CABONNE COUNCIL

North-West Portion of Eugowra Showground

PRELIMINARY CONTAMINATION INVESTIGATION

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Premise

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1. INTRODUCTION

1.1 Background

Premise was engaged by Cabonne Council to conduct a Preliminary Contamination Investigation (PCI) for the site to support a Schedule 1 Amendment to the Cabonne Local Environmental Plan (LEP) 2012 to permit development of a centre-based child care facility at the Eugowra Showground. The site is comprised of the north-west portion of the Eugowra Showground, located at 21 Noble Street, Eugowra (the site) as shown on **Figure 1**.

The subject site corresponds to a single title, identified as lot 150 of deposited plan (DP) 750182, across which the area of development is proposed. The site is located approximately 1 km east of the Eugowra town centre. The area of development is the subject of this PCI based on the change of land use allowing for construction, commissioning and occupation of a centre-based child care facility.

This PCI is recommended by the *Managing Land Contamination – Planning Guidelines* (Department of Urban Affairs and Planning, 1998) under the NSW *State Environmental Planning Policy (Resilience and Hazards)* 2021 (R&H SEPP).

Clause 4.6 of the *Resilience and Hazards State Environmental Planning Policy* (R&H SEPP) requires that a consent authority must consider contamination and remediation in determining a development application and must not grant consent unless:

> *(a) it has considered whether the land is contaminated, and*
>
> *(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
>
> *(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

This PCI is based on a desktop review of available information, a site walkover reconnaissance, analysis of targeted soil samples and a search of historical records.

1.2 Objectives

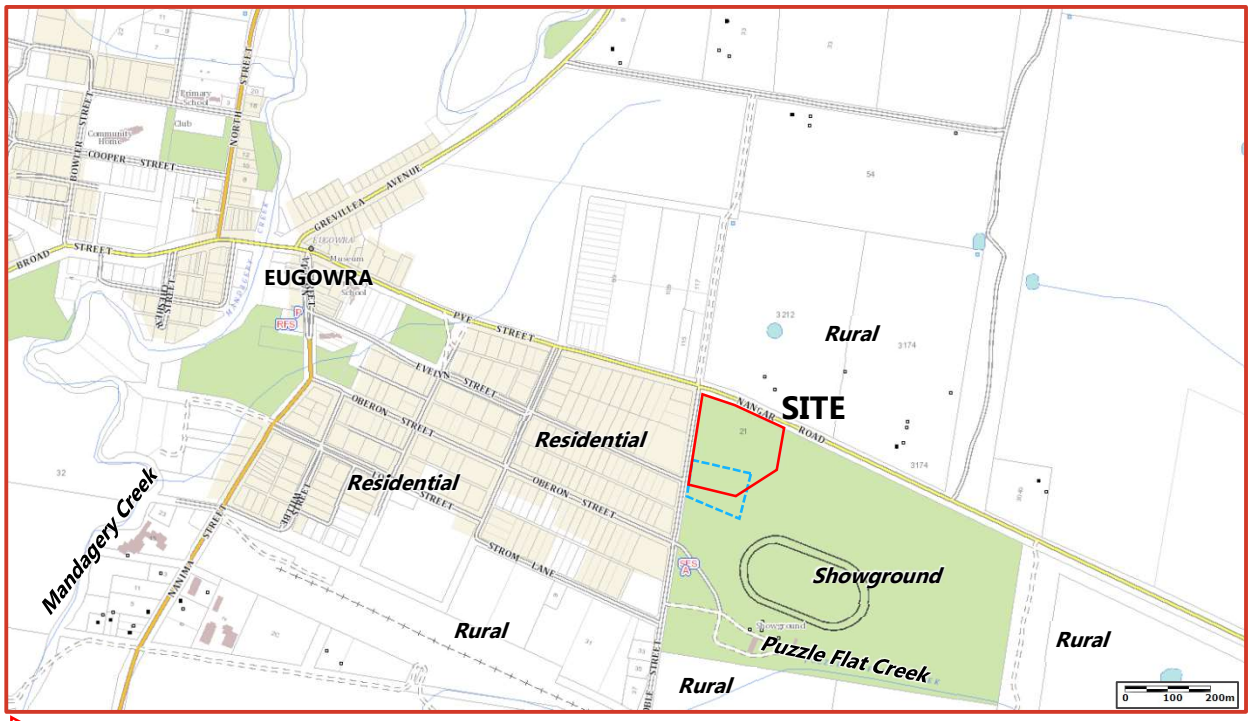
This PCI has been prepared in general accordance with the NSW EPA publication *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land* (EPA, April 2020). The overall objective is to identify the potential for land contamination at the site. Where land is not considered to be suitable for proposed land uses, recommendations for management and/or remediation to minimise risk to the environment, future occupants and contractors would be included.

The specific objective of the PCI was to assess the extent of potential soil contamination at the site to have resulted from historic operations at or in proximity to the site. Findings of this investigation are intended to assist the consent authority in assessing risks associated with a change of land use. The data collected is also intended to identify potential contaminant sources and to evaluate remediation or mitigation options.

This PCI provides data relating to the type, extent and level of contamination in the investigation area, by assessing:

- known site history and operations;
- contaminant distribution in surface soil;
- the adequacy and completeness of all information available to be used in making decisions on remediation to further characterise potential impacts to areas of the site;
- the scope of any further investigation required; and
- any interim management measures required to limit exposure.

Figure 1 – Site Locality



Title Boundary & Investigation Area

NSW Reconstruction Authority Compound

1.3 Investigation Area

The investigation area is shown on **Figure 2** and comprises the entirety of lot 150 of DP 750182. This area is in the north-western portion of Eugowra Showground, and partially overlaps the NSW Reconstruction Authority works compound that occupied this area subsequent to the flooding of the Eugowra township that occurred in late 2022.

The potential for chemicals of potential concern (COPC) to be present in the soil of the site requires assessment. Elevated COPC may be representative of a contamination risk to human health and environmental receptors.

Figure 2 – Site Investigation Area

1.4 Scope of Work

The scope of work for this assessment consisted of the following components:

- Review of the following third-party documents:
  - Existing environmental reports for the site or portions of the site;
  - Published topographical, geological and soil maps of the area;
  - Details of groundwater bores located within 500 m of the site and registered on the groundwater bore database, maintained by the NSW Office of Water (https://realtimedata.waternsw.com.au/water.stm);
  - The public register managed by the NSW EPA for information on scheduled activities and penalty notices issued under the Protection of the Environment Operations Act;
  - The database managed by the NSW Environment Protection Authority (EPA) for information on notices issued under the Contaminated Land Management Act 1997;
  - Aerial photographs – selected historical aerial photographs of the site available for review to provide evidence of the history of development of the site and indications of potential sources of contamination;
  - Historic title information and charting maps.

- Site inspection – A site inspection by Premise personnel of the site and surrounding areas was undertaken to provide further information, via visual inspection, of potential sources and areas of significant environmental liability. The site inspection focused on the following:
  - Areas where operational processes may have occurred, including waste management, water management, site structures, surfaces and infrastructure.
  - Areas of potential landfilling.
  - Potential impacts of neighbouring land uses.
  - Sensitivity of the receiving environment.
- Collection of samples from surface soil at the site in accordance with the NSW EPA publications *Contaminated Land Guidelines, Sampling Design Part 1 – Application* (2022), and *Contaminated Land Guidelines, Sampling Design Part 2 – Interpretation* (2022). Laboratory analysis for chemicals of potential concern (COPC) to establish potential for residual chemical impacts.
- Preparation of this factual report detailing the assessment findings in accordance with the NSW EPA publication *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land* (EPA, 2020).

An overview of the neighbouring area was also conducted to identify the presence and proximity of sensitive receptors which could be significantly impacted upon by the site, and off-site operations which could have a significant impact on land contamination at the site.

2. SITE DESCRIPTION

2.1 Site Definition

Table 1 – Summary of Property Description Details

Feature	Details
Site Address[1]	21 Noble Street, Eugowra
Title Identification Details[1]	Lot 150 in DP 750182
Current Ownership	*The State of New South Wales*
Current Site Use and Zoning[2]	Land Use: Agriculture (Pasture) Temporary Works Compound Zoning: Private Recreation (RE2 zoning)
Future Site Use	Centre-Based Child Care Facility
Previous Environmental Reports	Nil
Site Area[1]	3.8 hectares (approximately)
Sources: 1: Partial survey, partial compilation of deposited plans, partial SIX Maps Website developed by NSW Government, Land and Property Information. https://maps.six.nsw.gov.au/ (accessed January 2024). 2: Cabonne Local Environmental Plan, 2012, under the Environmental Planning and Assessment Act 1979.	

2.2 Site Setting

2.2.1 REGIONAL SETTING

The site is comprised entirely of Lot 150 in DP 750182, at 21 Noble Street, Eugowra, on the eastern edge of the Eugowra township. The site is in a generally agricultural and rural use area with paddocks present to the north of the site and the remainder of the Eugowra Showground to the east and south. Mixed land uses are present to the site's west.

Approximately 420 m south-east of the site is Puzzle Flat Creek, which has a confluence with Mandagery Creek approximately 3.5 km south-west of the site.

The following sensitive receptors are located within the vicinity of the site:

- Watercourses, including contributory drainage features, discharging to Puzzle Flat Creek. Such drainage pathways are considered to be sensitive receptors insofar as their connectivity with off-site waterways.
- Current users of the site, and future workers / occupants of the site.
- Residents of dwellings in proximity to the site.
- Groundwater present in aquifer(s) underlying the site.

2.2.2 LOCAL SETTING

No permanent structures exist within the investigation area of the site. The site itself consists of groundcover vegetation, vehicle hardstands, cleared areas, fences, shipping containers and relocatable structures.

Land uses adjacent to the site were obtained from the site inspection conducted by Premise personnel in March 2024. The local area surrounding the site is displayed in **Figure 1**. Identified adjacent land uses are summarised in **Table 2**:

Table 2 – Adjacent Properties Descriptions

Direction from Site	Site Use (Nature of Activity)
North	Rural Residence, and paddocks
South	NSW Reconstruction Authority compound (portion) Eugowra Showground main area
East	Paddocks, associated with Eugowra Showground
West	Mixed land uses (light industrial and commercial) on Noble Street, residential land uses beyond

2.3 Topography and Surface Water

Topographical site information was obtained from the:

- Forbes 8531-S, 1:50,000 Scale, Topographic Map, 2017 Edition (Department of Finance, Services and Innovation); and
- Site visit in March 2024

The site of the investigation area consists of a generally flat landscape with a slight overall slope downward to the south-west. The elevation at the site is approximately 275 m Australian Height Datum (mAHD), with the highest point in the north-east of the site.

Puzzle Flat Creek (Mandagery Creek catchment) is located approximately 420 m south-east of the site, and its current alignment may have been historically engineered to flow straighter than its original course.

No defined drainage pathways exist at the site, and the majority of overland surface flow is presumed to be absorbed into the site. The catchment of surface water flow at the site may include areas to the north of the site, from Nangar Road.

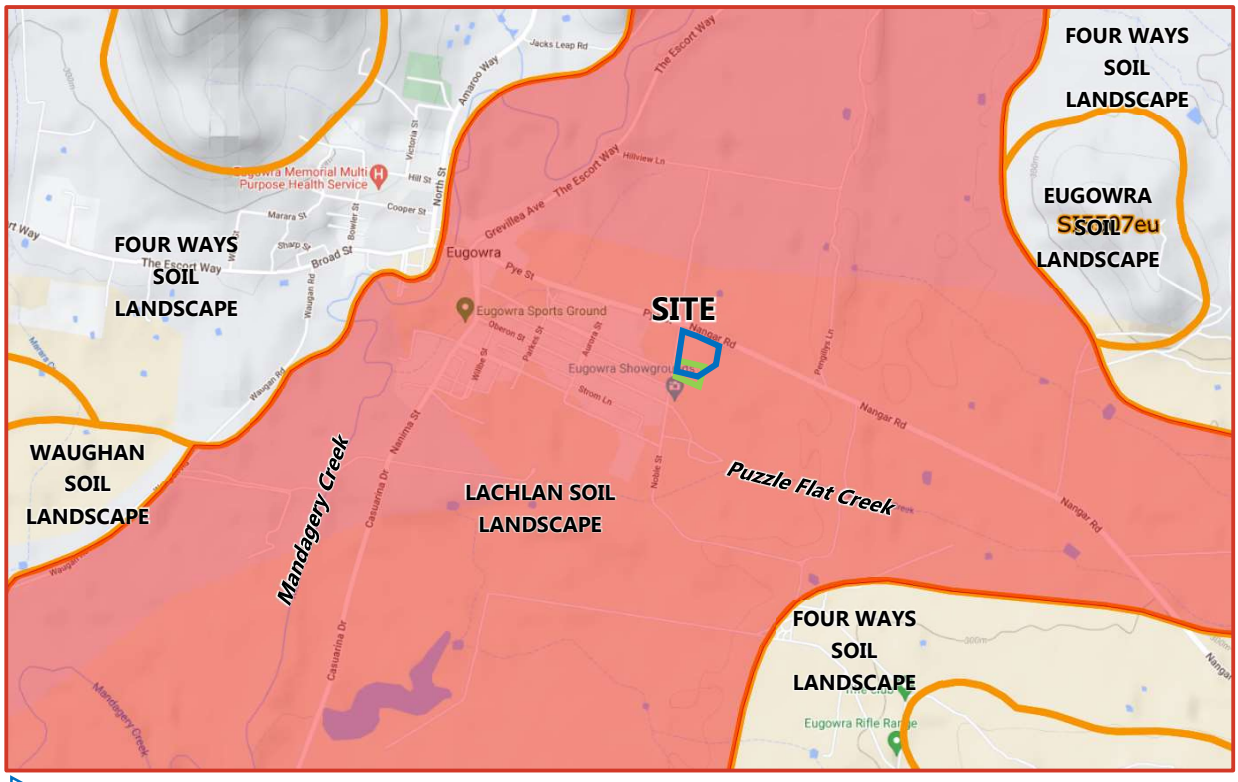
2.4 Regional and Site Geology

Mapped soil landscapes around the site are shown on **Figure 3**. The entirety of the site lies on the 'Lachlan' soil landscape. During the site inspection the soils were identified to be 'brown-black silty clay' across the site.

Silty clay of the Lachlan soil landscape consists of "Brownish black silty clay, moderately pedal, overlying dark greyish yellow weakly pedal silty clay". At 30 cm depth a gradual boundary to "Dark greyish yellow medium-heavy clay, moderately pedal".

The *Forbes SI 55-7 Geological 1 : 250,000 Series Sheet* (Second Edition, NSW Department of Mineral Resources, 2000) indicates the underlying geology comprises Quaternary era alluvium ("active depositional plains and terraces containing present day drainage").

Figure 3 – Extent of Soil Landscape Groups



Title Boundary & Investigation Area

NSW Reconstruction Authority Compound

The NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) Acid Sulfate Soils Risk project has mapped the occurrence of acid sulfate soils within areas of NSW. The area encompassing the investigation area has not been assessed for the potential presence of acid sulfate within the landform of the surrounding region.

The NSW Heads of Asbestos Coordination Authorities (HACA) Mapping of Naturally Occurring Asbestos in NSW (2015) has assessed the geology surrounding the site (i.e., alluvial sediments) as having negligible potential for naturally occurring asbestos (NOA) to be found within 10 m of the ground surface. The site is located approximately 12 km east of a geological unit with medium potential for NOA.

2.5 Regional Hydrogeology

A search for registered groundwater users located proximal to the site was undertaken using the WaterNSW on-line database (https://realtimedata.waternsw.com.au/water.stm), in April 2024. The results indicated that there are no groundwater bores registered at within the investigation area and six (6) bores are registered within 250 m and within the title boundary. Details of the closest bores to the site are provided in **Table 3**.

Table 3 – Groundwater Bores within 500 m of Site

Licence Reference and Registered Use	Location (relative to closest portion of site)	Depth	Uppermost Water Bearing Zone
GW703355 (Domestic)	140 m west	23.5 m	0.0 mBGL to 10.0 mBGL
GW706217 (No Data)	150 m west	No Data	Data not provided
GW703834 (Domestic)	200 m west	18.0 m	Data not provided
GW052908 (Stock, Domestic)	230 m north-west	29.6 m	26.2 mBGL to 29.6 mBGL
GW703487 (Domestic)	240 m west	24.0 m	Data not provided (standing water level recorded at 10.0 m depth)
GW701384 (Stock, Domestic)	250 m south-west	21.0 m	15.0 mBGL to 18.0 mBGL

Registration details of the above groundwater bore are included in **Appendix A**.

Premise has considered the surrounding land uses (refer **Section 3**) and notes the potential for unregistered bores for irrigation, stock and/or domestic purposes proximal to the site.

3. SITE HISTORICAL REVIEW

A review of the site history was undertaken to assess historical use of the site, and in particular to identify activities with the potential to contaminate soil and/or groundwater at the site.

3.1 NSW EPA Records

3.1.1 SCHEDULED ACTIVITIES AND/OR ENVIRONMENTAL NOTICES

A search of the NSW EPA on-line register (https://www.epa.nsw.gov.au/prpoeoapp/) was undertaken in April 2024 for environment protection licenses (EPLs) and/or penalty notices issued under the Protection of the Environment Operations Act (POEO) 1997. The search indicated that no licenses have been issued for titles comprising properties located within 500 metres of the site.

No clean-up notices relating to the site or surrounding properties have been issued by the NSW EPA.

3.1.2 CONTAMINATED SITES REGISTER

A search of the NSW EPA on-line register (https://app.epa.nsw.gov.au/prclmapp/searchregister.aspx) and 'List of Notified Sites' was undertaken in December 2023 for contaminated land notices issued or regulated under the Contaminated Land Management (CLM) Act 1997. The search indicated that the NSW EPA holds no contaminated land notices relating to the site or properties within 500 m of the site. No properties were recorded as having been notified to the NSW EPA as potentially contaminated.

3.2 Previous Title Information

Historic title information was sought for titles comprising the site. Previous title ownership particulars are attached in **Appendix B** and summarised in **Table 4**:

Table 4 – Title History, Lot 150 DP 750182

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
22 / 03 / 1883	Reserved for Public Recreation. Revoked 29th November 1918.	Government Gazette
04 / 12 / 1936	Dedicated for Public Recreation, Racecourse and Showground	Government Gazette Folio 5003
28 / 12 / 1936 (1936 to 1943)	James Charles Herbert Lawrence Kirby John Thomas Noble John William Lees Jippa Matheson Mervyn Albert Stanley Wheatley Fredercik Evans Hill	Volume 4815 Folio 18 (Crown Grant)

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
19 / 10 / 1943 (1943 to 1947)	Ronald Keith Douglas William Lees Lindsay Guthrie Noble Bernard Joseph Townsend	Volume 4815 Folio 18
05 / 11 / 1947 (1947 to 2023)	The Council of the Shire of Boree	Volume 4815 Folio 18 Lot 150 DP 750182 (Auto-Consol 4815-18)
06 / 10 / 2023	The State of New South Wales	Lot 150 DP 750182 (Auto-Consol 4815-18)

3.3 Historic Aerial Photography

An historical aerial photography survey was undertaken for the site, with a total of seven (7) photographs identified and reviewed. The historical aerial photographs that were reviewed spanned a period of approximately 55 years, with the most recent from 2019, to the earliest in 1965. Aerial photographs, as attached in **Appendix C**, were reviewed to track changes in use of the site and surrounding properties over time. Key observations made during the review of aerial photos are summarised in **Table 5** as follows:

Table 5 – Summary of Aerial Photo Information

Date	Site Activity	Surrounding Land Use
1965	The site consists of vacant land associated with Eugowra Showground. A number of isolated trees are present in the northern portion of the site. No structures or features of note are evident.	The area exists as rurally used land to the east of Eugowra. Agricultural land uses (cropping and/or pasture) are present to the north of the site, along with a residential dwelling and sheds. Eugowra Showground is present to the site's east and south. A vacant block exists to the site's west and residential lots are present to the site's south-west.
1974	Fewer trees in the northern portion of the site are now present. The remainder of the area encompassing the site is generally unchanged.	Land uses of the surrounding area do not appear to have been significantly altered.

Date	Site Activity	Surrounding Land Use
1989	Some changes to the paddock layout at the site have occurred. The area encompassing the remainder of the site is generally unchanged.	Some development has occurred to the north-east of the site, including a racing track and new dwelling. Expansion of facilities at the Eugowra Showground has occurred to the site's south-east. Construction of residences has occurred to the site's west in the formerly vacant block. Land uses of the remainder of the surrounding area do not appear to have been significantly altered.
1997	The area encompassing the site is generally unchanged.	Land uses of the surrounding area do not appear to have been significantly altered.
2014	Some changes to the paddock layout at the site have occurred. The area encompassing the remainder of the site is generally unchanged.	Land uses of the surrounding area do not appear to have been significantly altered.
2017	The area encompassing the site is generally unchanged.	Land uses of the surrounding area do not appear to have been significantly altered.
2019	The area encompassing the site is generally unchanged.	The racing track of Eugowra Showground has been resurfaced. Land uses of the remainder of the surrounding area do not appear to have been significantly altered.

3.4 Summary of Site History Information

The site of the investigation area appears to not contain any structures and has not been actively utilised beyond low-intensity agricultural uses, primarily cropping and/or pasture.

No evidence of landfilling was apparent from the historic aerial photography, and no evidence of significant 'cut' and/or 'fill' occurring exists.

The following chemicals are potential contaminants at areas of the site based on known historic uses:

- Agricultural chemical storage and/or application
  - Organochlorine pesticides (OCPs) and Organophosphorus pesticides (OPPs)
  - Phenoxyacid Herbicides
- Occupation by NSW Reconstruction Authority – Flood Debris Works
  - Heavy metals
  - Total recoverable hydrocarbons (TRH)
  - Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN analytes)
  - Polynuclear aromatic hydrocarbons (PAHs)
  - Asbestos

4. SITE RECONNAISSANCE

Observations from the site inspection are summarised below.

4.1 Waste Management / Landfilling

Evidence of wastes having been disposed on the site by burial / landfilling was not identified at the site. The ground surface was observed to be generally even and no areas of potential subsidence were apparent.

Stressed vegetation, which may be indicative of soil and/or groundwater contamination, was not apparent at any locations during the site inspection.

No stockpiled material or material of unknown origin was observed at the site.

Based on observations there is little potential for 'cut-and-fill' civil works of significance to have occurred at the site.

4.2 Stormwater

The majority of site stormwater would be infiltrated, however sheet flow may be generated and discharge to Puzzle Flat Creek to the south of the site. No ponded water was evident during the site inspection in March 2024.

4.3 Chemical and Fuel Storage / Spills

No evidence of storage fuels or oils chemicals was observed at the site.

No findings of the historic aerial photography review (refer to **Section 3.3**) indicate the presence (historic or otherwise) of bulk chemical storage infrastructure at the site.

No sheep dips or cattle dips were observed at the site or anecdotally known to have been installed.

4.4 Asbestos

Premise did not conduct a comprehensive asbestos survey at the site during the inspection, however the absence of NOA (refer to **Section 2.4**) and structures (historic or current) at the site likely precludes the presence of an asbestos risk at the site.

The potential for forms of asbestos at the site is considered to be low, and limited to potential flood waste handling activities conducted by the NSW Reconstruction Authority during their occupation of the southern portion of the site since 2023.

5. ENVIRONMENTAL INVESTIGATION

5.1 Potential Contamination Issues

5.1.1 POTENTIAL SOURCES

Based on the historic and predominantly agricultural uses of the site, activities that are considered to have the potential to adversely impact the soil and groundwater environment are limited to those associated with application / storage of agricultural chemicals, and handling of flood waste material.

5.1.2 CHEMICALS OF POTENTIAL CONCERN (COPC)

COPC associated with previous uses of the site and considered to have the potential to adversely impact the underlying soil and groundwater environments include:

- Heavy metals
  - Arsenic (As)
  - Cadmium (Cd)
  - Chromium (Cr)
  - Copper (Cu)
  - Lead (Pb)
  - Mercury (Hg)
  - Nickel (Ni)
  - Zinc (Zn)
- Total Recoverable Hydrocarbons (TRH) / Total Petroleum Hydrocarbons (TPH)
- Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene (BTEXN Analytes)
- Polynuclear Aromatic Hydrocarbons (PAHs)
- Organochlorine pesticides (OCPs)
- Organophosphorus pesticides (OPPs)
- Phenoxyacid Herbicides
- Asbestos

5.2 Data Quality Objectives

The Data Quality Objectives (DQOs) process is used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site.

A summary of the site-specific DQO process to be adopted in this investigation is provided in the following sections, in the context of the seven-step iterative planning approach provided in the 'Amended ASC NEPM' (NEPC, 2013), and the United States Environment Protection Agency (US EPA) documents *Guidance on Systematic Planning Using the Data Quality Objectives Process* (2006) and *Data Quality Objectives Process for Hazardous Waste Site Investigations* (2000).

5.2.1 STEP 1 – STATE THE PROBLEM

The primary objective is to assess for the presence and extent of contamination in soil at the site in the context of the proposed future land use scenarios i.e., construction, commissioning and occupation of a centre-based child care facility.

The main problems are:

- At present there is limited data and existing data gaps on the contamination status of the site.
- Contamination remaining at the site may present an unacceptable risk to human health and/or ecological receptors.

The investigation area is illustrated on **Figure 2**.

5.2.2 STEP 2 – IDENTIFY THE DECISION

The principal study question that arises from Step 1 is:

What scope of work is required to assess the potential risks posed by contamination and obtain sufficient data to enable conclusive statements to be made on land use suitability; or allow the development of strategies to remediate and/or manage the contamination to an end land use that is suitable for the proposed redevelopment?

Project decisions include:

- Does the environmental media at the site contain concentrations of chemicals of potential concern (COPC) above the investigation criteria for the current and proposed land use?
- Do current concentrations of contaminants pose a human health or ecological risk to the receptors of concern?
- What are the pathways of exposure for human and ecological receptors?
- Is there sufficient data to develop the scope for further investigation or remedial strategies?
- Is there sufficient data to establish whether portions of the site are currently suitable for the intended land uses?
- Can the site be made suitable for the proposed future land use?

5.2.3 STEP 3 – IDENTIFY THE INPUTS TO THE DECISION

The primary inputs required include:

- Relevant background data provided and any relevant data obtained from previous investigations.
- New data collected and observations made during field works, which may include information on potential contaminant migration pathways (e.g., stormwater drainage and groundwater flow directions).
- Results of chemical analyses of samples for the identified COPC.
- Assessment of the suitability of new and old data for the purposes of environmental assessment through application of data quality indicators (DQIs), namely precision, accuracy, representativeness, completeness and comparability (PARCC) parameters.
- Assessment of the data in the context of the adopted investigation criteria.

5.2.4 STEP 4 – DEFINE THE STUDY BOUNDARIES

The spatial boundaries are limited to:

- Lateral – as defined by the areas illustrated on **Figure 2**, i.e., the property title boundary.
- Vertical – from the existing ground level to the depth necessary to collect soil data to delineate the vertical extent of impact.

Temporal boundaries are not considered to be necessary in the context of this investigation.

5.2.5 STEP 5 – DEVELOP A DECISION RULE

The decision rules will be:

- If the concentrations of contaminants in the new data exceed investigation criteria; then assess the need to further investigate the extent of impacts on-site and off-site.
- If it is assessed that contamination at the site poses an unacceptable risk to human health and/or the environment; then make recommendations for potential management options necessary to remove/reduce the risk.
- If aesthetic issues (i.e., visible waste material) identified during field observations pose potential concerns for the future development, then consider similar recommendations for potential management options necessary to remove/reduce the concern.

Decision criteria for QA/QC measures are defined below. A decision on the acceptance of the analytical data will be made on the basis of the Data Quality Indicators (DQI) in the context of the 'PARCC' parameters as follows.

- Precision: A quantitative measure of the variability (or reproducibility) of data.
- Accuracy: A quantitative measure of the closeness of reported data to the "true" value.
- Representativeness: The confidence (expressed qualitatively) that data are representative of each media present on Site.
- Completeness: A measure of the amount of useable data from a data collection activity.
- Comparability: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

The quantitative and qualitative measures/criteria employed to enable application of these parameters are described as follows:

Precision

Suitable criteria and/or performance indicators for assessment of precision include:

Performance of laboratory duplicate sample sets through calculation of relative percentage differences (RPD).

The RPDs will be assessed as acceptable if less than 30%. RPDs that exceed this range may be considered where:

- Results are less than 10 times the limit of reporting (LOR) – RPDs values of 100% or less would be acceptable in consideration of all other DQI data.
- Results are less than 20 times the LOR and the RPD value is less than 50%.

- Elevated organic compounds are detected, where field observations indicated organic matter or volatile compounds to be present, and the RPD is less than 50%.
- Heterogeneous materials and variations in soil types and compositions are encountered.

Accuracy (Bias)

The closeness of the reported data to the 'true' value is assessed through review of performance of:

- Method blanks, which are analysed for the analytes targeted in the primary samples.
- Matrix spike and matrix spike duplicate sample sets (to be specifically requested to be performed by the primary laboratory, for each sample batch submitted).
- Laboratory control samples.
- Surrogates.

Representativeness

To ensure the data produced by the laboratory is representative of conditions encountered in the field, the following steps are taken by the laboratory and subsequently reviewed:

Blank samples will be run in parallel with field samples to confirm there are no unacceptable instances of laboratory cross-contamination.

Review of relative percentage differences (RPD) values for field or laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities.

The appropriateness of collection methodologies, handling, storage and preservation techniques will be assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (e.g., volatile loss during transport due to incorrect preservation / transport methods).

A review of the methodology used to collect all soil samples will also ensure the representativeness of the data.

Completeness

In validating the degree of completeness of the analytical data sets acquired during the program the following is considered:

- Whether standard operating procedures (SOPs) for sampling protocols have been adhered to.
- Copies of all COC documentation are reviewed and presented.
- Have sufficient soil samples have been collected and analysed.

It can therefore be considered whether the proportion of 'useable data' generated in the data collection activities is sufficient for the purposes of the land use assessment.

Comparability

Given that the reported data set can comprise several data sets from separate sampling events, issues of comparability between data sets are reduced through adherence to Standard Operating Procedures (SOPs) and regulator endorsed or made guidelines and standards on each data gathering activity.

In addition, the data will be collected by experienced field staff and NATA accredited laboratory methodologies will be engaged in all laboratory operations.

5.2.6 STEP 6 – SPECIFY LIMITS ON DECISION ERRORS

Specific limits for this project are in accordance with the appropriate guidance made or endorsed by the NSW EPA, appropriate indicators of data quality, and standard procedures for field sampling and handling.

This step also examines the certainty of conclusive statements based on the available site data collected to quantify the allowable errors in decision making. This should include the following points to quantify tolerable limits:

A decision can be made based on whether the calculated 95% Upper Confidence Limit of the arithmetic mean concentration of a chemical in soil, within a specified soil data set, will satisfy the given site criteria. Therefore, a limit on the decision error will be 5% that a conclusive statement regarding a specified soil data set may be incorrect.

For the 95% Upper Confidence Limit of the arithmetic mean concentration of a chemical in soil to be considered, the standard deviation of the results should be less than 50% of the relevant investigation or screening level, and no single value should exceed 250% of the relevant investigation or screening level.

5.2.7 STEP 7 – OPTIMISE THE DESIGN

The investigation program presented for the area identified on **Figure 2** is aimed at obtaining the necessary data to allow the identified decisions in Step 2 to be made.

The sampling design is presented in detail in **Section 5.4** of this document. A comprehensive Sampling and Analysis Quality Plan (SAQP), identified in *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land* (EPA, April 2020) as a requirement of a S1 PCI where sampling is undertaken, has not been prepared as a component of this investigation. Premise notes this as a deviation from the guidelines, however considers a SAQP to not be warranted based on the relatively low-risk historic uses of the site as identified in the desktop portion of this investigation.

5.3 Soil Investigation Criteria

The primary guidance document for environmental site assessment in Australia, which is approved by the EPA under Section 105 of the Contaminated Land Management Act 1997, is the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM). Schedule B2 (Site Characterisation) and Schedule B3 (Laboratory Analysis of Contaminated Soil) are of particular relevance to this PCI.

The EPA has also made the following guidelines that are relevant to this PCI:

- Contaminated Land Guidelines, Sampling Design Part 1 – Application (EPA, 2022)
- Contaminated Land Guidelines, Sampling Design Part 2 – Interpretation (EPA, 2022)
- Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land (EPA, 2020)
- Guidelines for the NSW Site Auditor Scheme, 3rd edition (EPA 2017)
- Guidelines for the assessment and management of groundwater contamination (EPA 2007)

- Guidelines on the duty to report contamination under the Contaminated Land Management Act 1997 (EPA 2015)

and has approved the

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018)

The work described in this PCI was carried out in general accordance with the guidelines listed above.

5.3.1 HUMAN HEALTH ENVIRONMENTAL GUIDELINE VALUES

The National Environment Protection Council (NEPC) National Environment Protection (Assessment of Site Contamination) Measure, 1999 (amended 2013) provides a framework for the use of investigation and screening levels. The framework (i.e. the 'Amended ASC NEPM') is applicable for assessing human health risk via all relevant pathways of exposure and covers a broad range of metals and organic substances.

Health Investigation Levels

The Amended ASC NEPM (NEPC, 2013) Health Investigation Levels (HILs) have been developed to be protective of human health. Based on the current and proposed land use and zoning for the investigation area, concentrations of contaminants in soil at the site are to be compared against the residential (with access to soil) 'HIL A' land use HILs.

Health Screening Levels

The Amended ASC NEPM (NEPC, 2013) presents health screening levels (HSLs) for petroleum compounds. HSLs are relevant to various land use settings for residential, recreational open space, and commercial / industrial land use and reflect the risk posed by vapour.

Based on the current and proposed land uses and zonings for the site, concentrations of contaminants in soil at the site are to be compared against the residential (with access to soil) 'HSL A' land use HSLs. Where screening levels are non-limiting, Premise has adopted the maximum – or saturation[1] – concentration as the soil investigation level.

Management Limits

The Amended ASC NEPM (NEPC, 2013) Management Limits for TRH reflect the nature and properties of petroleum hydrocarbons. Management Limits are specified for coarse and fine soil types and land uses. Compliance with the Management Limits avoid or minimise the potential effects of the following and require consideration of site-specific factors to determine the maximum depth to which the limits should apply:

- Formation of observable LNAPL;
- Fire and explosive hazards;
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons; and
- Aesthetics.

[1] Soil saturation concentration at which the porewater phase cannot dissolve any more of an individual chemical, adopted from NEPM 1999 (2013) *Health screening levels for petroleum hydrocarbons in soil and groundwater.*

Based on the current land use and zoning for the site, concentrations of contaminants in soil are to be compared against the 'residential, parkland and public open space' management limits.

5.3.2 ECOLOGICAL ASSESSMENT GUIDELINES VALUES

Ecological Investigation Levels and Ecological Screening Levels

Ecological investigations levels (EILs) from the Amended ASC NEPM (NEPC, 2013) are applicable for assessing risk to natural terrestrial ecosystems, including plants and animals. These EILs depend on specific soil physicochemical properties, age of impacts and land use scenarios, and generally apply to the top two metres of soil. Based on the intended future land uses of the site.

The Amended ASC NEPM (NEPC, 2013) provides ecological screening levels (ESLs) to be protective of environmental concerns by establishing the reasonable maximum exposure and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse and fine-grained soils and various land uses. They are generally applied to the top two metres of soil. For the purposes of this investigation and based on field observations during sampling, conservative soil physicochemical properties have been assumed, as follows:

- pH of 5.0
- Cation exchange capacity (CEC) of 10 cmol(+)/kg
- Clay content 2.5%

Based on the current land uses and zoning for the site, the 'Urban Residential' EILs and ESLs are to be adopted as investigation criteria at the site.

EILs/ESLs will not be adopted as validation criteria for soil under slabs, roads and buildings. In other areas where soils are accessible, EILs/ESLs will be considered.

5.4 Sampling and Analysis Strategy

5.4.1 METHODOLOGY

The following tables outlines the scope and method of the assessment.

Table 6 – Soil Assessment Methodology Summary

Activity / Item	Details
Date of Field Activities	19 March 2024
Samples Collected	Sample locations are shown on **Figure 4**. Twelve (12) soil samples were collected in a combined systematic / judgemental sampling pattern from across the site.
Sample Depth	Shallow soil samples were collected at each of 12 locations, at a depth corresponding to soil most likely to have been impacted by off-site COPC sources (i.e., in the upper 15 cm and within the root zone). Sample locations were extended to a depth of 0.4 m below ground level (mBGL) to visually assess for the presence of fill or buried waste.

Activity / Item	Details
Methodology	Soil samples were collected directly by hand auger or trowel. All samples were placed in clean, laboratory-supplied acid washed solvent rinsed glass jars with Teflon® lids.
Sample Preservation	Samples were stored on ice in a chilled container whilst on-site and in transit to the laboratory.
Decontamination	Re-usable equipment was decontaminated before each use using decontamination solution, then rinsed in potable water. Dedicated single-use items were not decontaminated, but were disposed following use. Nitrile gloves used for sampling were changed between each sample.

5.4.2 SAMPLE ANALYSIS

Twelve (12) samples of soil where potential for COPC impacts to be present were submitted to ALS Laboratories (ALS) for analysis. ALS is NATA (National Association of Testing Authorities) certified for the analyses performed.

Samples were analysed COPC described in **Section 5.1.2**, as appropriate.

Figure 4 – Investigation Sampling Locations

5.5 Sampling Observations and Analytical Results

Soil descriptions were logged as a brown-black silty clay (firm) of low plasticity across the site. No evidence of buried waste or stained material was apparent during collection of soil samples to a depth of 0.4 mBGL.

Soil analytical results are presented in the laboratory certificates in **Appendix D** and summarised in **Table 1** (attached). Results were compared to human health and ecological criteria adopted from the Amended ASC NEPM (NEPC, 2013), as detailed in **Section 5.3**.

Findings of the soil investigation indicated no exceedances of residential HSL/HIL criteria or EIL/ESL criteria.

5.6 Quality of Analytical Data

5.6.1 OUTLINE

Analytical data validation is the process of assessing whether data are in compliance with method requirements and project specifications. The primary objectives of this process are to ensure that data of known quality are reported, and to identify if the data can be used to fulfil the overall project objectives.

The adopted data validation process is based on guidance documents published by the United States Environmental Protection Agency (USEPA) and the National Environment Protection Council. These include the following guidelines:

- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA 540-R-2017-001, dated January 2017);
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (EPA 540-R-2017-002, dated January 2017); and
- NEPC (2013), National Environment Protection (Assessment of Site Contamination) Measure, 1999, Guideline on Investigation Levels for Soil and Groundwater.

The process involves the checking of analytical procedure compliance and the assessment of the accuracy and precision of analytical data from a range of quality control measurements, generated from both field sampling and analytical programs.

5.6.2 QA/QC ASSESSMENT

Specific elements that have been checked and assessed for this project include:

- Preservation and storage of samples upon collection and during transport to the laboratory;
- Holding times;
- Use of appropriate analytical procedures;
- Required limit of reporting (LOR);
- Frequency of conducting quality control measurements;
- Laboratory blanks;
- Laboratory duplicates;
- Matrix spike / matrix spike duplicates (MS/MSDs);

- Surrogates (or System Monitoring Compounds); and
- The occurrence of apparently unusual or anomalous results, e.g., laboratory results that appear to be inconsistent with field observations or measurements.

Laboratory chain of custody (COC) documentation and analytical QA/QC reports are included in **Appendix E**.

The coverage provided by the systematic / judgemental sampling pattern from across the site is considered to have sufficiently delineated lateral impacts.

On the basis of the analytical data validation procedure employed, the overall quality of the analytical data produced is considered to be of an acceptable standard for interpretive use.

6. DISCUSSION

6.1 Conceptual Site Model

A conceptual site model (CSM) for the site has been prepared to identify contamination sources and transport mechanisms, and exposure pathways to receptors. An 'incomplete' linkage between the source and the receptor (indicated by a ' ') indicates the risk to that receptor is considered to be negligible. Based on the current investigation findings, linkages in the CSM between sources and receptors are illustrated below.

Figure 5 – Conceptual Site Model

CSM Aspect	Comments			
Primary Source	Agricultural Land Uses		Works Compound Occupation	
Potential Contaminant	Heavy Metals / Pesticides / Herbicides / Asbestos		Heavy Metals / Pesticides / Herbicides / Asbestos / Hydrocarbons	
Release Mechanism	Spills / Application			
	1		2	
Media Impacted	Surface Water / Sediment	3	On-Site Soil	
Pathways	Downstream Flow		Direct Contact	
Potential Receptors	Aquatic Ecology	Recreational Users	Terrestrial Ecology	Site Personnel Future Occupants
Exposure Route	Flora / Fauna Uptake	Ingestion / Direct Contact	Flora / Fauna Uptake	Inhalation / Ingestion
Source / Pathway / Receptor Linkage	**Incomplete linkage – Low risk to receptors**			

Pathway Legend:

Complete | Potentially Complete | Incomplete

6.1.1 INCOMPLETE PATHWAYS

Incomplete source / pathway / Receptor linkages identified in the CSM are explained below:

☒ 1 – No pathway for direct application or spills of COPC into surface water receptors at the site was evident.

☒ 2 – The risk to future occupants and terrestrial ecology at the site, resulting from COPC impacts, is low, based on recorded concentrations of COPC in soil being lower than the adopted human health and ecological investigation criteria.

☒ 3 – Contaminant concentrations in soil at the site were not identified to be elevated. A risk of mobilisation to downgradient aquatic ecology or surface water bodies used for recreation is not considered to be present.

6.1.2 CHARACTERISATION OF RESIDUIAL RISKS

No potentially complete linkages (i.e., connection pathways from contaminant sources to receptors) in the CSM have been identified.

6.2 Summary

No significant routes of exposure by receptors (current or future) to potential contamination sources have been confirmed as definitively being present, primarily due to the site inspection and historical investigation not identifying historical storage or application of COPC at the site as conclusively having occurred.

With regard to the *Managing Land Contamination Guidelines* under the 2021 R&H SEPP, the proposed development works are not considered to possess potential for increasing the risk of exposure to contamination.

7. CONCLUSIONS

7.1 Summary

Premise make the following conclusions regarding the potential for land contamination at the site, based on a desktop review of available information, a review of historical records, site walkover reconnaissance, and analytical results of collected samples.

The area comprising the site, consisting of the entirety of Lot 150 in DP 750182 (**Figure 2**) appears to have predominantly been historically utilised for passive rural / agricultural purposes. No structures have been recorded as having been historically present on the site.

Based on analytical results of samples collected from the soil investigation, and consideration of routes of exposure by receptors (current or future) to potential contamination sources (refer to CSM, **Figure 5**), minimal potential exists for risks to human health and/or ecology within or downgradient of the investigation area.

No potentially complete linkages in the CSM (source – pathway – receptor) have been identified. The following items were considered to be of significance in the context of this investigation:

- No pathway for direct application or spills of COPC into surface water receptors at the site was evident.
- The risk to future occupants and terrestrial ecology at the site, resulting from COPC impacts, is low, based on recorded concentrations of COPC in soil being lower than the adopted human health and ecological investigation criteria.
- Contaminant concentrations in soil at the site were not identified to be elevated. A risk of mobilisation to downgradient aquatic ecology or surface water bodies used for recreation is not considered to be present.

During construction activities at the site, work health and safety (WHS) controls are to be implemented to mitigate risks if unexpected findings of potentially impacted material is identified. Such controls may include:

- Any land disturbance incorporating stockpiled material containing demolition waste should include assessment for the presence of contaminants (including asbestos), and managed accordingly.
- Avoiding skin contact with soil that is discoloured, malodourous, containing foreign matter and/or generally inconsistent with virgin soil.
- No entry permitted into confined spaces and excavations; and
- Controls are to be in place to contain soil and soil impacts (e.g. dust, sediment, etc) to within the area of the site.

Based on the findings of the site investigation, Premise considers that risks associated with the proposed change of land use are not considered to significantly increase. No further assessment of contamination impacts resulting from historic land practices at the site is considered to be warranted, with the suitability of the site for the proposed land uses having been established.

Premise

PHOTOS

Photo 1 – NSW Reconstruction Auhority Compound, Eastern Aspect

Photo 2 – NSW Reconstruction Auhority Compound, Western Aspect

Photo 3 – Northern Paddock, Eastern Aspect

Photo 4 – Northern Paddock, South-Western Aspect

Premise

DATA TABLES

TABLE 1: Eugowra Showground (North-West Portion), Eugowra, NSW - Site Investigation
Soil Sampling Analytical Results
MARCH 2024

						Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05	CA_06	CA_07	CA_08	CA_09	CA_10	CA_11	CA_12
						Sample Date	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024
				Criteria														
Group	**Analyte**	**LOR**	**Units**	**Ecol. / Health**			PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
Physical Parameters	Moisture Content	1	%	-	-		**18**	**9.3**	**3.1**	**8.1**	**5.6**	**4.8**	**10**	**2.8**	**3.2**	**6.4**	**13**	**7.2**
Trace Metals	Arsenic (As)	5	mg/kg	100	100		-	< 5	-	< 5	-	-	< 5	< 5	< 5	< 5	< 5	< 5
	Barium (Ba)	10	mg/kg	-	-		-	**50**	-	**50**	-	-	**30**	**20**	**50**	**60**	**40**	**60**
	Beryllium (Be)	1	mg/kg	-	4500		-	< 1	-	< 1	-	-	< 1	< 1	< 1	< 1	< 1	< 1
	Boron (B)	50	mg/kg	-	100		-	< 50	-	< 50	-	-	< 50	< 50	< 50	< 50	< 50	< 50
	Cadmium (Cd)	1	mg/kg	-	20		-	< 1	-	< 1	-	-	< 1	< 1	< 1	< 1	< 1	< 1
	Chromium (Cr)	2	mg/kg	250	-		-	**12**	-	**10**	-	-	**8**	**15**	**11**	**16**	**9**	**14**
	Cobalt (Co)	2	mg/kg	-	100		-	**6**	-	**5**	-	-	**4**	**4**	**5**	**6**	**5**	**4**
	Copper (Cu)	5	mg/kg	60	6000		-	**9**	-	**6**	-	-	< 5	< 5	**5**	**7**	**6**	**7**
	Lead (Pb)	5	mg/kg	1100	300		-	**5**	-	**8**	-	-	**6**	**8**	**8**	**12**	**7**	**9**
	Manganese (Mn)	5	mg/kg	-	3800		-	**470**	-	**733**	-	-	**344**	**179**	**469**	**458**	**570**	**455**
	Mercury (Hg)	0.1	mg/kg	-	40		-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel (Ni)	2	mg/kg	170	400		-	**12**	-	**6**	-	-	**5**	**5**	**7**	**10**	**8**	**9**
	Selenium (Se)	5	mg/kg	-	-		-	< 5	-	< 5	-	-	< 5	< 5	< 5	< 5	< 5	< 5
	Vanadium (V)	5	mg/kg	-	60		-	**17**	-	**17**	-	-	**14**	**25**	**20**	**34**	**19**	**29**
	Zinc (Zn)	5	mg/kg	180	7400		-	**18**	-	**20**	-	-	**8**	**7**	**10**	**10**	**8**	**12**
BTEXN Analytes	Benzene	0.2	mg/kg	50	0.5		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	-	-	-
	Toluene	0.5	mg/kg	85	160		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Ethylbenzene	0.5	mg/kg	70	55		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	meta- & para-Xylene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	ortho-Xylene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Naphthalene	1	mg/kg	170	3		< 1	< 1	< 1	< 1	< 1	< 1	< 1	-	-	-	-	-
	Total Xylenes	0.5	mg/kg	105	40		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Sum of BTEX	0.2	mg/kg	-	-		< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	-	-	-	-
Polynuclear Aromatic Hydrocarbons	Acenaphthene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Acenaphthylene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Anthracene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Benzo(a)anthracene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Benzo(a)pyrene	0.5	mg/kg	0.7	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Benzo(b&j)fluoranthene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Benzo(ghi)perylene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Benzo(k)fluoranthene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Chrysene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Dibenzo(ah)anthracene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Fluoranthene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Fluorene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Naphthalene	0.5	mg/kg	170	3		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Phenanthrene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Pyrene	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Total PAHs	0.5	mg/kg	-	300		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
	Benzo(a)pyrene TEQ (half LOR)	0.5	mg/kg	-	3		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**	-	-	-	-	-
	Benzo(a)pyrene TEQ (LOR)	0.5	mg/kg	-	-		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**	-	-	-	-	-
	Benzo(a)pyrene TEQ (zero)	0.5	mg/kg	-	-		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-	-	-
Total Petroleum Hydrocarbons	TRH C6-C9	10	mg/kg	-	-		< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	-	-	-
	TRH C10-C14	50	mg/kg	-	-		< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-	-	-
	TRH C10-C36	50	mg/kg	-	-		< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-	-	-
	TRH C15-C28	100	mg/kg	-	-		< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	-	-	-	-
	TRH C29-C36	100	mg/kg	-	-		< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	-	-	-	-
Total Recoverable Hydrocarbons	TRH C6-C10	10	mg/kg	-	700		< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	-	-	-
	TRH C6-C10 less BTEX (F1)	10	mg/kg	180	45		< 10	< 10	< 10	< 10	< 10	< 10	< 10	-	-	-	-	-
	TRH >C10-C16	50	mg/kg	-	1000		< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-	-	-
	TRH >C10-C16 less Naphthalene (F2)	50	mg/kg	120	110		< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-	-	-
	TRH >C16-C34	100	mg/kg	300	2500		< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	-	-	-	-
	TRH >C34-C40	100	mg/kg	2800	10000		< 100	< 100	< 100	< 100	< 100	< 100	< 100	-	-	-	-	-
	TRH C10-C40	50	mg/kg	-	-		< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-	-	-
Asbestos ID	Asbestos Detected	0.1	g/kg	-	D / ND		-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Asbestos (Trace)	5	Fibres	-	D / ND		-	< 5	-	< 5	-	-	< 5	< 5	< 5	< 5	< 5	< 5

TABLE 1: Eugowra Showground (North-West Portion), Eugowra, NSW - Site Investigation
Soil Sampling Analytical Results
MARCH 2024

Premise

						Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05	CA_06	CA_07	CA_08	CA_09	CA_10	CA_11	CA_12
						Sample Date	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024	19/03/2024
				Criteria														
Group	Analyte	LOR	Units	Ecol.	Health		PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS
OC Pesticides	Aldrin	0.05	mg/kg	-	3	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Aldrin + Dieldrin (sum)	0.05	mg/kg	-	6	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Alpha BHC	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Alpha Chlordane	0.05	mg/kg	-	25	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Alpha Endosulfan	0.05	mg/kg	-	90	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Beta BHC	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Beta Endosulfan	0.05	mg/kg	-	90	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	p,p'-DDD	0.05	mg/kg	-	40	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	p,p'-DDE	0.05	mg/kg	-	40	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	p,p'-DDT	0.2	mg/kg	-	40	-	< 0.2	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	DDD + DDE + DDT (sum)	0.05	mg/kg	-	240	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Delta BHC	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Dieldrin	0.05	mg/kg	-	3	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endosulfan (sum)	0.05	mg/kg	-	270	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endosulfan sulphate	0.05	mg/kg	-	90	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin	0.05	mg/kg	-	10	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin ketone	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Heptachlor	0.05	mg/kg	-	6	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Hexachlorobenzene (HCB)	0.05	mg/kg	-	10	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Lindane (gamma BHC)	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Methoxychlor	0.2	mg/kg	-	300	-	< 0.2	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Total Chlordane (sum)	0.05	mg/kg	-	50	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	trans-Chlordane	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
OP Pesticides	Azinphos-methyl	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Bromophos Ethyl	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Carbophenothion	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Chlorfenvinphos	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Chlorpyrifos (Chlorpyrifos Ethyl)	0.05	mg/kg	-	160	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Chlorpyrifos-methyl	0.05	mg/kg	-	160	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Demeton-S-methyl	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Diazinon (Dimpylate)	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Dichlorvos	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Dimethoate	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Ethion	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Fenamiphos	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Fenthion	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Malathion	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Monocrotophos	0.2	mg/kg	-	-	-	< 0.2	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Parathion-ethyl (Parathion)	0.2	mg/kg	-	-	-	< 0.2	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Parathion-methyl	0.2	mg/kg	-	-	-	< 0.2	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	Pirimphos-ethyl	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	Prothiofos	0.05	mg/kg	-	-	-	< 0.05	< 0.05	-	< 0.05	-	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenoxyacetic Acid Herbicides	2.4.5-T	0.02	mg/kg	-	600	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	2.4.5-TP (Silvex)	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	2.4-D	0.02	mg/kg	-	900	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	2.4-DB	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	2.4-DP	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	4-Chlorophenoxy acetic acid	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	Clopyralid	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	Dicamba	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	Fluroxypyr	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	MCPA	0.02	mg/kg	-	600	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	MCPB	0.02	mg/kg	-	600	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	Mecoprop	0.02	mg/kg	-	600	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	Picloram	0.02	mg/kg	-	4500	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	Triclopyr	0.02	mg/kg	-	-	-	< 0.02	< 0.02	-	< 0.04	-	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02

mg/kg	milligrams per kilogram
LOR	limit of reporting
PS	primary sample
FD	field duplicate
TEQ	toxicity equivalent quotient
D / ND	detect / non-detect
Criteria	Criteria adopted from *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPC 2013):

'HIL' A / 'HSL' A (Residential with garden/accessible soil), and/or Management Limits (Residential, parkland and public open space)

'EIL' A / 'ESL' A (Urban residential and public open space)

within criteria
HIL / HSL criteria exceeded
EIL / ESL criteria exceeded
HIL/HSL & EIL/ESL criteria exceeded

APPENDIX A

Registered Groundwater Bore Records

WaterNSW
Work Summary

GW052908

Licence: | **Licence Status:**

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

Work Type: Bore
Work Status:
Construct.Method: Cable Tool
Owner Type: Private

Commenced Date:
Completion Date: 01/01/1981

Final Depth: 29.60 m
Drilled Depth: 29.60 m

Contractor Name: (None)
Driller: Richard Murney
Assistant Driller:

Property:
GWMA:
GW Zone:

Standing Water Level (m):
Salinity Description:
Yield (L/s):

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ASHBURNHAM	GOIMBLA	48
Licensed:			

Region: 70 - Lachlan
River Basin: 412 - LACHLAN RIVER
Area/District:

CMA Map: 8531-S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: (Unknown)

Northing: 6300363.000
Easting: 628326.000

Latitude: 33°25'42.4"S
Longitude: 148°22'49.3"E

GS Map: -

MGA Zone: 55

Coordinate Source: GD.,ACC.MAP

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1	1	Casing	Threaded Steel	-0.30	26.20	152			
1	1	Opening	Screen	26.20	29.60	125		1	Plastic, A: 2.00mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
26.20	29.60	3.40	Unconsolidated	10.10		0.23			

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	Soil	Soil	
0.30	12.20	11.90	Clay Grey	Clay	
12.20	18.30	6.10	Clay Grey Silty	Clay	
18.30	26.20	7.90	Clay Yellow	Clay	
26.20	29.60	3.40	Clay Yellow Sandy Water Supply	Clay	

***** End of GW052908 *****

WaterNSW
Work Summary

GW701384

Licence: | **Licence Status:**

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

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Rotary Air
Owner Type: Private

Commenced Date:
Completion Date: 21/09/2001
Final Depth: 21.00 m
Drilled Depth: 21.00 m

Contractor Name: Competitive Drilling Services
Driller: Phillip William Brown
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 9.000
Salinity Description:
Yield (L/s): 4.000

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ASHBURNHAM	TRAJERE	LT 21 DP 16181
Licensed:			

Region: 70 - Lachlan
River Basin: 412 - LACHLAN RIVER
Area/District:
CMA Map: 8531-S
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6299788.000
Easting: 628225.000
Latitude: 33°26'01.1"S
Longitude: 148°22'45.7"E

GS Map: -
MGA Zone: 55
Coordinate Source: Map Interpre

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	21.00	225			Rotary Air
1		Annulus	Waterworn/Rounded	0.00	21.00				Graded, Q:1.000m3
1	1	Casing	Pvc Class 9	0.00	21.00	150	132		Seated on Bottom, , Glued
1	1	Opening	Slots - Vertical	15.00	21.00	150		0	Mechanically Slotted, PVC Class 9, SL: 10.0mm, A: 0.77mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
15.00	18.00	3.00	Unknown	9.00		4.00	21.00	02:00:00	

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	1.00	1.00	Topsoil	Topsoil	
1.00	3.00	2.00	Clay	Clay	
3.00	15.00	12.00	Sandy Clay	Invalid Code	
15.00	18.00	3.00	Gravel	Gravel	
18.00	21.00	3.00	Sandy Clay	Invalid Code	

Remarks

21/09/2001: Form A Remarks:
Unknown completion date, taken from license information. Unknown casing bottom. Opening details taken as mechanically slotted as per previous phone conversation.
09/07/2002: Coordinates taken from Arcview.

***** End of GW701384 *****

WaterNSW
Work Summary

GW703355

Licence:
Licence Status:

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

Work Type: Bore
Work Status: Supply Obtained
Construct.Method: Cable Tool
Owner Type: Private

Commenced Date:
Completion Date: 28/04/2008
Final Depth: 23.50 m
Drilled Depth: 23.50 m

Contractor Name: MILNE WATER DRILLING
Driller: Howard William Milne
Assistant Driller:

Property:
GWMA:
GW Zone:
Standing Water Level (m): 10.500
Salinity Description: Good
Yield (L/s): 0.250

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ASHBURNHAM	GOIMBLA	11//253230
Licensed:			

Region: 70 - Lachlan
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6300207.000
Easting: 628299.000
Latitude: 33°25'47.5"S
Longitude: 148°22'48.3"E

GS Map: -
MGA Zone: 55
Coordinate Source: Unknown

Construction

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

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	23.50	160			Cable Tool
1	1	Casing	P.V.C.	0.00	23.50	160			S: 22.50-23.50m
1	1	Opening	Screen	19.50	22.50	16		0	Stainless Steel,

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	10.00	10.00	river silt	Silt	
10.00	18.00	8.00	brown clay	Clay	
18.00	23.50	5.50	sand rocks	Sand	

Remarks

28/04/2008: Form A Remarks:
Form AG
Entered by H. Lester

***** End of GW703355 *****

WaterNSW
Work Summary

GW703487

Licence:
Licence Status:

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

Work Type: Bore
Work Status: Supply Obtained
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 26/06/2008
Final Depth: 24.00 m
Drilled Depth:

Contractor Name: MILNE WATER DRILLING
Driller: Mark Anthony Driscoll
Assistant Driller: Howard Milne

Property:
GWMA:
GW Zone:
Standing Water Level (m): 10.000
Salinity Description:
Yield (L/s): 0.750

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ASHBURNHAM	GOIMBLA	7//11639
Licensed:			

Region: 70 - Lachlan
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6300053.000
Easting: 628163.000
Latitude: 33°25'52.5"S
Longitude: 148°22'43.2"E

GS Map: -
MGA Zone: 55
Coordinate Source: Unknown

***** End of GW703487 *****

WaterNSW
Work Summary

GW703834

Licence:
Licence Status:

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

Work Type: Bore
Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 26/02/2010
Final Depth: 18.00 m
Drilled Depth:

Contractor Name:
Driller:
Assistant Driller:

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

Site Details

Site Chosen By:

	County	Parish	Cadastre
Form A:	ASHBURNHAM	GOIMBLA	23//253230
Licensed:			

Region: 70 - Lachlan
River Basin: - Unknown
Area/District:
CMA Map:
Grid Zone:
Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Source: Unknown
Northing: 6300100.000
Easting: 628223.000
Latitude: 33°25'51.0"S
Longitude: 148°22'45.5"E

GS Map: -
MGA Zone: 55
Coordinate Source: Unknown

Remarks

26/02/2010: Form A Remarks:
Entered by H. Lester
Form AG
System date entered as no completion date given.
Casing - PVC, dia -150mm.
This was constructed before we bought the property so we don't know all the details.
No other details were provided.

***** End of GW703834 *****

Premise

APPENDIX B

Title Records

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

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

Summary of Owners Report

Address: - 21 Noble Street, Eugowra

Description: - Lot 150 D.P. 750182

Date of Acquisition	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
22.03.1883	Reserved for Public Recreation. Revoked 29th November 1918.	Government Gazette
04.12.1936	Dedicated for Public Recreation, Racecourse and Showground	Government Gazette Folio 5003
28.12.1936 (1936 to 1943)	James Charles Herbert Lawrence Kirby John Thomas Noble John William Lees Jippa Matheson Mervyn Albert Stanley Wheatley Fredercik Evans Hill	Volume 4815 Folio 18 (Crown Grant)
19.10.1943 (1943 to 1947)	Ronald Keith Douglas William Lees Lindsay Guthrie Noble Bernard Joseph Townsend	Volume 4815 Folio 18
05.11.1947 (1947 to 2023)	The Council of the Shire of Boree	Volume 4815 Folio 18 Then 150/750182 Now Auto-Consol 4815-18
06.10.2023 (2023 to date)	# The State of New South Wales	Auto-Consol 4815-18

 # Denotes current registered proprietor

Leases: - NIL

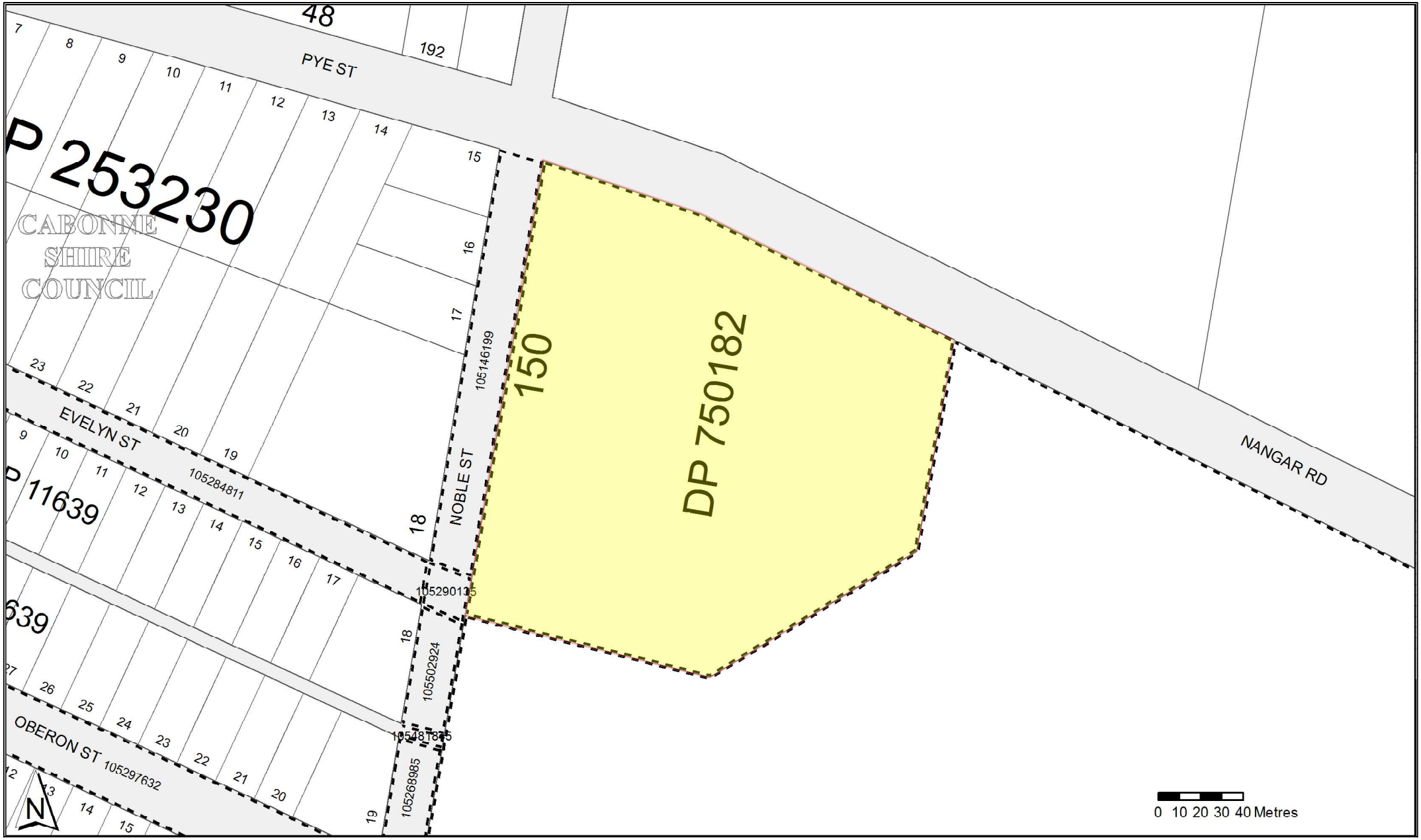
Easements: -

- 27.07.2021 (AR96286) Easement for Flood Levee 15.2 wide and variable.

Yours Sincerely
Molly Elson
18th March 2024

Cadastral Records Enquiry Report : Lot 150 DP 750182

Locality : EUGOWRA
Parish : TRAJERE
LGA : CABONNE
County : ASHBURNHAM



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

BOREE SHIRE

Cancels pt W 102 18346

LAND BOARD OFFICE NO. Papers LB 18/1333 Enclosure ORANGE

PLAN OF PORTION 150

County of Ashburnham Parish of Trajere

Land District Molong Land Board District Orange Eastern Division

RESUMED AREA Nº PASTORAL HOLDING

Applied for under the Section of the Crown Lands Act of by

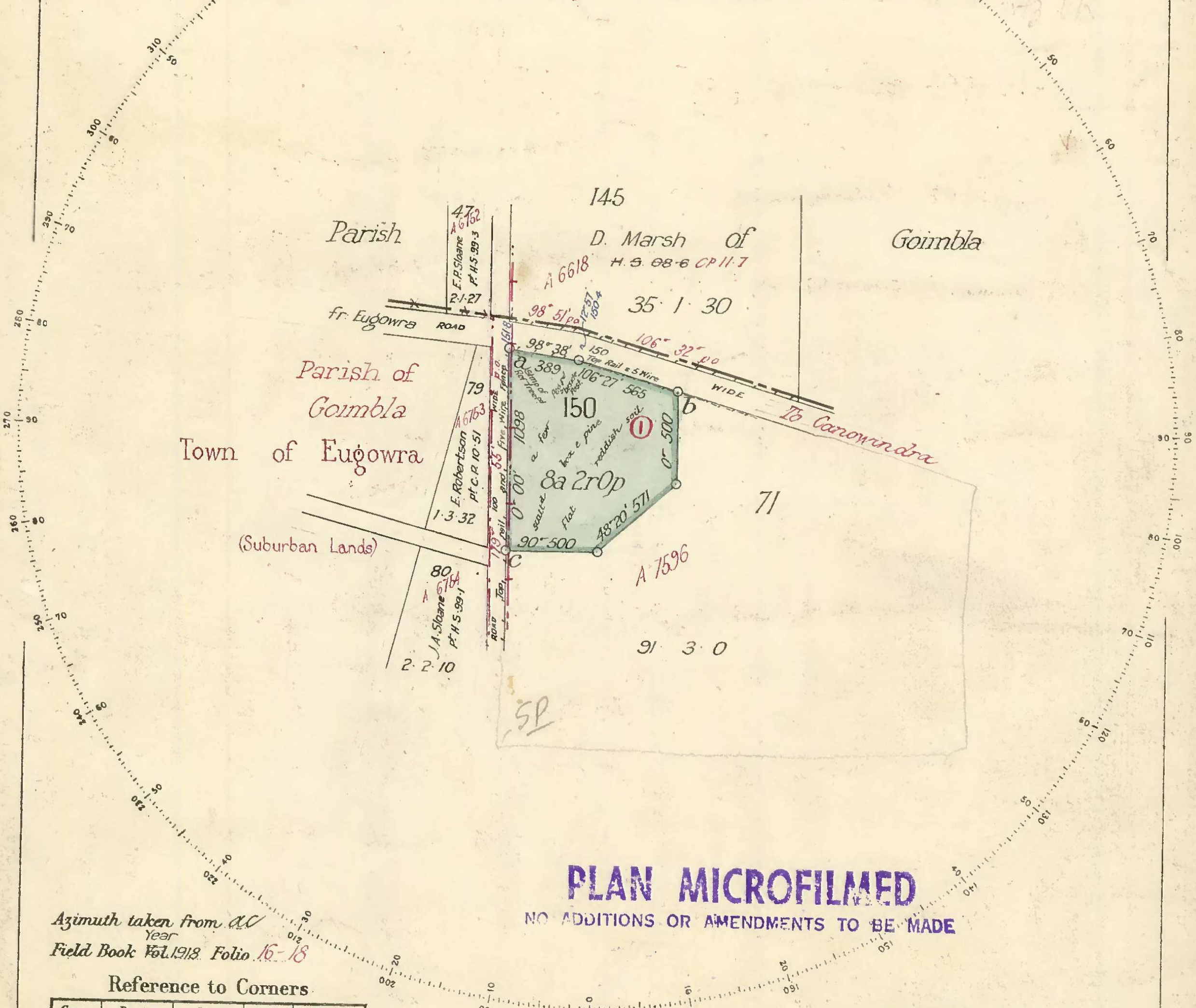
Within Reserve for Public Recⁿ Dedicated 22nd March 1883. Revoked 29th Novʳ 18.

Measured for Public Recreation

~~Within R. 52036 fr. Sale 5303? fr. Lse genˡʸ for Publᶜ Recⁿ, Racecourse & Show Ground Notified 29 November 1918.~~ Revoked 22.1.37.

(1) Pt 100 a 1r 0p See also A 7596. n/a Grant issued to James Charles Herbert, Laurence Kirby, John Thomas Noble, John William Lees, Jippa Matheson, Mervyn Albert Stanley Wheatley & Frederick Evans Hill vide Parks 36. 10890

Dedicated for Public Recreation, Racecourse and Showground. Gaz. 4.12.36.



PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

Azimuth taken from a.c. Year
Field Book Vol. 1918 Folio 16-18

Reference to Corners

Corner	Bearing	From	Links	Nº on Tree
a	297° 00'	Stump	90·2	150
b	91° 02'	do	68·3	71 150
c	283° 36'	Pine	29·8	71 150

STANDARD TRACING PREPARED

Reference to Traverse

Line	Bearing	Distance

Improvements Fencing £7·13·9
Clearing £4·5·0

I hereby certify that I in person made and on the 17th May 1918 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

B. Gordon Langtree Licensed Surveyor

Transmitted to the District Surveyor with my letter of July 15 ?? Nº 18/10

Charted on Head Office Maps ... Dec 1918
Examined ... 6.10.18

Voucher Nº 18/10 Passed £3-19-7 ... 4-9-18
Calculation Book Nº B98 Folio 75
Checked and Charted ... 28th August 18
Examined ... 7th September 1918
Plan approved 7th September 1918 E.McBryde
Draftsman-in-Charge

Scale 8 Chains to an Inch.

Lithographed by Turner & Henderson

7598-1770 Cat. Nº A 7598 1770

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
11/3/2024 4:40PM

FOLIO: 150/750182

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 4815 FOL 18

Recorded	Number	Type of Instrument	C.T. Issue
20/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
28/9/1993		CONVERTED TO AUTO CONSOL 4815-18	CONSOL CREATED CT NOT ISSUED

*** END OF SEARCH ***

21 Noble Street PRINTED ON 11/3/2024

Received: 11/03/2024 16:40:46

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
11/3/2024 4:41PM

FOLIO: AUTO CONSOL 4815-18

Recorded	Number	Type of Instrument	C.T. Issue
28/9/1993		CONSOL HISTORY RECORD CREATED FOR AUTO CONSOL 4815-18	
		PARCELS IN CONSOL ARE: 71/750182, 150/750182.	
25/11/2010	AF899343	DEPARTMENTAL DEALING	
18/7/2013	AH883326	DEPARTMENTAL DEALING	
27/12/2017	DP1238378	DEPOSITED PLAN	
11/2/2021	AQ656326	REQUEST	
8/4/2021	AQ940597	DEPARTMENTAL DEALING	
27/7/2021	AR96286	RESUMPTION APPLICATION	EDITION 1
27/7/2021	AR96282	WITHDRAWN - TRANSFER GRANTING EASEMENT	
6/10/2023	AT418620	APPLICATION TO RECORD A NEW REGISTERED PROPRIETOR	EDITION 2

*** END OF SEARCH ***

21 Noble Street PRINTED ON 11/3/2024

Received: 11/03/2024 16:41:45

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: AUTO CONSOL 4815-18

SEARCH DATE	TIME	EDITION NO	DATE
11/3/2024	4:41 PM	2	6/10/2023

LAND

LAND DESCRIBED IN SCHEDULE OF PARCELS
AT EUGOWRA
LOCAL GOVERNMENT AREA CABONNE
PARISH OF TRAJERE COUNTY OF ASHBURNHAM
TITLE DIAGRAM SEE SCHEDULE OF PARCELS

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES (RP AT418620)

SECOND SCHEDULE (4 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)

2 DEDICATED FOR PUBLIC RECREATION, RACECOURSE AND SHOWGROUND BY GOV. GAZETTE DATED 4.12.1936 FOLIO 5003

3 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.

4 AR96286 EASEMENT FOR FLOOD LEVEE 15.2 WIDE AND VARIABLE AFFECTING PART LOT 71 IN DP750182 DESIGNATED (E) IN DP1238378

NOTATIONS

UNREGISTERED DEALINGS: NIL

SCHEDULE OF PARCELS	TITLE DIAGRAM
LOT 71 IN DP750182	CROWN PLAN 7596.1770
LOT 150 IN DP750182	CROWN PLAN 7598.1770.

*** END OF SEARCH ***

57019 3.38

No. ~~192~~ 1936/4187 **State of New South Wales** [LAND GRANT]

N.S.W. DEPARTMENT OF 6 JA37 M. STAMP DUTIES

Free.

REGISTER BOOK

VOL. 4815 FOL. 18

GRANT OF LAND ~~AS A SITE~~ FOR Public Recreation Racecourse and Showground

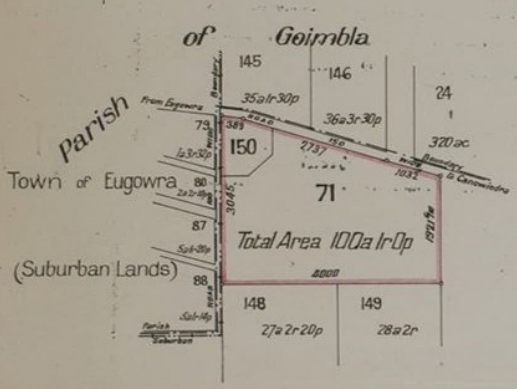
CANCELLED W

ON ISSUE OF NEW FOLIO Vol 6850 Fol 4815-18

GEORGE VI, by the Grace of God, of Great Britain, Ireland, and the British Dominions beyond the Seas, King, Defender of the Faith, Emperor of India:—

TO ALL to whom these Presents shall come, Greeting:—

Whereas by Notice in the *Gazette* dated the fourth day of December 1936 the land hereinafter described and intended to be hereby granted was dedicated ~~as the site~~ for Public Recreation Racecourse and Showground at Eugowra in Our State of New South Wales **Now Know Ye** That in accordance with the provisions of Section 24 of the Crown Lands Consolidation Act 1913 of WE HAVE GRANTED and for Us Our Heirs and Successors DO HEREBY GRANT unto James Charles Herbert, Laurence Kirby, John Thomas Noble, John William Lees, Jeffa Matheson, Mervyn Albert Stanley Wheatley and Frederick Evans Hill all of Eugowra aforesaid and their Heirs and Assigns ALL THAT Piece or Parcel of Land in Our said State containing by Admeasurement one hundred acres one rood be the same more or less situated in the County of Ashburnham Parish of Thapre At Eugowra Portions 71 and 150



Scale 20 Chains to an Inch

Commencing on the Eastern side of a road one chain wide at the North Western corner of portion one hundred and forty eight of twenty seven acres two roods twenty perches and bounded thence on the West by that road dividing this land from portions eighty eight of five acres one rood fourteen perches eighty seven of five acres one rood twenty perches eighty of two acres two roods ten perches and seventy nine of one acre three roods thirty two perches all in the Parish of Goimbla bearing North thirty chains forty five links on the North East by the road one chain fifty links wide from Eugowra to Canowindra dividing it from portions one hundred and forty five of thirty five acres one rood thirty perches one hundred and forty six of thirty six acres three roods thirty perches and twenty four of three hundred and twenty acres all in the Parish of Goimbla bearing South eighty one degrees twenty two minutes East three chains eighty nine links South seventy three degrees thirty three minutes East twenty seven chains thirty seven links and thence South seventy three degrees forty four minutes East ten chains thirty two links on the East by a line bearing South nineteen chains twenty one links and six tenths of a link and on the South by the Northern boundaries of portions one hundred and forty nine of twenty eight acres two roods and one hundred and forty eight aforesaid in all bearing West forty chains to the point of commencement

As per plan in the margin hereof With all the Rights and Appurtenances thereto belonging **To Hold** ~~the said~~ unto the said James Charles Herbert Laurence Kirby, John Thomas Noble, John William Lees, Jeffa Matheson, Mervyn Albert Stanley Wheatley and Frederick Evans Hill their Heirs and Assigns for ever Upon and for the Trusts and Purposes hereinafter declared of and concerning the said Land that is to say **upon Trust** to use the said land for Public Recreation Racecourse and Showground and for no other use trust or purpose whatsoever

And subject to the Reservations and Exceptions hereinafter contained **Provided always** and it is hereby declared that it shall or may be lawful for the Trustees for the time being of the said Lands for any of the purposes aforesaid subject to the approval of the Governor of Our said State with the advice of the Executive Council to make all any or every such Rules or Regulations for the use of the said Land or any part thereof and to vary or alter the same from time to time as they may think fit for any of the purposes aforesaid. PROVIDED ALWAYS and we do hereby declare that when and so often as the said James Charles Herbert, Laurence Kirby, John Thomas Noble, John William Lees, Jeffa Matheson, Mervyn Albert Stanley Wheatley and Frederick Evans Hill

or any Trustee or Trustees to be appointed by virtue hereof shall die resign cease to reside in the State of New South Wales or become incapable of acting in the Trusts hereby created it shall be lawful for Our Minister for Lands of our said State from time to time by writing under his hand to name and appoint a new Trustee or Trustees in the place and stead of any Trustee or Trustees so dying resigning ceasing to reside in Our State of New South Wales or becoming incapable of acting in the said Trusts and upon every such appointment the Trust property shall be transferred so that the same may be vested in the Trustees or Trustee for the time being upon the Trusts and for the Intents and purposes hereinbefore created and declared of and concerning the same **Provided nevertheless** AND WE DO HEREBY RESERVE AND EXCEPT unto Us Our Heirs and Successors all minerals which the said Land contains with full power and authority for Us Our Heirs and Successors and such person or persons as shall from time to time be authorised by Us or them to enter upon the said Land and to search for mine dig and remove the said minerals **And also** all such parts and so much of the said Land as may hereafter be required for public ways viaducts canals railways tramways dams sewers or drains in over and through the same to be set out by Our Governor as aforesaid or some person by him authorised in that respect **And also** all sand clay stone gravel and indigenous timber and all other materials the natural produce of the said Land which may be required at any time hereafter for the construction and repair of any public ways bridges or canals or for naval purposes or railways and tramways or any fences embankments viaducts dams sewers or drains necessary for the same together with the right of taking and removing all such materials by such person or persons as may be authorised in that behalf by the Governor aforesaid **Provided further and We do hereby** ALSO RESERVE for Us Our Heirs and Successors and for our Governor as aforesaid by such person or persons as shall be by Us them or him authorised in that behalf full power to make and conduct through in under upon or over the said Land or any portion thereof all public ways viaducts railways tramways canals and all common or public drains and sewers which may be deemed expedient And the right of full and free ingress egress and regress into out of and upon the said Land for the several purposes aforesaid or any of them **Provided always** and these presents are upon the express condition that if the said Land hereinbefore described or any part thereof shall be used for any other purpose than is hereinbefore provided or declared in and by the said Trust the said Trust shall cease and the said Land shall be forfeited and revert unto Us Our Heirs and Successors and these Presents and every matter and thing herein contained shall cease and determine and become absolutely void to all intents and purposes And it shall be lawful for Us Our Heirs and Successors by Our said Governor or some person by him authorised in that behalf to re-enter upon the said Land or any part thereof and the said Grantees their Heirs and Assigns therefrom wholly to remove **In Testimony Whereof** We have caused this Our Grant to be Sealed with the Seal of Our said State the words "and twenty" between the words "hundred" and "acres" on the twenty first line hereof having been previously inserted.

Witness Our Trusty and Well-beloved The Honourable Sir PHILIP WHISTLER STREET, Knight Commander of Our Most Distinguished Order of Saint Michael and Saint George, Our Lieutenant-Governor of Our State of New South Wales and its Dependencies, in the Commonwealth of Australia, at Sydney, in Our said State, this twenty eighth day of December in the first year of Our Reign, and in the year of Our Lord one thousand nine hundred and thirty-six

G. Street

Lieutenant-Governor.

RECORDED and ENROLLED in the Registrar General's Office, at Sydney, in New South Wales, this 6th day of January 1937.

Roy W. Willis
Registrar General.

No. D233879. Application under Section 14 of the Real Property (Amendment) Act 1921 Ronald Keith Douglas, William Colbran Lees, Lindsay Guthrie Noble ~~and~~ Bernard Joseph Townsend, Laurence Kirby, Mervyn Albert Stanley Wheatley and Frederick Evans Hill are registered as proprietors of the land within described. Produced 1st October 1943, and entered 19th October 1943 at 10 ~~mts. past~~ o'clock in the fore noon.

Roy W. Willis
REGISTRAR GENERAL.

MAL. Dep. Reg. Gen. 5·11·43.

ANT Sec 14 ...

No. D744603 Application under Section 14 of the Real Property (Amendment) Act 1921. The Council of the Shire of Boree now registered as proprietor of the land within described. Produced 24th October, 1947 and entered 5th November, 1947 at ~~mts. past~~ o'clock in the noon.

T. Wells
REGISTRAR GENERAL.

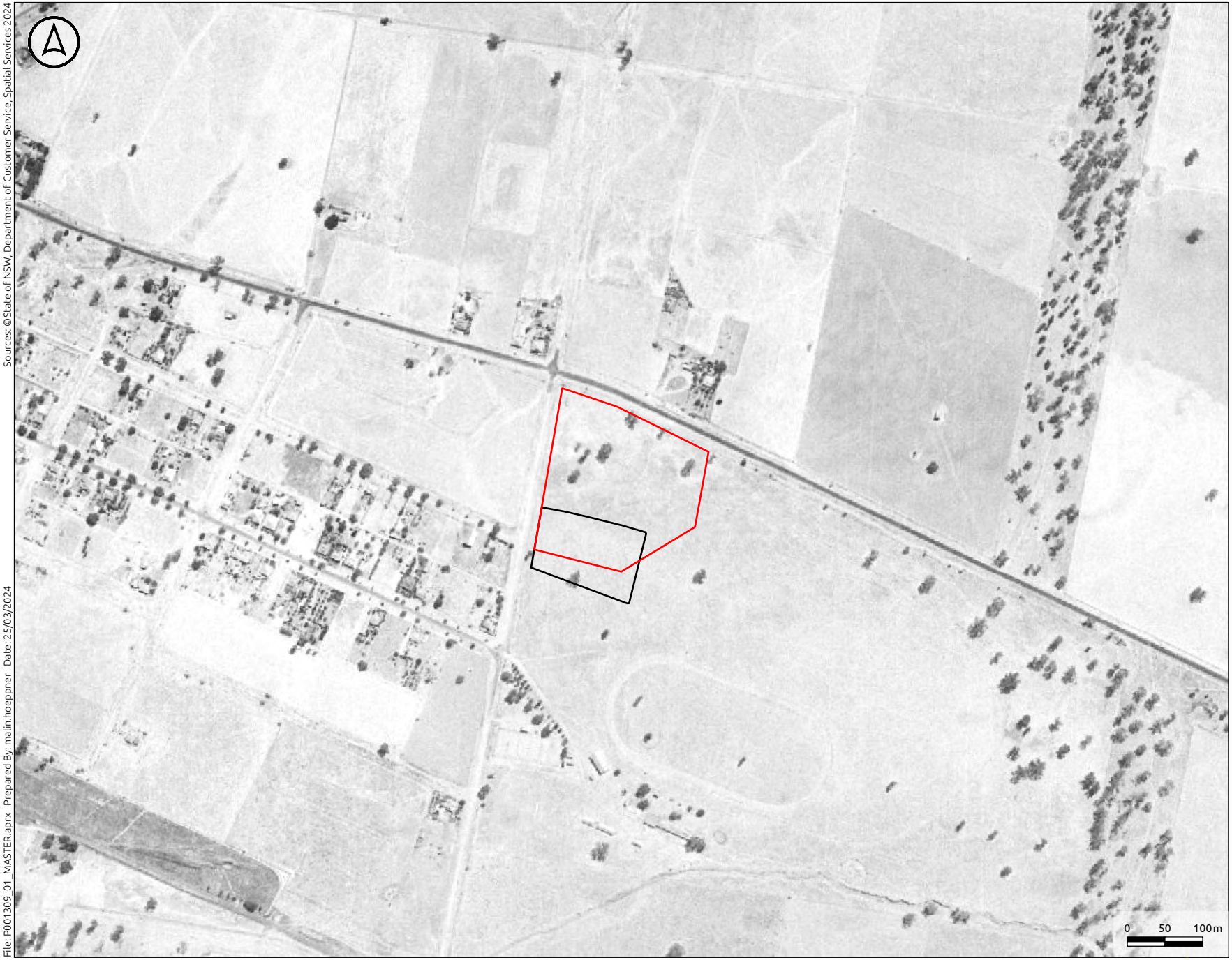
COMPUTER FOLIO NO FURTHER
DEALINGS TO BE REGISTERED.

~~D 2075~~ & W...
D233879 R 19/10/43
D744603 Sec 14 Applcn R

Premise

APPENDIX C

Historic Aerial Photography



Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 1965

Legend

- Site
- NSW Reconstruction Authority Compound

File: P0001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 1974

Legend

- Site
- NSW Reconstruction Authority Compound

File: P0001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 1989

Legend

- Site
- NSW Reconstruction Authority Compound

File: P0001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 1997

Legend

- Site
- NSW Reconstruction Authority Compound

File: P0001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 2014

Legend

- Site
- NSW Reconstruction Authority Compound

File: P001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 2017

Legend

- Site
- NSW Reconstruction Authority Compound

File: P0001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

Premise

CABONNE COUNCIL

Eugowra Showground Preliminary Contamination Assessment

Historical Aerial Imagery 2019

Legend

- Site
- NSW Reconstruction Authority Compound

File: P0001309_01_MASTER.aprx Prepared By: malin.hoeppner Date: 25/03/2024

APPENDIX D

Analytical Certificates

CERTIFICATE OF ANALYSIS

Work Order	: **ES2409346**	Page	: 1 of 19
Client	: **PREMISE NSW Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BRENDAN STUART	Contact	: Customer Services ES
Address	: 154 Peisley St, Orange 2800	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 0263935000	Telephone	: +61-2-8784 8555
Project	: P001309 TER	Date Samples Received	: 21-Mar-2024 08:00
Order number	: ----	Date Analysis Commenced	: 22-Mar-2024
C-O-C number	: ----	Issue Date	: 28-Mar-2024 13:38
Sampler	: B. Searl		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 12		
No. of samples analysed	: 12		

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

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

This Certificate of Analysis contains the following information:

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

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS 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.

- EP202: Poor matrix spike recoveries for Picloram and Clopyralid due to matrix effects.
- EP202: Particular samples required dilution due to matrix interferences. LOR values have been adjusted accordingly.
- 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.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2409346-001	ES2409346-002	ES2409346-003	ES2409346-004	ES2409346-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	18.0	9.3	3.1	8.1	5.6
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	No	----
Asbestos (Trace)	1332-21-4	-	-	----	No	----	No	----
Asbestos Type	1332-21-4	-	--	----	-	----	-	----
Synthetic Mineral Fibre	----	-	--	----	No	----	No	----
Organic Fibre	----	-	--	----	No	----	No	----
Sample weight (dry)	----	0.01	g	----	160	----	134	----
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	----	B.SCHRADER	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	<5	----	<5	----
Barium	7440-39-3	10	mg/kg	----	50	----	50	----
Beryllium	7440-41-7	1	mg/kg	----	<1	----	<1	----
Boron	7440-42-8	50	mg/kg	----	<50	----	<50	----
Cadmium	7440-43-9	1	mg/kg	----	<1	----	<1	----
Chromium	7440-47-3	2	mg/kg	----	12	----	10	----
Cobalt	7440-48-4	2	mg/kg	----	6	----	5	----
Copper	7440-50-8	5	mg/kg	----	9	----	6	----
Lead	7439-92-1	5	mg/kg	----	5	----	8	----
Manganese	7439-96-5	5	mg/kg	----	470	----	733	----
Nickel	7440-02-0	2	mg/kg	----	12	----	6	----
Selenium	7782-49-2	5	mg/kg	----	<5	----	<5	----
Vanadium	7440-62-2	5	mg/kg	----	17	----	17	----
Zinc	7440-66-6	5	mg/kg	----	18	----	20	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2409346-001	ES2409346-002	ES2409346-003	ES2409346-004	ES2409346-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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	----
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**	72-54-8/72-55-9/50-29-3	0.05	mg/kg	----	<0.05	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2409346-001	ES2409346-002	ES2409346-003	ES2409346-004	ES2409346-005
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
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	----
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	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2409346-001	ES2409346-002	ES2409346-003	ES2409346-004	ES2409346-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2409346-001	ES2409346-002	ES2409346-003	ES2409346-004	ES2409346-005
					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	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg		----	<0.02	----	<0.04	----
2.4-DB	94-82-6	0.02	mg/kg		----	<0.02	----	<0.04	----
Dicamba	1918-00-9	0.02	mg/kg		----	<0.02	----	<0.04	----
Mecoprop	93-65-2	0.02	mg/kg		----	<0.02	----	<0.04	----
MCPA	94-74-6	0.02	mg/kg		----	<0.02	----	<0.04	----
2.4-DP	120-36-5	0.02	mg/kg		----	<0.02	----	<0.04	----
2.4-D	94-75-7	0.02	mg/kg		----	<0.02	----	<0.04	----
Triclopyr	55335-06-3	0.02	mg/kg		----	<0.02	----	<0.04	----
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg		----	<0.02	----	<0.04	----
2.4.5-T	93-76-5	0.02	mg/kg		----	<0.02	----	<0.04	----
MCPB	94-81-5	0.02	mg/kg		----	<0.02	----	<0.04	----
Picloram	1918-02-1	0.02	mg/kg		----	<0.02	----	<0.04	----
Clopyralid	1702-17-6	0.02	mg/kg		----	<0.02	----	<0.04	----
Fluroxypyr	69377-81-7	0.02	mg/kg		----	<0.02	----	<0.04	----
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_01	CA_02	CA_03	CA_04	CA_05
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2409346-001	ES2409346-002	ES2409346-003	ES2409346-004	ES2409346-005
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.05	%	----	102	----	94.6	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	82.0	----	76.3	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	86.2	84.6	82.7	77.0	81.9
2-Chlorophenol-D4	93951-73-6	0.5	%	85.7	83.7	80.2	73.0	79.0
2.4.6-Tribromophenol	118-79-6	0.5	%	74.0	67.2	57.3	44.5	50.0
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	87.6	85.9	84.2	83.0	85.1
Anthracene-d10	1719-06-8	0.5	%	80.8	76.3	76.7	72.2	74.9
4-Terphenyl-d14	1718-51-0	0.5	%	91.8	89.0	87.9	86.1	88.2
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	109	117	110	113	123
Toluene-D8	2037-26-5	0.2	%	109	112	103	111	119
4-Bromofluorobenzene	460-00-4	0.2	%	99.2	96.2	90.7	97.5	108
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	92.0	----	72.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_06	CA_07	CA_08	CA_09	CA_10
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2409346-006	ES2409346-007	ES2409346-008	ES2409346-009	ES2409346-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	4.8	10.0	2.8	3.2	6.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	No	No	No
Asbestos (Trace)	1332-21-4	-	-	----	No	No	No	No
Asbestos Type	1332-21-4	-	--	----	-	-	-	-
Synthetic Mineral Fibre	----	-	--	----	No	No	No	No
Organic Fibre	----	-	--	----	No	No	No	No
Sample weight (dry)	----	0.01	g	----	186	155	196	167
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	B.SCHRADER	B.SCHRADER	B.SCHRADER
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	----	30	20	50	60
Beryllium	7440-41-7	1	mg/kg	----	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	----	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	8	15	11	16
Cobalt	7440-48-4	2	mg/kg	----	4	4	5	6
Copper	7440-50-8	5	mg/kg	----	<5	<5	5	7
Lead	7439-92-1	5	mg/kg	----	6	8	8	12
Manganese	7439-96-5	5	mg/kg	----	344	179	469	458
Nickel	7440-02-0	2	mg/kg	----	5	5	7	10
Selenium	7782-49-2	5	mg/kg	----	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	14	25	20	34
Zinc	7440-66-6	5	mg/kg	----	8	7	10	10
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_06	CA_07	CA_08	CA_09	CA_10
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2409346-006	ES2409346-007	ES2409346-008	ES2409346-009	ES2409346-010
					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
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_06	CA_07	CA_08	CA_09	CA_10
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2409346-006	ES2409346-007	ES2409346-008	ES2409346-009	ES2409346-010
					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
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	----
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	CA_06	CA_07	CA_08	CA_09	CA_10
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2409346-006	ES2409346-007	ES2409346-008	ES2409346-009	ES2409346-010
					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	CA_06	CA_07	CA_08	CA_09	CA_10
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit		ES2409346-006	ES2409346-007	ES2409346-008	ES2409346-009	ES2409346-010
					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	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
2.4-DB	94-82-6	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
Dicamba	1918-00-9	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
Mecoprop	93-65-2	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
MCPA	94-74-6	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
2.4-DP	120-36-5	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
2.4-D	94-75-7	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
Triclopyr	55335-06-3	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
2.4.5-T	93-76-5	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
MCPB	94-81-5	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
Picloram	1918-02-1	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
Clopyralid	1702-17-6	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
Fluroxypyr	69377-81-7	0.02	mg/kg		----	<0.02	<0.02	<0.02	<0.02
EP068S: Organochlorine Pesticide Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_06	CA_07	CA_08	CA_09	CA_10
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00	19-Mar-2024 00:00
Compound	CAS Number	LOR	Unit	ES2409346-006	ES2409346-007	ES2409346-008	ES2409346-009	ES2409346-010
				Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.05	%	----	89.0	102	99.1	100
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	----	65.0	71.9	74.6	66.8
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	84.4	80.3	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	83.0	79.6	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	51.9	49.0	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	87.0	84.1	----	----	----
Anthracene-d10	1719-06-8	0.5	%	75.9	73.8	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	90.1	87.8	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	102	107	----	----	----
Toluene-D8	2037-26-5	0.2	%	106	105	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	94.4	99.0	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	----	95.4	88.3	87.5	73.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_11	CA_12	----	----	----
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2409346-011	ES2409346-012	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		13.0	7.2	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	----	----	----
Asbestos (Trace)	1332-21-4	-	-		No	No	----	----	----
Asbestos Type	1332-21-4	-	--		-	-	----	----	----
Synthetic Mineral Fibre	----	-	--		No	No	----	----	----
Organic Fibre	----	-	--		No	No	----	----	----
Sample weight (dry)	----	0.01	g		130	170	----	----	----
APPROVED IDENTIFIER:	----	-	--		B.SCHRADER	B.SCHRADER	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	----	----	----
Barium	7440-39-3	10	mg/kg		40	60	----	----	----
Beryllium	7440-41-7	1	mg/kg		<1	<1	----	----	----
Boron	7440-42-8	50	mg/kg		<50	<50	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		9	14	----	----	----
Cobalt	7440-48-4	2	mg/kg		5	4	----	----	----
Copper	7440-50-8	5	mg/kg		6	7	----	----	----
Lead	7439-92-1	5	mg/kg		7	9	----	----	----
Manganese	7439-96-5	5	mg/kg		570	455	----	----	----
Nickel	7440-02-0	2	mg/kg		8	9	----	----	----
Selenium	7782-49-2	5	mg/kg		<5	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg		19	29	----	----	----
Zinc	7440-66-6	5	mg/kg		8	12	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_11	CA_12	----	----	----
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2409346-011	ES2409346-012	--------	--------	--------
					Result	Result	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
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	----	----	----
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**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	CA_11	CA_12	----	----	----
				Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES2409346-011	ES2409346-012	--------	--------	--------
					Result	Result	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
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	----	----	----
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	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	0.02	mg/kg		<0.02	<0.02	----	----	----
2.4-DB	94-82-6	0.02	mg/kg		<0.02	<0.02	----	----	----
Dicamba	1918-00-9	0.02	mg/kg		<0.02	<0.02	----	----	----
Mecoprop	93-65-2	0.02	mg/kg		<0.02	<0.02	----	----	----
MCPA	94-74-6	0.02	mg/kg		<0.02	<0.02	----	----	----
2.4-DP	120-36-5	0.02	mg/kg		<0.02	<0.02	----	----	----
2.4-D	94-75-7	0.02	mg/kg		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	CA_11	CA_12	----	----	----
			Sampling date / time	19-Mar-2024 00:00	19-Mar-2024 00:00	----	----	----
Compound	CAS Number	LOR	Unit	ES2409346-011	ES2409346-012	--------	--------	--------
				Result	Result	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued								
Triclopyr	55335-06-3	0.02	mg/kg	<0.02	<0.02	----	----	----
2.4.5-TP (Silvex)	93-72-1	0.02	mg/kg	<0.02	<0.02	----	----	----
2.4.5-T	93-76-5	0.02	mg/kg	<0.02	<0.02	----	----	----
MCPB	94-81-5	0.02	mg/kg	<0.02	<0.02	----	----	----
Picloram	1918-02-1	0.02	mg/kg	<0.02	<0.02	----	----	----
Clopyralid	1702-17-6	0.02	mg/kg	<0.02	<0.02	----	----	----
Fluroxypyr	69377-81-7	0.02	mg/kg	<0.02	<0.02	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**104**	**115**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**80.5**	**90.6**	----	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	**82.3**	**92.0**	----	----	----

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	CA_02 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_04 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_07 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_08 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_09 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_10 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_11 - 19-Mar-2024 00:00	A soil sample.
EA200: Description	CA_12 - 19-Mar-2024 00:00	A soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
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
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	45	139

Inter-Laboratory Testing

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

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

APPENDIX E

Analytical Laboratory QA/QC & Chain of Custody Documents

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

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☐NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: Premise Australia	TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☑ Standard TAT (List due date):
OFFICE: Orange NSW		☐ Non Standard or urgent TAT (List due date):
PROJECT: P001309 TER	ALS QUOTE NO.: EN/222/23	
ORDER NUMBER:		
PROJECT MANAGER: B. Stuart	CONTACT PH: 0418 607 830	
SAMPLER: B. Searl	SAMPLER MOBILE:	
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	
Email Reports to (will default to PM if no other addresses are listed): PM		
Email Invoice to (will default to PM if no other addresses are listed): Accounts + PM		

COC SEQUENCE NUMBER (Circle)

COC: ① 2 3 4 5 6 7

OF: ① 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)

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

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
PREMISE	FAST		
DATE/TIME: 20/03/2024, 14:00	DATE/TIME: 21/3/24	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).							Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S-12	S-3	EP202	S-7	EA200			Comments on likely contaminant levels, dilutions, or samples requiring specific QC
1	CA_01	19/03/2024	S	JAR / BAG	2				X				
2	CA_02	19/03/2024	S	JAR / BAG	2	X	X	X	X	X			
3	CA_03	19/03/2024	S	JAR / BAG	2				X				
4	CA_04	19/03/2024	S	JAR / BAG	2	X	X	X	X	X			
5	CA_05	19/03/2024	S	JAR / BAG	2				X				
6	CA_06	19/03/2024	S	JAR / BAG	2				X				
7	CA_07	19/03/2024	S	JAR / BAG	2	X	X	X	X	X			
8	CA_08	19/03/2024	S	JAR / BAG	2	X	X	X		X			
9	CA_09	19/03/2024	S	JAR / BAG	2	X	X	X		X			
10	CA_10	19/03/2024	S	JAR / BAG	2	X	X	X		X			
11	CA_11	19/03/2024	S	JAR / BAG	2	X	X	X		X			
12	CA_12	19/03/2024	S	JAR / BAG	2	X	X	X		X			
				TOTAL									

Environmental Division Sydney
Work Order Reference
ES2409346

Telephone : +61-2-8784 8555

Subcon / Forward Lab / Split WO

Lab / Analysis: Newcastle - asbestos

Organised By / Date:

Relinquished By / Date:

Connote / Courier:

WO No:

Attached Page / Internal Sheet:

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

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2409346**	Page	: 1 of 7
Client	: **PREMISE NSW Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: BRENDAN STUART	Telephone	: +61-2-8784 8555
Project	: P001309 TER	Date Samples Received	: 21-Mar-2024
Site	: ----	Issue Date	: 28-Mar-2024
Sampler	: B. Searl	No. of samples received	: 12
Order number	: ----	No. of samples analysed	: 12

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.**
- **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

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

Outliers : Frequency of Quality Control Samples

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

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
Matrix Spike (MS) Recoveries							
EP202A: Phenoxyacetic Acid Herbicides by LCMS	ES2409114--001	Anonymous	**Picloram**	1918-02-1	25.7 %	49.0-138%	**Recovery less than lower data quality objective**
EP202A: Phenoxyacetic Acid Herbicides by LCMS	ES2409114--001	Anonymous	**Clopyralid**	1702-17-6	30.7 %	49.0-149%	**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)								
CA_01,	CA_02,	**19-Mar-2024**	**----**	----	**----**	**22-Mar-2024**	02-Apr-2024	✓
CA_03,	CA_04,							
CA_05,	CA_06,							
CA_07,	CA_08,							
CA_09,	CA_10,							
CA_11,	CA_12							
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag (EA200)								
CA_02,	CA_04,	**19-Mar-2024**	**----**	----	**----**	**25-Mar-2024**	15-Sep-2024	✓
CA_07,	CA_08,							
CA_09,	CA_10,							
CA_11,	CA_12							
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
CA_02,	CA_04,	**19-Mar-2024**	**22-Mar-2024**	15-Sep-2024	✓	**25-Mar-2024**	15-Sep-2024	✓
CA_07,	CA_08,							
CA_09,	CA_10,							
CA_11,	CA_12							

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
CA_02, CA_04, CA_07, CA_08, CA_09, CA_10, CA_11, CA_12	**19-Mar-2024**	**22-Mar-2024**	16-Apr-2024	✓	**25-Mar-2024**	16-Apr-2024	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
CA_02, CA_04, CA_07, CA_08, CA_09, CA_10, CA_11, CA_12	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**27-Mar-2024**	01-May-2024	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
CA_02, CA_04, CA_07, CA_08, CA_09, CA_10, CA_11, CA_12	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**27-Mar-2024**	01-May-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
CA_01, CA_02, CA_03, CA_04, CA_05, CA_06, CA_07	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**25-Mar-2024**	01-May-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
CA_01, CA_02, CA_03, CA_04, CA_05, CA_06, CA_07	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**22-Mar-2024**	02-Apr-2024	✓
Soil Glass Jar - Unpreserved (EP071)							
CA_01, CA_02, CA_03, CA_04, CA_05, CA_06, CA_07	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**25-Mar-2024**	01-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)							
CA_01, CA_02, CA_03, CA_04, CA_05, CA_06, CA_07	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**22-Mar-2024**	02-Apr-2024	✓
Soil Glass Jar - Unpreserved (EP071)							
CA_01, CA_02, CA_03, CA_04, CA_05, CA_06, CA_07	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**25-Mar-2024**	01-May-2024	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
CA_01, CA_02, CA_03, CA_04, CA_05, CA_06, CA_07	**19-Mar-2024**	**22-Mar-2024**	02-Apr-2024	✓	**22-Mar-2024**	02-Apr-2024	✓
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Soil Glass Jar - Unpreserved (EP202)							
CA_02, CA_04, CA_07, CA_08, CA_09, CA_10, CA_11, CA_12	**19-Mar-2024**	**26-Mar-2024**	02-Apr-2024	✓	**27-Mar-2024**	05-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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	**6.25**	**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
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
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.
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	SOIL	In house: LCMS (Electrospray in negative mode). Residues of acid herbicides are extracted from soil samples under the alkaline condition. An aliquot of the alkaline aqueous phase is taken and acidified before a SPE cleanup. After eluting off from the SPE cartridge, residues of acid herbicides are dissolved in HPLC mobile phase prior to instrument analysis.

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).
Extraction for Phenoxy Acid Herbicides in Soils.	EP202-PR	SOIL	In-House: Alkaline extract followed by SPE clean up of acidified portion of the sample extract.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
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.