shown
 Source: © Department of Finance, Services & Innovation 2018



Analytical Tables

	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
EQI	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
NEPM 2013 Table 1A(1) Hills Res A Soil																				
NEPM 2013 Table 7 Res A HSL for Asbestos in Soil																				
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								
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space	170																			
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil		65	105	125			45				800	180	120	120	1,300	5,600				
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																				

Field ID	Date	Depth	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)	
TP01-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08-L_0.1	24 Apr 2024	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	
TP09-P_0.1	24 Apr 2024	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	
TP10-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14-P_0.1	24 Apr 2024	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	
TP15-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP18-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19-L_0.1	24 Apr 2024	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	
TP20-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21-P_0.1	24 Apr 2024	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	
TP22-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24-P_0.1	24 Apr 2024	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	
TP25-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP27-L_0.1	24 Apr 2024	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	
TP28-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP29-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33-P_0.1	24 Apr 2024	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	
TP34-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP35-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP36-L_0.1	24 Apr 2024	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	
TP37-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP38-P_0.1	24 Apr 2024	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	
TP39-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP40-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

	Inorganics											Metals								Particulates
	Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Potassium	Exchangeable Sodium	Moisture Content	pH (CaCl2)	pH (Lab)	CEC	Electrical Conductivity (Lab)	Iron	TOC	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Organic Matter
	meq/100g	meq/100g	meq/100g	meq/100g	%	-	-	meq/100g	µS/cm	%	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
EOL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.005	0.5	5	1	2	5	5	0.1	2	5	0.5	
NEPM 2013 Table 1A(1) Hills Res A Soil											100	20	100	6,000	300	40	400	7,400		
NEPM 2013 Table 7 Res A HSL for Asbestos in Soil																				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																				
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space											50		270	50	270		110	110		
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil																				
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																				

Field ID	Date	Depth	Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Potassium	Exchangeable Sodium	Moisture Content	pH (CaCl2)	pH (Lab)	CEC	Electrical Conductivity (Lab)	Iron	TOC	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Organic Matter
TP01-L_0.1	24 Apr 2024	0.1	-	-	-	-	29.1	-	-	-	-	-	-	10	<1	45	<5	14	<0.1	9	23	-
TP02-P_0.1	24 Apr 2024	0.1	-	-	-	-	12.0	-	-	-	-	-	-	8	<1	28	<5	11	<0.1	5	6	-
TP03-L_0.1	24 Apr 2024	0.1	-	-	-	-	18.5	-	-	-	-	-	-	5	<1	10	<5	6	<0.1	4	12	-
TP04-P_0.1	24 Apr 2024	0.1	-	-	-	-	18.5	-	-	-	-	-	-	12	<1	33	<5	11	<0.1	6	12	-
TP05-P_0.1	24 Apr 2024	0.1	-	-	-	-	25.4	-	-	-	-	-	-	5	<1	107	37	9	<0.1	101	42	-
TP06-P_0.1	24 Apr 2024	0.1	-	-	-	-	21.4	-	-	-	-	-	-	6	<1	40	12	10	<0.1	19	27	-
TP07-P_0.1	24 Apr 2024	0.1	-	-	-	-	27.9	-	-	-	-	-	-	<5	<1	106	36	6	<0.1	36	31	-
TP08-L_0.1	24 Apr 2024	0.1	-	-	-	-	27.2	-	-	-	-	-	-	<5	<1	83	21	9	<0.1	39	25	-
TP09-P_0.1	24 Apr 2024	0.1	-	-	-	-	25.2	-	-	-	-	-	-	<5	<1	83	21	11	<0.1	33	15	-
TP10-P_0.1	24 Apr 2024	0.1	-	-	-	-	25.6	-	-	-	-	-	-	<5	<1	88	28	9	<0.1	40	30	-
TP11-L_0.1	24 Apr 2024	0.1	-	-	-	-	25.9	-	-	-	-	-	-	<5	<1	71	25	9	<0.1	83	30	-
TP12-P_0.1	24 Apr 2024	0.1	-	-	-	-	24.1	-	-	-	-	-	-	<5	<1	74	26	8	<0.1	85	31	-
TP13-L_0.1	24 Apr 2024	0.1	-	-	-	-	25.0	-	-	-	-	-	-	<5	<1	98	36	6	<0.1	49	26	-
TP14-P_0.1	24 Apr 2024	0.1	-	-	-	-	29.0	-	-	-	-	-	-	<5	<1	89	40	<5	<0.1	73	28	-
TP15-P_0.1	24 Apr 2024	0.1	-	-	-	-	26.8	-	-	-	-	-	-	<5	<1	94	33	<5	<0.1	55	26	-
TP16-L_0.1	24 Apr 2024	0.1	-	-	-	-	24.8	-	-	-	-	-	-	<5	<1	69	22	7	<0.1	45	28	-
TP17-L_0.1	24 Apr 2024	0.1	-	-	-	-	21.7	-	-	-	-	-	-	<5	<1	68	12	9	<0.1	52	20	-
TP18-L_0.1	24 Apr 2024	0.1	-	-	-	-	22.4	-	-	-	-	-	-	<5	<1	50	10	10	<0.1	19	16	-
TP19-L_0.1	24 Apr 2024	0.1	-	-	-	-	28.9	-	-	-	-	-	-	<5	<1	84	31	7	<0.1	50	32	-
TP20-P_0.1	24 Apr 2024	0.1	-	-	-	-	28.7	-	-	-	-	-	-	<5	<1	97	37	6	<0.1	68	57	-
TP21-P_0.1	24 Apr 2024	0.1	-	-	-	-	30.0	-	-	-	-	-	-	<5	<1	118	36	9	<0.1	43	40	-
TP22-P_0.1	24 Apr 2024	0.1	-	-	-	-	22.6	-	-	-	-	-	-	5	<1	34	7	10	<0.1	13	16	-
TP23-L_0.1	24 Apr 2024	0.1	-	-	-	-	24.6	-	-	-	-	-	-	<5	<1	66	22	6	<0.1	31	29	-
TP24-P_0.1	24 Apr 2024	0.1	-	-	-	-	26.8	-	-	-	-	-	-	10	<1	71	17	10	<0.1	21	29	-
TP25-P_0.1	24 Apr 2024	0.1	-	-	-	-	25.9	-	-	-	-	-	-	7	<1	90	26	10	<0.1	32	37	-
TP26-P_0.1	24 Apr 2024	0.1	-	-	-	-	26.9	-	-	-	-	-	-	<5	<1	82	30	9	<0.1	48	39	-
TP27-L_0.1	24 Apr 2024	0.1	-	-	-	-	24.5	-	-	-	-	-	-	<5	<1	38	5	12	<0.1	12	20	-
TP28-P_0.1	24 Apr 2024	0.1	-	-	-	-	18.8	-	-	-	-	-	-	<5	<1	19	<5	15	<0.1	4	17	-
TP29-P_0.1	24 Apr 2024	0.1	-	-	-	-	25.2	-	-	-	-	-	-	<5	<1	63	16	12	<0.1	30	29	-
TP30-P_0.1	24 Apr 2024	0.1	-	-	-	-	23.5	-	-	-	-	-	-	<5	<1	10	<5	20	<0.1	4	18	-
TP31-L_0.1	24 Apr 2024	0.1	-	-	-	-	19.8	-	-	-	-	-	-	6	<1	17	<5	10	<0.1	5	19	-
TP32-P_0.1	24 Apr 2024	0.1	-	-	-	-	20.6	-	-	-	-	-	-	6	<1	17	<5	8	<0.1	3	12	-
TP33-P_0.1	24 Apr 2024	0.1	-	-	-	-	20.6	-	-	-	-	-	-	<5	<1	16	7	13	<0.1	7	32	-
TP34-L_0.1	24 Apr 2024	0.1	-	-	-	-	19.4	-	-	-	-	-	-	5	<1	13	<5	10	<0.1	4	20	-
TP35-P_0.1	24 Apr 2024	0.1	-	-	-	-	26.7	-	-	-	-	-	-	<5	<1	50	19	13	<0.1	27	38	-
TP36-L_0.1	24 Apr 2024	0.1	-	-	-	-	20.7	-	-	-	-	-	-	<5	<1	11	<5	11	<0.1	4	18	-
TP37-P_0.1	24 Apr 2024	0.1	-	-	-	-	26.8	-	-	-	-	-	-	8	<1	25	<5	9	<0.1	7	7	-
TP38-P_0.1	24 Apr 2024	0.1	-	-	-	-	20.0	-	-	-	-	-	-	8	<1	16	<5	13	<0.1	4	11	-
TP39-L_0.1	24 Apr 2024	0.1	-	-	-	-	19.1	-	-	-	-	-	-	5	<1	14	<5	<5	<0.1	5	6	-
TP40-P_0.1	24 Apr 2024	0.1	-	-	-	-	25.7	-	-	-	-	-	-	<5	<1	90	31	9	<0.1	45	35	-

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

EQI	PCBs		PAH																			
	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)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 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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
NEPM 2013 Table 1A(1) Hills Res A Soil	1																	3	3	3	300	
NEPM 2013 Table 7 Res A HSL for Asbestos in Soil																						
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay																						
NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space														5								
NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil						0.7																
NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil																						

Field ID	Date	Depth	PCBs	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)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 Calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ Calc (Zero)	PAHs (Sum of total)
TP01-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP02-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP03-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP04-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP05-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP06-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP07-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP08-L_0.1	24 Apr 2024	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
TP09-P_0.1	24 Apr 2024	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
TP10-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP11-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14-P_0.1	24 Apr 2024	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
TP15-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP18-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19-L_0.1	24 Apr 2024	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
TP20-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP21-P_0.1	24 Apr 2024	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
TP22-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP23-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP24-P_0.1	24 Apr 2024	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
TP25-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP26-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP27-L_0.1	24 Apr 2024	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
TP28-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP29-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP30-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP31-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP32-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP33-P_0.1	24 Apr 2024	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
TP34-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP35-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP36-L_0.1	24 Apr 2024	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
TP37-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP38-P_0.1	24 Apr 2024	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
TP39-L_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP40-P_0.1	24 Apr 2024	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
 2013, NEPM 2013 Table 1A(1) Hills Res A Soil
 NEPM, 2013, NEPM 2013 Table 7 Res A HSL for Asbestos in Soil
 2013, NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion, Clay
 2013, NEPM 2013 Table 1B(5) Generic EIL - Urban Res & Public Open Space
 2013, NEPM 2013 Table 1B(6) ESLs for Urban Res, Fine Soil
 NEPM, NEPM 2013 Table 1B(7) Management Limits in Res / Parkland, Fine Soil

Lab Report Number	Field ID	Date	Matrix Type	BTEX								TRH						TPH					Inorganics			
				1,2,4-trichlorobenzene (BTD)	Benzene	Toluene	o-Xylene	m-Xylene (m & p)	p-Xylene (p)	o-Xylene Total	Total BTEX	1,2-Dichloroethane	1,1,1-Trichloroethane (TCE)	1,1-Dichloroethene	1,1,2,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane (Sum of all)	1,2-Dichloroethane	1,1,2,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane (Sum of all)	Molbute Content	Molbute Content (Index @ 101°C)	
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	1	1	
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	<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	27.2	-	
ES2414714	QA01	24 Apr 2024	Soil	<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	29.4	-	
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	<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	27.2	-	
1092777	QA02	24 Apr 2024	Soil	<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	-	40	
RPD				0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	<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	26.8	-	
ES2414714	QA03	24 Apr 2024	Soil	<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	24.2	-	
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	-
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	<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	26.8	-	
1092777	QA04	24 Apr 2024	Soil	<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	-	23	
RPD				0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-

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

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 50 (1 - 10 x EQL); 50 (10 - 30 x EQL); 50 (> 30 x EQL))

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

EQL	Metals									Asbestos										
	Arsenic	Barium	Chromium (III/VI)	Copper	Lead	Mercury	Nickel	Pb		Asbestos Type	Asbestos (Trace)	Asbestos (<7mm R/F/FA)	Asbestos (ACM 7mm) Estimation	Asbestos (FA R/AF)	Weight based for % Calculation	Synthetic Mineral Fibre	Organic Fibre	Asbestos fibres		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		Detect	g	g	% (w/w)	kg			g/kg			
EQL	2	0.4	2	5	5	0.1	2	5			0.0004	0.0004	0.001	0.0001				0.1		
Lab Report Number	Field ID	Date	Matrix Type																	
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	<5	<1	83	21	9	<0.1	39	25	1	0	<0.0004	<0.0004	<0.001	0.243	0	0	0
ES2414714	QA01	24 Apr 2024	Soil	<5	<1	85	24	10	<0.1	47	25	-	-	-	-	-	-	-	-	-
RPD				0	0	2	13	11	0	19	0	-	-	-	-	-	-	-	-	-
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	<5	<1	83	21	9	<0.1	39	25	1	0	<0.0004	<0.0004	<0.001	0.243	0	0	0
1092777	QA02	24 Apr 2024	Soil	<2	<0.4	87	21	10	<0.1	40	25	-	-	-	-	-	-	-	-	-
RPD				0	0	5	0	11	0	3	0	-	-	-	-	-	-	-	-	-
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	10	<1	71	17	10	<0.1	21	29	1	0	<0.0004	<0.0004	<0.001	0.177	0	0	0
ES2414714	QA03	24 Apr 2024	Soil	6	<1	70	15	10	<0.1	21	26	-	-	-	-	-	-	-	-	-
RPD				50	0	1	12	0	0	0	11	-	-	-	-	-	-	-	-	-
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	10	<1	71	17	10	<0.1	21	29	1	0	<0.0004	<0.0004	<0.001	0.177	0	0	0
1092777	QA04	24 Apr 2024	Soil	6.6	<0.4	54	11	8.2	<0.1	14	18	-	-	-	-	-	-	-	-	-
RPD				41	0	27	43	20	0	40	47	-	-	-	-	-	-	-	-	-

*RPDs have only been considered where a concentration is greater than 1 times the EQL
 **Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
 ***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any m

Lab Report Number	Field ID	Date	Matrix Type	PCBs								PAHs																										
				rochlor 1016 mg/kg	rochlor 1221 mg/kg	rochlor 1222 mg/kg	rochlor 1242 mg/kg	rochlor 1248 mg/kg	rochlor 1254 mg/kg	rochlor 1260 mg/kg	PCBs (Sum of total) mg/kg	1-methylphenanthrene mg/kg	2-methylphenanthrene mg/kg	anthracene mg/kg	1-methylanthracene mg/kg	2-methylanthracene mg/kg	fluoranthene mg/kg	1-methylfluoranthene mg/kg	2-methylfluoranthene mg/kg	fluoranthene mg/kg	benzo(a)anthracene mg/kg	benzo(b)anthracene mg/kg	perylene mg/kg	indeno(1,2,3-cd)pyrene mg/kg	benzofluoranthene mg/kg	benzo(e)pyrene mg/kg	pyrene mg/kg	benzo(a)pyrene TEQ mg/kg	benzo(a)pyrene TEQ (LOI) mg/kg	benzo(a)pyrene TEQ mg/kg	PAHs (Sum of total) mg/kg							
EQL				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	0.5	0.5	0.5	0.5		
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	-	-	-	-	-	-	<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	<0.5	<0.5	<0.5	<0.5			
ES2414714	QA01	24 Apr 2024	Soil	-	-	-	-	-	-	<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	<0.5	<0.5	<0.5	<0.5	<0.5		
RPD				-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	-	-	-	-	-	-	<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	<0.5	<0.5	<0.5	<0.5	<0.5		
1092777	QA02	24 Apr 2024	Soil	<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	<0.5	<0.5	<0.5	<0.5	<0.5		
RPD				-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	-	-	-	-	-	-	<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	<0.5	<0.5	<0.5	<0.5	<0.5		
ES2414714	QA03	24 Apr 2024	Soil	-	-	-	-	-	-	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
RPD				-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	-	-	-	-	-	-	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
1092777	QA04	24 Apr 2024	Soil	<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	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
RPD				-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL
 **Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
 ***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any m

				Organochlorine Pesticides																													
				Organochlorine pesticides EPA/C	Other organochlorine pesticides EPA/C	p,p'-DDE	p,p'-DDE	Endrin	Endrin + Dieldrin	p,p'-DDE	Chlordane	Chlordane (cis)	Chlordane (trans)	p,p'-DDE	DDD	DDT	p,p'-DDE/p,p'-DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin aldehyde	Endrin ketone	Endrin	p,p'-DDE (Lindane)	Permethrin	Permethrin epoxide	Hexachlorobenzene	Metomylchlor	Osaphene		
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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	0.05	0.05	0.5
Lab Report Number	Field ID	Date	Matrix Type	-	-	<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	<0.05	<0.05	<0.05
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	-	-	<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	<0.05	<0.05	<0.05
ES2414714	QA01	24 Apr 2024	Soil	-	-	<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	<0.05	<0.05	<0.05
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES2413401	TP08-L_0.1	24 Apr 2024	Soil	-	-	<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	<0.05	<0.05	<0.05
1892777	QA02	24 Apr 2024	Soil	<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	<0.05	<0.05	<0.05
RPD				-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	-	-	<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	<0.05	<0.05	<0.05
ES2414714	QA03	24 Apr 2024	Soil	-	-	<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	<0.05	<0.05	<0.05
RPD				-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ES2413458	TP24-P_0.1	24 Apr 2024	Soil	-	-	<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	<0.05	<0.05	<0.05
1892777	QA04	24 Apr 2024	Soil	<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	<0.05	<0.05	<0.05
RPD				-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL
 **Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
 ***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any m

	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	1	0.2	0.5	0.5	0.5	0.5	0.2	10	10	50	50	100	100	50	10	50	100	100	50	
Field ID	Date																			
TRIP BLANK	15 Apr 2024	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<10	-	-	-	-	-	<10	-	-	-

		BTEX							
		Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		1	0.2	0.5	0.5	0.5	0.5	0.5	0.2
TRIP SPIKE	15 Apr 2024	<1	<0.2	4.3	5.2	5.7	2.4	8.1	17.6
TSC	15 Apr 2024	<1	<0.2	4.5	5.4	5.9	2.6	8.5	18.4

	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)
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL	5	1	2	2	2	2	2	1	20	20	100	100	100	100	100	20	50	100	50	50
Field ID	Date																			
RW01	24 Apr 2024																			
	<5	<1	<2	<2	<2	<2	<2	<1	<20	<20	<100	<100	<100	<100	<100	<20	<50	<100	<50	<50

	Metals									
	Naphthalene (BTEX)	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
EQL	5	1	0.1	1	1	1	0.1	1	5	
Field ID	Date									
RW01	24 Apr 2024	<5	<1	<0.1	<1	<1	<1	<0.1	<1	<5

	PAH																		
	Naphthalene (BTEX)	Acenaphthene	Acenaphthylene	Anthracene	Benz(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 calc (Zero)	PAHs (Sum of total)
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
EQL	5	1	1	1	1	0.5	1	1	1	1	1	1	1	1	1	1	1	0.5	0.5
Field ID	Date																		
RW01	24 Apr 2024																		
	<5	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<0.5

Job Number: EP3627

Client: Thirdi

Table 1F - Bonded Asbestos Analytical Table



Site Location: Gosforth

Date: 24.04.24

Location	Profile	Litres of Soil	Soil (kg)	ACM (kg)	Asbestos Content (kg)	% w/w Asbestos	Variables	Adopted Factors
							Specific gravity	1.8
							Asbestos content	15.00%
TP01-L_0.1	TOPSOIL	10	18	0	0	0.000		
TP02-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP03-L_0.1	TOPSOIL	10	18	0	0	0.000		
TP06-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP08-L_0.1	TOPSOIL	10	18	0	0	0.000		
TP10-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP14-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP24-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP29-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP30-P_0.1	TOPSOIL	10	18	0	0	0.000		
TP34-L_0.1	TOPSOIL	10	18	0	0	0.000		

	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
	Yes / No	g	g	% (w/w)	kg	-	-	g/kg
EQL		0.0004	0.0004	0.001	0.0001			0.1
NEPM 2013 Table 7 Res A HSL for Asbestos in Soil				0.001				

Field ID	Date	Depth								
TP01-L_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.227	0	0	0
TP02-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.315	0	0	0
TP03-L_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.327	0	0	0
TP06-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.218	0	0	0
TP08-L_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.243	0	0	0
TP10-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.225	0	0	0
TP14-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.261	0	0	0
TP24-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.177	0	0	0
TP29-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.292	0	0	0
TP30-P_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.229	0	0	0
TP34-L_0.1	24 Apr 2024	0.1	No	<0.0004	<0.0004	<0.001	0.314	0	0	0

Environmental Standards

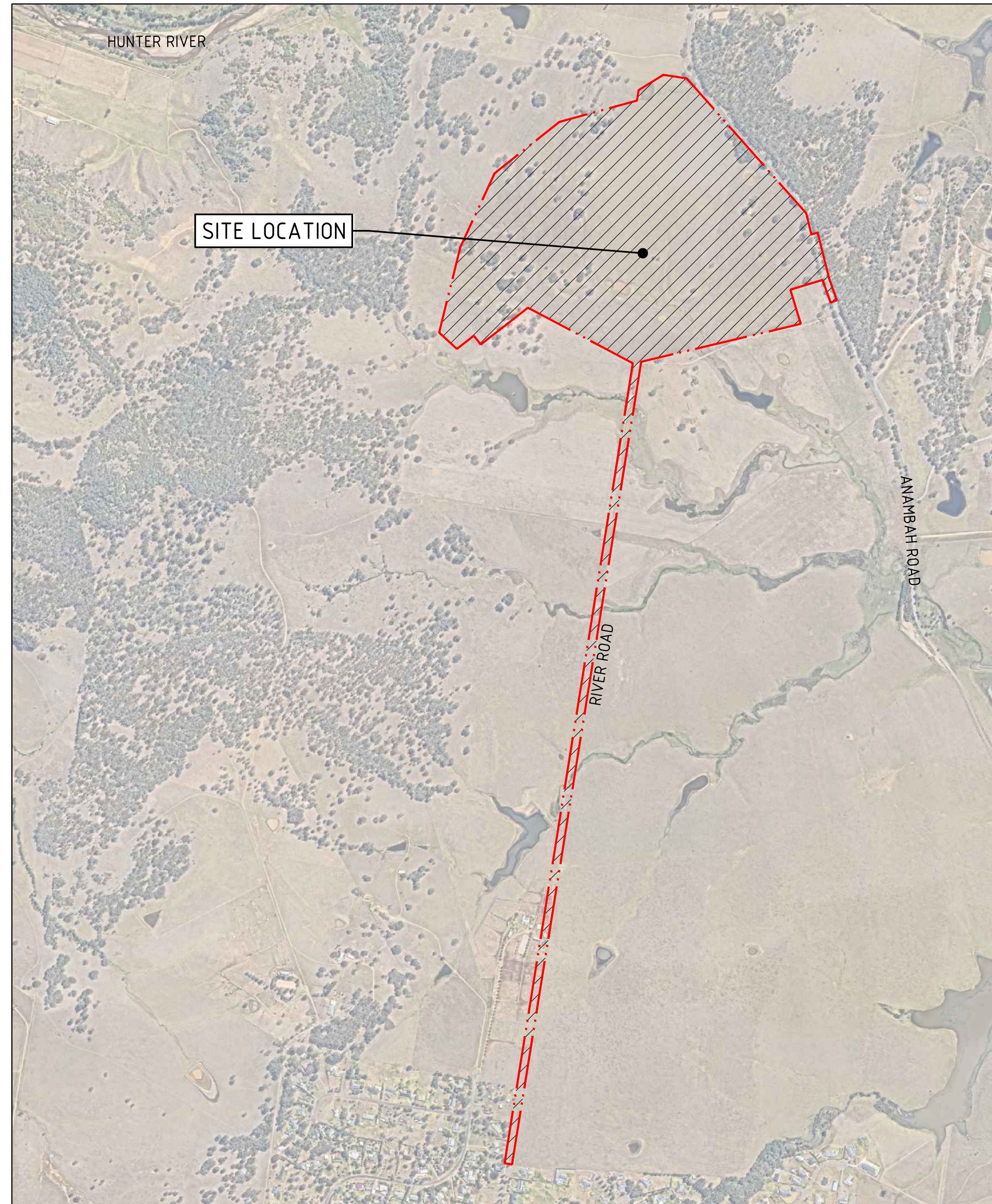
NEPM, 2013, NEPM 2013 Table 7 Res A HSL for Asbestos in Soil

Appendix A

CONCEPT PLANS

PROPOSED SUBDIVISION, 559 ANAMBAH ROAD GOSFORTH NSW 2320

MASTERPLANNING DEVELOPMENT APPLICATION CIVIL ENGINEERING PACKAGE



LOCALITY PLAN

IMAGE SOURCE - NEARMAPS

DRAWING SCHEDULE

DWG NO.	DRAWING TITLE
MP-C01.01	COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN
MP-C02.01	STAGING PLAN
MP-C03.01	CONCEPT BULK EARTHWORKS PLAN
MP-C03.11	BULK EARTHWORKS SITE SECTIONS - SHEET 1
MP-C03.12	BULK EARTHWORKS SITE SECTIONS - SHEET 2
MP-C03.13	BULK EARTHWORKS SITE SECTIONS - SHEET 3
MP-C04.01	CONCEPT CIVIL WORKS PLAN - SHEET 1
MP-C04.02	CONCEPT CIVIL WORKS PLAN - SHEET 2
MP-C04.03	CONCEPT CIVIL WORKS PLAN - SHEET 3
MP-C04.04	CONCEPT CIVIL WORKS PLAN - SHEET 4
MP-C05.01	FOOTPATH AND SHARED PATH PLAN
MP-C05.21	ROAD TYPICAL SECTIONS - SHEET 1
MP-C05.22	ROAD TYPICAL SECTIONS - SHEET 2
MP-C05.25	TYPICAL SECTIONS THROUGH LOTS
MP-C05.26	TYPICAL CIVIL DETAILS
MP-C05.31	ROAD LONGITUDINAL SECTIONS - SHEET 1
MP-C05.32	ROAD LONGITUDINAL SECTIONS - SHEET 2
MP-C05.33	ROAD LONGITUDINAL SECTIONS - SHEET 3
MP-C05.34	ROAD LONGITUDINAL SECTIONS - SHEET 4
MP-C05.35	ROAD LONGITUDINAL SECTIONS - SHEET 5
MP-C05.36	ROAD LONGITUDINAL SECTIONS - SHEET 6
MP-C05.37	ROAD LONGITUDINAL SECTIONS - SHEET 7
MP-C05.38	ROAD LONGITUDINAL SECTIONS - SHEET 8
MP-C05.39	ROAD LONGITUDINAL SECTIONS - SHEET 9
MP-C05.40	ROAD LONGITUDINAL SECTIONS - SHEET 10
MP-C05.41	ROAD LONGITUDINAL SECTIONS - SHEET 11
MP-C05.42	ROAD LONGITUDINAL SECTIONS - SHEET 12
MP-C05.43	ROAD LONGITUDINAL SECTIONS - SHEET 13
MP-C05.44	ROAD LONGITUDINAL SECTIONS - SHEET 14
MP-C05.45	ROAD LONGITUDINAL SECTIONS - SHEET 15
MP-C05.46	ROAD LONGITUDINAL SECTIONS - SHEET 16
MP-C05.47	ROAD LONGITUDINAL SECTIONS - SHEET 17
MP-C05.48	ROAD LONGITUDINAL SECTIONS - SHEET 18
MP-C05.49	ROAD LONGITUDINAL SECTIONS - SHEET 19
MP-C05.50	ROAD LONGITUDINAL SECTIONS - SHEET 20
MP-C05.51	ROAD LONGITUDINAL SECTIONS - SHEET 21
MP-C05.52	ROAD LONGITUDINAL SECTIONS - SHEET 22
MP-C05.53	ROAD LONGITUDINAL SECTIONS - SHEET 23
MP-C05.54	ROAD LONGITUDINAL SECTIONS - SHEET 24
MP-C05.55	ROAD LONGITUDINAL SECTIONS - SHEET 25
MP-C05.56	ROAD LONGITUDINAL SECTIONS - SHEET 26
MP-C05.57	ROAD LONGITUDINAL SECTIONS - SHEET 27
MP-C05.58	ROAD LONGITUDINAL SECTIONS - SHEET 28
MP-C05.59	ROAD LONGITUDINAL SECTIONS - SHEET 29
MP-C05.60	ROAD LONGITUDINAL SECTIONS - SHEET 30
MP-C05.61	ROAD LONGITUDINAL SECTIONS - SHEET 31
MP-C05.62	ROAD LONGITUDINAL SECTIONS - SHEET 32
MP-C05.63	ROAD LONGITUDINAL SECTIONS - SHEET 33
MP-C05.64	ROAD LONGITUDINAL SECTIONS - SHEET 34
MP-C05.65	ROAD LONGITUDINAL SECTIONS - SHEET 35
MP-C05.66	ROAD LONGITUDINAL SECTIONS - SHEET 36
MP-C06.01	CREEK PLAN AND LONGITUDINAL SECTION
MP-C06.11	CREEK CROSS SECTIONS
MP-C08.01	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 1
MP-C08.02	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 2
MP-C08.03	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 3
MP-C08.04	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 4
MP-C08.05	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 5
MP-C08.21	ROAD TYPICAL SECTIONS RIVER ROAD
MP-C08.31	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 1
MP-C08.32	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 2
MP-C08.33	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 3
MP-C08.34	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 4

DRAWN: J. STAUB DESIGNED: A. TURNBULL JOB MANAGER: L. MCRAE VERIFIER: L. MCRAE



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Newcastle

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Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100

PROJECT

**PROPOSED SUBDIVISION
559 ANAMBAH ROAD
GOSFORTH NSW 2320**

MASTERPLANNING DA

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

**COVER SHEET, DRAWING SCHEDULE
AND LOCALITY PLAN**

JOB NUMBER

NL222055-01

DRAWING NUMBER

MP-C01.01

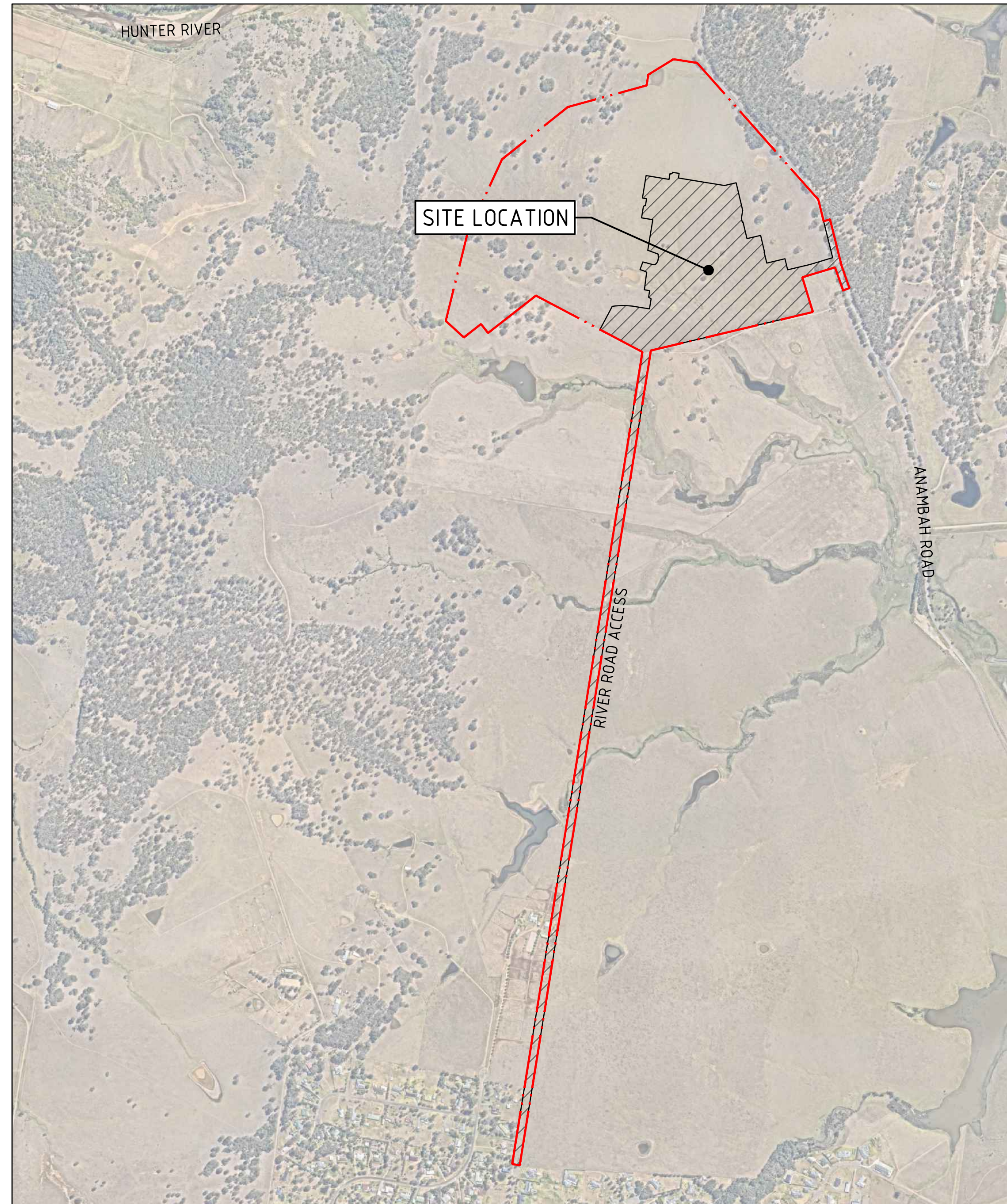
REVISION

C

DRAWING SHEET SIZE = A1

PROPOSED SUBDIVISION, 559 ANAMBAH ROAD GOSFORTH NSW 2320

STAGE 1 DEVELOPMENT APPLICATION CIVIL ENGINEERING PACKAGE



LOCALITY PLAN

IMAGE SOURCE - NEARMAPS

DRAWING SCHEDULE

DWG NO.	DRAWING TITLE
DA1-C01.01	COVER SHEET, DRAWING SCHEDULE AND LOCALITY PLAN
DA1-C04.01	GENERAL ARRANGEMENT PLAN
DA1-C04.11	CIVIL WORKS PLAN - SHEET 1
DA1-C04.12	CIVIL WORKS PLAN - SHEET 2
DA1-C04.13	CIVIL WORKS PLAN - SHEET 3
DA1-C04.14	CIVIL WORKS PLAN - SHEET 4
DA1-C04.15	CIVIL WORKS PLAN - SHEET 5
DA1-C04.16	CIVIL WORKS PLAN - SHEET 6
DA1-C04.17	CIVIL WORKS PLAN - SHEET 7
DA1-C05.01	FOOTPATH AND SHARED PATH PLAN
DA1-C05.21	TYPICAL SECTIONS - SHEET 1
DA1-C05.22	TYPICAL SECTIONS - SHEET 2
DA1-C05.25	TYPICAL SECTIONS THROUGH LOTS
DA1-C05.26	TYPICAL CIVIL DETAILS
DA1-C05.31	ROAD LONGITUDINAL SECTIONS - SHEET 1
DA1-C05.32	ROAD LONGITUDINAL SECTIONS - SHEET 2
DA1-C05.33	ROAD LONGITUDINAL SECTIONS - SHEET 3
DA1-C05.34	ROAD LONGITUDINAL SECTIONS - SHEET 4
DA1-C05.35	ROAD LONGITUDINAL SECTIONS - SHEET 5
DA1-C05.36	ROAD LONGITUDINAL SECTIONS - SHEET 6
DA1-C05.37	ROAD LONGITUDINAL SECTIONS - SHEET 7
DA1-C05.38	ROAD LONGITUDINAL SECTIONS - SHEET 8
DA1-C05.39	ROAD LONGITUDINAL SECTIONS - SHEET 9
DA1-C05.40	ROAD LONGITUDINAL SECTIONS - SHEET 10
DA1-C05.41	ROAD LONGITUDINAL SECTIONS - SHEET 11
DA1-C05.42	ROAD LONGITUDINAL SECTIONS - SHEET 12
DA1-C05.43	ROAD LONGITUDINAL SECTIONS - SHEET 13
DA1-C05.44	ROAD LONGITUDINAL SECTIONS - SHEET 14
DA1-C05.45	ROAD LONGITUDINAL SECTIONS - SHEET 15
DA1-C05.46	ROAD LONGITUDINAL SECTIONS - SHEET 16
DA1-C05.47	ROAD LONGITUDINAL SECTIONS - SHEET 17
DA1-C06.01	CONCEPT BULK EARTHWORKS PLAN - SHEET 1
DA1-C06.02	CONCEPT BULK EARTHWORKS PLAN - SHEET 2
DA1-C07.01	EROSION AND SEDIMENT CONTROL PLAN - SHEET 1
DA1-C07.02	EROSION AND SEDIMENT CONTROL PLAN - SHEET 2
DA1-C07.11	EROSION AND SEDIMENT CONTROL NOTES
DA1-C07.12	EROSION AND SEDIMENT CONTROL DETAILS
DA1-C08.01	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 1
DA1-C08.02	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 2
DA1-C08.03	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 3
DA1-C08.04	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 4
DA1-C08.05	CONCEPT CIVIL WORKS PLAN RIVER ROAD - SHEET 5
DA1-C08.21	ROAD TYPICAL SECTIONS RIVER ROAD
DA1-C08.31	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 1
DA1-C08.32	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 2
DA1-C08.33	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 3
DA1-C08.34	ROAD LONGITUDINAL SECTIONS RIVER ROAD - SHEET 4

DRAWN: J. STAUB DESIGNED: A. TURBULL JOB MANAGER: L. MCRAE VERIFIER: L. MCRAE



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Level 1, 215 Pacific Hwy, Charlestown NSW 2290
Ph (02) 4943 1777 Email newcastle@northrop.com.au
ABN 81 094 433 100

PROJECT

**PROPOSED SUBDIVISION
559 ANAMBAH ROAD
GOSFORTH NSW 2320**

STAGE 1 DA

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

**COVER SHEET, DRAWING SCHEDULE
AND LOCALITY PLAN**

JOB NUMBER

NL222055-01

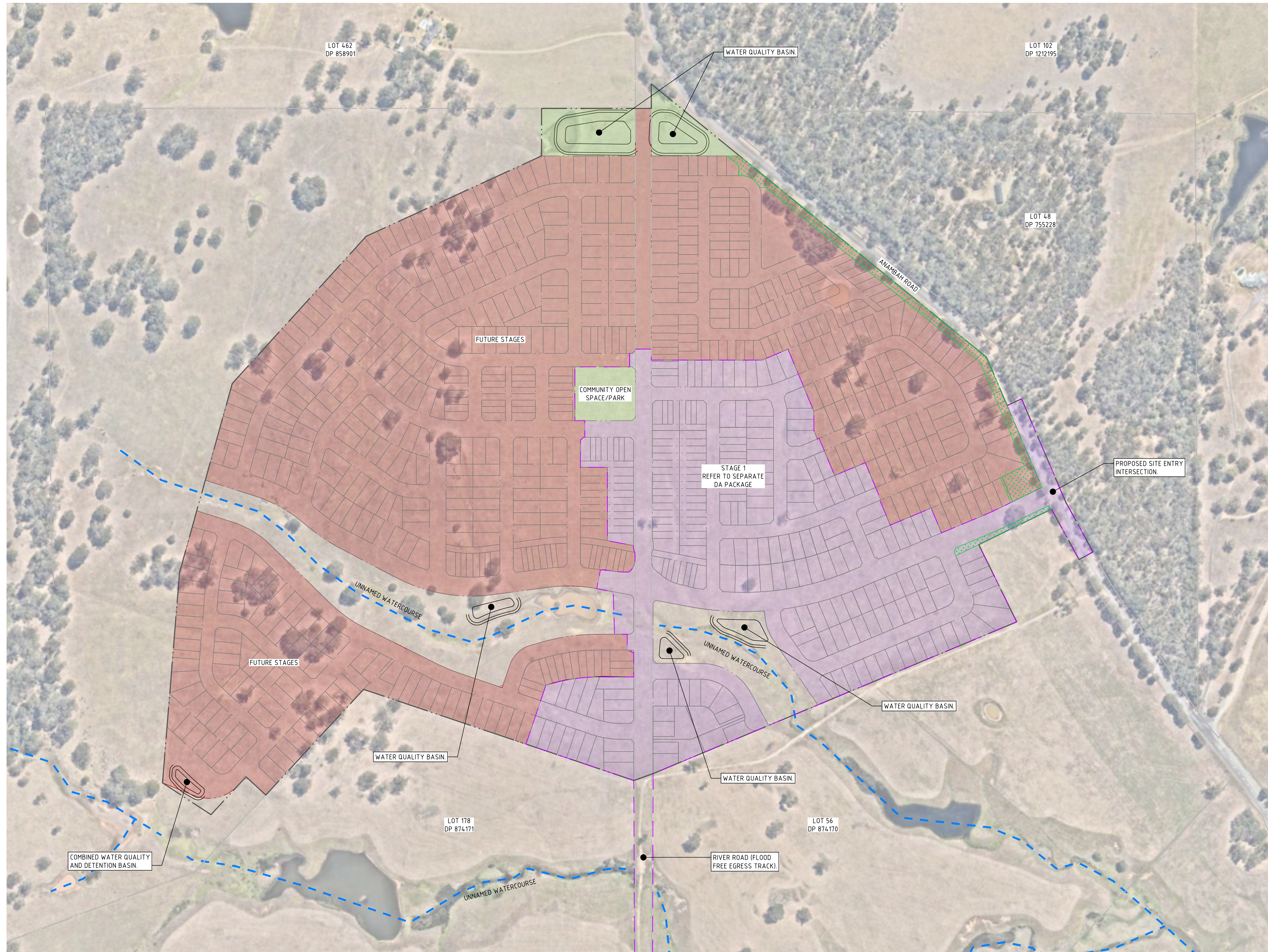
DRAWING NUMBER

DA1-C01.01

REVISION

B

DRAWING SHEET SIZE = A1



LEGEND	
	SITE BOUNDARY LINE
	EXISTING BOUNDARY LINE
	STAGE 1 WORKS EXTENT
	STAGE 1
	FUTURE STAGE
	OPEN SPACE
	LANDSCAPE SETBACK
	INDICATIVE LINE OF EXISTING WATERCOURSE

DRAWN: J. STAUB DESIGNED: A. TURBULL JOB MANAGER: L. MCRAE VERIFIER: L. MCRAE



NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE	CLIENT
A	DRAFT ISSUE	AK		LM	09.08.24	 DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED
B	DRAFT ISSUE	JS		AK	15.08.24	
C	ISSUED FOR APPROVAL	JS	LM	AK	22.08.24	

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Newcastle
 Level 1, 215 Pacific Hwy, Charlestown NSW 2290
 Ph (02) 4943 1777 Email newcastle@northrop.com.au
 ABN 81 094 433 100

PROJECT
PROPOSED SUBDIVISION
559 ANAMBAH ROAD
GOSFORTH NSW 2320
MASTERPLANNING DA

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
STAGING PLAN

JOB NUMBER NL222055-01	
DRAWING NUMBER MP-C02.01	REVISION C
DRAWING SHEET SIZE = A1	

Appendix B

LOT SEARCH REPORT (2024)



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 16 Apr 2024 13:48:14

Reference: LS055157 EP

Address: 559 Anambah Road, Gosforth, NSW 2320

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

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	04/01/2024	04/01/2024	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	09/04/2024	14/03/2024	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	09/04/2024	09/04/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	24/01/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority	09/04/2024	09/04/2024	Monthly	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	20/09/2023	07/09/2020	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	10/04/2024	21/11/2032	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	15/04/2024	29/02/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	15/04/2024	29/02/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	15/04/2024	15/04/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	24/01/2024	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	13/11/2023	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	10/04/2024	10/04/2024	Monthly	1000m	1	1	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	10/04/2024	10/04/2024	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	10/04/2024	10/04/2024	Monthly	1000m	3	4	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	-	0	0
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	13/11/2023	13/11/2023	Quarterly	1000m	0	0	2
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	13/11/2023	13/11/2023	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	13/11/2023	13/11/2023	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	31/01/2024	31/01/2024	Quarterly	1000m	0	0	3
State Forest	Forestry Corporation of NSW	12/12/2023	11/12/2023	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	06/02/2024	19/08/2019	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	09/05/2023	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	18/04/2023	13/07/2022	Annually	2000m	0	0	2
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	3	3	11
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	2	4	21
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	12/12/2023	27/07/2020	Annually	1000m	1	1	6
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	02/04/2024	01/09/2023	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	Annually	1000m	1	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	24/01/2024	24/01/2024	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	15/04/2024	15/04/2024	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	15/04/2024	15/04/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	15/04/2024	15/04/2024	Monthly	1000m	8	8	10
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	02/04/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	02/04/2024	23/02/2024	Monthly	1000m	2	6	10
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	20/10/2023	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	24/01/2024	24/11/2023	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	02/04/2024	01/03/2024	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	09/04/2024	12/03/2024	Monthly	1000m	4	4	4
NSW Native Vegetation Type Map	NSW Department of Planning and Environment	26/05/2023	12/12/2022	Quarterly	1000m	4	5	14
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	09/05/2023	01/11/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	2	3	5
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	2	3	10
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	29/11/2023	29/11/2023	Weekly	10000m	-	-	-

Contaminated Land

559 Anambah Road, Gosforth, NSW 2320

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
 © State of New South Wales through the Environment Protection Authority

Contaminated Land

559 Anambah Road, Gosforth, NSW 2320

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
© State of New South Wales through the 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
© State of New South Wales through the Environment Protection Authority

Contaminated Land

559 Anambah Road, Gosforth, NSW 2320

EPA Notices

Penalty Notices, s.91 & s.92 Clean up Notices and s.96 Prevention Notices within the dataset buffer:

Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
N/A	No records in buffer										

NSW EPA Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

559 Anambah Road, Gosforth, NSW 2320

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											

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

National Liquid Fuel Facilities

National Liquid Fuel Facilities 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										

National Liquid Fuel Facilities Data Source: Geoscience Australia
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PFAS Investigation & Management Programs

559 Anambah Road, Gosforth, NSW 2320

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
© State of New South Wales through the 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 and Unexploded Ordnance

559 Anambah Road, Gosforth, NSW 2320

Defence Controlled Areas (DCA)

Defence Controlled Areas provided by the Department of Defence within the dataset buffer:

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

Defence Controlled Areas, Data Custodian: Department of Defence, Australian Government

Defence 3 Year Regional Contamination Investigation Program (RCIP)

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

National Unexploded Ordnance (UXO)

Sites which have been assessed by the Department of Defence for the potential presence of unexploded ordnance within the dataset buffer:

Site ID	Location Name	Category	Area Description	Additional Information	Commonwealth	Loc Conf	Dist	Dir
N/A	No records in buffer							

National Unexploded Ordnance (UXO), Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

559 Anambah Road, Gosforth, NSW 2320

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
- Pasmenco Lead Abatement Strategy Area

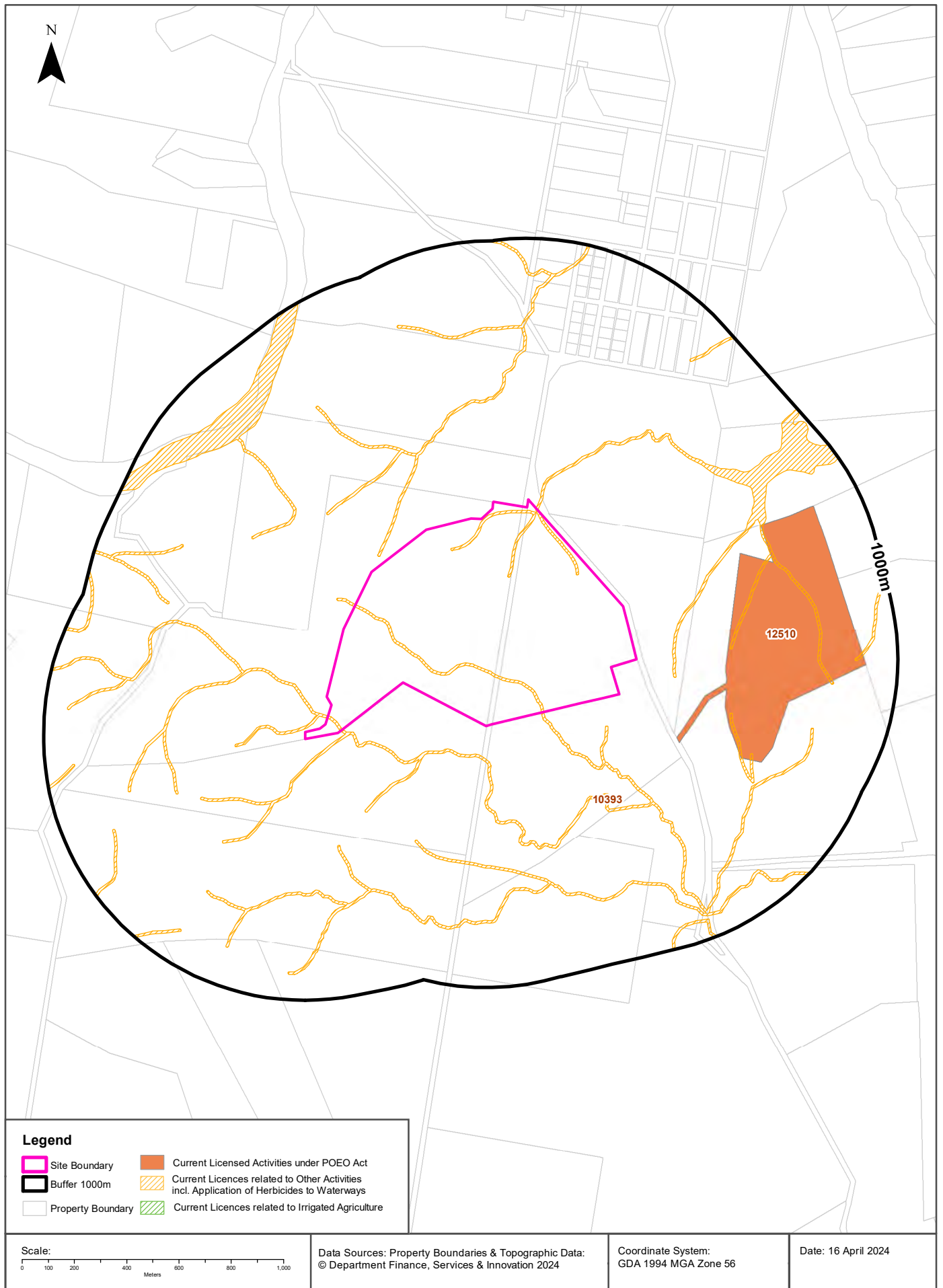
Sites within the dataset buffer:

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
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

559 Anambah Road, Gosforth, NSW 2320



EPA Activities

559 Anambah Road, Gosforth, NSW 2320

Licensed Activities under the POEO Act 1997

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

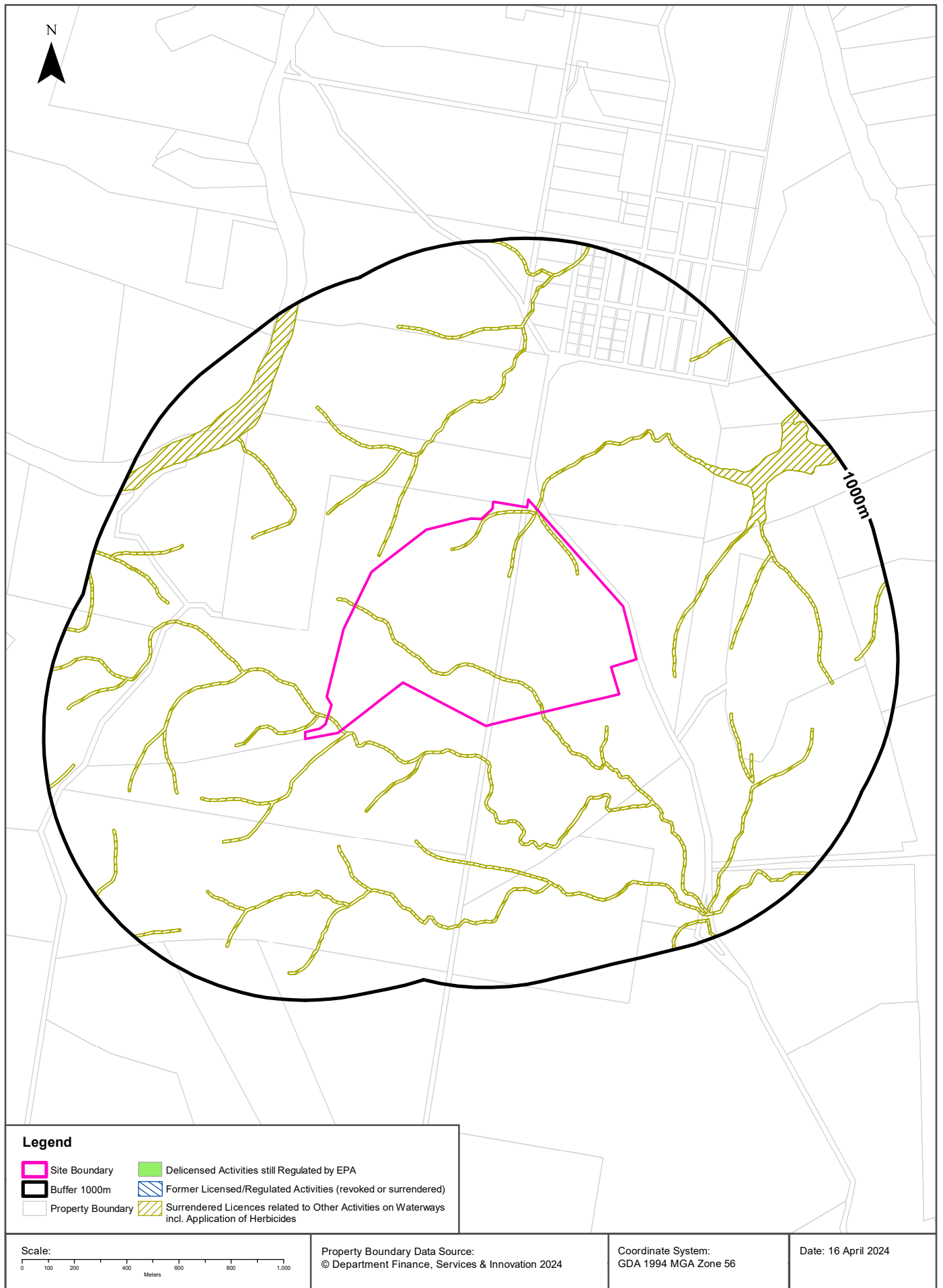
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10393	MAITLAND CITY COUNCIL	ALL WATERBODIES IN THE MAITLAND LOCAL GOVERNMENT AREA	.	MAITLAND	Other activities	Network of Features	0m	On-site
12510	DITTON PROPERTIES PTY LIMITED	DITTON PROPERTIES PTY LIMITED	442 Anambah Road	GOSFORTH	Land-based extractive activity	Premise Match	273m	East

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

559 Anambah Road, Gosforth, NSW 2320



EPA Activities

559 Anambah Road, Gosforth, NSW 2320

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
 © State of New South Wales through the 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	0m	North East

Former Licensed Activities Data Source: Environment Protection Authority
 © State of New South Wales through the Environment Protection Authority

Historical Business Directories

559 Anambah Road, Gosforth, NSW 2320

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories 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						

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Business Directory Records 1950-1991 Road or Area Matches

Potentially contaminative business activities extracted from Universal Business Directories 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
N/A	No records in buffer					

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Historical Business Directories

559 Anambah Road, Gosforth, NSW 2320

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						

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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					



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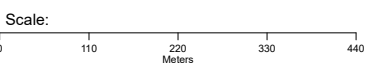
Aerial Imagery 2023

559 Anambah Road, Gosforth, NSW 2320



Legend

-  Site Boundary
-  Buffer 150m



Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56

Date: 15 April 2024

Aerial Imagery 2020

559 Anambah Road, Gosforth, NSW 2320





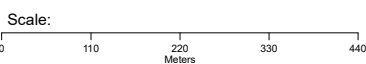
Aerial Imagery 2015

559 Anambah Road, Gosforth, NSW 2320



Legend

-  Site Boundary
-  Buffer 150m



Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56



Date: 15 April 2024

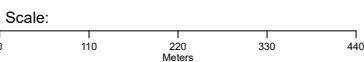
Aerial Imagery 2010

559 Anambah Road, Gosforth, NSW 2320



Legend

-  Site Boundary
-  Buffer 150m



Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56



Date: 15 April 2024

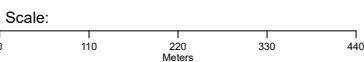
Aerial Imagery 2007

559 Anambah Road, Gosforth, NSW 2320



Legend

-  Site Boundary
-  Buffer 150m



Data Source Aerial Imagery:
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Coordinate System:
GDA 1994 MGA Zone 56

Date: 15 April 2024

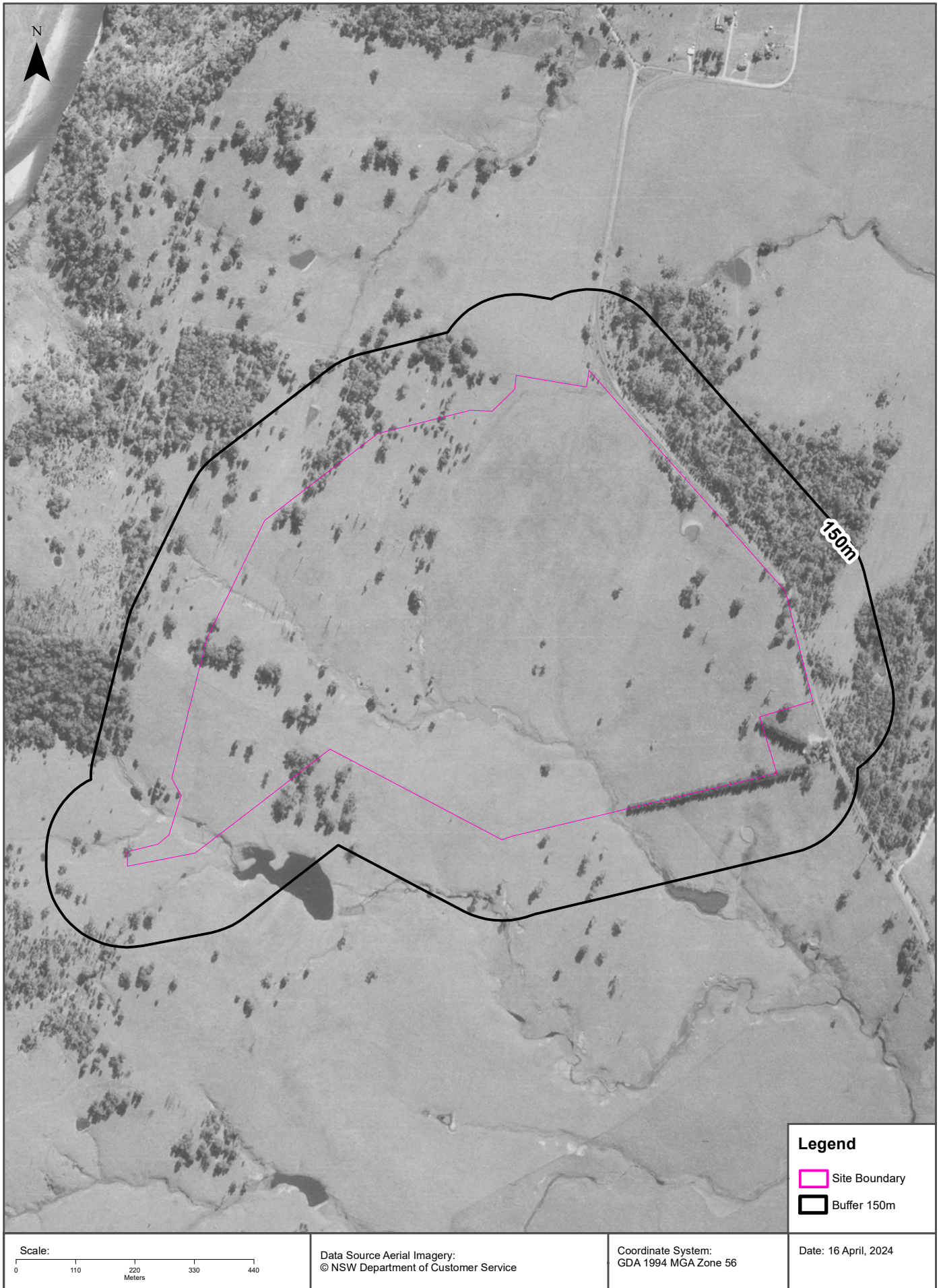
Aerial Imagery 2004

559 Anambah Road, Gosforth, NSW 2320



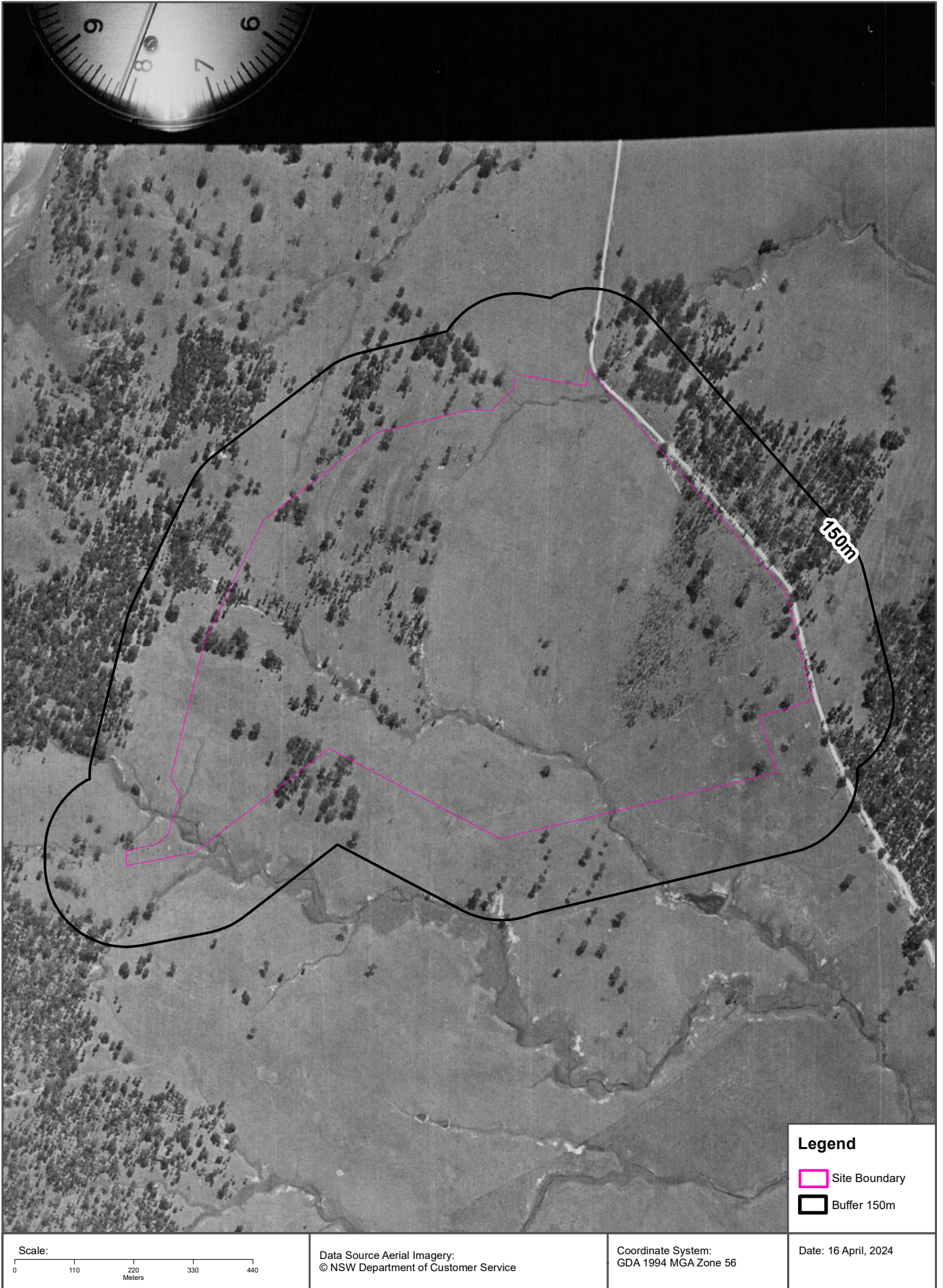
Aerial Imagery 1984

559 Anambah Road, Gosforth, NSW 2320



Aerial Imagery 1961

559 Anambah Road, Gosforth, NSW 2320



Legend

- Site Boundary
- Buffer 150m

Scale:
0 110 220 330 440
Meters

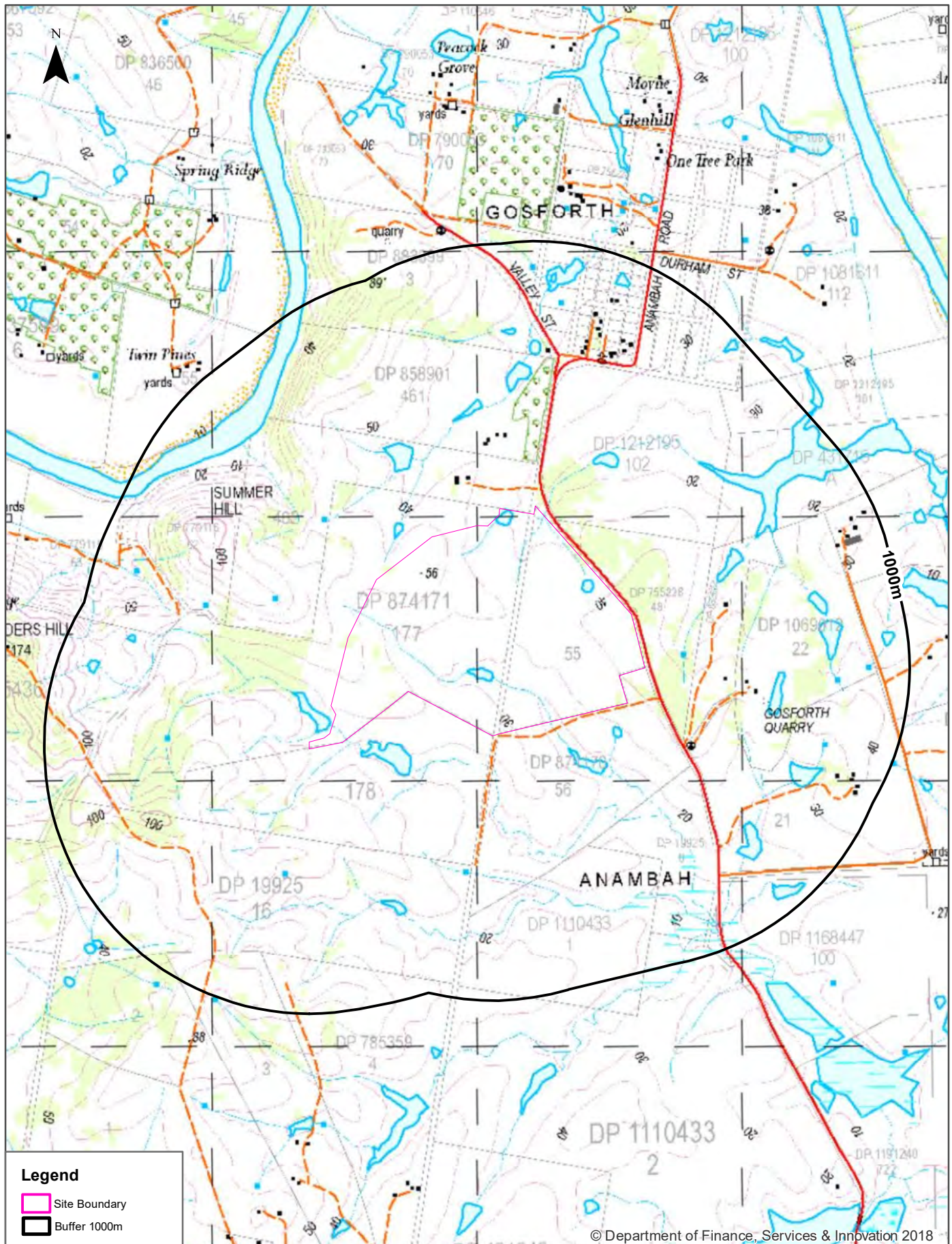
Data Source Aerial Imagery:
© NSW Department of Customer Service

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 April, 2024

Topographic Map 2015

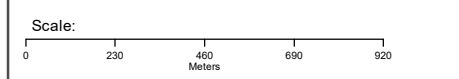
559 Anambah Road, Gosforth, NSW 2320



Legend

- Site Boundary
- Buffer 1000m

© Department of Finance, Services & Innovation 2018



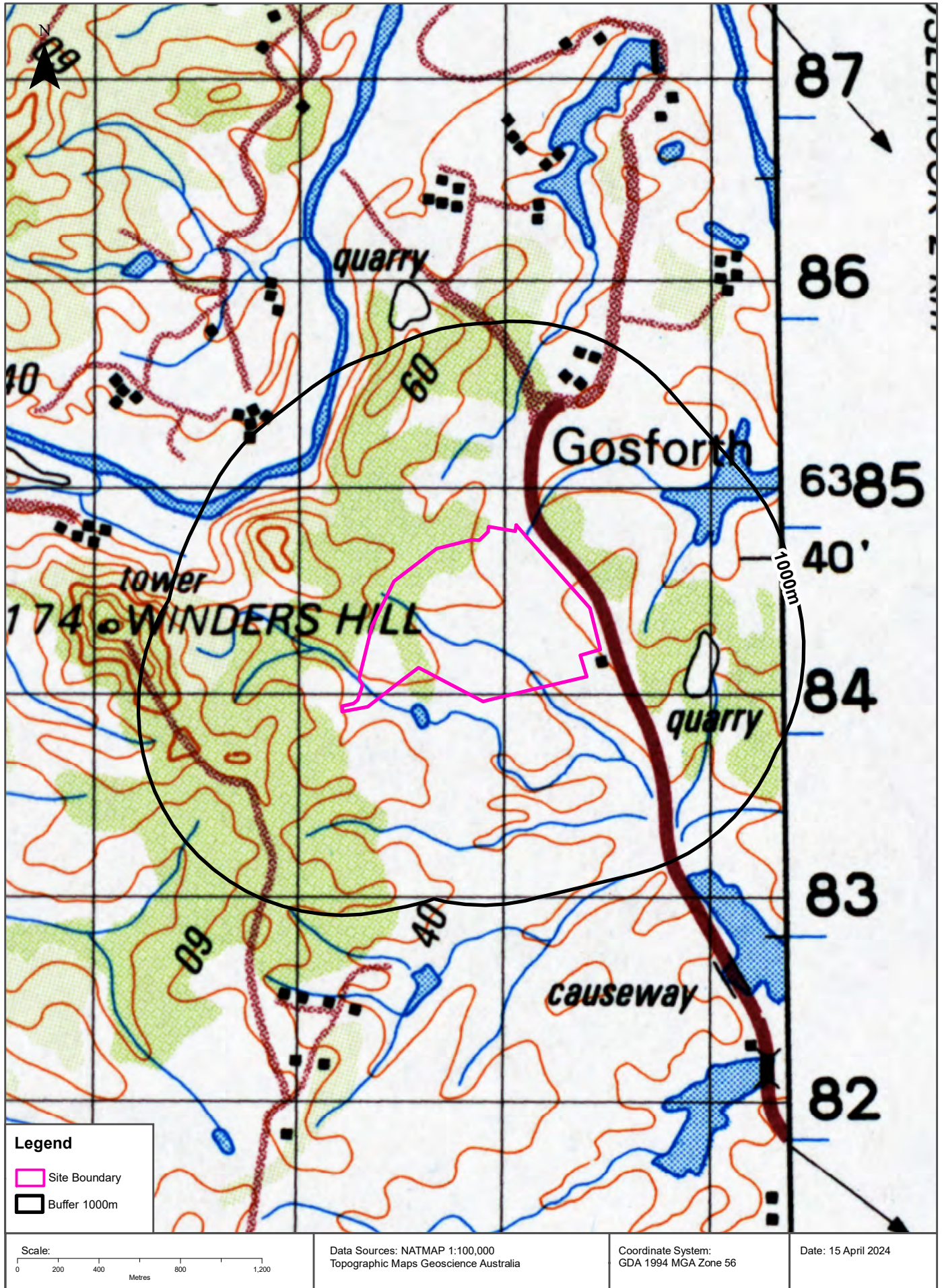
Data Sources: Topographic Map Data
© NSW Land and Property Information

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 April 2024

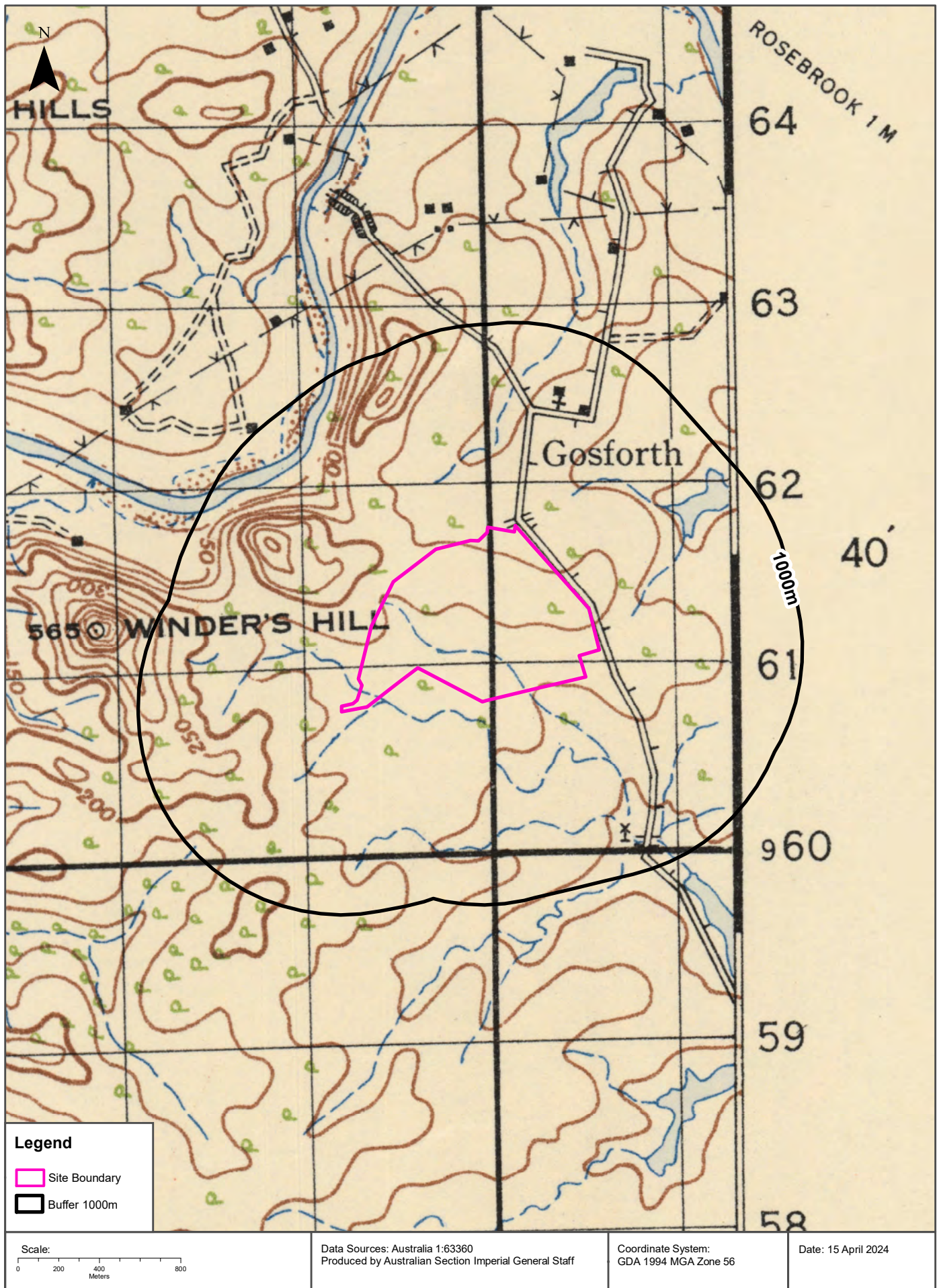
Historical Map 1982

559 Anambah Road, Gosforth, NSW 2320



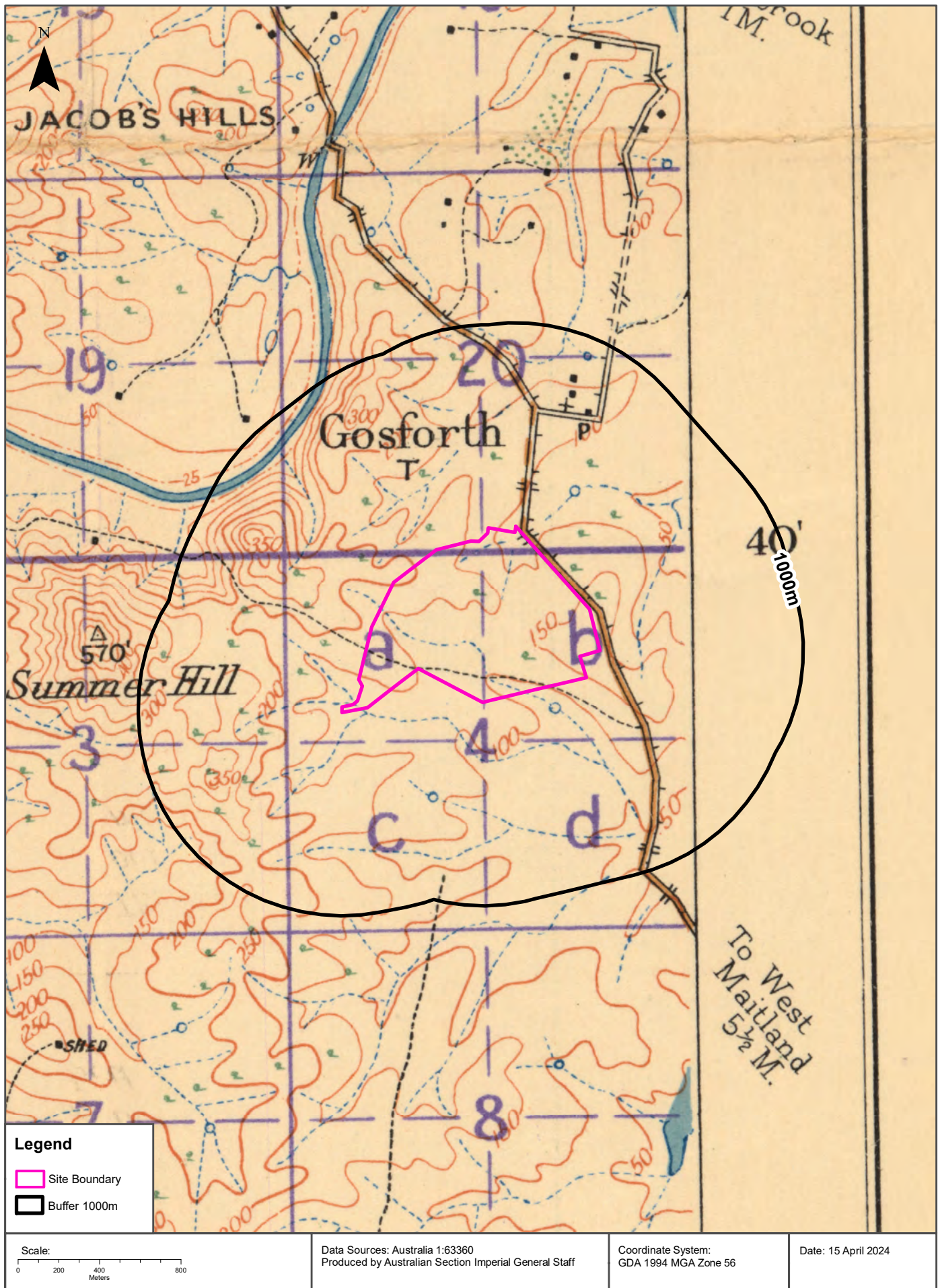
Historical Map c.1955

559 Anambah Road, Gosforth, NSW 2320



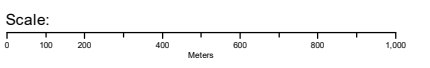
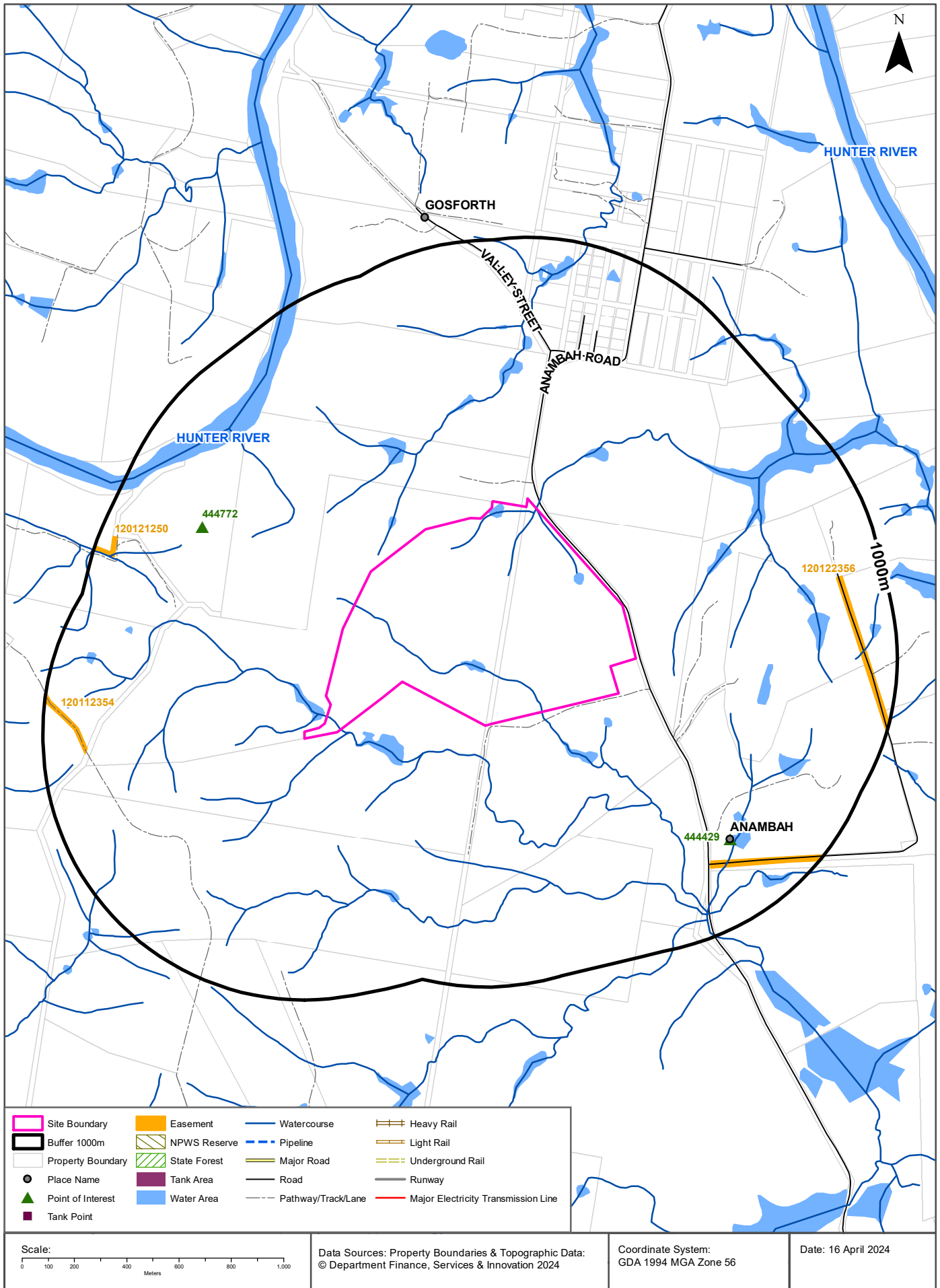
Historical Map c.1927

559 Anambah Road, Gosforth, NSW 2320



Topographic Features

559 Anambah Road, Gosforth, NSW 2320



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2024

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 April 2024

Topographic Features

559 Anambah Road, Gosforth, NSW 2320

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
444772	Mountain Like	SUMMER HILL	653m	West
444429	Locality	ANAMBAH	703m	South East

Topographic Data Source: © Land and Property Information (2015)

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Topographic Features

559 Anambah Road, Gosforth, NSW 2320

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					

Tanks Data Source: © Land and Property Information (2015)

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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
120122356	Primary	Undefined		733m	East
120112354	Primary	Undefined		833m	West
120121250	Primary	Undefined		918m	West

Easements Data Source: © Land and Property Information (2015)

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Topographic Features

559 Anambah Road, Gosforth, NSW 2320

State Forest

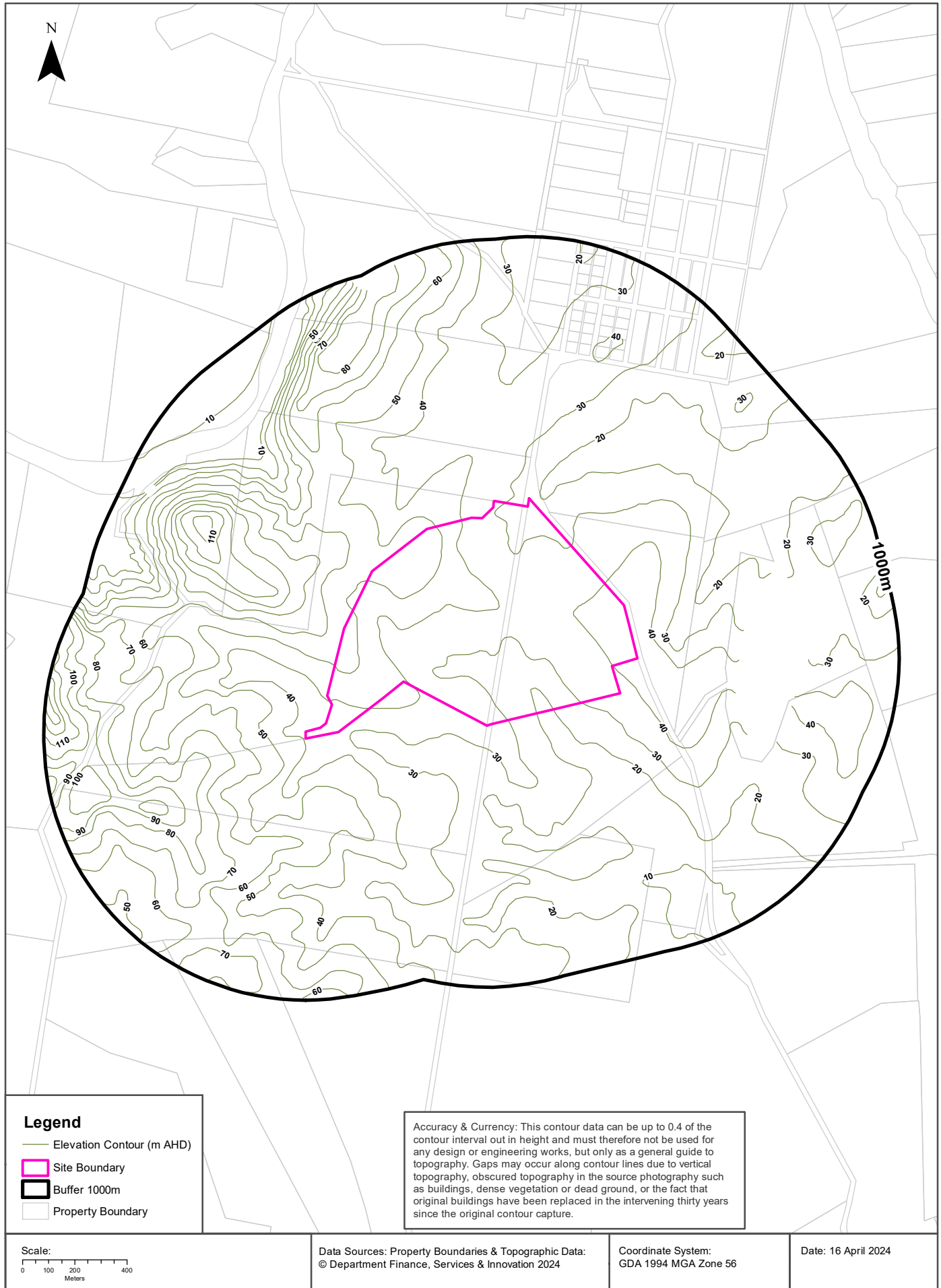
What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
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Elevation Contours (m AHD)

559 Anambah Road, Gosforth, NSW 2320



Hydrogeology & Groundwater

559 Anambah Road, Gosforth, NSW 2320

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

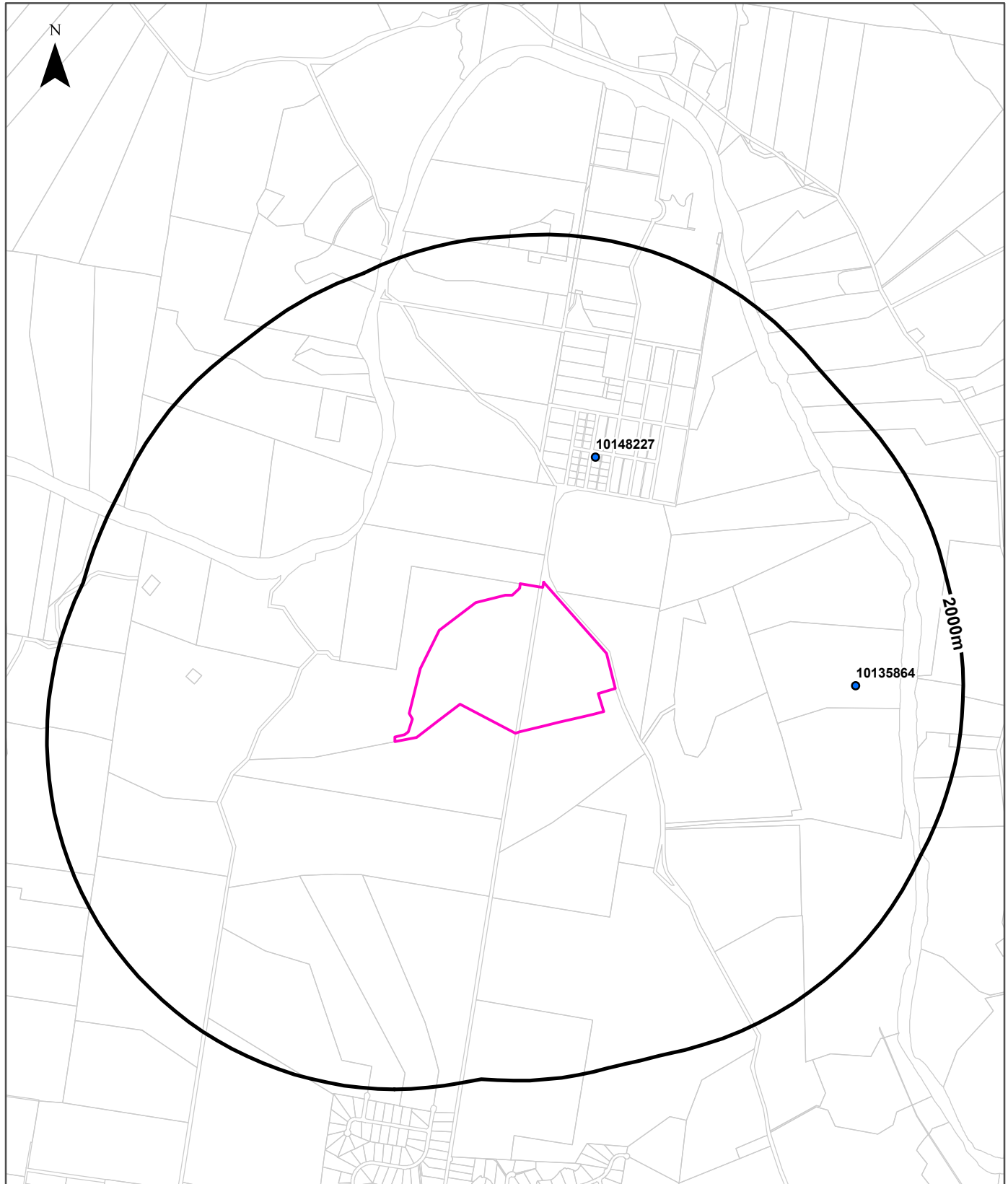
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

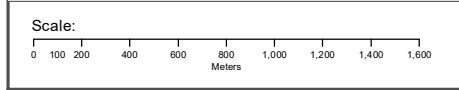
Groundwater Boreholes

559 Anambah Road, Gosforth, NSW 2320



Legend

Site Boundary	Borehole	Monitoring
Buffer 2000m	Commercial and Industrial	Other; Unknown
Property Boundary	Dewatering	Stock and Domestic
	Exploration	Water Supply
	Irrigation	



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2024

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 April 2024

Hydrogeology & Groundwater

559 Anambah Road, Gosforth, NSW 2320

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
10148227	GW061253	Water Supply	Unknown	01/10/1985	25.00		AHD	3001-7000 ppm			778m	North
10135864	GW080640	Water Supply	Unknown	11/03/2004			AHD				1385m	East

Borehole Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Hydrogeology & Groundwater

559 Anambah Road, Gosforth, NSW 2320

Driller's Logs

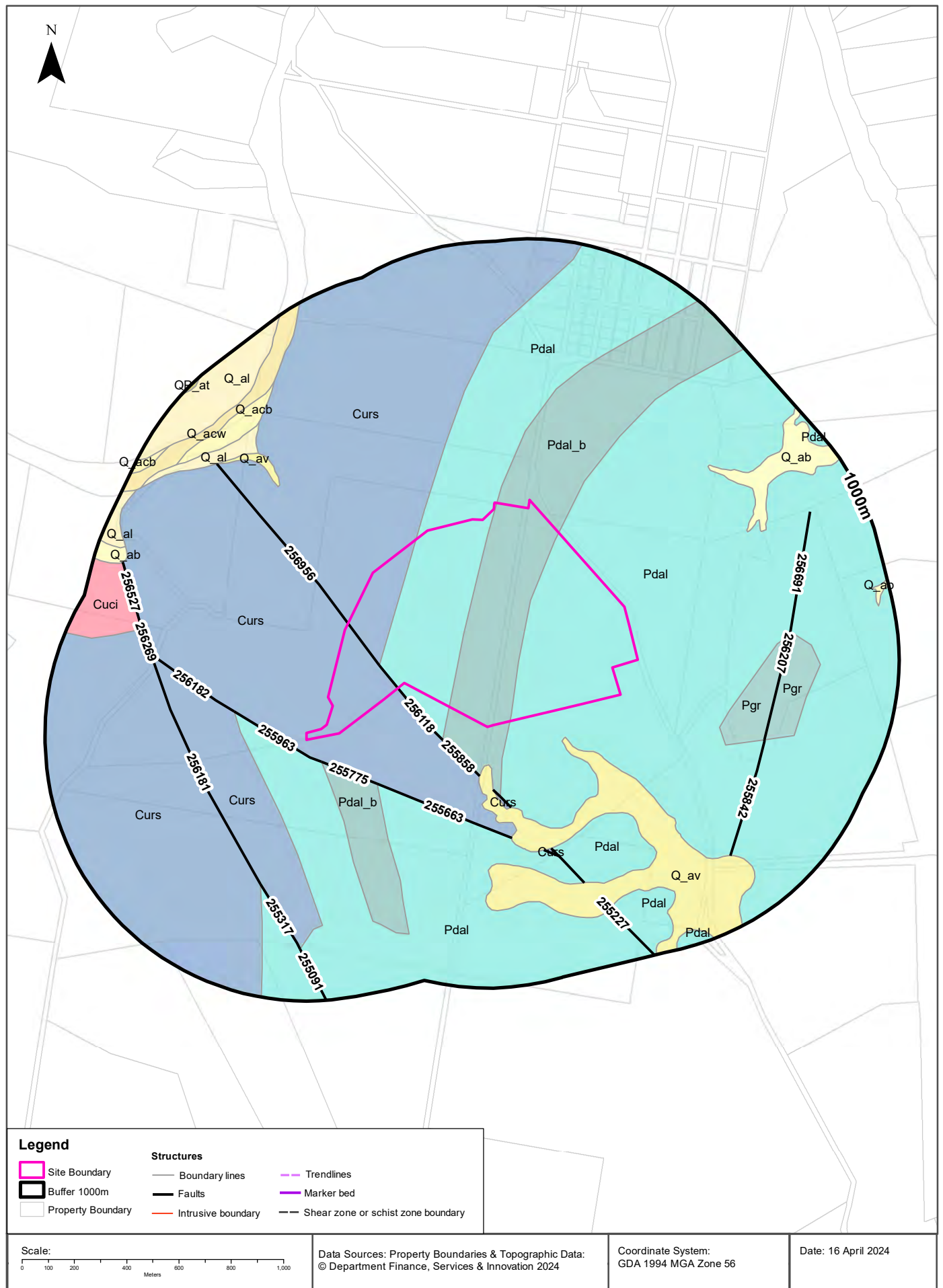
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10148227	0.00m-6.09m Clay 6.09m-19.20m Sandstone 19.20m-20.20m Sandstone Weathered Water Supply 20.20m-24.99m Sandstone	778m	North

Drill Log Data Source: Bureau of Meteorology; Water NSW. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Geology

559 Anambah Road, Gosforth, NSW 2320



Geology

559 Anambah Road, Gosforth, NSW 2320

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pdal	Lochinvar Formation	Basalt, siltstone, sandstone.	\Dalwood Group\ \Lochinvar Formation\	Permian (base) to Permian (top)	Basalt	0m
Pdal_b	Lochinvar Formation - basalt	Amygdaloidal basalt.	\Dalwood Group\ \Lochinvar Formation \Lochinvar Formation - basalt\	Permian (base) to Permian (top)	Basalt	0m
Curs	Seaham Formation	Tillite, varved siltstone, tuff, red and green zeolitic mudstone with dropstones interbedded in thick-bedded lithic sandstone and conglomerate.	\Ungrouped Rouchel Block units\ \Seaham Formation\	Serpukhovian (base) to Kasimovian (top)	Siliciclastic sedimentary rock	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	109m
Pgr	Greta Coal Measures	Sandstone, siltstone, pellet claystone, coal, chert, sporadic conglomerate.	\Greta Coal Measures\	Permian (base) to Permian (top)	Sandstone	400m
Q_ab	Alluvial backswamp deposits	Organic-rich mud, peat, silt, clay.	\Alluvium\ \Alluvial backswamp deposits\	Quaternary (base) to Now (top)	Organic rich sediment	551m
Q_al	Alluvial levee/overbank deposits	Fluvially deposited fine- to medium-grained lithic to quartz-rich sand, silt, clay.	\Alluvium\ \Alluvial levee overbank deposits\	Quaternary (base) to Now (top)	Clastic sediment	634m
Q_acb	Alluvial channel deposits - in-channel bar	Polymictic to lithic to quartz-rich sand and gravel; silt and clay; polymictic pebble- to cobble- in-channel imbricated lag and bar deposits with interstitial sand, silt and clay.	\Alluvium\ \Alluvial channel deposits\ \Alluvial channel deposits - in-channel bar\	Quaternary (base) to Now (top)	Clastic sediment	717m
Cuci	Winders Hill Granodiorite	Granodiorite, diorite, andersite.	\Unassigned Carboniferous intrusions\ \Winders Hill Granodiorite\	Carboniferous (base) to Carboniferous (top)	Granodiorite	744m
Q_acw	Alluvial channel deposits - subaqueous	Fluvially deposited sand, gravel, silt, clay.	\Alluvium\ \Alluvial channel deposits\ \Alluvial channel deposits - subaqueous\	Quaternary (base) to Now (top)	Clastic sediment	793m
QP_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	986m

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
256118	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	0m
256956	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	0m
255963	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	51m
255775	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	94m
255858	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	123m
255632	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	241m
255663	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	241m
255606	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	271m
256182	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	289m
256181	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	425m
255415	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	510m
255420	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	510m
256207	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	544m
255399	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	546m
255842	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	574m
255317	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	579m
256691	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	590m
256269	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	667m
256527	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	744m
255227	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	790m
255091	Faulted boundary	Fault, position approximate	Newcastle Coalfield 1:100,000 Regional Geology	802m

Geological Data Source: Statewide Seamless Geology v2.1, Department of Regional NSW

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Naturally Occurring Asbestos Potential

559 Anambah Road, Gosforth, NSW 2320

Naturally Occurring Asbestos Potential

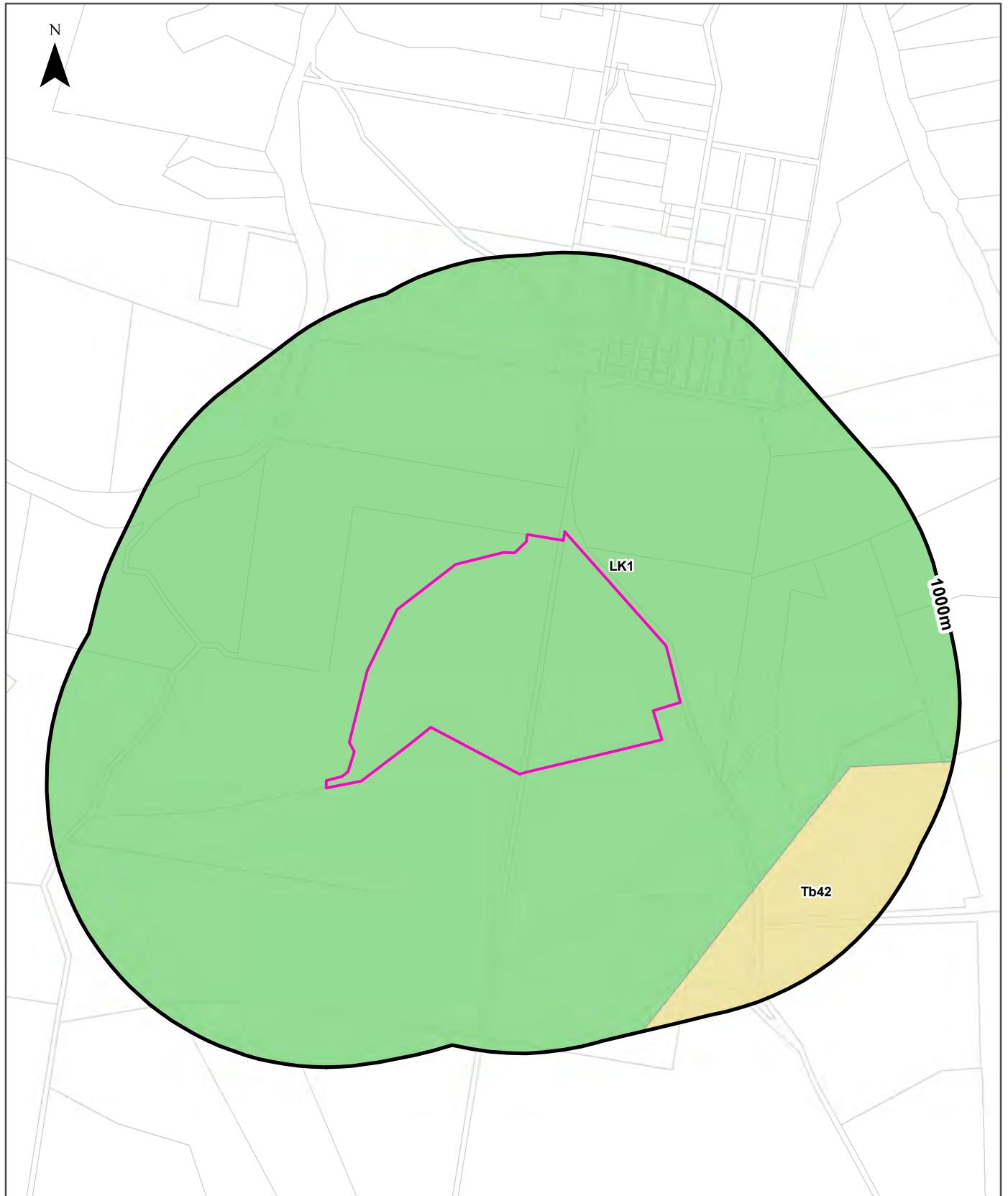
Naturally Occurring Asbestos Potential within the dataset buffer:

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

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

559 Anambah Road, Gosforth, NSW 2320



Legend		Australian Soil Classification Orders					
Site Boundary	Anthroposol	Dermosol	Kandosol	Podosol	Tenosol	No Data	
Buffer 1000m	Calcarosol	Ferrosol	Kurosol	Rudosol	Vertosol		
Property Boundary	Chromosol	Hydrosol	Organosol	Sodosol	Lake		

<p>Scale:</p> <p>0 100 200 400 600 800 1,000 Meters</p>	<p>Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 16 April 2024</p>
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Soils

559 Anambah Road, Gosforth, NSW 2320

Atlas of Australian Soils

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

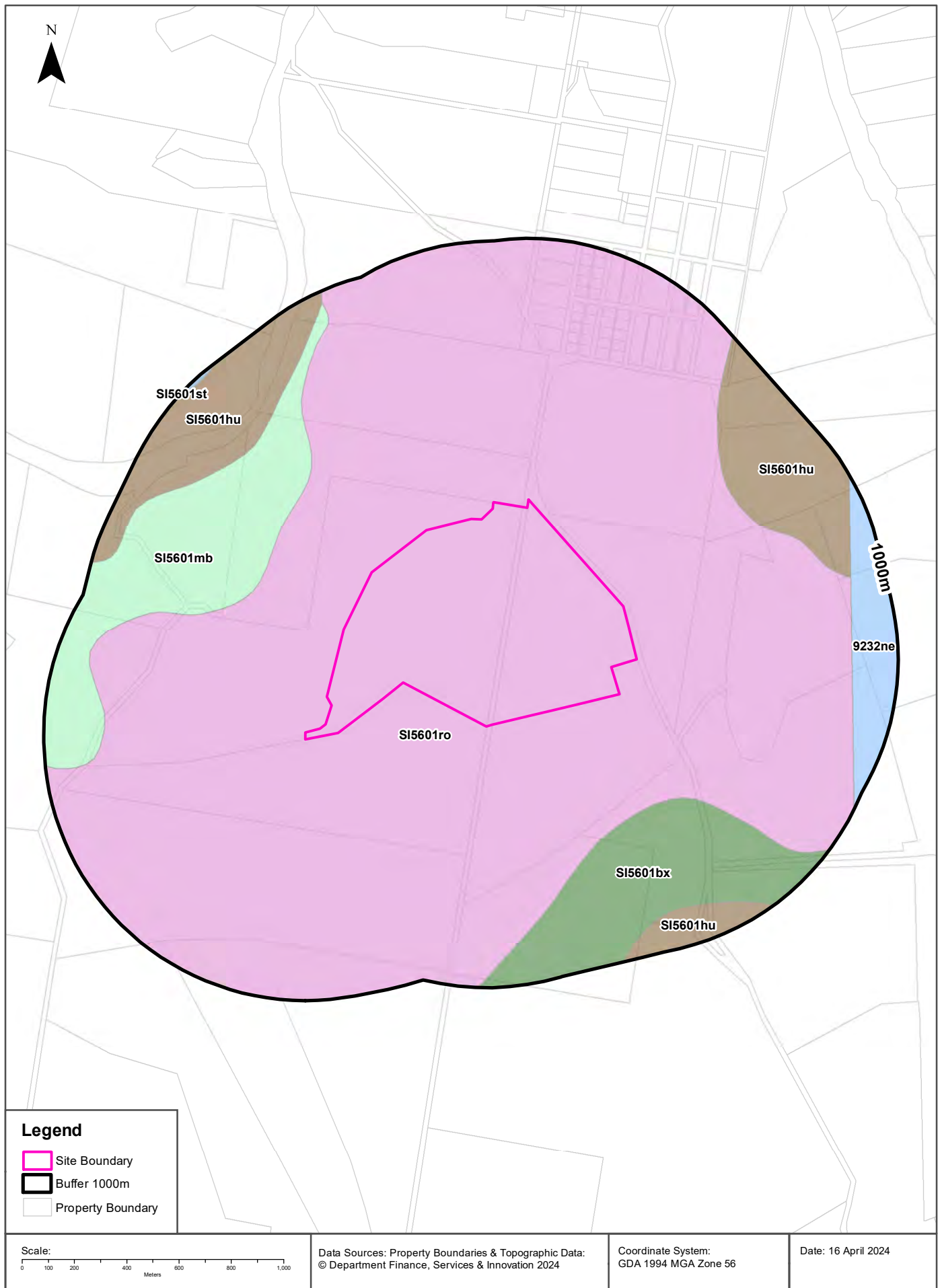
Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
LK1	Tenosol	Hilly to steep hilly terrain with some very rugged portions, cliffs, ridges, or steep domes, rock outcrops common: chief soils are shallow loamy soils (Um4.1), (Um4.2), and (Um6), shallow sand soils (Uc4.1), and shallow clay soils (Uf). Associated are small areas of a wide range of soils including (Ug5.12), (Ug5.3), (Gn3.42), (Db3.12), (Dr2), (Dy), and (Gn2.1) soils. As mapped, small flat to undulating areas of unit Ke12 are included.	0m	On-site
Tb42	Kurosol	Undulating to hilly with a general ridge, slope, and valley sequence throughout; some outcropping sandstone or conglomerate on the ridges, occasionally some escarpments: chief soils are hard acidic yellow mottled soils (Dy3.41), possibly with (Dy3.42). Associated are: narrow ridges of shallow (Dy3.41) and (Dr3.41) soils, both often containing ironstone gravel; (Dr2.41) soils on broader ridges some broad sandy flats of (Dy5.81) soils containing ironstone gravels; dunes of (Uc1.2) soils on local sand deposits; and various undescribed soils along the streams where salinity is a common local feature.	588m	South East

Atlas of Australian Soils Data Source: CSIRO

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Soil Landscapes of Central and Eastern NSW

559 Anambah Road, Gosforth, NSW 2320



Soils

559 Anambah Road, Gosforth, NSW 2320

Soil Landscapes of Central and Eastern NSW

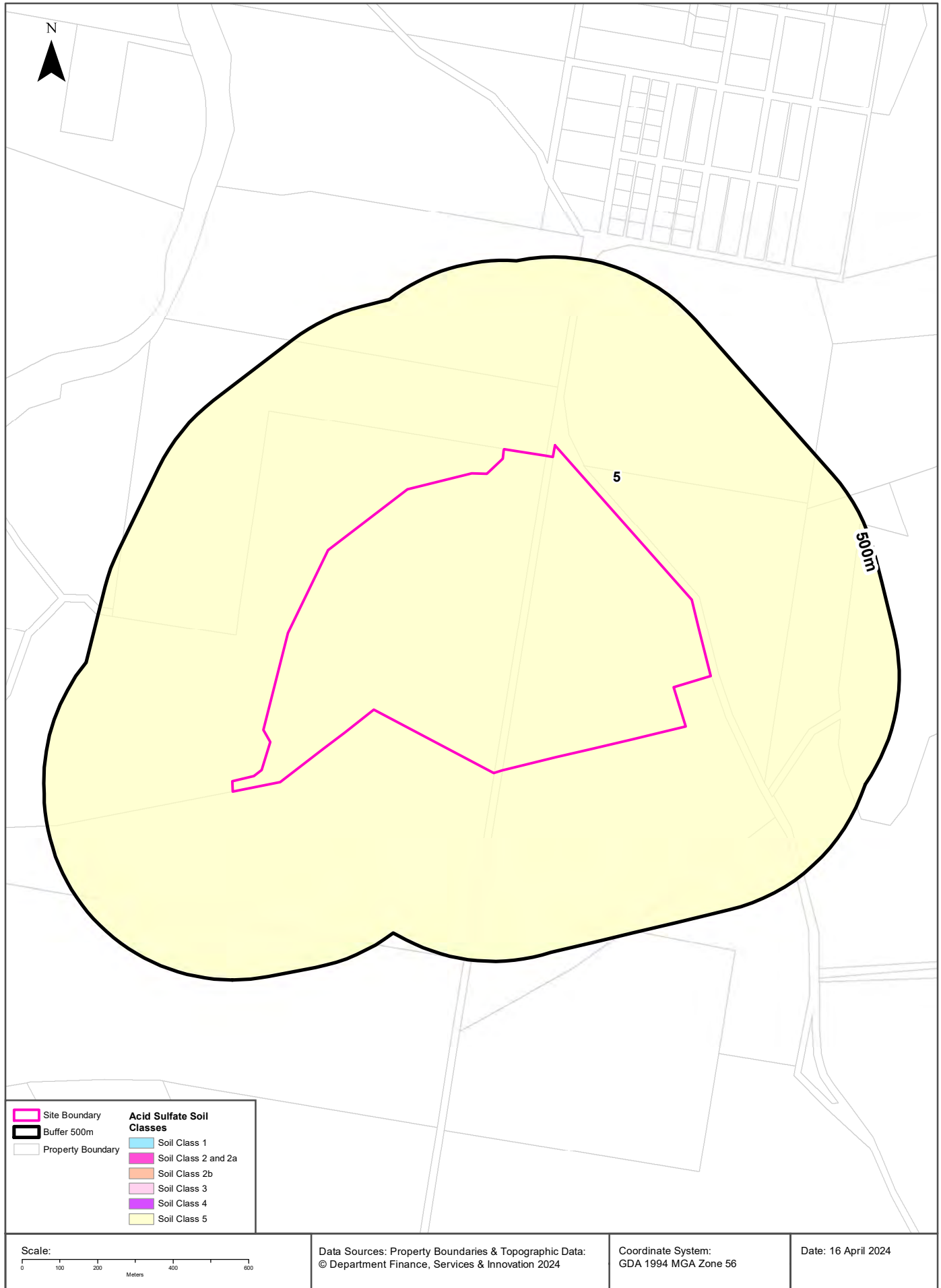
Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
SI5601ro	Rothbury	0m	On-site
SI5601mb	Moonabung	369m	West
SI5601bx	Branxton	441m	South East
SI5601hu	Hunter	586m	North East
9232ne	North Eelah	820m	East
SI5601st	Stanhope	983m	North West

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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Acid Sulfate Soils

559 Anambah Road, Gosforth, NSW 2320



Acid Sulfate Soils

559 Anambah Road, Gosforth, NSW 2320

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?

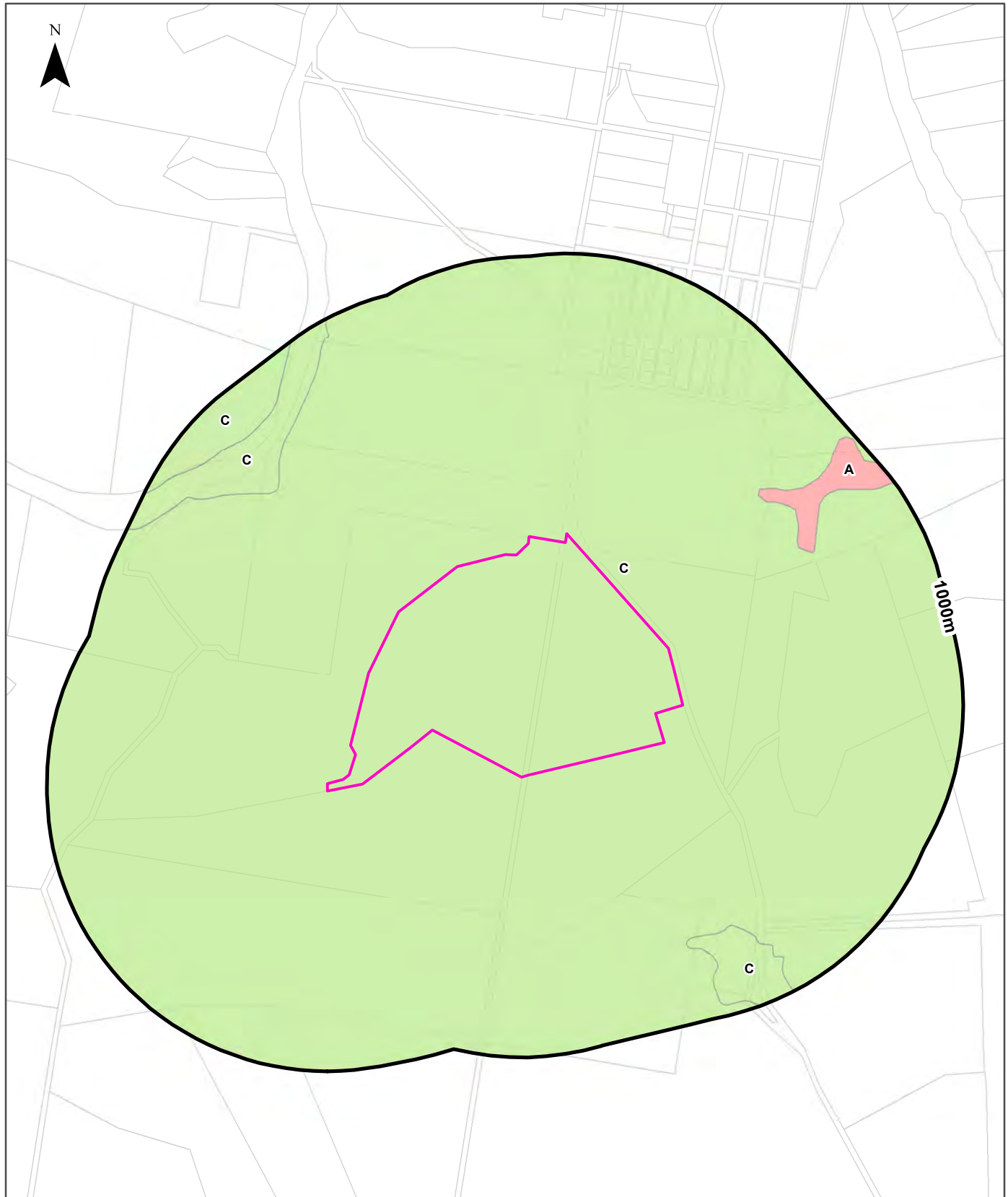
Soil Class	Description	EPI Name	Distance	Direction
None				

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Atlas of Australian Acid Sulfate Soils

559 Anambah Road, Gosforth, NSW 2320



Legend			
Site Boundary	Probability of occurrence of Acid Sulfate Soils		
Buffer 1000m	A. High (>70%)	C. Extremely Low (1-5%)	No Data
Property Boundary	B. Low (6-70%)	D. No Chance (0%)	

<p>Scale:</p> <p>0 100 200 400 600 800 1,000 Meters</p>	<p>Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 16April 2024</p>
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Acid Sulfate Soils

559 Anambah Road, Gosforth, NSW 2320

Atlas of Australian Acid Sulfate Soils

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

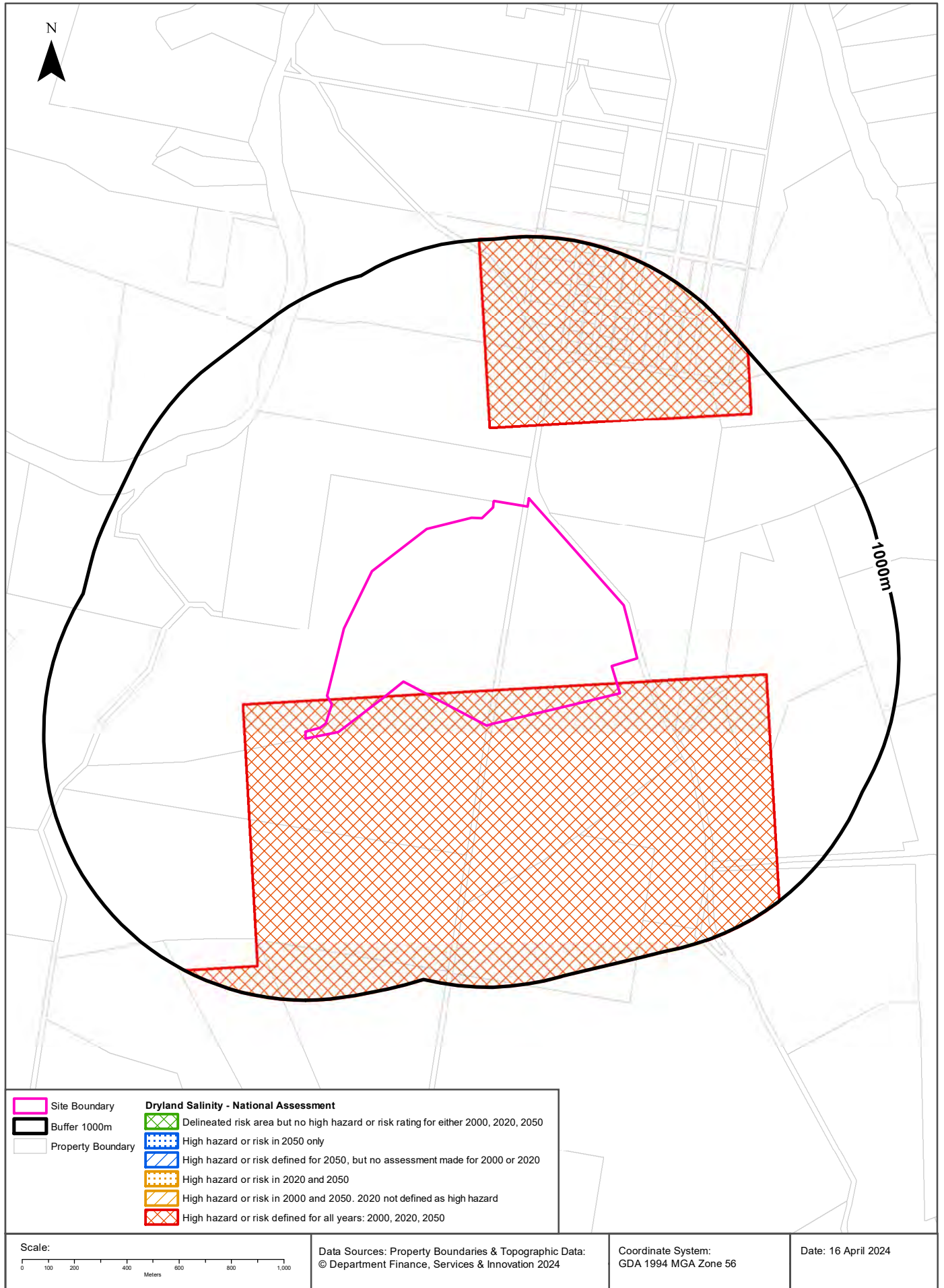
Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	586m	North East

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

559 Anambah Road, Gosforth, NSW 2320



Dryland Salinity

559 Anambah Road, Gosforth, NSW 2320

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

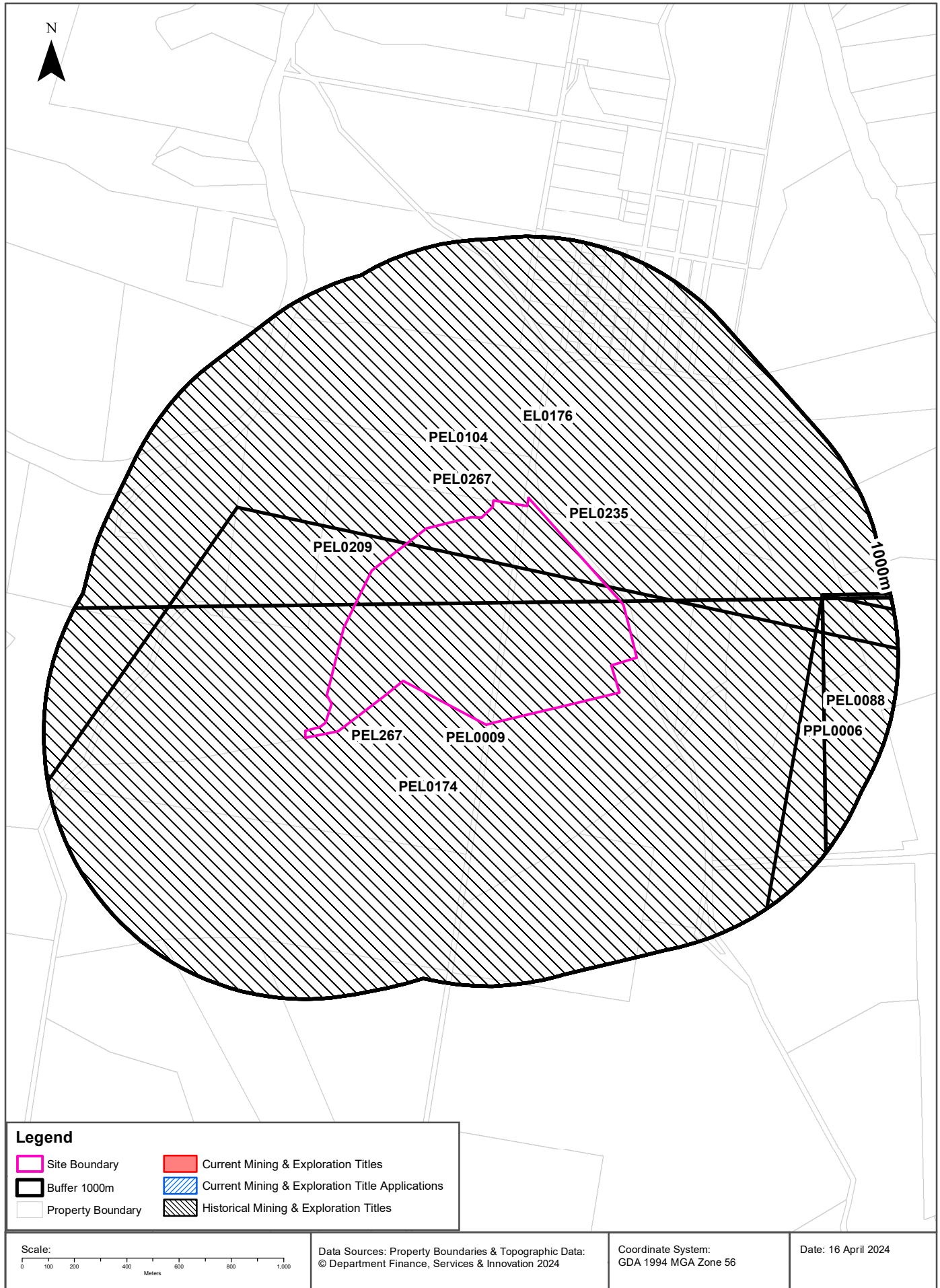
559 Anambah Road, Gosforth, NSW 2320

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Mining

559 Anambah Road, Gosforth, NSW 2320

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

559 Anambah Road, Gosforth, NSW 2320

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL267	AGL UPSTREAM INVESTMENTS PTY LIMITED	19930413	19991205	MINERALS		0m	On-site
PEL0209	EARTH RESOURCES AUSTRALIA 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
EL0176	LEFTWICH, R W	19690501	19700501	MINERALS	Cu Pb Zn Ag	0m	On-site
PEL0009	AUSTRALIAN OIL AND GAS CORPORATION LTD, UNION OIL DEVELOPMENT CORP., KERN COUNTY LAND CO.			PETROLEUM	Petroleum	0m	On-site
PEL0174	NSW OIL AND GAS COMPANY NL			PETROLEUM	Petroleum	0m	On-site
PEL0235	EASTMET LTD	19810504		PETROLEUM	Petroleum	0m	On-site
PEL0104	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PPL0006	PLANET EXPLORATION	19060305		PETROLEUM	Petroleum	657m	East
PEL0088	PLANET EXPLORATION COMPANY PTY LTD			PETROLEUM	Petroleum	713m	East

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

State Environmental Planning Policy

559 Anambah Road, Gosforth, NSW 2320

State Significant Precincts

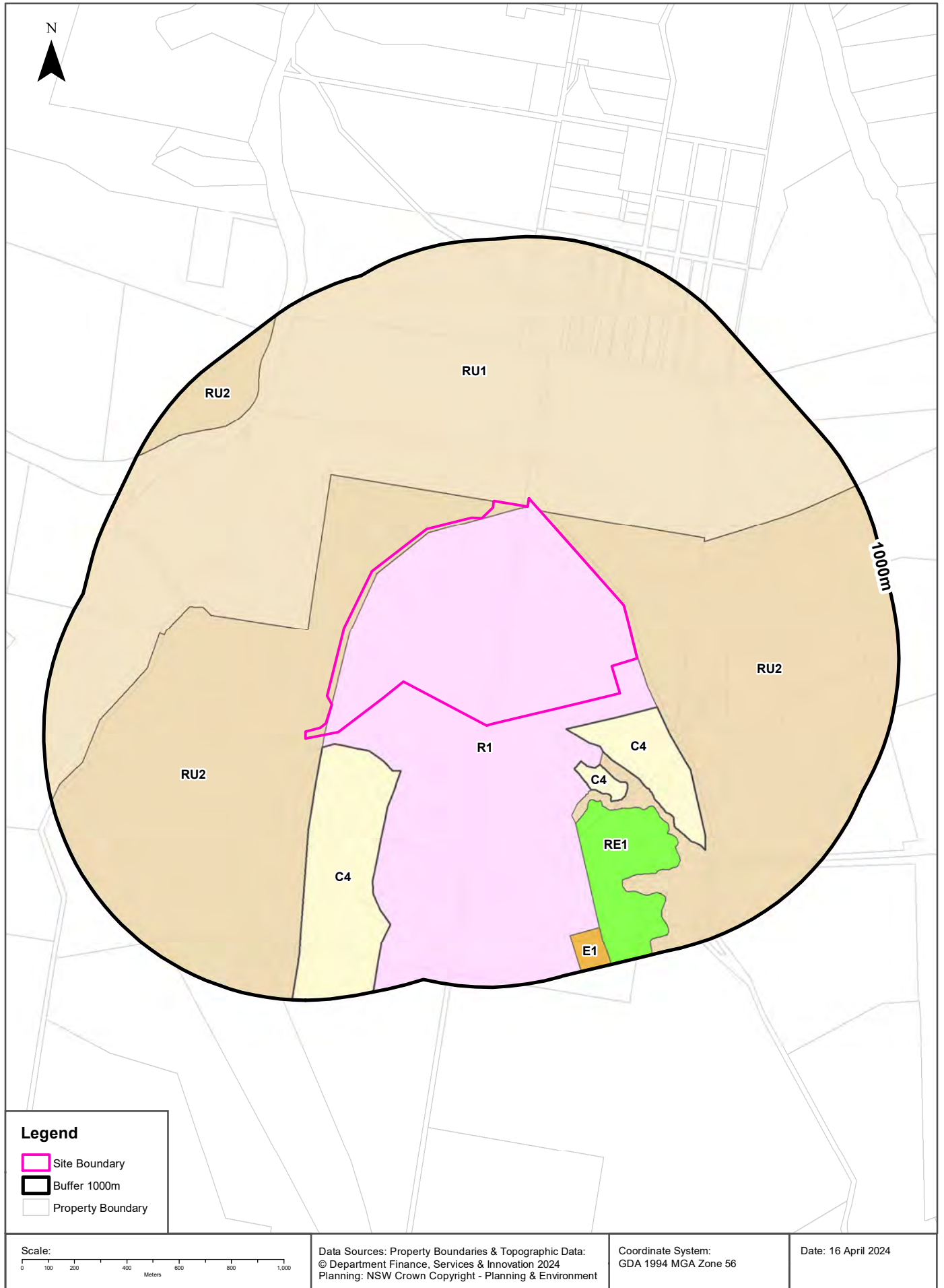
What SEPP State Significant Precincts exist within the dataset buffer?

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

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EPI Planning Zones

559 Anambah Road, Gosforth, NSW 2320



Environmental Planning Instrument

559 Anambah Road, Gosforth, NSW 2320

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
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	0m	On-site
R1	General Residential		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	0m	On-site
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	0m	East
RU1	Primary Production		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	0m	North
C4	Environmental Living		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	42m	South West
C4	Environmental Living		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	84m	South East
C4	Environmental Living		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	218m	South East
RE1	Public Recreation		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	370m	South East
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	775m	North West
E1	Local Centre		Maitland Local Environmental Plan 2011	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 4	851m	South

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Heritage

559 Anambah Road, Gosforth, NSW 2320

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
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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
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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
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Environmental Planning Instrument - Heritage

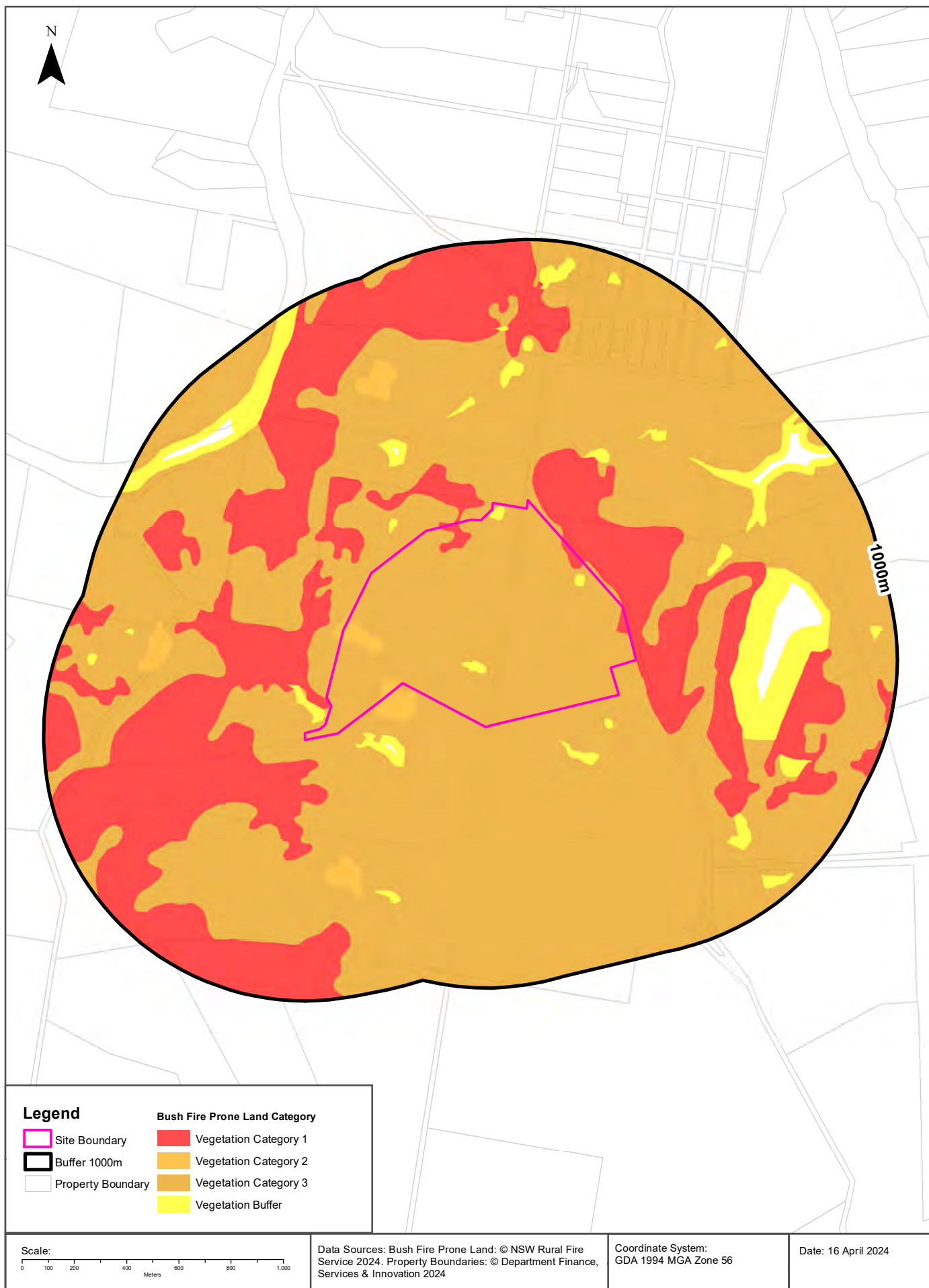
What are the EPI Heritage Items located within the dataset buffer?

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
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Natural Hazards - Bush Fire Prone Land

559 Anambah Road, Gosforth, NSW 2320



Natural Hazards

559 Anambah Road, Gosforth, NSW 2320

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 Category 2	0m	On-site
Vegetation Buffer	0m	On-site

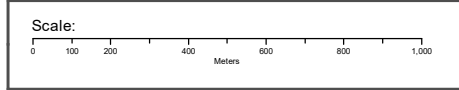
NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints - Vegetation & Ramsar Wetlands

559 Anambah Road, Gosforth, NSW 2320



Site Boundary	Dry Sclerophyll Forests (Shrub/grass sub-formation)	Semi-arid Woodlands (Grassy sub-formation)
Report Buffer	Dry Sclerophyll Forests (Shrubby sub-formation)	Semi-arid Woodlands (Shrubby sub-formation)
Property Boundary	Forested Wetlands	Wet Sclerophyll Forests (Grassy sub-formation)
Ramsar Wetland	Freshwater Wetlands	Wet Sclerophyll Forests (Shrubby sub-formation)
Native Vegetation		
Alpine Complex	Grasslands	Non vegetated
Arid Shrublands (Acacia sub-formation)	Grassy Woodlands	Unattributed
Arid Shrublands (Chenopod sub-formation)	Heathlands	Not classified
	Rainforests	Other
	Saline Wetlands	



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2024

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 April 2024

Ecological Constraints

559 Anambah Road, Gosforth, NSW 2320

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
2992038	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Hunter Coast Foothills Spotted Gum-Ironbark Grassy Forest	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
3397694	Not classified	(Not classified) Not classified	Not classified	0m	On-site
3592774	Wet Sclerophyll Forests (Grassy sub-formation)	(Wet Sclerophyll Forests (Grassy sub-formation)) Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest	Northern Hinterland Wet Sclerophyll Forests	0m	On-site
3592885	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Lower North Foothills Ironbark-Box-Gum Grassy Forest	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
2992023	Grassy Woodlands	(Grassy Woodlands) Lower Hunter Red Gum-Paperbark Riverflat Forest	Coastal Valley Grassy Woodlands	70m	West
3592975	Freshwater Wetlands	(Freshwater Wetlands) Southern Lower Floodplain Freshwater Wetland	Coastal Freshwater Lagoons	349m	South East
3593046	Forested Wetlands	(Forested Wetlands) Coastal Valleys Swamp Oak Riparian Forest	Coastal Floodplain Wetlands	358m	South East
3593068	Forested Wetlands	(Forested Wetlands) Lower North Riverflat Eucalypt-Paperbark Forest	Coastal Floodplain Wetlands	386m	South East
3592584	Rainforests	(Rainforests) Lower Hunter Tuckeroo Riparian Rainforest	Dry Rainforests	695m	North West
3397766	Rainforests	(Rainforests) Hunter Valley Whalebone Dry Rainforest	Dry Rainforests	710m	North West
3243401	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Hunter Coast Foothills Spotted Gum-Ironbark Grassy Forest	Hunter-Macleay Dry Sclerophyll Forests	713m	East
3156337	Not classified	(Not classified) Not classified	Not classified	714m	East
3393231	Unattributed	(Unattributed) Unattributed	Unattributed	726m	East
3596765	Unattributed	(Unattributed) Unattributed	Unattributed	737m	North East

Native Vegetation Type Map : NSW Department of Planning and Environment 2022

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Ecological Constraints

559 Anambah Road, Gosforth, NSW 2320

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

559 Anambah Road, Gosforth, NSW 2320

Collaborative Australian Protected Areas Database - Terrestrial

Protected areas in terrestrial environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

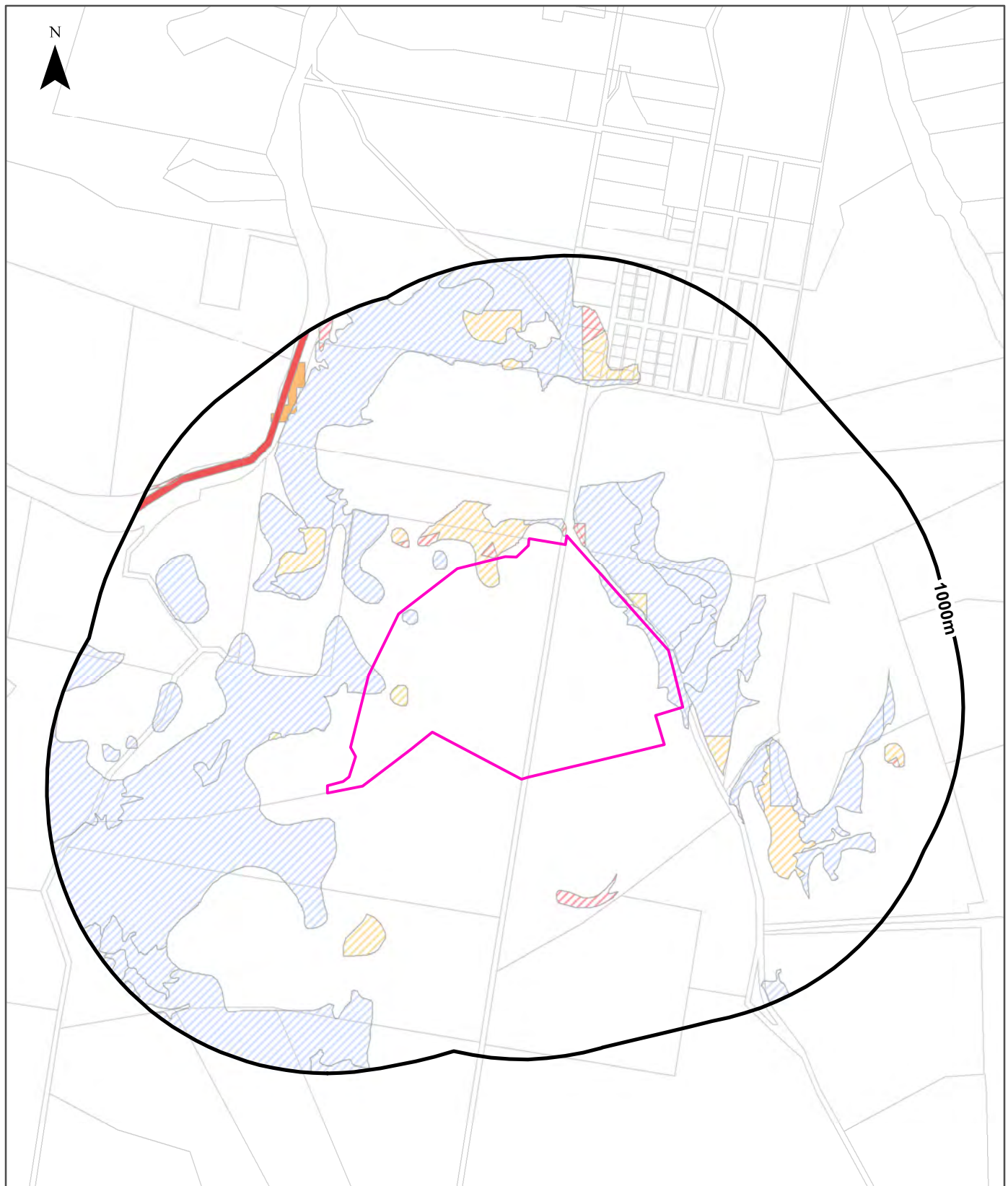
Protected areas in marine environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022
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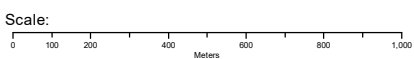
Ecological Constraints - Groundwater Dependent Ecosystems Atlas

559 Anambah Road, Gosforth, NSW 2320



Legend

Site Boundary	High potential GDE - from national assessment	Low potential GDE - from national assessment
Buffer 1000m	High potential GDE - from regional studies	Low potential GDE - from regional studies
Property Boundaries	Moderate potential GDE - from national assessment	Known GDE - from regional studies
	Moderate potential GDE - from regional studies	Unclassified potential GDE - from national assessment
	Unclassified potential GDE - from regional studies	



Data Sources: Property Boundaries & Topographic Data:
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Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 April 2024

Ecological Constraints

559 Anambah Road, Gosforth, NSW 2320

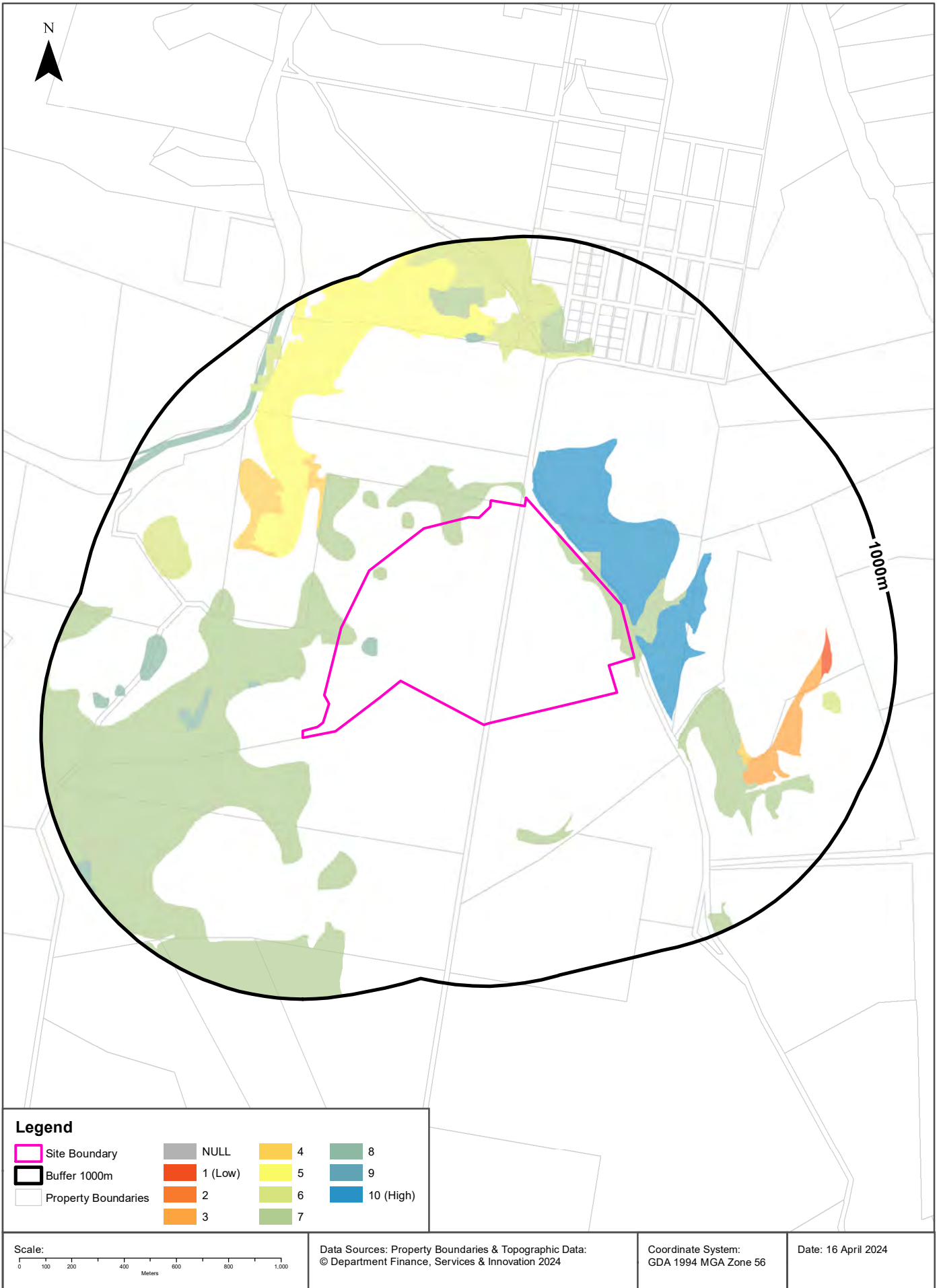
Groundwater Dependent Ecosystems Atlas

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		0m	On-site
Terrestrial	Moderate potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial	High potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		2m	North
Aquatic	High potential GDE - from national assessment	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	River		747m	North West
Aquatic	Moderate potential GDE - from national assessment	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Wetland		784m	North West

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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Ecological Constraints - Inflow Dependent Ecosystems Likelihood

559 Anambah Road, Gosforth, NSW 2320



Ecological Constraints

559 Anambah Road, Gosforth, NSW 2320

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	7	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial	8	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial	10	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		4m	North East
Terrestrial	4	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		254m	North West
Terrestrial	5	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		296m	North West
Terrestrial	6	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		523m	North
Terrestrial	3	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		564m	East
Terrestrial	1	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		713m	East
Aquatic	8	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	River		747m	North West
Aquatic	6	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Wetland		784m	North West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

559 Anambah Road, Gosforth, NSW 2320

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	<i>Litoria aurea</i>	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Amphibia	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	Endangered	Not Sensitive	Endangered	
Animalia	Aves	<i>Anseranas semipalmata</i>	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Anthochaera phrygia</i>	Regent Honeyeater	Critically Endangered	Category 2	Critically Endangered	
Animalia	Aves	<i>Apus pacificus</i>	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Ardenna carneipes</i>	Flesh-footed Shearwater	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Botaurus poiciloptilus</i>	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Calyptorhynchus banksii samueli</i>	Red-tailed Black-Cockatoo (inland subspecies)	Vulnerable	Category 2	Not Listed	
Animalia	Aves	<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	<i>Chthonicola sagittata</i>	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Circus assimilis</i>	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Cuculus optatus</i>	Oriental Cuckoo	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	<i>Daphoenositta chrysoptera</i>	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	<i>Epthianura albifrons</i>	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Falco subniger</i>	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Gallinago hardwickii</i>	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Hieraaetus morphnoides</i>	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	<i>Hirundapus caudacutus</i>	White-throated Needle-tail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	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	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pomatostomus temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus regina	Rose-crowned Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thinornis cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
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 novaehollandiae	Masked 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	Petaurus norfolkensis	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	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-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	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	<i>Cymbidium canaliculatum</i>	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	<i>Eucalyptus camaldulensis</i>	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	<i>Eucalyptus glaucina</i>	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	<i>Maunderia triglochinoidea</i>		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	<i>Pterostylis gibbosa</i>	Illawarra Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	<i>Rhodomyrtus psidioides</i>	Native Guava	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	<i>Rutidosia heterogama</i>	Heath Wrinklewort	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

NSW BioNet: © State of NSW and Office of Environment and Heritage

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:
General Site
photo, taken
facing
northwest.

Date:
23/04/2024

**Plate 2**

Description:
General Site
photo, taken
facing east.

Date:
24/04/2024

**Plate 3**

Description:
General Site
photo, taken
facing south.

Date:
23/04/2024

**Plate 4**

Description:
Test pit 26-P.
Photo taken
facing west.

Date:
23/04/2024



Plate 5

Description:
Soil from TP27-
1. Photo taken
facing west.

Date:
23/04/2024



Plate 6

Description:
Samples from
TP38-P. Photo
taken facing
north.

Date:
23/04/2024

**Plate 7**

Description:
General Site
photo, taken
facing south.

Date:
23/04/2024

**Plate 8**

Description:
General Site
photo, taken
facing south.

Date:
24/04/2024

Appendix D

SOIL LOGS



ENVIRONMENTAL LOG: TP01_L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD: 600mm bucket
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358404, 6384230

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP01-L_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, black to grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, grey to brown, dry.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium plasticity, grey, brown and red, fine to coarse grained sand, with fine to coarse grained sand, subangular gravel, dry.</p>	
1						
2						
3					Terminated at 3.0	
4						

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ENVIRONMENTAL LOG: TP02-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 2.2
COORDINATES: 358463, 6384408

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP02-P_0.1				<p>TOPSOIL TOPSOIL: Sandy CLAY: Low to medium plasticity, dark grey, fine to medium grained sand, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, grey-brown, moist.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, grey to pale brown and red, fine to coarse grained sand.</p> <p>Terminated at 2.2 m BGL.</p>	
1						
2						
3						
4						

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ENVIRONMENTAL LOG: TP04-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 2.7
COORDINATES: 358435, 6384575
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP04-P_0.1				<p>Sandy CLAY TOPSOIL: Sandy CLAY: Low to medium plasticity, grey, fine to medium sand, very moist.</p> <p>Sandy CLAY Sandy CLAY: Medium to high plasticity, brown to yellow, fine to coarse sand, moist.</p>	
1					<p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, grey to pale brown with red, fine to coarse sand.</p>	
2						
3						
4					Terminated at 2.5 m BGL.	

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ENVIRONMENTAL LOG: TP05-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358352, 6384819

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP05-P_0.1			TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist. Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist. Extremely Weathered Mudstone Extremely weathered mudstone recovered as Silty CLAY (Marl), medium to high plasticity, dark brown, with fine to coarse grained sand, dry.		
1						
2						
3					Terminated at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP06-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 358296, 6384711

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP06-L_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p>	
1					<p>Extremely Weathered Mudstone Extremely weathered mudstone recovered as Silty CLAY (Marl), medium to high plasticity, dark brown, with fine to coarse grained sand, dry.</p>	
2						
3						
4					Terminated at 3.2 m BGL.	

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ENVIRONMENTAL LOG: TP07-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358304, 6384917

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP07-P_0.1				<p>TOPSOIL</p> <p>TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY</p> <p>Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Extremely Weathered Mudstone</p> <p>Extremely weathered sandstone recovered as Clayey gravelly SAND, fine to coarse grained, brown, sub-angular to angular gravels, dry.</p>	
1						
2						
3						
4					Terminated at 3.0 m BGL.	

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ENVIRONMENTAL LOG: TP08-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358149, 6384909

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP08-L_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark brown, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Extremely Weathered Mudstone Extremely weathered sandstone recovered as Clayey SAND, fine to coarse grained, brown, dry.</p>	
1						
2					<p>Extremely weathered interbedded sandstone and mudstone Extremely weathered interbedded Sandstone and Mudstone (Marl) recovered as Sandy CLAY, medium to high plasticity, dark brown and pale brown, fine to coarse grained sand, dry.</p>	
3					Terminated at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP09-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358131, 6384744

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP09-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark brown, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, very moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown and red, moist.</p> <p>Extremely weathered interbedded sandstone and mudstone Extremely weathered interbedded Mudstone (Marl) recovered as Silty CLAY, medium to high plasticity, dark brown with fine to coarse grained sand, dry.</p> <p>Terminated at 3.0 m BGL.</p>	
1						
2						
3						
4						

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ENVIRONMENTAL LOG: TP10-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358029, 6384841

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP10-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Extremely Weathered Mudstone Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
4					Terminated at 3.0 m BGL.	

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ENVIRONMENTAL LOG: TP11-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357982, 6384806
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0 1 2 3 4	TP11-L_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark brown, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Extremely Weathered Mudstone Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
					Terminated at 3.0 m BGL.	

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ENVIRONMENTAL LOG: TP12-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357953, 6384748

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP12-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, grey, moist.</p> <p>Extremely Weathered Mudstone Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, grey-yellow, fine to coarse grained sand, dry.</p>	
1						
2						
3					Terminated at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP13-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358074, 6384644
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP13-L_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, grey, moist.</p> <p>Silty CLAY Silty CLAY: medium to high plasticity, brown, dry.</p> <p>Extremely Weathered Mudstone Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, grey-yellow, fine to coarse grained sand, dry.</p>	
1						
2						
3					Terminated at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP14-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 2.8
COORDINATES: 358046, 6384591

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP14-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, grey, moist.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, grey-yellow, fine to coarse grained sand, dry.</p>	
1						
2						
3						
4						
						Refusal at 2.8 m BGL.

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ENVIRONMENTAL LOG: TP15-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358209, 6384588

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP15-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p> <p>Extremely weathered SANDSTONE Extremely weathered Sandstone interbedded with Mudstone (MARL), recovered as Sandy CLAY, medium to high plasticity, dark brown, fine to coarse grained sand.</p> <p>Terminated at 3.0 m BGL.</p>	
1						
2						
3						
4						

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ENVIRONMENTAL LOG: TP16-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358308, 6384553

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP16-L_0.1				<p>TOPSOIL</p> <p>TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY</p> <p>Silty CLAY: Medium to high plasticity, grey, moist.</p> <p>Extremely Weathered SANDSTONE</p> <p>Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
1						
2						
3						
4					Terminated at 3.0 m BGL.	

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ENVIRONMENTAL LOG: TP17-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358262, 6384433

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP17-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Silty CLAY Silty CLAY: medium to high plasticity, brown, dry.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
4					Terminated at 3.0 m BGL.	

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ENVIRONMENTAL LOG: TP19-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 2.5
COORDINATES: 357971, 6384484
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0 1 2 3 4	TP19-L_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, dark brown, moist.</p> <p>Gravelly CLAY Gravelly CLAY: medium to high plasticity, brown, fine to coarse, angular to sub-angular gravels, moist.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p> <p>Terminated at 2.5 m BGL.</p>	

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ENVIRONMENTAL LOG: TP20-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 2.4
COORDINATES: 358060, 6384451

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP20-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Gravelly CLAY Gravelly CLAY: medium to high plasticity, brown, fine to medium, angular to subangular gravels, moist.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
1						
2						
3						
4					Terminated at 2.4 m BGL.	

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ENVIRONMENTAL LOG: TP21-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-22-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 358132, 6384398

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP21-P_0.1				<p>TOPSOIL TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Sandy CLAY Sandy CLAY: medium to high plasticity, brown, fine to coarse, slightly moist.</p> <p>Extremely Weathered SANDSTONE Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
1						
2						
3						
4					Terminated at 3.2 m BGL.	

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ENVIRONMENTAL LOG: TP22-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 358289, 6384289

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP22-P_0.1				<p>TOPSOIL</p> <p>TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Silty CLAY</p> <p>Silty CLAY: Medium to high plasticity, brown, moist.</p> <p>Silty CLAY</p> <p>Silty CLAY: medium to high plasticity, brown, yellow, moist.</p>	
1					<p>Extremely Weathered SANDSTONE</p> <p>Extremely weathered sandstone recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, dry.</p>	
2	TP22-P_2.0					
3	TP22-P_3.0					
4					Terminated at 3.2 m BGL.	

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ENVIRONMENTAL LOG: TP23-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 358042, 6384325

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP23-L_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP23-L_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, brown, moist.	
1	TP23-L_1.0			Gravelly CLAY	Gravelly CLAY: medium to high plasticity, brown, fine to medium grained, angular gravel, slightly moist.	
2	TP23-L_2.0			Extremely Weathered SANDSTONE	Extremely weathered Sandston interbedded with Mudstone (MARL), recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, very dry.	
3	TP23-L_3.0				Terminated at 3.2 m BGL.	
4						

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ENVIRONMENTAL LOG: TP24-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 358092, 6384221

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP24-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP24-P_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, brown, grey, moist.	
1	TP24-P_1.0			Silty CLAY	Silty CLAY: medium to high plasticity, brown, grey, moist.	
	TP24-P_2.0			Extremely Weathered SANDSTONE	Extremely weathered Sandston interbedded with Mudstone (MARL), recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand, very dry.	
3	TP24-P_3.0					
4					Terminated at 3.2 m BGL.	

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ENVIRONMENTAL LOG: TP25-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358009, 6384248

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP25-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP25-P_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, brown, moist.	
	TP25-P_1.0			Gravelly CLAY	Gravelly CLAY: medium to high plasticity, brown, fine to coarse grained, angular to subangular gravels, moist.	
1	TP25-P_2.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey Sandy GRAVEL, fine to coarse grained, sub-angular, brown to dark brown, fine to coarse grained sand, dry.	
2	TP25-P_3.0				Terminated at 3.0 m BGL.	
3						
4						

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ENVIRONMENTAL LOG: TP26-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357850, 6384349

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP26-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP26-P_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, brown, moist.	
1	TP26-P_1.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey SAND, brown to dark brown, fine to coarse grained sand, low plasticity, very dry.	
2	TP26-P_2.0					
3	TP26-P_3.0				Terminated at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP27-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 1.6
COORDINATES: 357675, 6384402

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP27-L_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, with 300mm boulders, moist.	
	TP27-L_0.5			Sandy CLAY	Sandy CLAY: Medium to high plasticity, brown, fine to coarse grained sand, moist.	
1				Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained sand, brown, low plasticity, very dry.	
2					Refusal at 1.60 m BGL.	
3						
4						

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ENVIRONMENTAL LOG: TP28-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 1.3
COORDINATES: 357731, 6384445
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP28-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP28-P_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, grey, moist.	
	TP28-P_1.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained sand, pale brown, low plasticity, dry.	
					Refusal at 1.30 m BGL.	
1						
2						
3						
4						

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ENVIRONMENTAL LOG: TP29-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357850, 6384503

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP29-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP29-P_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, brown, grey, moist.	
				Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Sandy CLAY, low plasticity, pale brown, fine to coarse grained sand, dry.	
1	TP29-P_1.0					
2	TP29-P_2.0					
3	TP29-P_3.0				Refusal at 2.70 m BGL.	
4						

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ENVIRONMENTAL LOG: TP30-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 357708, 6384571

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP30-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP30-P_0.5			Silty Gravelly CLAY	Silty Gravelly CLAY: Medium to high plasticity, brown, grey, fine to coarse grained, angular to subangular, moist.	
	TP30-P_1.0			Extremely Weathered MUDSTONE	Extremely weathered Mudstone, recovered as Silty CLAY, medium to high plasticity, brown, grey, dry.	
2	TP30-P_2.0					
3	TP30-P_3.0					
4					Termination at 3.20 m BGL.	

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



ENVIRONMENTAL LOG: TP31-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 357777, 6384632

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP31-L_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist. Sandy Gravelly CLAY	
	TP31-L_0.5				Sandy Gravelly CLAY: Medium to high plasticity, brown, grey, fine to coarse grained, angular to subangular, fine to coarse grained sand, moist.	
1	TP31-L_1.0				Extremely Weathered SANDSTONE Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained sand, brown, grey, low plasticity, dry.	
2	TP31-L_2.0					
3	TP31-L_3.0					
4					Termination at 3.20 m BGL.	

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ENVIRONMENTAL LOG: TP32-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE:
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 1.2
COORDINATES: 357844, 6384658

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP32-P_0.1				<p>TOPSOIL</p> <p>TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Sandy Gravelly CLAY</p> <p>Sandy Gravelly CLAY: Medium to high plasticity, grey, brown, fine to coarse grained, angular to subangular gravel, fine to medium grained sand, moist.</p> <p>Extremely Weathered SANDSTONE</p> <p>Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained sand, pale brown, low plasticity, dry.</p>	
	TP32-P_0.5					
1	TP32-P_1.0					
					Refusal at 1.20 m BGL.	
2						
3						
4						

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ENVIRONMENTAL LOG: TP33-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 2
COORDINATES: 357810, 6384794

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP33-P_0.1				<p>TOPSOIL</p> <p>TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Sandy CLAY</p> <p>Sandy CLAY: Medium to high plasticity, grey, brown, fine to medium grained sand, moist.</p> <p>Extremely Weathered SANDSTONE</p> <p>Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained sand, pale brown, low plasticity, dry.</p>	
	TP33-P_0.5					
1	TP33-P_1.0					
2	TP33-P_2.0				Refusal at 1.80 m BGL.	
3						
4						

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



ENVIRONMENTAL LOG: TP34-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357735, 6384824

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP34-L_0.1				<p>TOPSOIL</p> <p>TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.</p> <p>Sandy Gravelly CLAY</p> <p>Sandy Gravelly CLAY: Medium to high plasticity, brown, grey, fine to coarse grained, angular to subangular gravels, fine to medium grained sand, moist with sandstone boulders.</p> <p>Extremely Weathered SANDSTONE</p> <p>Extremely weathered Sandstone, recovered as Sandy CLAY, low plasticity, brown to grey, fine to coarse grained sand, dry.</p>	
1	TP34-L_1.0					
2	TP34-L_2.0					
3	TP34-L_3.0				Termination at 3.0 m BGL.	
4						

RSJLog / EP Risk Environmental Soil Logging Template without well - NM Edit / ep-risk-management-ply-ld / admin / May 23, 2024 11:06 pm



ENVIRONMENTAL LOG: TP35-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357584, 6384677

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP35-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP35-P_0.5			Silty CLAY	Silty CLAY: Medium to high plasticity, grey, red moist.	
	TP35-P_1.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey Gravelly SAND, fine to coarse grained, brown to grey, fine to coarse grained, subangular to angular gravels, dry.	
2	TP35-P_2.0					
3	TP35-P_3.0				Termination at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP36-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357500, 6384570

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP36-L_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP36-L_0.5			Sandy Gravelly CLAY	Samdy Gravelly CLAY: Medium to high plasticity, grey, fine to coarse grained, subangular to angular gravel, fine to medium grained sand, moist.	
1	TP36-L_1.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Sandy CLAY, medium to high plasticity, brown, fine to coarse grained sand.	
2	TP36-L_2.0					
3	TP36-L_3.0					
4					Termination at 3.0 m BGL.	

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ENVIRONMENTAL LOG: TP37-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3.2
COORDINATES: 357571, 6384452

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP37-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP37-P_0.5			Sandy Gravelly CLAY	Sandy Gravelly CLAY: Medium to high plasticity, grey, fine to coarse grained, subangular to angular gravel, fine to medium grained sand, moist.	
				Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse grained sand, grey red and brown, very dry.	
				Extremely Weathered MUDSTONE	Extremely weathered Mudstone recovered as Sandy CLAY, medium to high plasticity, grey, brown, fine to coarse grained sand, very dry.	
					Termination at 3.2 m BGL.	
4						

RSJLog / EP Risk Environmental Soil Logging Template without well - NM Edit / ep-risk-management-ply-td / admin / May 23, 2024 11:06 pm

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



ENVIRONMENTAL LOG: TP38-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357610, 6384336
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP38-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP38-P_0.5			Silty CLAY	Silty CLAY: medium to high plasticity, brown, moist.	
	TP38-P_1.0			Sandy CLAY	Sandy CLAY: Medium to high plasticity, grey, fine to medium grained sand, moist.	
	TP38-P_2.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse, grey, red and brown, low plasticity, dry.	
3					Termination at 3.0 m BGL.	
4						

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ENVIRONMENTAL LOG: TP39-L

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 357472, 6384306

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP39-L_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP39-L_0.5			Silty Sandy CLAY	Silty Sandy CLAY: medium to high plasticity, grey, fine to medium grained sand, moist.	
				Sandy CLAY	Sandy CLAY: Medium to high plasticity, brown, grey, fine to coarse grained sand, moist.	
				Extremely Weathered SANDSTONE	Extremely weathered Sandstone, recovered as Clayey SAND, fine to coarse, grey, red and brown, low plasticity, dry.	
1	TP39-L_1.0					
2	TP39-L_2.0					
3	TP39-L_3.0					
4					Termination at 3.0 m BGL.	

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



ENVIRONMENTAL LOG: TP40-P

PROJECT NO.: EP3627
PROJECT NAME: Thirdi Gosforth
CLIENT: Thirdi
ADDRESS: Anamabah Rd, Gosforth

DRILLING DATE: 04-23-2024
DRILLING CO.: Lovetts
DRILL METHOD:
DRILLER:
LOGGED BY: MC

TOTAL DEPTH: 3
COORDINATES: 358135, 6384496

COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: NM

NOTES:

Depth	Samples	PID READING (ppm)	Graphic	Soil Classification	Material Description	Additional Observations
Ground Surface at						
0	TP40-P_0.1			TOPSOIL	TOPSOIL: Silty CLAY: Low to medium plasticity, dark grey, moist.	
	TP40-P_0.5			Silty CLAY	Silty CLAY: medium to high plasticity, grey, moist.	
	TP40-P_1.0			Extremely Weathered SANDSTONE	Extremely weathered Sandstone, rrecovered as Clayey Gravelly SAND, fine to coarse grained, dark brown, low plasticity, dry.	
2	TP40-P_2.0					
3	TP40-P_3.0				Termination at 3.0 m BGL.	
4						

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Appendix E

NATA ACCREDITED LABORATORY REPORTS



CERTIFICATE OF ANALYSIS

Work Order : **ES2413401**
Client : **EP RISK MANAGEMENT**
Contact : **MR NATHAN MCGUIRE (EPRISK)**
Address : **3/19 BOLTON STREET
NEWCASTLE NSW 2300**
Telephone : **+61 02 4913 5650**
Project : **Gosford**
Order number : **EP3627**
C-O-C number : **----**
Sampler : **MC**
Site : **----**
Quote number : **ES23EPRISK0002 - ES PRIMARY WORK ONLY**
No. of samples received : **105**
No. of samples analysed : **22**

Page : 1 of 28
Laboratory : Environmental Division Sydney
Contact : Jason Dighton
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 24-Apr-2024 16:15
Date Analysis Commenced : 29-Apr-2024
Issue Date : 03-May-2024 11:09



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	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.

- 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.
- 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
- 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	TP01-L_0.1	TP02-P_0.1	TP03-L_0.1	TP04-P_0.1	TP05-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-001	ES2413401-006	ES2413401-011	ES2413401-016	ES2413401-021	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	29.1	12.0	18.5	18.5	25.4	
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	-	-	No	No	No	----	----	
Sample weight (dry)	----	0.01	g	227	315	327	----	----	
Synthetic Mineral Fibre	----	-	--	No	No	No	----	----	
Organic Fibre	----	-	--	No	No	No	----	----	
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	----	----	
EA200N: Asbestos Quantification (non-NATA)									
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	----	----	
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	----	----	
∅ Weight Used for % Calculation	----	0.0001	kg	0.227	0.315	0.327	----	----	
∅ Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	10	8	5	12	5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	45	28	10	33	107	
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	37	
Lead	7439-92-1	5	mg/kg	14	11	6	11	9	
Nickel	7440-02-0	2	mg/kg	9	5	4	6	101	
Zinc	7440-66-6	5	mg/kg	23	6	12	12	42	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<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	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-L_0.1	TP02-P_0.1	TP03-L_0.1	TP04-P_0.1	TP05-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-001	ES2413401-006	ES2413401-011	ES2413401-016	ES2413401-021	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<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	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<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	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<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	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<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	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<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	<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<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	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<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	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<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	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<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	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01-L_0.1	TP02-P_0.1	TP03-L_0.1	TP04-P_0.1	TP05-P_0.1
Sampling date / time					24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-001	ES2413401-006	ES2413401-011	ES2413401-016	ES2413401-021	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<0.05	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	99.3	93.3	88.4	106	93.8	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	105	96.3	91.8	113	100	



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP06-P_0.1 received as TP06-L_0.1	TP07-P_0.1	TP08-L_0.1	TP09-P_0.1	TP10-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-026	ES2413401-031	ES2413401-036	ES2413401-041	ES2413401-046
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	21.4	27.9	27.2	25.2	25.6
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	-	-	No	----	No	----	No
Sample weight (dry)	----	0.01	g	218	----	243	----	225
Synthetic Mineral Fibre	----	-	--	No	----	No	----	No
Organic Fibre	----	-	--	No	----	No	----	No
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	A. SMYLIE	----	A. SMYLIE
EA200N: Asbestos Quantification (non-NATA)								
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	----	<0.0004	----	<0.0004
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	----	<0.001	----	<0.001
∅ Weight Used for % Calculation	----	0.0001	kg	0.218	----	0.243	----	0.225
∅ Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	----	<0.0004	----	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	40	106	83	83	88
Copper	7440-50-8	5	mg/kg	12	36	21	21	28
Lead	7439-92-1	5	mg/kg	10	6	9	11	9
Nickel	7440-02-0	2	mg/kg	19	36	39	33	40
Zinc	7440-66-6	5	mg/kg	27	31	25	15	30
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	<0.1	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP06-P_0.1 received as TP06-L_0.1	TP07-P_0.1	TP08-L_0.1	TP09-P_0.1	TP10-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-026	ES2413401-031	ES2413401-036	ES2413401-041	ES2413401-046
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<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	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<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	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<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	<0.05
[^] Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<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	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<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	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<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	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05
[^] Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<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	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<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	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<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	<0.05
[^] Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP06-P_0.1 received as TP06-L_0.1	TP07-P_0.1	TP08-L_0.1	TP09-P_0.1	TP10-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-026	ES2413401-031	ES2413401-036	ES2413401-041	ES2413401-046
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<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	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	----	<0.5	<0.5	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP06-P_0.1 received as TP06-L_0.1	TP07-P_0.1	TP08-L_0.1	TP09-P_0.1	TP10-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-026	ES2413401-031	ES2413401-036	ES2413401-041	ES2413401-046
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	----	----	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	----	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	----	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	<0.5	<0.5	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	----	<0.5	<0.5	----
[^] Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	<0.5	<0.5	----
[^] Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	----	<0.5	<0.5	----
[^] Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	----	0.6	0.6	----
[^] Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	----	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	----	----	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg	----	----	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg	----	----	<100	<100	----
[^] C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	----	<10	<10	----
[^] C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	----	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg	----	----	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg	----	----	<100	<100	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP06-P_0.1 received as TP06-L_0.1	TP07-P_0.1	TP08-L_0.1	TP09-P_0.1	TP10-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-026	ES2413401-031	ES2413401-036	ES2413401-041	ES2413401-046
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C34 - C40 Fraction	----	100	mg/kg	----	----	<100	<100	----
[^] >C10 - C40 Fraction (sum)	----	50	mg/kg	----	----	<50	<50	----
[^] >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	----	<50	<50	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	<0.5	<0.5	----
[^] Sum of BTEX	----	0.2	mg/kg	----	----	<0.2	<0.2	----
[^] Total Xylenes	----	0.5	mg/kg	----	----	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg	----	----	<1	<1	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	77.9	89.2	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	93.1	101	79.7	83.2	93.9
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	97.2	104	77.3	89.0	96.4
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	----	93.5	71.8	----
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	91.2	65.5	----
2,4,6-Tribromophenol	118-79-6	0.5	%	----	----	55.1	38.0	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	88.4	68.4	----
Anthracene-d10	1719-06-8	0.5	%	----	----	103	75.7	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	100	73.6	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP06-P_0.1 received as TP06-L_0.1	TP07-P_0.1	TP08-L_0.1	TP09-P_0.1	TP10-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413401-026	ES2413401-031	ES2413401-036	ES2413401-041	ES2413401-046
				Result	Result	Result	Result	Result

EP080S: TPH(V)/BTEX Surrogates

1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	84.1	72.5	----
Toluene-D8	2037-26-5	0.2	%	----	----	79.4	70.0	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	85.0	77.0	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-L_0.1	TP12-P_0.1	TP13-L_0.1	TP14-P_0.1	TP15-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-051	ES2413401-056	ES2413401-058	ES2413401-063	ES2413401-068	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	25.9	24.1	25.0	29.0	26.8	
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	-	-	----	----	----	No	----	
Sample weight (dry)	----	0.01	g	----	----	----	261	----	
Synthetic Mineral Fibre	----	-	--	----	----	----	No	----	
Organic Fibre	----	-	--	----	----	----	No	----	
APPROVED IDENTIFIER:	----	-	--	----	----	----	A. SMYLIE	----	
EA200N: Asbestos Quantification (non-NATA)									
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	----	----	<0.0004	----	
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	----	----	<0.001	----	
∅ Weight Used for % Calculation	----	0.0001	kg	----	----	----	0.261	----	
∅ 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	<5	<5	<5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	71	74	98	89	94	
Copper	7440-50-8	5	mg/kg	25	26	36	40	33	
Lead	7439-92-1	5	mg/kg	9	8	6	<5	<5	
Nickel	7440-02-0	2	mg/kg	83	85	49	73	55	
Zinc	7440-66-6	5	mg/kg	30	31	26	28	26	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<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	TP11-L_0.1	TP12-P_0.1	TP13-L_0.1	TP14-P_0.1	TP15-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-051	ES2413401-056	ES2413401-058	ES2413401-063	ES2413401-068	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<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	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<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	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<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	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<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	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<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	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<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	<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<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	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<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	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<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	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
EP068B: Organophosphorus Pesticides (OP)									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-L_0.1	TP12-P_0.1	TP13-L_0.1	TP14-P_0.1	TP15-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-051	ES2413401-056	ES2413401-058	ES2413401-063	ES2413401-068	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<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	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<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	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-L_0.1	TP12-P_0.1	TP13-L_0.1	TP14-P_0.1	TP15-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-051	ES2413401-056	ES2413401-058	ES2413401-063	ES2413401-068	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	
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	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-L_0.1	TP12-P_0.1	TP13-L_0.1	TP14-P_0.1	TP15-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-051	ES2413401-056	ES2413401-058	ES2413401-063	ES2413401-068	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >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	%	----	----	----	87.5	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	89.8	95.4	89.8	87.1	98.0	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	91.6	96.2	93.0	86.1	97.6	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	----	----	----	78.5	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	----	75.2	----	
2,4,6-Tribromophenol	118-79-6	0.5	%	----	----	----	48.5	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	----	76.8	----	
Anthracene-d10	1719-06-8	0.5	%	----	----	----	91.4	----	
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	----	88.0	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	----	91.3	----	
Toluene-D8	2037-26-5	0.2	%	----	----	----	88.0	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP11-L_0.1	TP12-P_0.1	TP13-L_0.1	TP14-P_0.1	TP15-P_0.1
				Sampling date / time	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit		ES2413401-051	ES2413401-056	ES2413401-058	ES2413401-063	ES2413401-068
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	88.0	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16-L_0.1	TP17-L_0.1	TP18-L_0.1	TP19-L_0.1	TP20-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-073	ES2413401-078	ES2413401-083	ES2413401-088	ES2413401-093	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	24.8	21.7	22.4	28.9	28.7	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	69	68	50	84	97	
Copper	7440-50-8	5	mg/kg	22	12	10	31	37	
Lead	7439-92-1	5	mg/kg	7	9	10	7	6	
Nickel	7440-02-0	2	mg/kg	45	52	19	50	68	
Zinc	7440-66-6	5	mg/kg	28	20	16	32	57	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<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	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<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	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<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	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<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	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<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	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16-L_0.1	TP17-L_0.1	TP18-L_0.1	TP19-L_0.1	TP20-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-073	ES2413401-078	ES2413401-083	ES2413401-088	ES2413401-093	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05	
[^] Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<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	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<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	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<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	<0.05	
[^] Sum of DDD + DDE + DDT	72-54-8/72-55-9/5-0-2	0.05	mg/kg	<0.05	<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	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16-L_0.1	TP17-L_0.1	TP18-L_0.1	TP19-L_0.1	TP20-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-073	ES2413401-078	ES2413401-083	ES2413401-088	ES2413401-093	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<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	----	
Benzo(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	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16-L_0.1	TP17-L_0.1	TP18-L_0.1	TP19-L_0.1	TP20-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-073	ES2413401-078	ES2413401-083	ES2413401-088	ES2413401-093	
				Result	Result	Result	Result	Result	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	----	
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	%	----	----	----	97.1	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	94.0	90.1	87.7	92.0	84.8	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP16-L_0.1	TP17-L_0.1	TP18-L_0.1	TP19-L_0.1	TP20-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413401-073	ES2413401-078	ES2413401-083	ES2413401-088	ES2413401-093	
				Result	Result	Result	Result	Result	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	100	91.4	90.5	93.0	84.9	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	----	----	----	72.2	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	----	----	----	69.8	----	
2.4.6-Tribromophenol	118-79-6	0.5	%	----	----	----	47.3	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	----	----	----	70.9	----	
Anthracene-d10	1719-06-8	0.5	%	----	----	----	93.4	----	
4-Terphenyl-d14	1718-51-0	0.5	%	----	----	----	89.3	----	
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	----	105	----	
Toluene-D8	2037-26-5	0.2	%	----	----	----	106	----	
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	----	96.2	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-P_0.1	TP22-P_0.1	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413401-097	ES2413401-102	-----	-----	-----	
				Result	Result	----	----	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	30.0	22.6	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	5	----	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----	
Chromium	7440-47-3	2	mg/kg	118	34	----	----	----	
Copper	7440-50-8	5	mg/kg	36	7	----	----	----	
Lead	7439-92-1	5	mg/kg	9	10	----	----	----	
Nickel	7440-02-0	2	mg/kg	43	13	----	----	----	
Zinc	7440-66-6	5	mg/kg	40	16	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-P_0.1	TP22-P_0.1	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413401-097	ES2413401-102	-----	-----	-----	
				Result	Result	----	----	----	
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
[^] Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	----	
4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----	
[^] Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----	
[^] Sum of DDD + DDE + DDT	72-54-8/72-55-9/5-0-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-P_0.1	TP22-P_0.1	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413401-097	ES2413401-102	-----	-----	-----	
				Result	Result	----	----	----	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<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	----	----	----	----	
Benzo(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	----	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-P_0.1	TP22-P_0.1	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413401-097	ES2413401-102	-----	-----	-----	
				Result	Result	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----	----
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	%	123	----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	122	115	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP21-P_0.1	TP22-P_0.1	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413401-097	ES2413401-102	-----	-----	-----	
				Result	Result	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	131	130	----	----	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	99.7	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	99.8	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	0.5	%	78.8	----	----	----	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	93.4	----	----	----	----	
Anthracene-d10	1719-06-8	0.5	%	112	----	----	----	----	
4-Terphenyl-d14	1718-51-0	0.5	%	111	----	----	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	77.6	94.6	----	----	----	
Toluene-D8	2037-26-5	0.2	%	73.9	85.7	----	----	----	
4-Bromofluorobenzene	460-00-4	0.2	%	74.7	86.5	----	----	----	

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	TP01-L_0.1 - 24-Apr-2024 00:00	Soil sample.
EA200: Description	TP02-P_0.1 - 24-Apr-2024 00:00	Soil sample.
EA200: Description	TP03-L_0.1 - 24-Apr-2024 00:00	Soil sample.
EA200: Description	TP06-P_0.1 received as TP06-L_0.1 - 24-Apr-2024 00:00	Soil sample.
EA200: Description	TP08-L_0.1 - 24-Apr-2024 00:00	Soil sample.
EA200: Description	TP10-P_0.1 - 24-Apr-2024 00:00	Soil sample.
EA200: Description	TP14-P_0.1 - 24-Apr-2024 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	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Inter-Laboratory Testing

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

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

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



QUALITY CONTROL REPORT

Work Order	: ES2413401	Page	: 1 of 20
Client	: EP RISK MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR NATHAN MCGUIRE (EPRISK)	Contact	: Jason Dighton
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4913 5650	Telephone	: +61-2-8784 8555
Project	: Gosford	Date Samples Received	: 24-Apr-2024
Order number	: EP3627	Date Analysis Commenced	: 29-Apr-2024
C-O-C number	: ----	Issue Date	: 03-May-2024
Sampler	: MC		
Site	: ----		
Quote number	: ES23EPRISK0002 - ES PRIMARY WORK ONLY		
No. of samples received	: 105		
No. of samples analysed	: 22		



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
Ankit Joshi	Senior Chemist - Inorganics	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
 * = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5755590)									
ES2413330-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	17	6.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	20	5.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	22	22	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	28	32	15.2	No Limit
ES2413348-022	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	8	18.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	11	16.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	32	21	41.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	34	30	13.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	163	169	3.7	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5755592)									
ES2413401-041	TP09-P_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	83	86	2.9	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	33	30	10.6	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	21	20	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	11	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: 5755592) - continued									
ES2413401-041	TP09-P_0.1	EG005T: Zinc	7440-66-6	5	mg/kg	15	17	14.5	No Limit
ES2413401-088	TP19-L_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	84	85	0.0	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	50	49	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	31	31	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	7	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	32	30	5.3	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5757401)									
ES2413401-097	TP21-P_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	118	113	4.2	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	43	43	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	36	35	4.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	8	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	37	6.8	No Limit
ES2413458-040	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	17	13	26.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	4	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	<5	22.6	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	8	19.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	19	16	16.6	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5755594)									
ES2413330-003	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	20.0	19.8	1.4	0% - 20%
ES2413401-006	TP02-P_0.1	EA055: Moisture Content	----	0.1 (1.0)*	%	12.0	11.9	0.9	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5755595)									
ES2413401-051	TP11-L_0.1	EA055: Moisture Content	----	0.1 (1.0)*	%	25.9	26.2	1.3	0% - 20%
ES2413404-002	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	13.8	13.6	1.5	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5757405)									
ES2413458-003	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	24.6	25.0	1.6	0% - 20%
ES2413458-052	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	19.4	17.5	9.8	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5755591)									
ES2413330-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2413348-022	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.4	0.3	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5755593)									
ES2413401-041	TP09-P_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	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 (%)
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5755593) - continued									
ES2413401-088	TP19-L_0.1	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: 5757402)									
ES2413401-097	TP21-P_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2413458-040	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5754520)									
ES2413401-001	TP01-L_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2413401-051	TP11-L_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5754695)									
ES2413401-097	TP21-P_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5754519)									
ES2413401-001	TP01-L_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		
ES2413401-051	TP11-L_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



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: 5754519) - continued									
ES2413401-051	TP11-L_0.1	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: 5754694)									
ES2413401-097	TP21-P_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		



Sub-Matrix: SOIL

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: 5754519)									
ES2413401-001	TP01-L_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
		ES2413401-051	TP11-L_0.1	EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2
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
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		



Sub-Matrix: SOIL

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: 5754694)									
ES2413401-097	TP21-P_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: 5754518)									
ES2413401-001	TP01-L_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	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	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: 5754518) - continued									
ES2413401-001	TP01-L_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
ES2413401-051	TP11-L_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: 5754693)									
ES2413627-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory 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: 5754693) - continued									
ES2413627-001	Anonymous	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
ES2413401-097	TP21-P_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	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: 5754458)							
ES2413401-001	TP01-L_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2413401-051	TP11-L_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5754517)									
ES2413401-001	TP01-L_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
ES2413401-051	TP11-L_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: 5754692)									
ES2413627-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	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: 5754692) - continued									
ES2413627-001	Anonymous	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
ES2413401-097	TP21-P_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: 5756923)									
ES2413096-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2413522-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5754458)									
ES2413401-001	TP01-L_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2413401-051	TP11-L_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: 5754517)									
ES2413401-001	TP01-L_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
ES2413401-051	TP11-L_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: 5754692)									
ES2413627-001	Anonymous	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
ES2413401-097	TP21-P_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: 5756923)									
ES2413096-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2413522-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5754458)									
ES2413401-001	TP01-L_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
ES2413401-051	TP11-L_0.1	EP080: Benzene	71-43-2	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 (%)
EP080: BTEXN (QC Lot: 5754458) - continued									
ES2413401-051	TP11-L_0.1	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
EP080: BTEXN (QC Lot: 5756923)									
ES2413096-001	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
ES2413522-001	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



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				
					Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit					LCS	Low
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5755590)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	106	88.0	113	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	76.4	70.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	118	68.0	132	
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	102	89.0	111	
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	95.7	82.0	119	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	99.0	80.0	120	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	89.4	66.0	133	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5755592)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	98.1	88.0	113	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	83.6	70.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	115	68.0	132	
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	97.8	89.0	111	
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	95.4	82.0	119	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	95.7	80.0	120	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	89.2	66.0	133	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5757401)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	113	88.0	113	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	101	70.0	130	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	117	68.0	132	
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	89.0	111	
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	97.2	82.0	119	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	98.1	80.0	120	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	95.5	66.0	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5755591)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	105	70.0	125	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5755593)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	93.1	70.0	125	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5757402)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	102	70.0	125	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754520)									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754520) - continued								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	99.9	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754695)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	91.5	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754519)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	90.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	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	89.3	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.5	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	100	66.0	116
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.1	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	80.2	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	81.8	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754694)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	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	90.3	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.5	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.4	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	77.6	62.0	118



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Acceptable Limits (%)	
					Concentration	LCS	Low	High	
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754694) - continued									
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.6	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	91.8	64.0	116	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	94.1	66.0	116	
EP068: 4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.9	67.0	115	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	67.0	123	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	69.0	115	
EP068: 4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	69.0	121	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	90.7	56.0	120	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	62.0	124	
EP068: 4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	84.9	66.0	120	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	64.0	122	
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	84.6	54.0	130	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754519)									
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	59.0	119	
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.5	62.0	128	
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	100.0	54.0	126	
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	67.0	119	
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	70.0	120	
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	87.6	72.0	120	
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	83.7	68.0	120	
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	68.0	122	
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	69.0	117	
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.7	76.0	118	
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	81.5	64.0	122	
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	70.0	116	
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	69.0	121	
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	66.0	118	
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	68.0	124	
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	62.0	112	
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.8	68.0	120	
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	65.0	127	
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	60.7	41.0	123	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754694)									



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Acceptable Limits (%)	
					Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754694) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	80.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	84.4	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	79.9	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.7	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.2	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	67.3	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754518)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.5	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	94.2	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	97.4	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	94.0	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	98.6	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	101	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	98.0	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	99.4	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	90.4	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	90.7	68.0	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	100.0	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	100	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	103	61.0	121



Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)	
						LCS	Low	High	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754518) - continued									
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	104	62.0	118	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	101	63.0	121	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754693)									
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	95.2	77.0	125	
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	90.6	72.0	124	
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	94.9	73.0	127	
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	92.1	72.0	126	
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	94.9	75.0	127	
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	99.7	77.0	127	
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	92.0	73.0	127	
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	95.3	74.0	128	
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	88.9	69.0	123	
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	98.1	75.0	127	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	92.0	68.0	116	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	96.5	74.0	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	95.2	70.0	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	86.7	61.0	121	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	82.8	62.0	118	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	82.4	63.0	121	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754458)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.2	72.2	131	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754517)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	96.2	75.0	129	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	103	77.0	131	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	105	71.0	129	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754692)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	114	75.0	129	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	108	77.0	131	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	102	71.0	129	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5756923)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	83.1	72.2	131	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754458)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	82.7	72.4	133	



Sub-Matrix: SOIL

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%) LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754517)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	102	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	102	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	108	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754692)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	115	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	104	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	97.5	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5756923)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.7	72.4	133
EP080: BTEXN (QCLot: 5754458)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	96.5	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.1	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.0	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	94.8	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	97.5	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	101	78.8	122
EP080: BTEXN (QCLot: 5756923)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	95.4	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.3	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	81.7	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	83.7	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	83.7	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	99.3	78.8	122

Matrix Spike (MS) Report

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

Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Acceptable Limits (%) Low High	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%) MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5755590)							
ES2413330-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	88.5	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	87.0	70.0	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5755590) - continued							
ES2413330-001	Anonymous	EG005T: Chromium	7440-47-3	50 mg/kg	86.6	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	88.6	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	86.2	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	85.3	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	85.4	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5755592)							
ES2413401-041	TP09-P_0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	73.6	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.4	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	109	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	102	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	95.2	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	87.9	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	97.9	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5757401)							
ES2413401-097	TP21-P_0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	75.3	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	85.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	96.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	90.0	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	87.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5755591)							
ES2413330-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	88.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5755593)							
ES2413401-041	TP09-P_0.1	EG035T: Mercury	7439-97-6	5 mg/kg	90.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5757402)							
ES2413401-097	TP21-P_0.1	EG035T: Mercury	7439-97-6	5 mg/kg	92.6	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754520)							
ES2413401-001	TP01-L_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	97.0	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754695)							
ES2413401-097	TP21-P_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	113	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754519)							
ES2413401-001	TP01-L_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	92.0	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	115	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	102	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	112	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
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754519) - continued							
ES2413401-001	TP01-L_0.1	EP068: Endrin	72-20-8	2 mg/kg	105	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	106	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754694)							
ES2413401-097	TP21-P_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	82.2	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	74.2	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	80.2	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	96.5	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	71.9	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	72.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754519)							
ES2413401-001	TP01-L_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	95.0	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	99.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	98.9	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	97.3	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	81.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754694)							
ES2413401-097	TP21-P_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	78.3	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	86.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	77.1	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	83.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	77.3	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754518)							
ES2413401-001	TP01-L_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	106	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	112	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754693)							
ES2413401-097	TP21-P_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754458)							
ES2413401-001	TP01-L_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	83.1	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754517)							
ES2413401-001	TP01-L_0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	107	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	121	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	110	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754692)							
ES2413401-097	TP21-P_0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	115	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	104	53.0	131



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754692) - continued							
ES2413401-097	TP21-P_0.1	EP071: C29 - C36 Fraction	----	2060 mg/kg	109	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5756923)							
ES2413096-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	81.5	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754458)							
ES2413401-001	TP01-L_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	69.9	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754517)							
ES2413401-001	TP01-L_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	103	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	122	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	115	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754692)							
ES2413401-097	TP21-P_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	104	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	106	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	101	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5756923)							
ES2413096-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	87.4	61.1	142
EP080: BTEXN (QCLot: 5754458)							
ES2413401-001	TP01-L_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	71.0	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	73.1	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	73.4	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	73.8	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	79.1	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	89.7	61.1	115
EP080: BTEXN (QCLot: 5756923)							
ES2413096-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	86.4	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	85.4	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	86.2	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	86.4	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	86.3	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.7	61.1	115



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2413401	Page	: 1 of 8
Client	: EP RISK MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR NATHAN MCGUIRE (EPRISK)	Telephone	: +61-2-8784 8555
Project	: Gosford	Date Samples Received	: 24-Apr-2024
Site	: ----	Issue Date	: 03-May-2024
Sampler	: MC	No. of samples received	: 105
Order number	: EP3627	No. of samples analysed	: 22

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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



Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	ES2413401-041	TP09-P_0.1	2-Chlorophenol-D4	93951-73-6	65.5 %	66.0-122 %	Recovery less than lower data quality objective
EP075(SIM)S: Phenolic Compound Surrogates	ES2413401-041	TP09-P_0.1	2,4,6-Tribromophenol	118-79-6	38.0 %	40.0-138 %	Recovery less than lower data quality objective
EP075(SIM)T: PAH Surrogates	ES2413401-041	TP09-P_0.1	2-Fluorobiphenyl	321-60-8	68.4 %	70.0-122 %	Recovery less than lower data quality objective

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) TP01-L_0.1, TP03-L_0.1, TP05-P_0.1, TP07-P_0.1, TP09-P_0.1, TP11-L_0.1, TP13-L_0.1, TP15-P_0.1, TP17-L_0.1, TP19-L_0.1, TP02-P_0.1, TP04-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP08-L_0.1, TP10-P_0.1, TP12-P_0.1, TP14-P_0.1, TP16-L_0.1, TP18-L_0.1, TP20-P_0.1	24-Apr-2024	----	----	----	29-Apr-2024	08-May-2024	✓
Soil Glass Jar - Unpreserved (EA055) TP21-P_0.1, TP22-P_0.1	24-Apr-2024	----	----	----	30-Apr-2024	08-May-2024	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) TP01-L_0.1, TP03-L_0.1, TP08-L_0.1, TP14-P_0.1, TP02-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP10-P_0.1	24-Apr-2024	----	----	----	30-Apr-2024	21-Oct-2024	✓



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) TP01-L_0.1, TP03-L_0.1, TP08-L_0.1, TP14-P_0.1 TP02-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP10-P_0.1	24-Apr-2024	----	----	----	30-Apr-2024	21-Oct-2024	✓
EG005(ED093): Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) TP01-L_0.1, TP03-L_0.1, TP05-P_0.1, TP07-P_0.1, TP09-P_0.1, TP11-L_0.1, TP13-L_0.1, TP15-P_0.1, TP17-L_0.1, TP19-L_0.1 TP02-P_0.1, TP04-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP08-L_0.1, TP10-P_0.1, TP12-P_0.1, TP14-P_0.1, TP16-L_0.1, TP18-L_0.1, TP20-P_0.1	24-Apr-2024	29-Apr-2024	21-Oct-2024	✓	01-May-2024	21-Oct-2024	✓
Soil Glass Jar - Unpreserved (EG005T) TP21-P_0.1, TP22-P_0.1	24-Apr-2024	30-Apr-2024	21-Oct-2024	✓	01-May-2024	21-Oct-2024	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) TP01-L_0.1, TP03-L_0.1, TP05-P_0.1, TP07-P_0.1, TP09-P_0.1, TP11-L_0.1, TP13-L_0.1, TP15-P_0.1, TP17-L_0.1, TP19-L_0.1 TP02-P_0.1, TP04-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP08-L_0.1, TP10-P_0.1, TP12-P_0.1, TP14-P_0.1, TP16-L_0.1, TP18-L_0.1, TP20-P_0.1	24-Apr-2024	29-Apr-2024	22-May-2024	✓	02-May-2024	22-May-2024	✓
Soil Glass Jar - Unpreserved (EG035T) TP21-P_0.1, TP22-P_0.1	24-Apr-2024	30-Apr-2024	22-May-2024	✓	02-May-2024	22-May-2024	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) TP08-L_0.1, TP14-P_0.1 TP09-P_0.1, TP19-L_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	01-May-2024	09-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP066) TP21-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	02-May-2024	09-Jun-2024	✓



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	
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068) TP01-L_0.1, TP03-L_0.1, TP05-P_0.1, TP07-P_0.1, TP09-P_0.1, TP11-L_0.1, TP13-L_0.1, TP15-P_0.1, TP17-L_0.1, TP19-L_0.1, TP21-P_0.1, TP02-P_0.1, TP04-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP08-L_0.1, TP10-P_0.1, TP12-P_0.1, TP14-P_0.1, TP16-L_0.1, TP18-L_0.1, TP20-P_0.1, TP22-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	01-May-2024	09-Jun-2024	✓	
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068) TP01-L_0.1, TP03-L_0.1, TP05-P_0.1, TP07-P_0.1, TP09-P_0.1, TP11-L_0.1, TP13-L_0.1, TP15-P_0.1, TP17-L_0.1, TP19-L_0.1, TP21-P_0.1, TP02-P_0.1, TP04-P_0.1, TP06-P_0.1 - received as TP06-L_0.1, TP08-L_0.1, TP10-P_0.1, TP12-P_0.1, TP14-P_0.1, TP16-L_0.1, TP18-L_0.1, TP20-P_0.1, TP22-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	01-May-2024	09-Jun-2024	✓	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) TP08-L_0.1, TP21-P_0.1, TP09-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	01-May-2024	09-Jun-2024	✓	
Soil Glass Jar - Unpreserved (EP075(SIM)) TP14-P_0.1, TP19-L_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	02-May-2024	09-Jun-2024	✓	
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080) TP08-L_0.1, TP14-P_0.1, TP09-P_0.1, TP19-L_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	30-Apr-2024	08-May-2024	✓	
Soil Glass Jar - Unpreserved (EP071) TP09-P_0.1, TP19-L_0.1, TP14-P_0.1, TP21-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	01-May-2024	09-Jun-2024	✓	
Soil Glass Jar - Unpreserved (EP071) TP08-L_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	03-May-2024	09-Jun-2024	✓	
Soil Glass Jar - Unpreserved (EP080) TP21-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✓	30-Apr-2024	08-May-2024	✓	



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) TP08-L_0.1, TP14-P_0.1,	TP09-P_0.1, TP19-L_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✔	30-Apr-2024	08-May-2024	✔
Soil Glass Jar - Unpreserved (EP071) TP09-P_0.1, TP19-L_0.1,	TP14-P_0.1, TP21-P_0.1	24-Apr-2024	30-Apr-2024	08-May-2024	✔	01-May-2024	09-Jun-2024	✔
Soil Glass Jar - Unpreserved (EP071) TP08-L_0.1		24-Apr-2024	30-Apr-2024	08-May-2024	✔	03-May-2024	09-Jun-2024	✔
Soil Glass Jar - Unpreserved (EP080) TP21-P_0.1		24-Apr-2024	30-Apr-2024	08-May-2024	✔	30-Apr-2024	08-May-2024	✔
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080) TP08-L_0.1, TP14-P_0.1,	TP09-P_0.1, TP19-L_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✔	30-Apr-2024	08-May-2024	✔
Soil Glass Jar - Unpreserved (EP080) TP21-P_0.1		24-Apr-2024	30-Apr-2024	08-May-2024	✔	30-Apr-2024	08-May-2024	✔



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	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Moisture Content	EA055	6	58	10.34	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	14	28.57	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	22	13.64	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	5	60.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	6	57	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	17	23.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	23	17.39	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	14	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	5	40.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	57	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	14	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	5	40.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	57	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	14	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	5	40.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	57	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	11.76	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
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).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ 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	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.

Preparation Methods	Method	Matrix	Method Descriptions
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<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Phoung Tran

From: Mathew Cheshire <mathew.cheshire@epriisk.com.au>
Sent: Monday, 29 April 2024 9:16 AM
To: Jason Dighton
Nathan Mcguire
Subject: [EXTERNAL] - FW: SRN for ALS Workorder : ES2413458 | ES2413401
Attachments: ES2413458_0_SRN_240426222846.pdf; ES2413458_CO2.pdf; ES2413401_0_SRN_240426222521.pdf

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Jason, How are you ?

Sorry to be a pain but can I change a few things with this analysis:

Cancel the s-16 analysis on all samples EXCEPT for the following:

- ES2413401
- 36 TP08-L_0.1
- 44 TP09-P_0.1
- 65 TP14-P_0.1
- 88 TP19-L_0.1
- 91 TP21-P_0.1
- 25 TP27-L_0.1
- 48 TP33-P_0.1
- 62 TP36-L_0.1
- 70 TP38-P_0.1
- 8 TP24-P_0.1

Environmental Division
Sydney
Work Order Reference
ES2413401



telephone : +61-2-8794 8565

Analyse the following for Metals, OCP and OPP:

- ES2413401
- 1 TP01-L_0.1
- 6 TP02-P_0.0.1
- 11 TP03-L_0.1

- 16 TP04-P_0.1
- 21 TP05-P_0.1
- 26 TP06-L_0.1
- 31 TP07-P_0.1
- 44 TP10-P_0.1
- 51 TP11-L_0.1
- 56 TP12-P_0.1
- 58 TP13-L_0.1
- 68 TP15-P_0.1
- 73 TP16-L_0.1
- 86 TP17-L_0.1
- 87 TP18-L_0.1
- 88 TP20-P_0.1
- 101 TP22-P_0.1
- 3 TP23-L_0.1
- 15 TP25-P_0.1
- 18 TP26-P_0.1
- 24 TP28-P_0.1
- 30 TP29-P_0.1
- 35 TP30-P_0.1
- 40 TP31-L_0.1
- 45 TP32-P_0.1
- 51 TP34-L_0.1
- 57 TP35-P_0.1
- 67 TP37-P_0.1
- 75 TP39-L_0.1
- 80 TP40-P_0.1

ES 24 13 4 5 8

Change the analysis on the following samples to a NEPM Screen for soil classification (P-22):

- NEPM_0.2-0.5
- NEPM_0.1

Cancel EA200F Analysis for the following:

ES 2419 401
TP18-L_0.1
TP19-L_0.1
TP09-P_0.1

Project name is Gosforth not Gosford.

Contact Number is (02) 4048 2845

Thanks very much Jason.

Mathew Cheshire
Graduate Environmental Scientist
M 0431 165533 | E Mathew.Cheshire@eprisk.com.au



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



From: Nathan McGuire <nathan.mcguire@eprisk.com.au>
Sent: Friday, April 26, 2024 10:49 PM
To: Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Subject: Fwd: SRN for ALS Workorder : ES2413458 | Your Reference: Gosford

Hey Mat,

SRN 2 of 2 attached.

Same as before can you check missing and extra samples.

The NEPM samples are being analysed for asbestos (the lab think it means NEPM asbestos, but you need to give them the suite code for the NEPM screen for soil classification). And make sure the number of samples and analyses matches the proposal, again there's too many S-16 suites.

From: angel-no-reply@alsglobal.com <angel-no-reply@alsglobal.com>

Sent: Friday, April 26, 2024 10:33 pm

To: Nathan McGuire <nathan.mcguire@eprisk.com.au>

Subject: SRN for ALS Workorder : ES2413458 | Your Reference: Gosford



Deliverables for ALS Workorder ES2413458

Project: Gosford

[View the Health Protection Report](#)

[and download the following attachments for ES2413458:](#)

- [ES2413458_A_SRN_24062024.pdf](#)
- [ES2413458_OCC.pdf](#)

Report Receipts

- NATURAL AFFECTION (EPFSSA)
- FSCA (ESR) - SMU 24002632264.pdf (Download)
- ESCA (ESR) - FOC.pdf (Download)

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right solutions.
right partner.



CERTIFICATE OF ANALYSIS

Work Order : **ES2413458**
Client : **EP RISK MANAGEMENT**
Contact : **MR NATHAN MCGUIRE (EPRISK)**
Address : **3/19 BOLTON STREET
NEWCASTLE NSW 2300**
Telephone : **+61 02 4913 5650**
Project : **Gosforth**
Order number : **EP3627**
C-O-C number : **----**
Sampler : **MC**
Site : **----**
Quote number : **ES23EPRISK0002 - ES PRIMARY WORK ONLY**
No. of samples received : **90**
No. of samples analysed : **24**

Page : 1 of 30
Laboratory : Environmental Division Sydney
Contact : Jason Dighton
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 24-Apr-2024 16:15
Date Analysis Commenced : 29-Apr-2024
Issue Date : 02-May-2024 18:03



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
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, 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.

- EA150H: Soil particle density results fell outside the scope of AS1289.3.6.3. Results should be scrutinised accordingly.
- 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.
- EG005T: Poor precision was obtained for Iron on sample ES2413677 # 009. Confirmed by re-digestion and reanalysis.
- EG035: Poor matrix spike recovery was obtained for Mercury on sample ES2413443 # 3. Confirmed by re-analysis.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- 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	TP23-L_0.1	TP24-P_0.1	TP25-P_0.1	TP26-P_0.1	TP27-L_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-003	ES2413458-008	ES2413458-013	ES2413458-018	ES2413458-023	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	24.6	26.8	25.9	26.9	24.5	
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	-	-	----	No	----	----	----	
Sample weight (dry)	----	0.01	g	----	177	----	----	----	
Synthetic Mineral Fibre	----	-	--	----	No	----	----	----	
Organic Fibre	----	-	--	----	No	----	----	----	
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	----	----	----	
EA200N: Asbestos Quantification (non-NATA)									
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	<0.0004	----	----	----	
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	<0.001	----	----	----	
∅ Weight Used for % Calculation	----	0.0001	kg	----	0.177	----	----	----	
∅ Fibrous Asbestos >7mm	----	0.0004	g	----	<0.0004	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	10	7	<5	<5	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	66	71	90	82	38	
Copper	7440-50-8	5	mg/kg	22	17	26	30	5	
Lead	7439-92-1	5	mg/kg	6	10	10	9	12	
Nickel	7440-02-0	2	mg/kg	31	21	32	48	12	
Zinc	7440-66-6	5	mg/kg	29	29	37	39	20	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	<0.1	
EP068A: Organochlorine Pesticides (OC)									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP23-L_0.1	TP24-P_0.1	TP25-P_0.1	TP26-P_0.1	TP27-L_0.1
Sampling date / time					24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-003	ES2413458-008	ES2413458-013	ES2413458-018	ES2413458-023	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<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	<0.05	<0.05
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<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	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<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	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP23-L_0.1	TP24-P_0.1	TP25-P_0.1	TP26-P_0.1	TP27-L_0.1
Sampling date / time					24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-003	ES2413458-008	ES2413458-013	ES2413458-018	ES2413458-023	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<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	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<0.05	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	----	<0.5	
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	----	<0.5	
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	----	<0.5	
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	----	<0.5	
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	----	<0.5	
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	----	<0.5	
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	----	<0.5	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP23-L_0.1	TP24-P_0.1	TP25-P_0.1	TP26-P_0.1	TP27-L_0.1
Sampling date / time					24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-003	ES2413458-008	ES2413458-013	ES2413458-018	ES2413458-023	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	----	<0.5	
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	----	<0.5	
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	----	<0.5	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	----	----	<0.5	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	----	----	<0.5	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	----	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	----	<0.5	
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	----	<0.5	
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	----	<0.5	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	----	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	----	----	<0.5	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	0.6	----	----	0.6	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	1.2	----	----	1.2	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	<10	
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	----	<50	
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	----	<100	
C29 - C36 Fraction	----	100	mg/kg	----	<100	----	----	<100	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	----	----	<50	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	----	<10	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	----	----	<10	
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	----	<50	
>C16 - C34 Fraction	----	100	mg/kg	----	<100	----	----	<100	
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	----	<100	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	----	----	<50	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP23-L_0.1	TP24-P_0.1	TP25-P_0.1	TP26-P_0.1	TP27-L_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-003	ES2413458-008	ES2413458-013	ES2413458-018	ES2413458-023	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
[^] >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	----	<50	
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	----	<0.2	
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	----	<0.5	
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	----	<0.5	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	----	<0.5	
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	----	<0.5	
[^] Sum of BTEX	----	0.2	mg/kg	----	<0.2	----	----	<0.2	
[^] Total Xylenes	----	0.5	mg/kg	----	<0.5	----	----	<0.5	
Naphthalene	91-20-3	1	mg/kg	----	<1	----	----	<1	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	----	94.5	----	----	92.7	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	----	100	----	----	98.8	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	----	121	----	----	114	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	----	88.6	----	----	86.8	
2-Chlorophenol-D4	93951-73-6	0.5	%	----	85.0	----	----	79.6	
2,4,6-Tribromophenol	118-79-6	0.5	%	----	56.9	----	----	57.3	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	----	85.7	----	----	76.2	
Anthracene-d10	1719-06-8	0.5	%	----	98.6	----	----	96.0	
4-Terphenyl-d14	1718-51-0	0.5	%	----	96.1	----	----	93.9	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	72.0	----	----	85.6	
Toluene-D8	2037-26-5	0.2	%	----	70.0	----	----	78.3	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP23-L_0.1	TP24-P_0.1	TP25-P_0.1	TP26-P_0.1	TP27-L_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-003	ES2413458-008	ES2413458-013	ES2413458-018	ES2413458-023	
				Result	Result	Result	Result	Result	
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%	----	77.5	----	----	72.3	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP28-P_0.1	TP29-P_0.1	TP30-P_0.1	TP31-L_0.1	TP32-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-025	ES2413458-030	ES2413458-035	ES2413458-040	ES2413458-045	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	18.8	25.2	23.5	19.8	20.6	
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	No	----	----	
Asbestos Type	1332-21-4	-	--	----	-	-	----	----	
Asbestos (Trace)	1332-21-4	-	-	----	No	No	----	----	
Sample weight (dry)	----	0.01	g	----	292	229	----	----	
Synthetic Mineral Fibre	----	-	--	----	No	No	----	----	
Organic Fibre	----	-	--	----	No	No	----	----	
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	B.SCHRADER	----	----	
EA200N: Asbestos Quantification (non-NATA)									
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	<0.0004	<0.0004	----	----	
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	<0.001	<0.001	----	----	
∅ Weight Used for % Calculation	----	0.0001	kg	----	0.292	0.229	----	----	
∅ Fibrous Asbestos >7mm	----	0.0004	g	----	<0.0004	<0.0004	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	6	6	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	19	63	10	17	17	
Copper	7440-50-8	5	mg/kg	<5	16	<5	<5	<5	
Lead	7439-92-1	5	mg/kg	15	12	20	10	8	
Nickel	7440-02-0	2	mg/kg	4	30	4	5	3	
Zinc	7440-66-6	5	mg/kg	17	29	18	19	12	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<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	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP28-P_0.1	TP29-P_0.1	TP30-P_0.1	TP31-L_0.1	TP32-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-025	ES2413458-030	ES2413458-035	ES2413458-040	ES2413458-045	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<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	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<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	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<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	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<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	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<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	<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<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	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<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	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<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	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<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	<0.05	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP28-P_0.1	TP29-P_0.1	TP30-P_0.1	TP31-L_0.1	TP32-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-025	ES2413458-030	ES2413458-035	ES2413458-040	ES2413458-045	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<0.05	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP33-P_0.1	TP34-L_0.1	TP35-P_0.1	TP36-L_0.1	TP37-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-048	ES2413458-052	ES2413458-057	ES2413458-062	ES2413458-067	
				Result	Result	Result	Result	Result	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	20.6	19.4	26.7	20.7	26.8	
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	-	-	----	No	----	----	----	
Sample weight (dry)	----	0.01	g	----	314	----	----	----	
Synthetic Mineral Fibre	----	-	--	----	No	----	----	----	
Organic Fibre	----	-	--	----	No	----	----	----	
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	----	----	----	
EA200N: Asbestos Quantification (non-NATA)									
∅ Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	----	<0.0004	----	----	----	
∅ Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	----	<0.001	----	----	----	
∅ Weight Used for % Calculation	----	0.0001	kg	----	0.314	----	----	----	
∅ 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	<5	<5	8	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	
Chromium	7440-47-3	2	mg/kg	16	13	50	11	25	
Copper	7440-50-8	5	mg/kg	7	<5	19	<5	<5	
Lead	7439-92-1	5	mg/kg	13	10	13	11	9	
Nickel	7440-02-0	2	mg/kg	7	4	27	4	7	
Zinc	7440-66-6	5	mg/kg	32	20	38	18	7	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	----	
EP068A: Organochlorine Pesticides (OC)									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP33-P_0.1	TP34-L_0.1	TP35-P_0.1	TP36-L_0.1	TP37-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-048	ES2413458-052	ES2413458-057	ES2413458-062	ES2413458-067	
				Result	Result	Result	Result	Result	
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<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	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<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	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<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	<0.05	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<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	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<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	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<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	<0.05	
Endrin	72-20-8	0.05	mg/kg	<0.05	<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	<0.05	
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<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	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<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	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<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	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<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	<0.05	
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
EP068B: Organophosphorus Pesticides (OP)									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP33-P_0.1	TP34-L_0.1	TP35-P_0.1	TP36-L_0.1	TP37-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-048	ES2413458-052	ES2413458-057	ES2413458-062	ES2413458-067	
				Result	Result	Result	Result	Result	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<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	<0.05	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<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	<0.05	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Parathion	56-38-2	0.2	mg/kg	<0.2	<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	<0.05	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<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	<0.05	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<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	<0.05	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	<0.5	----	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	<0.5	----	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	<0.5	----	
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	<0.5	----	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	<0.5	----	
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	<0.5	----	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	<0.5	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP33-P_0.1	TP34-L_0.1	TP35-P_0.1	TP36-L_0.1	TP37-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-048	ES2413458-052	ES2413458-057	ES2413458-062	ES2413458-067	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	<0.5	----	
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	<0.5	----	
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	<0.5	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	<0.5	----	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	<0.5	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	<0.5	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	<0.5	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	<0.5	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	<0.5	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	0.6	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	1.2	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	<10	----	
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	<50	----	
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	<100	----	
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	<100	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	<50	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	<10	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	<10	----	
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	<50	----	
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	<100	----	
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	<100	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	<50	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP33-P_0.1	TP34-L_0.1	TP35-P_0.1	TP36-L_0.1	TP37-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-048	ES2413458-052	ES2413458-057	ES2413458-062	ES2413458-067	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
[^] >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	<50	----	
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	<0.2	----	
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	<0.5	----	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	<0.5	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	<0.5	----	
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	<0.5	----	
[^] Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	<0.2	----	
[^] Total Xylenes	----	0.5	mg/kg	<0.5	----	----	<0.5	----	
Naphthalene	91-20-3	1	mg/kg	<1	----	----	<1	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	88.3	----	----	104	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	91.6	----	----	112	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	109	----	----	138	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	83.6	----	----	86.5	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	81.6	----	----	85.0	----	
2,4,6-Tribromophenol	118-79-6	0.5	%	54.8	----	----	54.7	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	78.8	----	----	80.7	----	
Anthracene-d10	1719-06-8	0.5	%	93.7	----	----	93.8	----	
4-Terphenyl-d14	1718-51-0	0.5	%	91.3	----	----	90.1	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	83.4	----	----	84.4	----	
Toluene-D8	2037-26-5	0.2	%	79.6	----	----	75.6	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP33-P_0.1	TP34-L_0.1	TP35-P_0.1	TP36-L_0.1	TP37-P_0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-048	ES2413458-052	ES2413458-057	ES2413458-062	ES2413458-067	
				Result	Result	Result	Result	Result	
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%	81.1	----	----	76.3	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP38-P_0.1	TP39-L_0.1	TP40-P_0.1	NEPM-0.2-0.5	NEPM-0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-070	ES2413458-075	ES2413458-080	ES2413458-085	ES2413458-086	
				Result	Result	Result	Result	Result	
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit	----	----	----	4.1	3.9	
EA002: pH 1:5 (Soils)									
pH Value	----	0.1	pH Unit	----	----	----	5.4	5.2	
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm	----	----	----	36	39	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%	----	----	----	19.7	17.6	
Moisture Content	----	1.0	%	20.0	19.1	25.7	----	----	
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%	----	----	----	41	22	
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	----	2.44	2.18	
ED007: Exchangeable Cations									
Exchangeable Calcium	----	0.1	meq/100g	----	----	----	1.6	0.9	
Exchangeable Magnesium	----	0.1	meq/100g	----	----	----	7.4	1.6	
Exchangeable Potassium	----	0.1	meq/100g	----	----	----	0.7	1.1	
Exchangeable Sodium	----	0.1	meq/100g	----	----	----	1.0	0.3	
Cation Exchange Capacity	----	0.1	meq/100g	----	----	----	10.6	4.4	
EG005(ED093)T: Total Metals by ICP-AES									
Iron	7439-89-6	0.005	%	----	----	----	2.74	1.41	
Arsenic	7440-38-2	5	mg/kg	8	5	<5	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----	
Chromium	7440-47-3	2	mg/kg	16	14	90	----	----	
Copper	7440-50-8	5	mg/kg	<5	<5	31	----	----	
Lead	7439-92-1	5	mg/kg	13	<5	9	----	----	
Nickel	7440-02-0	2	mg/kg	4	5	45	----	----	
Zinc	7440-66-6	5	mg/kg	11	6	35	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP38-P_0.1	TP39-L_0.1	TP40-P_0.1	NEPM-0.2-0.5	NEPM-0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-070	ES2413458-075	ES2413458-080	ES2413458-085	ES2413458-086	
				Result	Result	Result	Result	Result	
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	%	----	----	----	<0.5	3.3	
Total Organic Carbon	----	0.5	%	----	----	----	<0.5	1.9	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<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	----	----	
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	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP38-P_0.1	TP39-L_0.1	TP40-P_0.1	NEPM-0.2-0.5	NEPM-0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-070	ES2413458-075	ES2413458-080	ES2413458-085	ES2413458-086	
				Result	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	----	----	
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	72-54-8/72-55-9/5 0-2	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									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP38-P_0.1	TP39-L_0.1	TP40-P_0.1	NEPM-0.2-0.5	NEPM-0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	
Compound	CAS Number	LOR	Unit	ES2413458-070	ES2413458-075	ES2413458-080	ES2413458-085	ES2413458-086	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	----	----	----	
Benzo(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	----	----	----	----	
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									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP38-P_0.1	TP39-L_0.1	TP40-P_0.1	NEPM-0.2-0.5	NEPM-0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-070	ES2413458-075	ES2413458-080	ES2413458-085	ES2413458-086	
				Result	Result	Result	Result	Result	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
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	%	96.4	----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	99.8	----	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	123	----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	86.2	----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	83.5	----	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	57.0	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP38-P_0.1	TP39-L_0.1	TP40-P_0.1	NEPM-0.2-0.5	NEPM-0.1
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00	24-Apr-2024 00:00
Compound	CAS Number	LOR	Unit	ES2413458-070	ES2413458-075	ES2413458-080	ES2413458-085	ES2413458-086	ES2413458-086
				Result	Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	80.7	----	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	95.2	----	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	92.5	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	78.8	----	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	71.8	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	72.6	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TRIP SPIKE	TRIP BLANK	TSC	----	----
Sampling date / time				15-Apr-2024 00:00	15-Apr-2024 00:00	15-Apr-2024 00:00	----	----	
Compound	CAS Number	LOR	Unit	ES2413458-090	ES2413458-091	ES2413458-092	-----	-----	
				Result	Result	Result	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	----	
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	----	----	----	
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----	
Toluene	108-88-3	0.5	mg/kg	4.3	<0.5	4.5	----	----	
Ethylbenzene	100-41-4	0.5	mg/kg	5.2	<0.5	5.4	----	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	5.7	<0.5	5.9	----	----	
ortho-Xylene	95-47-6	0.5	mg/kg	2.4	<0.5	2.6	----	----	
[^] Sum of BTEX	----	0.2	mg/kg	17.6	<0.2	18.4	----	----	
[^] Total Xylenes	----	0.5	mg/kg	8.1	<0.5	8.5	----	----	
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	78.0	104	83.1	----	----	
Toluene-D8	2037-26-5	0.2	%	78.8	101	80.9	----	----	
4-Bromofluorobenzene	460-00-4	0.2	%	88.0	106	93.6	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW01	----	----	----	----
Sampling date / time				24-Apr-2024 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413458-089	-----	-----	-----	-----	
				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	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	
Nickel	7440-02-0	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	----	----	----	----	
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	----	----	----	----	



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RW01	----	----	----	----
Sampling date / time			24-Apr-2024 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413458-089	-----	-----	-----	-----
				Result	---	---	---	---
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<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	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<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	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ Total Xylenes	----	2	µg/L	<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	28.2	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RW01	----	----	----	----
Sampling date / time				24-Apr-2024 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	ES2413458-089	-----	-----	-----	-----	
				Result	---	---	---	---	
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	1.0	%	57.9	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1.0	%	43.6	----	----	----	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%	61.7	----	----	----	----	
Anthracene-d10	1719-06-8	1.0	%	60.7	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1.0	%	85.0	----	----	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%	105	----	----	----	----	
Toluene-D8	2037-26-5	2	%	110	----	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	116	----	----	----	----	

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	TP24-P_0.1 - 24-Apr-2024 00:00	A soil sample.
EA200: Description	TP29-P_0.1 - 24-Apr-2024 00:00	A soil sample.
EA200: Description	TP30-P_0.1 - 24-Apr-2024 00:00	A soil sample.
EA200: Description	TP34-L_0.1 - 24-Apr-2024 00:00	A 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	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
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	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

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Work Order : ES2413458
Client : EP RISK MANAGEMENT
Project : Gosforth



Inter-Laboratory Testing

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

(SOIL) EA150: Soil Classification based on Particle Size

(SOIL) EA152: Soil Particle Density

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

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



QUALITY CONTROL REPORT

Work Order	: ES2413458	Page	: 1 of 18
Client	: EP RISK MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR NATHAN MCGUIRE (EPRISK)	Contact	: Jason Dighton
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4913 5650	Telephone	: +61-2-8784 8555
Project	: Gosforth	Date Samples Received	: 24-Apr-2024
Order number	: EP3627	Date Analysis Commenced	: 29-Apr-2024
C-O-C number	: ----	Issue Date	: 02-May-2024
Sampler	: MC		
Site	: ----		
Quote number	: ES23EPRISK0002 - ES PRIMARY WORK ONLY		
No. of samples received	: 90		
No. of samples analysed	: 24		



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
Aleksandar Vujkovic	Laboratory Technician	Newcastle - Inorganics, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, 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
 * = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5757401)									
ES2413401-097	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	118	113	4.2	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	43	43	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	36	35	4.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	8	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	37	6.8	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	53700	52400	2.4	0% - 20%
ES2413458-040	TP31-L_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	17	13	26.3	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	4	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	<5	22.6	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	8	19.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	19	16	16.6	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	12000	13200	9.6	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5757403)									
ES2413458-087	QA01	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	86	89	3.9	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	44	46	5.8	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<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 (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5757403) - continued									
ES2413458-087	QA01	EG005T: Copper	7440-50-8	5	mg/kg	24	26	6.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	24	26	8.4	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	55200	55800	1.1	0% - 20%
ES2413677-009	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	28	39.7	0% - 50%
		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	6	6	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	17500	# 23100	27.7	0% - 20%
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 5762437)									
ES2412641-014	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	6.4	6.5	2.6	0% - 20%
ES2413704-008	Anonymous	EA001: pH (CaCl2)	----	0.1	pH Unit	7.6	7.3	4.7	0% - 20%
EA010: Conductivity (1:5) (QC Lot: 5757106)									
ES2413458-085	NEPM-0.2-0.5	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	36	37	4.7	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5757405)									
ES2413458-003	TP23-L_0.1	EA055: Moisture Content	----	0.1 (1.0)*	%	24.6	25.0	1.6	0% - 20%
ES2413458-052	TP34-L_0.1	EA055: Moisture Content	----	0.1 (1.0)*	%	19.4	17.5	9.8	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5757406)									
ES2413458-087	QA01	EA055: Moisture Content	----	0.1 (1.0)*	%	30.7	29.4	4.1	0% - 20%
ES2413677-012	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	11.1	11.6	5.2	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5760393)									
ES2413289-002	Anonymous	EA055: Moisture Content	----	0.1	%	5.1	5.7	12.1	0% - 20%
ED007: Exchangeable Cations (QC Lot: 5761383)									
ES2413458-085	NEPM-0.2-0.5	ED007: Exchangeable Calcium	----	0.1	meq/100g	1.6	1.6	0.0	0% - 50%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	7.4	7.4	0.0	0% - 20%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.7	0.6	0.0	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	1.0	1.0	0.0	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	10.6	10.6	0.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5757402)									
ES2413401-097	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2413458-040	TP31-L_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP004: Organic Matter (QC Lot: 5758046)									
ES2412641-014	Anonymous	EP004: Organic Matter	----	0.5	%	<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 (%)
EP004: Organic Matter (QC Lot: 5758046) - continued									
ES2412641-014	Anonymous	EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5754653)									
ES2413458-003	TP23-L_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2413458-048	TP33-P_0.1	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5754652)									
ES2413458-003	TP23-L_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		
ES2413458-048	TP33-P_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



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: 5754652) - continued									
ES2413458-048	TP33-P_0.1	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: 5754652)									
ES2413458-003	TP23-L_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		
ES2413458-048	TP33-P_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		



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: 5754652) - continued									
ES2413458-048	TP33-P_0.1	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: 5754651)									
ES2413458-003	TP23-L_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	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		
ES2413458-048	TP33-P_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



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: 5754651) - continued									
ES2413458-048	TP33-P_0.1	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: 5754650)									
ES2413458-003	TP23-L_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
ES2413458-048	TP33-P_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: 5754952)									
ES2413655-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2413655-004	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5755901)									
ES2413458-003	TP23-L_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2413458-048	TP33-P_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5754650)									
ES2413458-003	TP23-L_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
ES2413458-048	TP33-P_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: 5754952)									
ES2413655-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2413655-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	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 Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5755901)									
ES2413458-003	TP23-L_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2413458-048	TP33-P_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5754952)									
ES2413655-002	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
ES2413655-004	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
EP080: BTEXN (QC Lot: 5755901)									
ES2413458-003	TP23-L_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
ES2413458-048	TP33-P_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
Sub-Matrix: WATER									
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: 5757368)									
ES2413443-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	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	0.002	0.002	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: 5757368) - continued									
ES2413443-006	Anonymous	EG020A-T: Copper	7440-50-8	0.001	mg/L	0.101	0.106	5.1	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.202	0.211	4.3	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5757372)									
ES2413443-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5754311)									
ES2413516-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2413516-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5754311)									
ES2413516-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2413516-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 5754311)									
ES2413516-005	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
ES2413516-007	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	<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



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: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5757401)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	113	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	101	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	117	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	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	97.2	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	98.1	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	95.5	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5757403)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	104	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	91.1	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	113	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	100	89.0	111
EG005T: Iron	7439-89-6	50	mg/kg	<50	31660 mg/kg	97.6	89.0	112
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	103	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	96.9	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	90.7	66.0	133
EA002: pH 1:5 (Soils) (QCLot: 5757105)								
EA002: pH Value	----	----	pH Unit	----	4 pH Unit	99.8	98.8	101
					7 pH Unit	100	98.8	101
EA010: Conductivity (1:5) (QCLot: 5757106)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	99.9	92.0	108
ED007: Exchangeable Cations (QCLot: 5761383)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	89.0	75.8	120
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	94.6	74.9	115
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	92.2	80.0	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	86.2	80.0	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5757402)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	102	70.0	125



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
					LCS	Low	High	
EP004: Organic Matter (QCLot: 5758046)								
EP004: Organic Matter	----	0.5	%	<0.5	2.53 %	90.5	82.0	98.0
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.46 %	91.1	81.0	99.0
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754653)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	105	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754652)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	100	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	66.0	116
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	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	98.5	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	96.5	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	97.8	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754652)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	99.9	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	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	98.5	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	98.7	68.0	120



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Acceptable Limits (%)	
					Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754652) - continued								
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	94.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	100	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754651)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	104	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	100	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	104	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	100	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	106	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	108	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	104	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	106	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.1	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	92.4	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	106	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	98.2	61.0	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	98.7	62.0	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	96.1	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754650)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	89.6	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	96.4	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	97.4	71.0	129



Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754952)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	77.3	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5755901)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	98.2	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754650)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	108	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	94.8	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	94.9	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754952)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	73.0	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5755901)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	100	72.4	133
EP080: BTEXN (QCLot: 5754952)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	89.4	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.4	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	84.3	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	85.0	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	89.9	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	107	78.8	122
EP080: BTEXN (QCLot: 5755901)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	96.7	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	96.9	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	96.1	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.6	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.1	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	109	78.8	122

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5757368)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.4	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.8	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.2	83.0	118



Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 5757368) - continued								
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.8	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.8	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.3	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5757372)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.1	77.0	111
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5755261)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	84.2	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	77.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	88.0	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	115	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	87.2	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	82.2	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	95.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	94.1	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	109	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	114	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	81.2	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	112	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	114	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	93.9	59.9	118
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	94.1	61.2	117
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	99.1	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754311)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	86.8	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5755262)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	61.3	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	65.1	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	70.2	58.3	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754311)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	84.9	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5755262)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	72.2	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	59.3	57.8	110



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
						LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5755262) - continued								
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	72.6	50.5	115
EP080: BTEXN (QCLot: 5754311)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	100	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	96.9	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	98.4	73.8	122
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	97.3	73.0	122
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	75.5	124

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	Spike Recovery(%)	Acceptable Limits (%)	
					MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5757401)							
ES2413401-097	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	75.3	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	85.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	96.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	90.0	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	87.8	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5757403)							
ES2413458-087	QA01	EG005T: Arsenic	7440-38-2	50 mg/kg	93.6	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	88.9	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	91.1	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	96.6	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	87.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	89.4	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	86.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5757402)							
ES2413401-097	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	92.6	70.0	130
EP004: Organic Matter (QCLot: 5758046)							
ES2412641-014	Anonymous	EP004: Organic Matter	----	0.92 %	109	70.0	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report				
Laboratory sample ID		Sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery(%) MS	Acceptable Limits (%)	
							Low	High
EP004: Organic Matter (QCLot: 5758046) - continued								
ES2412641-014	Anonymous	EP004: Total Organic Carbon	----	0.54 %	106	70.0	130	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5754653)								
ES2413458-003	TP23-L_0.1	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	105	70.0	130	
EP068A: Organochlorine Pesticides (OC) (QCLot: 5754652)								
ES2413458-003	TP23-L_0.1	EP068: gamma-BHC	58-89-9	0.5 mg/kg	91.5	70.0	130	
		EP068: Heptachlor	76-44-8	0.5 mg/kg	82.3	70.0	130	
		EP068: Aldrin	309-00-2	0.5 mg/kg	90.0	70.0	130	
		EP068: Dieldrin	60-57-1	0.5 mg/kg	106	70.0	130	
		EP068: Endrin	72-20-8	2 mg/kg	77.1	70.0	130	
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	78.9	70.0	130	
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5754652)								
ES2413458-003	TP23-L_0.1	EP068: Diazinon	333-41-5	0.5 mg/kg	86.7	70.0	130	
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	94.1	70.0	130	
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	84.9	70.0	130	
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	90.9	70.0	130	
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	84.1	70.0	130	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5754651)								
ES2413458-003	TP23-L_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	99.4	70.0	130	
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	102	70.0	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754650)								
ES2413458-003	TP23-L_0.1	EP071: C10 - C14 Fraction	----	480 mg/kg	124	73.0	137	
		EP071: C15 - C28 Fraction	----	3100 mg/kg	125	53.0	131	
		EP071: C29 - C36 Fraction	----	2060 mg/kg	126	52.0	132	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754952)								
ES2413655-002	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	86.8	60.4	142	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5755901)								
ES2413458-003	TP23-L_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	80.4	60.4	142	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754650)								
ES2413458-003	TP23-L_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	110	73.0	137	
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	127	53.0	131	
		EP071: >C34 - C40 Fraction	----	890 mg/kg	120	52.0	132	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754952)								
ES2413655-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.6	61.1	142	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5755901)								
ES2413458-003	TP23-L_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	81.6	61.1	142	



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: 5754952)								
ES2413655-002	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	82.7	62.1	122	
		EP080: Toluene	108-88-3	2.5 mg/kg	80.2	66.6	119	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	80.6	67.4	123	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	81.2	66.4	121	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	85.2	70.7	121	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	94.6	61.1	115		
EP080: BTEXN (QCLot: 5755901)								
ES2413458-003	TP23-L_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	82.6	62.1	122	
		EP080: Toluene	108-88-3	2.5 mg/kg	81.1	66.6	119	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	86.2	67.4	123	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	84.5	66.4	121	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.6	70.7	121	
	EP080: Naphthalene	91-20-3	2.5 mg/kg	91.8	61.1	115		

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: 5757368)							
ES2413458-089	RW01	EG020A-T: Arsenic	7440-38-2	1 mg/L	90.9	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	96.0	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.1	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	91.9	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	92.9	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	91.9	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	90.8	70.0	130
		EG035T: Total Recoverable Mercury by FIMS (QCLot: 5757372)					
ES2413443-003	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	# 64.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5754311)							
ES2413516-005	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	118	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5754311)							
ES2413516-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	116	70.0	130
EP080: BTEXN (QCLot: 5754311)							
ES2413516-005	Anonymous	EP080: Benzene	71-43-2	25 µg/L	114	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	110	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	113	70.0	130



Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Acceptable Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
EP080: BTEXN (QCLot: 5754311) - continued							
ES2413516-005	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	112	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	118	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	94.0	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2413458	Page	: 1 of 12
Client	: EP RISK MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR NATHAN MCGUIRE (EPRISK)	Telephone	: +61-2-8784 8555
Project	: Gosforth	Date Samples Received	: 24-Apr-2024
Site	: ----	Issue Date	: 02-May-2024
Sampler	: MC	No. of samples received	: 90
Order number	: EP3627	No. of samples analysed	: 24

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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



Outliers : 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	ES2413677--009	Anonymous	Iron	7439-89-6	27.7 %	0% - 20%	RPD exceeds LOR based limits

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG035T: Total Recoverable Mercury by FIMS	ES2413443--003	Anonymous	Mercury	7439-97-6	64.1 %	70.0-130%	Recovery less than lower data quality objective

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved NEPM-0.2-0.5,	NEPM-0.1	02-May-2024	01-May-2024	1	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Analytical Methods	Method	Count		Rate (%)		Quality Control Specification
			QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)							
pH (1:5)		EA002	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Quality Control Sample Type	Analytical Methods	Method	Count		Rate (%)		Quality Control Specification
			QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)		EP075(SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction		EP071	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)		EP075(SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction		EP071	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard



Analysis Holding Time Compliance

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

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

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

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

Matrix: 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) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	02-May-2024	01-May-2024	✖	02-May-2024	02-May-2024	✔
EA002: pH 1:5 (Soils)							
Soil Glass Jar - Unpreserved (EA002) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	01-May-2024	01-May-2024	✔	01-May-2024	01-May-2024	✔
EA010: Conductivity (1:5)							
Soil Glass Jar - Unpreserved (EA010) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	01-May-2024	01-May-2024	✔	01-May-2024	29-May-2024	✔
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) TP25-P_0.1, TP37-P_0.1	24-Apr-2024	----	----	----	01-May-2024	08-May-2024	✔
Soil Glass Jar - Unpreserved (EA055) TP23-L_0.1, TP24-P_0.1, TP26-P_0.1, TP27-L_0.1, TP28-P_0.1, TP29-P_0.1, TP30-P_0.1, TP31-L_0.1, TP32-P_0.1, TP33-P_0.1, TP34-L_0.1, TP35-P_0.1, TP36-L_0.1, TP38-P_0.1, TP39-L_0.1, TP40-P_0.1, NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	----	----	----	30-Apr-2024	08-May-2024	✔
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150H) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	----	----	----	02-May-2024	21-Oct-2024	✔
EA152: Soil Particle Density							
Snap Lock Bag (EA152) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	----	----	----	02-May-2024	21-Oct-2024	✔
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) TP24-P_0.1, TP29-P_0.1, TP30-P_0.1, TP34-L_0.1	24-Apr-2024	----	----	----	30-Apr-2024	21-Oct-2024	✔



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) TP24-P_0.1, TP29-P_0.1, TP30-P_0.1, TP34-L_0.1	24-Apr-2024	----	----	----	30-Apr-2024	21-Oct-2024	✓	
ED007: Exchangeable Cations								
Soil Glass Jar - Unpreserved (ED007) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	01-May-2024	22-May-2024	✓	01-May-2024	22-May-2024	✓	
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) TP23-L_0.1, TP24-P_0.1, TP25-P_0.1, TP26-P_0.1, TP27-L_0.1, TP28-P_0.1, TP29-P_0.1, TP30-P_0.1, TP31-L_0.1, TP32-P_0.1, TP33-P_0.1, TP34-L_0.1, TP35-P_0.1, TP36-L_0.1, TP37-P_0.1, TP38-P_0.1, TP39-L_0.1, TP40-P_0.1, NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	30-Apr-2024	21-Oct-2024	✓	01-May-2024	21-Oct-2024	✓	
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) TP23-L_0.1, TP24-P_0.1, TP25-P_0.1, TP26-P_0.1, TP27-L_0.1, TP28-P_0.1, TP29-P_0.1, TP30-P_0.1, TP31-L_0.1, TP32-P_0.1, TP33-P_0.1, TP34-L_0.1, TP35-P_0.1, TP36-L_0.1, TP37-P_0.1, TP38-P_0.1, TP39-L_0.1, TP40-P_0.1	24-Apr-2024	30-Apr-2024	22-May-2024	✓	02-May-2024	22-May-2024	✓	
EP004: Organic Matter								
Soil Glass Jar - Unpreserved (EP004) NEPM-0.2-0.5, NEPM-0.1	24-Apr-2024	01-May-2024	22-May-2024	✓	01-May-2024	22-May-2024	✓	
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066) TP24-P_0.1, TP27-L_0.1, TP33-P_0.1, TP36-L_0.1, TP38-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	01-May-2024	08-Jun-2024	✓	



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
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) TP23-L_0.1, TP24-P_0.1, TP26-P_0.1, TP27-L_0.1, TP28-P_0.1, TP29-P_0.1, TP30-P_0.1, TP31-L_0.1, TP32-P_0.1, TP33-P_0.1, TP34-L_0.1, TP35-P_0.1, TP36-L_0.1, TP37-P_0.1, TP38-P_0.1, TP39-L_0.1, TP40-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	01-May-2024	08-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP068) TP25-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	02-May-2024	08-Jun-2024	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) TP23-L_0.1, TP24-P_0.1, TP26-P_0.1, TP27-L_0.1, TP28-P_0.1, TP29-P_0.1, TP30-P_0.1, TP31-L_0.1, TP32-P_0.1, TP33-P_0.1, TP34-L_0.1, TP35-P_0.1, TP36-L_0.1, TP37-P_0.1, TP38-P_0.1, TP39-L_0.1, TP40-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	01-May-2024	08-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP068) TP25-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	02-May-2024	08-Jun-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) TP24-P_0.1, TP27-L_0.1, TP33-P_0.1, TP36-L_0.1, TP38-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	01-May-2024	08-Jun-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) TRIP BLANK	15-Apr-2024	29-Apr-2024	29-Apr-2024	✓	29-Apr-2024	29-Apr-2024	✓
Soil Glass Jar - Unpreserved (EP071) TP24-P_0.1, TP27-L_0.1, TP33-P_0.1, TP36-L_0.1, TP38-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	01-May-2024	08-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP24-P_0.1, TP27-L_0.1, TP33-P_0.1, TP36-L_0.1, TP38-P_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	30-Apr-2024	08-May-2024	✓



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) TRIP BLANK	15-Apr-2024	29-Apr-2024	29-Apr-2024	✓	29-Apr-2024	29-Apr-2024	✓
Soil Glass Jar - Unpreserved (EP071) TP24-P_0.1, TP33-P_0.1, TP38-P_0.1 TP27-L_0.1, TP36-L_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	01-May-2024	08-Jun-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP24-P_0.1, TP33-P_0.1, TP38-P_0.1 TP27-L_0.1, TP36-L_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	30-Apr-2024	08-May-2024	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) TRIP SPIKE, TSC TRIP BLANK,	15-Apr-2024	29-Apr-2024	29-Apr-2024	✓	29-Apr-2024	29-Apr-2024	✓
Soil Glass Jar - Unpreserved (EP080) TP24-P_0.1, TP33-P_0.1, TP38-P_0.1 TP27-L_0.1, TP36-L_0.1	24-Apr-2024	29-Apr-2024	08-May-2024	✓	30-Apr-2024	08-May-2024	✓

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	24-Apr-2024	30-Apr-2024	21-Oct-2024	✓	30-Apr-2024	21-Oct-2024	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) RW01	24-Apr-2024	----	----	----	02-May-2024	22-May-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) RW01	24-Apr-2024	29-Apr-2024	01-May-2024	✓	01-May-2024	08-Jun-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) RW01	24-Apr-2024	29-Apr-2024	01-May-2024	✓	30-Apr-2024	08-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) RW01	24-Apr-2024	29-Apr-2024	08-May-2024	✓	29-Apr-2024	08-May-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) RW01	24-Apr-2024	29-Apr-2024	01-May-2024	✓	30-Apr-2024	08-Jun-2024	✓
Amber VOC Vial - Sulfuric Acid (EP080) RW01	24-Apr-2024	29-Apr-2024	08-May-2024	✓	29-Apr-2024	08-May-2024	✓

Page : 7 of 12
 Work Order : ES2413458
 Client : EP RISK MANAGEMENT
 Project : Gosforth



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
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) RW01	24-Apr-2024	29-Apr-2024	08-May-2024	✔	29-Apr-2024	08-May-2024	✔



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	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	50.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	5	42	11.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	5	40.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	5	40.00	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-AES	EG005T	4	38	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	5	40.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	25	16.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	2	2	100.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	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-AES	EG005T	2	38	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	25	8.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Electrical Conductivity (1:5)	EA010	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	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-AES	EG005T	2	38	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	25	8.00	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	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Matrix Spikes (MS)							
Organic Matter	EP004	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	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-AES	EG005T	2	38	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	25	8.00	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	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	5	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	3	33.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	5	20.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	3	33.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	5.26	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 CaCl ₂ 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 CaCl ₂ 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).
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
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).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ 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).



Analytical Methods	Method	Matrix	Method Descriptions
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 (SnCl ₂)(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 SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl ₂ extract	EA001-PR	SOIL	In house: Referenced to Rayment and Lyons 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl ₂ 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 NH ₄ Cl 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.



<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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.



CHAIN OF CUSTODY

ALS Laboratory, please tick →

Sydney, 277 Wootton St, Newtown NSW 2114
 Ph: 02 8794 8555 E: sales@als.com.au
 Newcastle, 3 Rosegum Rd, Warneck NSW 2304
 Ph: 05 6583 8433 E: alsnw@als.com.au

Brisbane, 32 Strand St, St Paul QLD 4053
 Ph: 07 3243 7222 E: alsbr@als.com.au
 Townsville, 14-15 Deima Ct, Seale QLD 4318
 Ph: 07 4759 0600 E: alsvnt@als.com.au

Melbourne, 2-4 Westall Rd, Springvale VIC 3117
 Ph: 03 8558 9600 E: alsmel@als.com.au
 Adelaide, 3-1 Berrill Rd, Prospect SA 5095
 Ph: 08 8359 0680 E: alsadl@als.com.au

CLIENT: _____

OFFICE: _____

PROJECT: _____

ORDER NUMBER: _____

PROJECT MANAGER: _____

SAMPLER: _____

COC emailed to ALS? (YES / NO) _____

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: _____

TURNAROUND REQUIREMENTS : Standard TAT (List due date)
 Non Standard or urgent TAT (List due date)
 SYBQ / 210 / 16

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

FOR LABORATORY USE ONLY (Circle)
 Yes No N/A
 Custom Seal Intact? Yes No N/A
 First use / frozen ice bricks present upon receipt? Yes No N/A
 Random Sample Temperature on Receipt: _____ °C
 Other comment: _____

RECEIVED BY: *MS*
 DATE/TIME: _____

RELINQUISHED BY: *[Signature]*
 DATE/TIME: _____

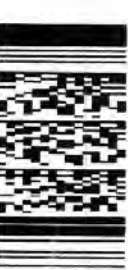
RECEIVED BY: *RR*
 DATE/TIME: _____

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price) <small>Where Metals are required, specify Total (unfiltered) or Dissolved (filtered) (both require)</small>	Additional Information
1	TP22-P-2.0	24/4	S	gr	1	X	ES 2413458
2	TP22-P-3.0			gr	1	X	
3	TP23-L-0.1			gr / bag	2	X	
4	TP23-L-0.5			gr	1	X	
5	TP23-L-1.0			gr	1	X	
6	TP23-L-2.0			gr	1	X	
7	TP23-L-3.0			gr	1	X	
8	TP24-P-0.1			gr / bag	2	X	
9	TP24-P-0.5			gr / bag	2	X	
10	TP24-P-1.0			gr / bag	2	X	
11	TP24-P-2.0			gr / bag	2	X	
12	TP24-P-3.0			gr / bag	2	X	
TOTAL							

Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
 Organised By: _____
 Relinquished By: _____
 Company / Client: _____
 WC No: _____
 Approved By: _____
SEALED
 ES 2413458

LAB OF ORIGIN:
 NEWCASTLE

Environmental Division
 Sydney
 Work Order Reference
ES2413458



Telephone: +61 2 8784 8655

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; GP - Airraig
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisphosphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airraig Unpreserved Vial; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specia
 L = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stable Bottle; ASS = Plastic Bag for Acid Substrate; S = Unpreserved Bag.



CHAIN OF CUSTODY

ALS Laboratory, please tick →

Sydney, 2117 Warrington Rd, Smithfield NSW 2164
 Ph: 02 8754 0355 E: customerservice@alsenviro.com
 Newcastle, 5 Rosslyn Rd, Warabrook NSW 2204
 Ph: 02 4986 8433 E: als.newcastle@alsenviro.com

Brisbane, 13 Bond Rd, Stafford QLD 4003
 Ph: 07 3263 7232 E: brisbane@alsenviro.com
 Townsville, 12/15 Deanna Ct, Bohle QLD 4810
 Ph: 07 4785 0800 E: townsville@alsenviro.com

Melbourne, 2-4 Warrall St, Springvale VIC 3171
 Ph: 03 8948 3600 E: melbourne@alsenviro.com
 Adelaide, 2/1 Burnside Rd, Prospect SA 5085
 Ph: 08 8350 0800 E: adelaide@alsenviro.com

CLIENT: _____ **TURNOURROUND REQUIREMENTS:** Standard TAT (List due date): _____ Non Standard or urgent TAT (List due date): _____
(Standard TAT may be longer for some tests e.g.: Ultra Trace Organics)

OFFICE: _____ **ALS QUOTE NO.:** _____ **SYBQ / 210 / 18**

PROJECT: _____ **CONTACT PH:** _____ **RELINQUISHED BY:** _____ **RECEIVED BY:** _____
Free Ice / Frozen / Ice bricks present upon receipt? Yes No N/A

ORDER NUMBER: _____ **SAMPLER MOBILE:** _____ **EDD FORMAT (or default):** _____ **DATE/TIME:** _____ **DATE/TIME:** _____

PROJECT MANAGER: _____ **RELINQUISHED BY:** _____ **RECEIVED BY:** _____
Other comment: _____

SAMPLER: _____ **COG emailed to ALS? (YES / NO)** _____ **DATE/TIME:** _____ **DATE/TIME:** _____

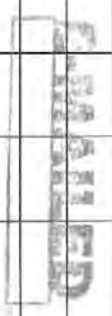
COG Reports to (will default to PM if no other addresses are listed): _____ **DATE/TIME:** _____

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 SITES (NB: Site Codes must be listed to attract site price) <small>Where Metals are required specify Total (unfiltered bottle required) or Dissolved (first filtered bottle required)</small>	Additional Information						
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE <small>(refer to codes below)</small>	TOTAL BOTTLES	COG SEQUENCE NUMBER (Circle)	RECEIVED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
13	TP25-P-01	24/4	S	dr / bag	2	X				
14	TP25-P-05			dr	1	X				
15	TP25-P-16			dr	1	X				
16	TP25-P-20			dr	1	X				
17	TP25-P-30			dr	1	X				
18	TP26-P-01			bag / dr	2	X				
19	TP26-P-05			dr	1	X				
20	TP26-P-16			dr	1	X				
21	TP26-P-20			dr	1	X				
22	TP26-P-30			dr	1	X				
23	TP27-L-01			bag / dr	2	X				
24	TP27-L-05			dr	1	X				
TOTAL										

LAB OF ORIGIN:
 NEWCASTLE



Water Container Codes: P = Unpreserved Plastic; N = Milik Preserved Plastic; ORC = Milik Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airright Unpreserved Plastic
 V = VOA, Vial HCl Preserved; VA = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfur Preserved; AV = Airright 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 Sulfate Soils; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory, please tick →

Sydney: 2/7 Westmead Rd, Westmead NSW 2145
 Ph: 02 8188 0888 E: als@als.com.au
 Newcastle: 5 Rossington Rd, Westmead NSW 2145
 Ph: 02 4988 9413 E: samples.newcastle@als.com.au

Brisbane: 72 Stuart St, Stafford QLD 4067
 Ph: 07 3243 7202 E: brisbane@als.com.au
 Townsville: 1441's Dam Rd, Baulk Hills QLD 4815
 Ph: 07 4798 0800 E: townsville@als.com.au

Melbourne: 2-4 Warrall Rd, Springvale VIC 3171
 Ph: 03 9549 2800 E: melbourne@als.com.au
 Adelaide: 2-1 Burna Rd, Pecora SA 5095
 Ph: 08 3356 0850 E: adelaide@als.com.au

CLIENT: _____ **TURNAROUND REQUIREMENTS:** Standard TAT (List due date): _____ Non Standard or urgent TAT (List due date): _____
 (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)

PROJECT: _____ **ALS QUOTE NO.:** _____ **SYBQ / 210 / 18** **COC SEQUENCE NUMBER (Circle)**
 COC: 1 2 3 4 5 6 **(12)** 7
 OF: 1 2 3 4 5 6 7

ORDER NUMBER: _____ **CONTACT PH:** _____ **RECEIVED BY:** _____ **DATE/TIME:** _____
PROJECT MANAGER: _____ **SAMPLER MOBILE:** _____ **EDD FORMAT (or default):** _____

SAMPLER: _____ **RECEIVED BY:** _____ **DATE/TIME:** _____
COC emailed to ALS? (YES / NO) _____ **RECEIVED BY:** _____ **DATE/TIME:** _____

Email Reports to (will default to PM if no other addresses are listed): _____ **DATE/TIME:** _____
Email Invoice to (will default to PM if no other addresses are listed): _____ **DATE/TIME:** _____

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: _____

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price)							Additional Information				
						When Metals are required, specify Total (unfiltered bottle required) or Dissolved (acid filtered bottle requires):											
25	TP28-P-0.1	24/9	S	jar / bag	2	X											
26	TP28-P-0.5			jar	1		X										
27	TP28-P-1.0			jar	1		X										
28	TP28-P-2.0			jar	1		X										
29	TP28-P-2.0																
30	TP29-P-0.1			bag / jar	2	X											
31	TP29-P-0.5			jar	1		X										
32	TP29-P-1.0				1		X										
33	TP29-P-2.0				1		X										
34	TP29-P-3.0				1		X										
35	TP30-P-0.1			bag / jar	2	X											
36	TP30-P-0.5			jar	1		X										
					TOTAL												

LAB OF ORIGIN:
NEWCASTLE

REMAILED

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisphosphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight 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 2077 Wootton Rd, Smithville NSW 2164
 Ph: 02 8784 9555 E: sampl@als.com.au
 Newcastle E Rasmussen Rd, Warabrook NSW 2304
 Ph: 02 4986 8435 E: sampl@als.com.au

Brisbane 32 Strand St, Stirling QLD 4053
 Ph: 07 3248 7322 E: sampl@als.com.au
 Townsville 14-15 Esplanade St, Bondi QLD 4819
 Ph: 07 4786 0500 E: townsvill@als.com.au

Melbourne 2-4 Worsell Rd, Springvale VIC 3175
 Ph: 02 8548 9600 E: sampl@als.com.au
 Adelaide 2-1 Burma Rd, Pottolva SA 5095
 Ph: 08 8359 0880 E: adelaide@als.com.au

TURNAROUND REQUIREMENTS:

Standard TAT may be longer for some tests

Standard TAT (List due date)
 Non Standard or urgent TAT (List due date)

ALS QUOTE NO.: SYBQ / 210 / 18

COC SEQUENCE NUMBER (Circle)

Freeze / Frozen Ice sticks present upon receipt?

Yes

No

N/A

CONTACT PH:

RECEIVED BY: *W*

DATE/TIME:

RECEIVED BY: *BR*

DATE/TIME:

SAMPLER MOBILE: EDD FORMAT (or default):

RECEIVED BY: *BR*

DATE/TIME:

DATE/TIME:

PROJECT: PROJECT MANAGER:

RECEIVED BY: *BR*

DATE/TIME:

DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

RECEIVED BY: *BR*

DATE/TIME:

DATE/TIME:

ALS USE ONLY

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 (refer to codes below)	TOTAL BOTTLES	ANALYSIS REQUIRED INCLUDING SUITES (NB: Suite Codes must be listed to attract suite price)	Additional Information
37	TP30-P-1.0	29/12	S	JW	1		
38	TP30-P-2.0			L	1		
39	TP30-P-3.0			JW / JW	1		
40	TP31-L-0.1			JW / JW	2	S16 EA 200 F HOUR	
41	TP31-L-0.5			JW	1		
42	TP31-L-1.0			JW	1		
43	TP31-L-2.0			JW	1		
44	TP31-L-3.0			JW	1		
45	TP32-P-0.1			JW / JW	2		
46	TP32-P-0.5			JW	1		
47	TP32-P-1.0			JW	1		
TOTAL							

LAB OF ORIGIN: NEWCASTLE

RECEIVED

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AF - Airfreight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisphosphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speedation 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 Wootton Rd, Smithfield NSW 2168
 Ph 02 8744 8600 E mail: piers.syd@alsenviro.com
 Newcastle 5 Redwood Rd, Woodstock NSW 2304
 Ph 02 4985 8437 E mail: piers.newcastle@alsenviro.com

Brisbane 327 Shrove St, Stirling QLD 4055
 Ph 07 3249 7202 E mail: piers.bris@alsenviro.com
 Townsville 14-15 Tarama Ct, Esplanade QLD 4810
 Ph 07 4755 0300 E mail: piers.townsville@alsenviro.com

Melbourne 2-4 Westall Rd, Springvale VIC 3171
 Ph 03 8546 8600 E mail: piers.melbourne@alsenviro.com
 Adelaide 24 Burna Rd, Pooraka SA 5088
 Ph 08 8358 0880 E mail: piers.adelaide@alsenviro.com

CLIENT: _____ **TURNAROUND REQUIREMENTS:** Standard TAT (List due date): _____ Non Standard or urgent TAT (List due date): _____

OFFICE: _____ **ALS QUOTE NO.:** _____ **SYBQ / 210 / 16**

PROJECT: _____ **CONTACT PH:** _____ **RELIQUISHED BY:** _____ **RECEIVED BY:** _____

ORDER NUMBER: _____ **SAMPLER MOBILE:** _____ **EDD FORMAT (or default):** _____

PROJECT MANAGER: _____ **RELINQUISHED BY:** _____ **RECEIVED BY:** _____

SAMPLER: _____ **DATE/TIME:** _____ **DATE/TIME:** _____

COC emailed to ALS? (YES / NO) _____ **DATE/TIME:** _____

Email Reports to (will default to PM if no other addresses are listed): _____

Email Invoice to (will default to PM if no other addresses are listed): _____

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL: _____

ALS USE ONLY **SAMPLE DETAILS** **CONTAINER INFORMATION** **ANALYSIS REQUIRED INCLUDING SUITES** **FOR LABORATORY USE ONLY (Circle)**

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	Where Metals are required specify Total (unlabeled bottle included) or Dissolved (labeled bottle required)	Additional information
48	TP32-P-0.0 TP33-P-0.1	24/4	S	or	2	X	
49	TP33-P-0.5			or	1	X	
50	TP33-P-1.0			or	1	X	
51	TP33-P-2.0			or	1	X	
52	TP33-P-0.0 TP34-L-0.1			or	2	X	
53	TP34-L-0.5			or	1	X	
54	TP34-L-1.0			or	1	X	
55	TP34-L-2.0			or	1	X	
56	TP34-L-3.0			or	1	X	
57	TP35-P-0.1			or	2	X	
					TOTAL		

LAB OF ORIGIN:
NEWCASTLE

CONTAINERED

Water ContAINER Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved Plastic; A2 = Airtight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Dichlorate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight 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 Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solts; B = Unpreserved Bag



CHAIN OF CUSTODY

ALS Laboratory, please tick →

1 Sydney, 277 Woodroffe Rd, Smithfield NSW 2104
Ph: 02 8766 8556 E: sam.plumley@als.com.au
1 New South Wales, 5 Rousburn Rd, Warburton NSW 2504
Ph: 02 4598 9433 E: sara.stevens@als.com.au

1 Brisbane, 22 Stynes St, Stafford QLD 4058
Ph: 07 2214 7227 E: adam.bloss@als.com.au
1 Townsville, 1411 St Johns St, North QLD 4815
Ph: 07 4758 0000 E: tom.winslie@als.com.au

1 Melbourne, 24 Warrin Rd, Springvale VIC 3171
Ph: 03 9540 9600 E: sam.plumley@als.com.au
1 Adelaide, 2-1 Burt St, Adelaide SA 5095
Ph: 08 8559 0330 E: melanie@als.com.au

CLIENT: TURNAROUND REQUIREMENTS: Standard TAT (List due date) Non Standard or Urgent TAT (List due date)

OFFICE: (Standard TAT may be longer for some basis e.g. Urea Trace Organics)

PROJECT: ALS QUOTE NO.: SYBA / 210 / 16

ORDER NUMBER: CONTACT PH:

PROJECT MANAGER: SAMPLER MOBILE: EDD FORMAT (or default):

SAMPLER: RELINQUISHED BY: DATE/TIME:

COC emailed to ALS? (YES / NO)

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)
Catalytic 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:

RECEIVED BY: DATE/TIME:

RECEIVED BY: DATE/TIME:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Watern(W)	CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES (NB: Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered) or Dissolved (filtered) (where required)	Additional Information
--------------	--	-----------------------	--	------------------------

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-16	Et	HOLD	RECEIVED BY: DATE/TIME:	RECEIVED BY: DATE/TIME:	Comments on likely contaminant levels, dilutions or samples requiring specific COC analysis etc.
58	TP35-P-05	24/4	S	Reg Hazard	12						
59	TP35-P-1.0				1						
60	TP35-P-2.0				1						
61	TP35-P-3.0				1						
62	TP36-L-0.1			or	1	X					
63	TP36-L-0.5			or	1	X					
64	TP36-L-1.0			or	1	X					
65	TP36-L-2.0			or	1	X					
66	TP36-L-3.0			or	1	X					
67	TP37-P-0.1			or / or	2	X					
68	TP37-P-0.5			or	1	X					
69	TP37-P-1.0			or	1	X					
TOTAL											

EMailed

LAB OF ORIGIN: NEWCASTLE

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; CRC = Nitric Preserved Plastic; SH = Sodium Hydroxide Preserved Plastic; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic; V = VOA Vial HCl Preserved; VS = VOA Vial Sodium Bisphosphate Preserved; AV = Airtight 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 Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.



CHAIN OF CUSTODY

check exp date for TB + TS

CLIENT	TURNAROUND REQUIREMENTS	<input type="checkbox"/> Standard (1-3 business days)	FOR LABORATORY USE ONLY (Circle)
OFFICE	<input type="checkbox"/> Expedited (2-3 business days)	<input type="checkbox"/> Non Standard (to be agreed with ALS prior to date)	Custody Seal Intact? Yes No N/A
PROJECT	ALS QUOTE NO. SYBQ / 210 / 16	COO SEQUENCE NUMBER (circle)	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER		1 2 3 4 5 6 7	Random Sample Temperature on Receipt 13.6
PROJECT MANAGER	CONTACT PH		Other comment:
SAMPLER	SAMPLER MOBILE	RELINQUISHED BY	RECEIVED BY: Elizabeth Brotherton
COO emailed to ALS? Y/N	EOD FORMAT (or default):	DATE/TIME	DATE/TIME 30/4 11:50am
Email Reports to: ALS (0800 00 00 00)			
Email Invoice to: ALS (0800 00 00 00)			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL

ALS USE ONLY	SAMPLE DETAIL	CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES	Additional Information
--------------	---------------	-----------------------	------------------------------------	------------------------

LAB ID	SAMPLE ID	SUITE / TIME	MATRIX	TYPE & PRESERVATIVE	TOTAL BOTTLES	ANALYSIS REQUIRED	Additional Information
1	106	TP22-P-20	20/4	S			
2	107	TP22-P-30					
3	108	TP23-L-01		Soil / Pig	2		
4	109	TP23-L-05		Soil			
5	110	TP23-L-10		Soil			
6	111	TP23-L-20		Soil			
7	112	TP23-L-30		Soil			
8	113	TP24-P-01		Soil / Pig			
9	114	TP24-P-05		Soil / Pig			
10	115	TP24-P-10		Soil / Pig			
11	116	TP24-P-20		Soil / Pig			
12	117	TP24-P-30		Soil / Pig			

QA02 / EA04 / ES2413458

Submittal / Forward Lab / Split WO

Lab / Analysis

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No: ES2413458

Attached By PC

Environmental Division
Sydney
Work Order Reference
ES2413458



Telephone : + 61-2-8784 8555

1092777



CHAIN OF CUSTODY

CLIENT	TURNAROUND REQUIREMENTS	FOR LABORATORY USE ONLY (Circle)	
OFFICE	<input type="checkbox"/> Standard (2-3 business days) <input type="checkbox"/> Expedited (1-2 business days) <input type="checkbox"/> Same Day (Next Business Day)	Custody Seal intact?	Yes No N/A
PROJECT	ALS QUOTE NO. 5392 / 210 / 16	Freeze / frozen ice bilvs present with receipt?	Yes No N/A
ORDER NUMBER		Random Sample Temperature on Receipt:	C
PROJECT MANAGER	CONTACT PH:	<input type="checkbox"/> None <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9	Other comment
SAMPLER	SAMPLER MODEL	RELINQUISHED BY	RECEIVED BY
CONTAINER TYPE (ALSO USED)	STD FORMAT (or default)	DATE/TIME	DATE/TIME
Email Register Mail: 800-833-8888			
Email Register Fax: 800-833-8888			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (ALC, HPLC, GC/MS, etc.)				Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE	TOTAL BOTTLES				
13	TP25-P-01	24/7	S	Ag	2				
14	TP25-P-05								
15	TP25-P-16								
16	TP25-P-20								
17	TP25-P-30								
18	TP26-P-01			Ag					
19	TP26-P-05								
20	TP26-P-16								
21	TP26-P-20								
22	TP26-P-30								
23	TP27-L-01			Ag					
24	TP27-L-05								

93 * TP27-L-1.0 EXTRA



CHAIN OF CUSTODY

CLIENT	TURNAROUND REQUIREMENTS	FOR LABORATORY USE ONLY (Circle)	
OFFICE	ALS QUOTE NO. SYRQ 249716	Custody Seal Intact?	Yes No N/A
PROJECT	ALS QUOTE NO. SYRQ 249716	Fine Ice / Frozen Ice packs present upon receipt?	Yes No N/A
PROJECT NUMBER	PROJECT PH	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER	SAMPLER MOBILE	RECEIVED BY	RECEIVED BY
SAMPLER	ESD FORMAT (or Default)	DATE/TIME	DATE/TIME

COMMENTS/SPECIAL HANDLING/STORAGE/REMARKS:

ALS USE ONLY		SAMPLE IDENT		CONTAINER INFORMATION		ANALYSIS REQUIRED (including SUITES)				Additional Information
LAB ID	SAMPLE ID	DATE/TIME	MATRIX	TYPE & PRESERVATIVE	TOTAL BOTTLES					
37	TP30-P-10	29/12	S	P	1	5/6	EA	2000	P	
38	TP30-P-20			L	1					
39	TP30-P-20				1					
40	TP31-L-01			P	1					
41	TP31-L-05			P	1					
42	TP31-L-10				1					
43	TP31-L-20				1					
44	TP31-L-30				1					
45	TP32-P-01			P	1					
46	TP32-P-05			P	1					
47	TP32-P-10			P	1					
	TP32-P-20									



CHAIN OF CUSTODY

CLIENT	TUPHAROUND REQUIREMENTS		FOR LABORATORY USE ONLY (Circle)	
OFFICE	<input type="checkbox"/> Sample for duplicate tests <input checked="" type="checkbox"/> Sample for duplicate tests (duplicate only)		Laboratory Sewage? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA Free ice / frozen ice blocks present upon receipt? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA Random Sample Temperature on Receipt: _____ °C Other comment: _____	
PROJECT	ALS QUOTE NO.	TY901215111	<input type="checkbox"/> No duplicate samples <input checked="" type="checkbox"/> Yes	
ORDER NUMBER	CONTACT TEL		M. (14) P. F. T.	
PROJECT MANAGER	SAMPLE NO	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY
YANFANG	YANFANG		W	
PROJECT MANAGER AL	SEND TO	DATE	RECEIVED BY	DATE

COMMENTS/SPECIAL INSTRUCTIONS/REMARKS/ISSUES

ALS USE ONLY	SAMPLE DETAILS		CONTAINER INFORMATION		ANALYSIS REQUIRED including SUBS			Additional Information
	LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE	NET BOTTLES	EA	REMARKS
		TP32-P-0	2/4/7	S				
	48	TP33-P-0.1			TP / P	2		⊙
	49	TP33-P-0.5			TP			
	50	TP33-P-1.0			TP			
	51	TP33-P-2.0			TP			
		TP33-P-0						
	52	TP34-L-0.1			TP / P	2		
	53	TP34-L-0.5			TP			
	54	TP34-L-1.0			TP			
	55	TP34-L-2.0			TP			
	56	TP34-L-3.0			TP			
	57	TP33-P-0.1			TP / P	2		



CHAIN OF CUSTODY

CLIENT	TURNAROUND REQUIREMENTS		FOR LABORATORY USE ONLY (Circle)	
OFFICE	<input type="checkbox"/> Standard (30 or 45 days) <input type="checkbox"/> Expedited (10 or 15 days) <input type="checkbox"/> Other (specify)		Custody Seal Intact? Yes No N/A Free of ice / frozen ice bricks present upon receipt? Yes No N/A Random Sample Temperature on Receipt: °C Other comment:	
PROJECT	ALP QUOTE NO.	54801210115	ANALYSIS SEQUENCE NUMBER (Circle) 1 2 3 4 5 6 7 8 9 10 10	
PROJECT NUMBER	CONTACT PH		RELINQUISHED BY	RECEIVED BY
SAMPLER	TAMPLER MOBILE		RECEIVED BY	RECEIVED BY
COC NUMBER (ALP) (TPA) (TD)	SEP FORMAT or REPORT		RECEIVED BY	RECEIVED BY
Email Report to: (ALP) (TPA) (TD)			RECEIVED BY	RECEIVED BY
Cell# Report to: (ALP) (TPA) (TD)			RECEIVED BY	RECEIVED BY

COMMENTS/SPEC. REQ. AND/OR OTHER INFO TO ANALYST

ALS USE ONLY	SAMPLE DESIGN	CONTAINER INFORMATION	ANALYSIS REQUIRED INCLUDING SITES (ALP, TPA, TD) AND NUMBER OF BOTTLES	ANALYST INFORMATION
--------------	---------------	-----------------------	--	---------------------

LAB ID	SAMPLE ID	DATE/TIME	MATRIX	TYPE & PRESERVATION	TOTAL BOTTLES	ANALYSIS REQUIRED	ANALYST
	TP37-P-2.0	2/9/17	I	...	2	EA	...
	TP37-P-3.0						
70	TP38-P-0.1			bag	2	>	
71	TP38-P-0.5						
72	TP38-P-1.0						
73	TP38-P-2.0						
74	TP-15-2.0						
75	TP39-L-0.1					>	
76	TP39-L-0.5						
77	TP39-L-1.0						
78	TP39-L-2.0						
79	TP39-L-3.0						



CHAIN OF CUSTODY

Form No. 100-10-1 (Rev. 10/2008)

CLIENT:	TURNING AND REQUIREMENTS: <input type="checkbox"/> "As Is" <input type="checkbox"/> "As Specified" (List in Remarks)	FOR LABORATORY USE ONLY (Circle):		
ADDRESS:	Special Handling Requirements: <input type="checkbox"/> "Yes" <input type="checkbox"/> "No" (Specify in Remarks)	Custody Seal Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	Freeze Ice / Frozen Ice Back's present upon Receipt? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
PROJECT:	ALS QUOTE NO. _____ SITE ID # _____	Random Sample Temperature on Receipt: _____ °C		
ORDER NUMBER:	CONTACT NO. _____	Other Comments: _____		
SAMPLER:	SAMPLER MOBILE: _____	RELINQUISHED BY: _____	RECEIVED BY: _____	RELINQUISHED BY: _____
COOL container used? YES <input type="checkbox"/> NO <input type="checkbox"/>	EDS FORMAT (if mobile): _____	DATE/TIME: _____	RECEIVED BY: _____	RECEIVED BY: _____
Field Reports to: _____				
Field Reference to: _____				
* COMPLETE (PROPERLY) HANDLING AND STORAGE FOR DISPOSAL.				

ALS USE ONLY		SAMPLE IDENTIFICATION		CONTAINER INFORMATION		ANALYSIS REQUIRED (including SUITES) (if any, specify in Remarks)			Additional Information	
LAB ID	SAMPLE #	DATE/TIME	DESTROY	TYPE & PRESERVATIVE	TOTAL BOTTLES					
80	81	TK40-P-01	2/4	S	Tap / B3	2	10	10	10	10
81	82	TK40-P-05		Tap	1	10	10	10	10	10
82	83	TK40-P-10		Tap	1	10	10	10	10	10
83	84	TK40-P-20		Tap	1	10	10	10	10	10
84	85	TK40-P-30		Tap	1	10	10	10	10	10
85	86	TK40-P-01		Tap / B3	1	10	10	10	10	10
86	87	TK40-P-01		Tap / B3	1	10	10	10	10	10
87	88	TK40-P-01		Tap	1	10	10	10	10	10
88	89	TK40-P-01		Tap	1	10	10	10	10	10
89	90	TK40-P-01		Tap	1	10	10	10	10	10
90	91	TK40-P-01		Tap	1	10	10	10	10	10
91	92	TK40-P-01		Tap	1	10	10	10	10	10
92	93	TK40-P-01		Tap	1	10	10	10	10	10
93	94	TK40-P-01		Tap	1	10	10	10	10	10
94	95	TK40-P-01		Tap	1	10	10	10	10	10
95	96	TK40-P-01		Tap	1	10	10	10	10	10
96	97	TK40-P-01		Tap	1	10	10	10	10	10
97	98	TK40-P-01		Tap	1	10	10	10	10	10
98	99	TK40-P-01		Tap	1	10	10	10	10	10
99	100	TK40-P-01		Tap	1	10	10	10	10	10
100	101	TK40-P-01		Tap	1	10	10	10	10	10
101	102	TK40-P-01		Tap	1	10	10	10	10	10
102	103	TK40-P-01		Tap	1	10	10	10	10	10
103	104	TK40-P-01		Tap	1	10	10	10	10	10
104	105	TK40-P-01		Tap	1	10	10	10	10	10
105	106	TK40-P-01		Tap	1	10	10	10	10	10
106	107	TK40-P-01		Tap	1	10	10	10	10	10
107	108	TK40-P-01		Tap	1	10	10	10	10	10
108	109	TK40-P-01		Tap	1	10	10	10	10	10
109	110	TK40-P-01		Tap	1	10	10	10	10	10
110	111	TK40-P-01		Tap	1	10	10	10	10	10
111	112	TK40-P-01		Tap	1	10	10	10	10	10
112	113	TK40-P-01		Tap	1	10	10	10	10	10
113	114	TK40-P-01		Tap	1	10	10	10	10	10
114	115	TK40-P-01		Tap	1	10	10	10	10	10
115	116	TK40-P-01		Tap	1	10	10	10	10	10
116	117	TK40-P-01		Tap	1	10	10	10	10	10
117	118	TK40-P-01		Tap	1	10	10	10	10	10
118	119	TK40-P-01		Tap	1	10	10	10	10	10
119	120	TK40-P-01		Tap	1	10	10	10	10	10
120	121	TK40-P-01		Tap	1	10	10	10	10	10
121	122	TK40-P-01		Tap	1	10	10	10	10	10
122	123	TK40-P-01		Tap	1	10	10	10	10	10
123	124	TK40-P-01		Tap	1	10	10	10	10	10
124	125	TK40-P-01		Tap	1	10	10	10	10	10
125	126	TK40-P-01		Tap	1	10	10	10	10	10
126	127	TK40-P-01		Tap	1	10	10	10	10	10
127	128	TK40-P-01		Tap	1	10	10	10	10	10
128	129	TK40-P-01		Tap	1	10	10	10	10	10
129	130	TK40-P-01		Tap	1	10	10	10	10	10
130	131	TK40-P-01		Tap	1	10	10	10	10	10
131	132	TK40-P-01		Tap	1	10	10	10	10	10
132	133	TK40-P-01		Tap	1	10	10	10	10	10
133	134	TK40-P-01		Tap	1	10	10	10	10	10
134	135	TK40-P-01		Tap	1	10	10	10	10	10
135	136	TK40-P-01		Tap	1	10	10	10	10	10
136	137	TK40-P-01		Tap	1	10	10	10	10	10
137	138	TK40-P-01		Tap	1	10	10	10	10	10
138	139	TK40-P-01		Tap	1	10	10	10	10	10
139	140	TK40-P-01		Tap	1	10	10	10	10	10
140	141	TK40-P-01		Tap	1	10	10	10	10	10
141	142	TK40-P-01		Tap	1	10	10	10	10	10
142	143	TK40-P-01		Tap	1	10	10	10	10	10
143	144	TK40-P-01		Tap	1	10	10	10	10	10
144	145	TK40-P-01		Tap	1	10	10	10	10	10
145	146	TK40-P-01		Tap	1	10	10	10	10	10
146	147	TK40-P-01		Tap	1	10	10	10	10	10
147	148	TK40-P-01		Tap	1	10	10	10	10	10
148	149	TK40-P-01		Tap	1	10	10	10	10	10
149	150	TK40-P-01		Tap	1	10	10	10	10	10
150	151	TK40-P-01		Tap	1	10	10	10	10	10
151	152	TK40-P-01		Tap	1	10	10	10	10	10
152	153	TK40-P-01		Tap	1	10	10	10	10	10
153	154	TK40-P-01		Tap	1	10	10	10	10	10
154	155	TK40-P-01		Tap	1	10	10	10	10	10
155	156	TK40-P-01		Tap	1	10	10	10	10	10
156	157	TK40-P-01		Tap	1	10	10	10	10	10
157	158	TK40-P-01		Tap	1	10	10	10	10	10
158	159	TK40-P-01		Tap	1	10	10	10	10	10
159	160	TK40-P-01		Tap	1	10	10	10	10	10
160	161	TK40-P-01		Tap	1	10	10	10	10	10
161	162	TK40-P-01		Tap	1	10	10	10	10	10
162	163	TK40-P-01		Tap	1	10	10	10	10	10
163	164	TK40-P-01		Tap	1	10	10	1		



CERTIFICATE OF ANALYSIS

Work Order : **ES2414714**
Client : **EP RISK MANAGEMENT**
Contact : MR NATHAN MCGUIRE (EPRISK)
Address : 3/19 BOLTON STREET
NEWCASTLE NSW 2300
Telephone : +61 02 4913 5650
Project : Gosforth
Order number : EP3627
C-O-C number : ----
Sampler : MC
Site : ----
Quote number : ES23EPRISK0002 - ES PRIMARY WORK ONLY
No. of samples received : 2
No. of samples analysed : 2

Page : 1 of 8
Laboratory : Environmental Division Sydney
Contact : Jason Dighton
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 07-May-2024 14:20
Date Analysis Commenced : 29-Apr-2024
Issue Date : 14-May-2024 10:34



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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	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.

- 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.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QA01	QA03	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2414714-001	ES2414714-002	-----	-----	-----	
				Result	Result	----	----	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%	29.4	24.2	----	----	----	
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	<5	6	----	----	----	
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----	
Chromium	7440-47-3	2	mg/kg	85	70	----	----	----	
Copper	7440-50-8	5	mg/kg	24	15	----	----	----	
Lead	7439-92-1	5	mg/kg	10	10	----	----	----	
Nickel	7440-02-0	2	mg/kg	47	21	----	----	----	
Zinc	7440-66-6	5	mg/kg	25	26	----	----	----	
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----	
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----	
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----	
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----	
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----	
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	----	
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QA01	QA03	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2414714-001	ES2414714-002	-----	-----	-----	
				Result	Result	----	----	----	
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
[^] Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	----	
4.4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----	
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----	
[^] Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----	
[^] Sum of DDD + DDE + DDT	72-54-8/72-55-9/5-0-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----	
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----	
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----	
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----	
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----	
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----	
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----	
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----	
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----	
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QA01	QA03	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2414714-001	ES2414714-002	-----	-----	-----	
				Result	Result	----	----	----	
EP068B: Organophosphorus Pesticides (OP) - Continued									
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----	
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----	
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----	
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----	
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----	
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----	
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----	
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----	
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	----	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QA01	QA03	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2414714-001	ES2414714-002	-----	-----	-----	
				Result	Result	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----	
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----	
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----	
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----	
[^] C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----	
[^] C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----	
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----	
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----	
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----	
[^] >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----	
[^] >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----	
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----	
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----	
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----	
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----	
[^] Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----	
[^] Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----	
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	91.0	121	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	92.9	124	----	----	----	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QA01	QA03	----	----	----
Sampling date / time				24-Apr-2024 00:00	24-Apr-2024 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES2414714-001	ES2414714-002	-----	-----	-----	
				Result	Result	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	93.4	136	----	----	----	
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	87.4	92.0	----	----	----	
2-Chlorophenol-D4	93951-73-6	0.5	%	85.7	89.2	----	----	----	
2.4.6-Tribromophenol	118-79-6	0.5	%	54.9	58.1	----	----	----	
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	82.4	86.3	----	----	----	
Anthracene-d10	1719-06-8	0.5	%	94.2	99.0	----	----	----	
4-Terphenyl-d14	1718-51-0	0.5	%	93.0	96.2	----	----	----	
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%	79.3	87.2	----	----	----	
Toluene-D8	2037-26-5	0.2	%	72.9	83.1	----	----	----	
4-Bromofluorobenzene	460-00-4	0.2	%	72.6	80.2	----	----	----	



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	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131



QUALITY CONTROL REPORT

Work Order	: ES2414714	Page	: 1 of 7
Client	: EP RISK MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR NATHAN MCGUIRE (EPRISK)	Contact	: Jason Dighton
Address	: 3/19 BOLTON STREET NEWCASTLE NSW 2300	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 4913 5650	Telephone	: +61-2-8784 8555
Project	: Gosforth	Date Samples Received	: 07-May-2024
Order number	: EP3627	Date Analysis Commenced	: 29-Apr-2024
C-O-C number	: ----	Issue Date	: 14-May-2024
Sampler	: MC		
Site	: ----		
Quote number	: ES23EPRISK0002 - ES PRIMARY WORK ONLY		
No. of samples received	: 2		
No. of samples analysed	: 2		



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
Ankit Joshi	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

* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: SOIL

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5778658)									
ES2414421-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	15	23.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	15	13	13.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	11	32.1	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	59	60	0.0	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	88	104	16.9	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	108	122	12.2	0% - 20%
ES2414715-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	18	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	19	18	9.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	10	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	26	6.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	25	23	7.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	76	66	13.6	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5778668)									
ES2414652-009	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	17.7	19.0	7.6	0% - 50%
ES2414726-003	Anonymous	EA055: Moisture Content	----	0.1	%	8.1	7.8	4.7	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5778659)									
ES2414421-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	1.1	1.5	25.7	0% - 50%
ES2414715-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Page : 3 of 7
 Work Order : ES2414714
 Client : EP RISK MANAGEMENT
 Project : Gosforth



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: 5774355)									
ES2414714-001	QA01	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5774355)									
ES2414714-001	QA01	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5774355)									
ES2414714-001	QA01	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



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: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
					LCS	Low	High	
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5778658)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	105	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	113	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	120	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	107	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	105	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	104	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	102	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5778659)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	89.6	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5776335)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	105	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5776334)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	100	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	103	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.9	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	107	66.0	116
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.8	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	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	98.5	62.0	124



Sub-Matrix: SOIL

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Acceptable Limits (%)	
					Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5776334) - continued								
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	96.5	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	97.8	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5776334)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	99.9	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	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	98.5	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	98.7	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	93.1	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	94.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.7	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	100	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5776333)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	104	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	100	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	104	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	100	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	106	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	108	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	104	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	106	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	94.1	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127



Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
					Result	Spike Concentration	Spike Recovery (%)		Acceptable Limits (%)
Method: Compound	CAS Number	LOR	Unit					LCS	Low
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5776333) - continued									
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	92.4	68.0	116	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	106	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	98.2	61.0	121	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	98.7	62.0	118	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	96.1	63.0	121	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5774355)									
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	74.5	72.2	131	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5776332)									
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	90.0	75.0	129	
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	96.7	77.0	131	
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	97.0	71.0	129	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5774355)									
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	74.2	72.4	133	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5776332)									
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	108	77.0	125	
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	94.8	74.0	138	
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	94.7	63.0	131	
EP080: BTEXN (QCLot: 5774355)									
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	83.4	76.0	124	
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	84.8	78.5	121	
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	81.1	77.4	121	
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	91.1	78.2	121	
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	94.1	81.3	121	
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	89.0	78.8	122	

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number			Low	High



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: 5778658)								
ES2414421-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	107	70.0	130	
		EG005T: Cadmium	7440-43-9	50 mg/kg	102	70.0	130	
		EG005T: Chromium	7440-47-3	50 mg/kg	104	68.0	132	
		EG005T: Copper	7440-50-8	250 mg/kg	105	70.0	130	
		EG005T: Lead	7439-92-1	250 mg/kg	102	70.0	130	
		EG005T: Nickel	7440-02-0	50 mg/kg	101	70.0	130	
		EG005T: Zinc	7440-66-6	250 mg/kg	106	66.0	133	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5778659)								
ES2414421-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	89.7	70.0	130	
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5774355)								
ES2414714-001	QA01	EP080: C6 - C9 Fraction	----	32.5 mg/kg	84.2	60.4	142	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5774355)								
ES2414714-001	QA01	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	76.2	61.1	142	
EP080: BTEXN (QCLot: 5774355)								
ES2414714-001	QA01	EP080: Benzene	71-43-2	2.5 mg/kg	70.4	62.1	122	
		EP080: Toluene	108-88-3	2.5 mg/kg	73.7	66.6	119	
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	73.7	67.4	123	
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	80.7	66.4	121	
			106-42-3					
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	82.7	70.7	121	
	91-20-3	EP080: Naphthalene		2.5 mg/kg	84.3	61.1	115	



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2414714	Page	: 1 of 5
Client	: EP RISK MANAGEMENT	Laboratory	: Environmental Division Sydney
Contact	: MR NATHAN MCGUIRE (EPRISK)	Telephone	: +61-2-8784 8555
Project	: Gosforth	Date Samples Received	: 07-May-2024
Site	: ----	Issue Date	: 14-May-2024
Sampler	: MC	No. of samples received	: 2
Order number	: EP3627	No. of samples analysed	: 2

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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



Outliers : Analysis Holding Time Compliance

Matrix: SOIL

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved	QA01, QA03	----	----	----	09-May-2024	08-May-2024	1

Outliers : Frequency of Quality Control Samples

Matrix: SOIL

Quality Control Sample Type	Method	Count		Rate (%)		Quality Control Specification
		QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (SIM)	EP075(SIM)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (SIM)	EP075(SIM)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	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
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)	24-Apr-2024	QA01, QA03	----	----	----	09-May-2024	08-May-2024	*
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)	24-Apr-2024	QA01, QA03	09-May-2024	21-Oct-2024	✓	10-May-2024	21-Oct-2024	✓
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)	24-Apr-2024	QA01, QA03	09-May-2024	22-May-2024	✓	13-May-2024	22-May-2024	✓



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) QA01	24-Apr-2024	29-Apr-2024	08-May-2024	✔	01-May-2024	08-Jun-2024	✔
Soil Glass Jar - Unpreserved (EP066) QA03	24-Apr-2024	29-Apr-2024	08-May-2024	✔	02-May-2024	08-Jun-2024	✔
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) QA01, QA03	24-Apr-2024	29-Apr-2024	08-May-2024	✔	01-May-2024	08-Jun-2024	✔
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) QA01, QA03	24-Apr-2024	29-Apr-2024	08-May-2024	✔	01-May-2024	08-Jun-2024	✔
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QA01, QA03	24-Apr-2024	29-Apr-2024	08-May-2024	✔	01-May-2024	08-Jun-2024	✔
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QA01, QA03	24-Apr-2024	08-May-2024	08-May-2024	✔	08-May-2024	08-May-2024	✔
Soil Glass Jar - Unpreserved (EP071) QA01, QA03	24-Apr-2024	29-Apr-2024	08-May-2024	✔	09-May-2024	08-Jun-2024	✔
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QA01, QA03	24-Apr-2024	08-May-2024	08-May-2024	✔	08-May-2024	08-May-2024	✔
Soil Glass Jar - Unpreserved (EP071) QA01, QA03	24-Apr-2024	29-Apr-2024	08-May-2024	✔	09-May-2024	08-Jun-2024	✔
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QA01, QA03	24-Apr-2024	08-May-2024	08-May-2024	✔	08-May-2024	08-May-2024	✔



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	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
Analytical Methods							
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	50.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	0	2	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ 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	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.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ 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.

Andrew Makar

From: Jack Clifton on behalf of Samples Sydney
Sent: Tuesday, 7 May 2024 12:41 PM
To: Sepan Mahamad; rebatches.sydney; Andrew Makar
Cc: Jason Dighton
Subject: RE: [EXTERNAL] - Work order: ES2413458

Follow Up Flag: Follow up
Flag Status: Flagged

Hi @Andrew,

Can you please process this rebatch?

Kind Regards,

Jack Clifton
Sample Receipt Coordinator | Environmental
Sydney, NSW

fight solutions
right partner.



O: +61 2 8784 8555
D: +61 2 8784 8532
Jack.Clifton@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA
alsglobal.com



Environmental Division
Sydney
Work Order Reference
ES2414714



Telephone : + 61-28784 8555

EnviroMail 145 Australia - Putting out the fire on emerging contaminants (HRL) EnviroMail 146 Australia - PFAS: Internal Standards, Surrogates & Isotope Dilutions
EnviroMail 147 Australia - PFAS: Emerged or emerging?
EnviroMail 148 Australia - Interpreting TOP Assay
EnviroMail 151 Australia - Expanding the scope of PFAS analysis in soils and waters

From: Sepan Mahamad <Sepan.Mahamad@alsglobal.com>
Sent: Tuesday, May 7, 2024 10:52 AM
To: rebatches.sydney <rebatches.sydney@alsglobal.com>
Cc: Jason Dighton <jason.dighton@alsglobal.com>
Subject: FW: [EXTERNAL] - Work order: ES2413458

Hi Team,

Could you please organise this rebatch?

Samples 87 and 88 for S-16.

Sydney samples are in trays: asp bags kept at EN as per NC bottles map.
Sydney samples are in trays: S-972 S-973 S-974 S-975 S-976 SV38 V127B M183C Eurofins

Kind regards,



right solutions.
right partners.

Sep Mahamad
Client Services Coordinator, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8504

Sepan.Mahamad@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com



EnviroMail 145 Australia - Putting out the fire on emerging contaminants (HBCDs)
EnviroMail 146 Australia - PFAS: Internal Standards, Surrogates & Isotope Dilutions
EnviroMail 147 Australia - PFAS: Emerged or emerging?
EnviroMail 148 Australia - Interpreting TOP Assay
EnviroMail 151 Australia - Expanding the scope of PFAS analysis in soils and waters

From: Mathew Cheshire <mathew.cheshire@eprisk.com.au>
Sent: Tuesday, May 7, 2024 7:31 AM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Jason Dighton <jason.dighton@ALSGlobal.com>
Subject: [EXTERNAL] - Work order: ES2413458

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi,

Can I get the following from work order ES2413458 analysed for s-16:

QA01
QA03

Can I also confirm that samples QA02 and QA04 have been sent for secondary analysis to eurofins for s_16 ?

Standard TAT

Regards,

Mathew Cheshire

Graduate Environmental Scientist

M 0431 165533 | 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



Eurofins Environment Testing Australia Pty Ltd

Eurofins ARL Pty Ltd

Eurofins ProMicro Pty Ltd

Eurofins Environment Testing NZ Ltd

ABN: 50 005 085 521

ABN: 91 05 0159 898

ABN: 47 009 120 549

NZBN: 9429046024954

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle	Perth	Perth ProMicro	Auckland	Auckland (Focus)	Christchurch	Tauranga
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289	46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370	46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554	35 O'Rorke Road Penrose, Auckland 1061 IANZ# 1327	Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 IANZ# 1308	43 Detroit Drive Rolleston, Christchurch 7675 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402

Sample Receipt Advice

Company name: EP Risk Management (NSW)
Contact name: Nathan McGuire
Project name: GOSFORD
Project ID: EP3627
Turnaround time: 5 Day
Date/Time received: Apr 30, 2024 11:30 AM
Eurofins reference: 1092777

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:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Nathan McGuire - nathan.mcguire@eprisk.com.au.

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



Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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

ABN: 91 05 0159 898

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

Eurofins ProMicro Pty Ltd

ABN: 47 009 120 549

Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554
--

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
---	--	--	--

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

Company Name:	EP Risk Management (NSW)	Order No.:	EP3627	Received:	Apr 30, 2024 11:30 AM
Address:	80 Mount Street, North Sydney NSW 2060	Report #:	1092777	Due:	May 7, 2024
Project Name:	GOSFORD	Phone:	02 99225021	Priority:	5 Day
Project ID:	EP3627	Fax:		Contact Name:	Nathan McGuire
Eurofins Analytical Services Manager : Bonnie Pu					

Sample Detail						Moisture Set	Suite B10B:TRH/BTEXN/PAH/OC/P/OPP/PCB/M8
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QA02	Apr 24, 2024		Soil	S24-My0003044	X	X
2	QA04	Apr 24, 2024		Soil	S24-My0003045	X	X
Test Counts						2	2

EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Nathan McGuire

Report 1092777-S
Project name GOSFORD
Project ID EP3627
Received Date Apr 30, 2024

Client Sample ID			QA02	QA04
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0003044	S24-My0003045
Date Sampled			Apr 24, 2024	Apr 24, 2024
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	117	73
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QA02	QA04
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0003044	S24-My0003045
Date Sampled			Apr 24, 2024	Apr 24, 2024
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	72	87
p-Terphenyl-d14 (surr.)	1	%	70	99
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	95	114
Tetrachloro-m-xylene (surr.)	1	%	70	92
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2

Client Sample ID			QA02	QA04
Sample Matrix			Soil	Soil
Eurofins Sample No.			S24-My0003044	S24-My0003045
Date Sampled			Apr 24, 2024	Apr 24, 2024
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Dimethoate	0.2	mg/kg	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	79	107
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	95	114
Tetrachloro-m-xylene (surr.)	1	%	70	92
Heavy Metals				
Arsenic	2	mg/kg	< 2	6.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	87	54
Copper	5	mg/kg	21	11
Lead	5	mg/kg	10	8.2
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	40	14
Zinc	5	mg/kg	25	18
Sample Properties				
% Moisture	1	%	40	23

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 - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 03, 2024	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 03, 2024	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	May 03, 2024	14 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	May 03, 2024	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	May 03, 2024	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	May 03, 2024	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	May 03, 2024	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	May 03, 2024	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 03, 2024	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	May 01, 2024	14 Days

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370	Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise, Mount Wellington, Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road, Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402
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 web: www.eurofins.com.au
 email: EnviroSales@eurofins.com

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
 North Sydney
 NSW 2060

Project Name: GOSFORD
Project ID: EP3627

Order No.: EP3627
Report #: 1092777
Phone: 02 99225021
Fax:

Received: Apr 30, 2024 11:30 AM
Due: May 7, 2024
Priority: 5 Day
Contact Name: Nathan McGuire

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Moisture Set	Suite B10B:TRH/BTEXN/PAH/OC/POP/PCB/M8
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	QA02	Apr 24, 2024		Soil	S24-My0003044	X	X
2	QA04	Apr 24, 2024		Soil	S24-My0003045	X	X
Test Counts						2	2

Internal Quality Control Review and Glossary
General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	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	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
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 moisture has been determined on a solid sample, the result is expressed on a dry weight 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 represents 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 similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -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 6.0
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 only be used as a guide 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. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- Where a result is reported as 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.
- 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 are not data from your samples.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 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	%	101		70-130	Pass	
TRH C10-C14	%	78		70-130	Pass	
TRH C6-C10	%	98		70-130	Pass	
TRH >C10-C16	%	76		70-130	Pass	
LCS - % Recovery						
BTEX						
Benzene	%	105		70-130	Pass	
Toluene	%	109		70-130	Pass	
Ethylbenzene	%	106		70-130	Pass	
m&p-Xylenes	%	106		70-130	Pass	
o-Xylene	%	121		70-130	Pass	
Xylenes - Total*	%	111		70-130	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene	%	97		70-130	Pass	
LCS - % Recovery						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	%	98		70-130	Pass	
Acenaphthylene	%	97		70-130	Pass	
Anthracene	%	108		70-130	Pass	
Benz(a)anthracene	%	96		70-130	Pass	
Benzo(a)pyrene	%	99		70-130	Pass	
Benzo(b&j)fluoranthene	%	80		70-130	Pass	
Benzo(g,h,i)perylene	%	100		70-130	Pass	
Benzo(k)fluoranthene	%	117		70-130	Pass	
Chrysene	%	102		70-130	Pass	
Dibenz(a,h)anthracene	%	95		70-130	Pass	
Fluoranthene	%	102		70-130	Pass	
Fluorene	%	100		70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	91		70-130	Pass	
Naphthalene	%	95		70-130	Pass	
Phenanthrene	%	92		70-130	Pass	
Pyrene	%	100		70-130	Pass	
LCS - % Recovery						
Organochlorine Pesticides						
Chlordanes - Total	%	107		70-130	Pass	
4,4'-DDD	%	104		70-130	Pass	
4,4'-DDE	%	108		70-130	Pass	
4,4'-DDT	%	113		70-130	Pass	
a-HCH	%	102		70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Aldrin	%	107			70-130	Pass		
b-HCH	%	96			70-130	Pass		
d-HCH	%	103			70-130	Pass		
Dieldrin	%	107			70-130	Pass		
Endosulfan I	%	107			70-130	Pass		
Endosulfan II	%	105			70-130	Pass		
Endosulfan sulphate	%	108			70-130	Pass		
Endrin	%	113			70-130	Pass		
Endrin aldehyde	%	112			70-130	Pass		
Endrin ketone	%	106			70-130	Pass		
g-HCH (Lindane)	%	114			70-130	Pass		
Heptachlor	%	112			70-130	Pass		
Heptachlor epoxide	%	101			70-130	Pass		
Hexachlorobenzene	%	105			70-130	Pass		
Methoxychlor	%	112			70-130	Pass		
LCS - % Recovery								
Organophosphorus Pesticides								
Diazinon	%	109			70-130	Pass		
Dimethoate	%	90			70-130	Pass		
Ethion	%	102			70-130	Pass		
Fenitrothion	%	87			70-130	Pass		
Methyl parathion	%	102			70-130	Pass		
Mevinphos	%	88			70-130	Pass		
LCS - % Recovery								
Polychlorinated Biphenyls								
Aroclor-1016	%	74			70-130	Pass		
Aroclor-1260	%	108			70-130	Pass		
LCS - % Recovery								
Heavy Metals								
Arsenic	%	113			80-120	Pass		
Cadmium	%	104			80-120	Pass		
Chromium	%	110			80-120	Pass		
Copper	%	107			80-120	Pass		
Lead	%	103			80-120	Pass		
Mercury	%	110			80-120	Pass		
Nickel	%	112			80-120	Pass		
Zinc	%	111			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	S24-My0001861	NCP	%	110		70-130	Pass	
TRH C10-C14	S24-My0007869	NCP	%	81		70-130	Pass	
TRH C6-C10	S24-My0001861	NCP	%	105		70-130	Pass	
TRH >C10-C16	S24-My0007869	NCP	%	74		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S24-My0001861	NCP	%	112		70-130	Pass	
Toluene	S24-My0001861	NCP	%	128		70-130	Pass	
Ethylbenzene	S24-My0001861	NCP	%	120		70-130	Pass	
m&p-Xylenes	S24-My0001861	NCP	%	124		70-130	Pass	
o-Xylene	S24-My0002148	NCP	%	120		70-130	Pass	
Xylenes - Total*	S24-My0001861	NCP	%	129		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	S24-My0001861	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	N24-Ap0071489	NCP	%	111			70-130	Pass	
Fenitrothion	N24-Ap0071489	NCP	%	93			70-130	Pass	
Methyl parathion	N24-Ap0071489	NCP	%	87			70-130	Pass	
Mevinphos	N24-Ap0071489	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-My0012803	NCP	%	99			75-125	Pass	
Cadmium	S24-My0012803	NCP	%	102			75-125	Pass	
Chromium	S24-My0012803	NCP	%	97			75-125	Pass	
Copper	S24-My0014055	NCP	%	104			75-125	Pass	
Lead	S24-My0012803	NCP	%	99			75-125	Pass	
Mercury	S24-My0012803	NCP	%	115			75-125	Pass	
Nickel	S24-My0012803	NCP	%	99			75-125	Pass	
Zinc	S24-My0012803	NCP	%	77			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	W24-My0000863	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S24-My0009519	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S24-My0009519	NCP	mg/kg	86	84	2.4	30%	Pass	
TRH C29-C36	S24-My0009519	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	W24-My0000863	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S24-My0009519	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S24-My0009519	NCP	mg/kg	110	100	7.9	30%	Pass	
TRH >C34-C40	S24-My0009519	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	W24-My0000863	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	W24-My0000863	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	W24-My0000863	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	W24-My0000863	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	W24-My0000863	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	W24-My0000863	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	W24-My0000863	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Naphthalene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N24-Ap0076124	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S24-My0014985	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S24-My0014985	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S24-My0014985	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S24-My0014043	NCP	mg/kg	6.1	6.7	9.8	30%	Pass
Cadmium	S24-My0014043	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S24-My0014043	NCP	mg/kg	7.3	8.0	9.8	30%	Pass
Copper	S24-My0014043	NCP	mg/kg	19	19	1.3	30%	Pass
Lead	S24-My0014043	NCP	mg/kg	9.4	10	9.7	30%	Pass
Mercury	S24-My0014043	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S24-My0014043	NCP	mg/kg	< 5	5.1	34	30%	Fail
Zinc	S24-My0014043	NCP	mg/kg	25	27	8.3	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	S24-My0003474	NCP	%	15	16	9.4	30%	Pass

Comments
Sample Integrity

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

Qualifier Codes/Comments

Code	Description
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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Nileshni Goundar	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
Managing Director

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](#).

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Appendix F

95% UCL_{MEAN} CALCULATIONS

A	B	C	D	E	F	G	H	I	J	K	L		
UCL Statistics for Uncensored Full Data Sets													
User Selected Options													
Date/Time of Computation		ProUCL 5.124/05/2024 3:42:27 PM											
From File		WorkSheet.xls											
Full Precision		OFF											
Confidence Coefficient		95%											
Number of Bootstrap Operations		2000											
Chromium													
General Statistics													
Total Number of Observations		40		Number of Distinct Observations		33							
				Number of Missing Observations		0							
Minimum		10		Mean		56.93							
Maximum		118		Median		64.5							
SD		33.36		Std. Error of Mean		5.274							
Coefficient of Variation		0.586		Skewness		-0.00397							
Normal GOF Test													
Shapiro Wilk Test Statistic		0.911		Shapiro Wilk GOF Test									
5% Shapiro Wilk Critical Value		0.94		Data Not Normal at 5% Significance Level									
Lilliefors Test Statistic		0.124		Lilliefors GOF Test									
5% Lilliefors Critical Value		0.139		Data appear Normal at 5% Significance Level									
Data appear Approximate Normal at 5% Significance Level													
Assuming Normal Distribution													
95% Normal UCL				95% UCLs (Adjusted for Skewness)									
95% Student's-t UCL		65.81		95% Adjusted-CLT UCL (Chen-1995)				65.6					
				95% Modified-t UCL (Johnson-1978)				65.81					
Gamma GOF Test													
A-D Test Statistic		1.477		Anderson-Darling Gamma GOF Test									
5% A-D Critical Value		0.758		Data Not Gamma Distributed at 5% Significance Level									
K-S Test Statistic		0.173		Kolmogorov-Smirnov Gamma GOF Test									
5% K-S Critical Value		0.141		Data Not Gamma Distributed at 5% Significance Level									
Data Not Gamma Distributed at 5% Significance Level													
Gamma Statistics													
k hat (MLE)		2.212		k star (bias corrected MLE)		2.063							
Theta hat (MLE)		25.73		Theta star (bias corrected MLE)		27.59							
nu hat (MLE)		177		nu star (bias corrected)		165							
MLE Mean (bias corrected)		56.93		MLE Sd (bias corrected)		39.63							
				Approximate Chi Square Value (0.05)		136.3							
Adjusted Level of Significance		0.044		Adjusted Chi Square Value		135.4							
Assuming Gamma Distribution													
95% Approximate Gamma UCL (use when n>=50))		68.91		95% Adjusted Gamma UCL (use when n<50)								69.41	
Lognormal GOF Test													
Shapiro Wilk Test Statistic		0.869		Shapiro Wilk Lognormal GOF Test									
5% Shapiro Wilk Critical Value		0.94		Data Not Lognormal at 5% Significance Level									
Lilliefors Test Statistic		0.195		Lilliefors Lognormal GOF Test									
5% Lilliefors Critical Value		0.139		Data Not Lognormal at 5% Significance Level									
Data Not Lognormal at 5% Significance Level													
Lognormal Statistics													
Minimum of Logged Data		2.303		Mean of logged Data		3.799							
Maximum of Logged Data		4.771		SD of logged Data		0.781							
Assuming Lognormal Distribution													
95% H-UCL		79.5		90% Chebyshev (MVUE) UCL				84.66					
95% Chebyshev (MVUE) UCL		95.83		97.5% Chebyshev (MVUE) UCL				111.3					
99% Chebyshev (MVUE) UCL		141.8											
Nonparametric Distribution Free UCL Statistics													
Data appear to follow a Discernible Distribution at 5% Significance Level													
Nonparametric Distribution Free UCLs													
95% CLT UCL		65.6		95% Jackknife UCL		65.81							
95% Standard Bootstrap UCL		65.63		95% Bootstrap-t UCL		65.71							
95% Hall's Bootstrap UCL		65.49		95% Percentile Bootstrap UCL		65.48							
95% BCA Bootstrap UCL		65.95											
90% Chebyshev(Mean, Sd) UCL		72.75		95% Chebyshev(Mean, Sd) UCL		79.91							
97.5% Chebyshev(Mean, Sd) UCL		89.86		99% Chebyshev(Mean, Sd) UCL		109.4							
Suggested UCL to Use													
95% Student's-t UCL		65.81											
When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test													
When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL													
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
Recommendations are based upon data size, data distribution, and skewness.													
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).													
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positively skewed data sets.													

