PRELIMINARY SITE INVESTIGATION REPORT

PROJECT: 21-33 Owlpen Lane, Farley, NSW 2320

CLIENT: Shams Abbasi

DATE: 05 July 2022

REPORT NO: NE1165

REVISION: 0

GEOTESTA

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EXECUTIVE SUMMARY

Geotesta was engaged by Mr. Shams Abbasi on behalf of the Bathla Group to conduct a Preliminary Site Investigation (PSI) on the site referred to as 21-33 Owlpen Lane, Farley, NSW 2320.

The PSI was conducted in general accordance with *"Managing Land Contamination Planning Guidelines SEPP 55"* and this report compiled, taking into consideration the *NSW EPA Consultants reporting on contaminated land Contaminated Land Guidelines update May 2020* and *Site History, Schedule B2 - Guideline on Site Characterisation (ASC NEPM).*

The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. All relevant information about the site was assessed to determine the potential for site contamination. As part of the PSI a limited soil sampling and analysis program was conducted to assist in assess the environmental risk profile of the site.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- identify potential environmental risks associated with the site;
- develop of conceptual model of the site and surrounding area;
- assess the requirements for additional investigations (Detail Site Investigation); and
- address the requirements of the planning authority.

The following scope of works was implemented to achieve the objectives of the PSI.

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Considering the historical aerial photographs, the site consisted of four (4) dwellings located on the western boundary, adjacent to the Owlpen Lane since 1974. Most site areas were vacant ground surfaces, covered by grass and scattered trees. On or before 2005, a new residential dwelling with was built in the central western section of the site and present until the time of the site inspection. There have been minor changes to the site for the past 17 years.

The soil sampling and analysis program conducted as part of the PSI indicates that there is no widespread significant soil contamination across the site, a summary of the laboratory results are presented as the following:

- The laboratory analysis detected concentrations of arsenic, chromium, lead, nickel and zinc within the soil samples recovered. All detected concentrations were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL). No concentrations of cadmium, copper, and mercury were detected and were therefore within the adopted site assessment criteria (HIL A and EIL).

- No concentrations of OCP/OPP were detected within all the recovered samples and were therefore within the adopted Site Assessment Criteria (SAC).
- No concentrations of PAHs (Total) and Naphthalene were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted site assessment criteria (SAC).
- No concentrations of TRHs were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted Site Criteria (HSL, ESL and ML).
- No concentrations of BTEXN were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the Site Criteria (HSL and ESL).
- No concentrations of Phenols were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted Site Criteria.
- No concentrations of PCB were detected above the laboratory limits of reporting (LOR) within the recovered samples analysed and were therefore within the adopted Site Assessment Criteria (SAC).
- No Asbestos was detected above the Reporting Limit of 0.001% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC).

- An intrusive groundwater assessment was not conducted as part of this PSI, as the risk of contamination from groundwater is considered negligible based on past uses and no identified sources of contamination that would impact groundwater.

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending an additional Data Gap Contamination Assessment is undertaken.
- Due to the existence of a data-gap in this investigation, a further assessment post demolition of the existing structures/dwellings is required to address further potential AECs identified previously and to determine if any contamination hotspots exist within the footprint of the existing sheds and dwellings. The Gap Assessment scope must also include the following:

  - Any stockpiles and areas under stockpiled materials that were not assessed at the time of the PSI or are new to site, will require sampling as part of the Data Gap Assessment.

1. INTRODUCTION

Geotesta was engaged by Bathla Group to conduct a Site Contamination Investigation (PSI) on the site referred to as 21-33 Owlpen Lane, Farley, NSW 2320.

The PSI was conducted in general accordance with *"Managing Land Contamination Planning Guidelines SEPP 55"* and this report compiled, taking into consideration the *NSW EPA Consultants reporting on Contaminated Land Guidelines update May 2020.* The PSI contains an appraisal of the site's history, a report based on a visual site inspection and an assessment of analytes for contamination. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI a limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

2. PLANNING GUIDELINES

The proposed development of the land comprises of a residential subdivision with on-site roadways. The planning authority must consider the possibility that the previous land use has the potential to cause contamination of the site as well as the potential risk to health or the environment from that contamination. The PSI is the first stage to determine if there is a potential for land contamination that has a potential to impact the development application (DA).

The Guidelines recommend that re-zonings, development control plans and development applications (DAs) are backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used.

3. OBJECTIVE

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- assess the requirements for additional investigations; and
- address the requirements of the planning authority.

4. SCOPE OF WORKS

The following scope of works was implemented to achieve the objectives of the PSI.

The PSI was conducted in general accordance with the Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non volatile and semi-volatile compounds*, *the Australian Standard AS 4482.2-1999 Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*, the National *Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1*, and other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

5. SITE DESCRIPTION

5.1 Site Identification

The site under investigation is situated at 21-33 Owlpen Lane, Farley, NSW 2320 in the east of Owlpen Lane and is approximately 40 km (by road) northwest of Newcastle. The site of the proposed development has an area of approximately 11.3 ha. The site is located within Maitland City Council. The site location is shown in Figure 1.

The site identification detail is presented in Table 1.

Table 1: Site Identification

Site Details	Site Observations
Address	21-33 Owlpen Lane, Farley, NSW 2320
Lot/Section/Plan no:	No. 21: Lot. 11/DP1229964, No. 23: Lot. B/DP348463, No. 25: Lot. C/DP348463, No. 41: Lot. D/DP348463, No. 33: Lot. 10/DP1229964
Local Government Area	Maitland City Council
Site Area (approx.)	~ 11.2 ha
Zoning	R1 - General Residential, RU2 - Rural Landscape
Current Land Use	Residential

Figure 1. Site Location and Features

5.2 Proposed Development

It is understood that the site is proposed for residential subdivision with on-site roadways. The site lies within General Residential (R1) and Rural Landscape (RU2) planning zones. Planning zones that are in the vicinity of the site include General Residential (R1), Rural Landscape (RU2), and Environmental Conservation (C2).

5.3 Site Details, Geology and Topography

The subject site consisted of five (5) single-storey dwellings. Sheds with possible storage of vehicles, fuels, chemicals, old generators and metals were noted on the site. The site initially slopes downgrade and then upgrade towards the southeast with a slope angle varying from approximately 5 – 10 degrees. A tributary of the Stony Creek flows southwest across the site. A photographic log provided in Appendix B.

The Hunter 1:100,000 Quaternary Geology map indicates the site is situated in Dalwood Group (Pda) comprising of sandstone, lithic sandstone, conglomerate, siltstone and basalt. Regional topographic maps indicate that the site approximately averages 20m above sea level, referenced to Australian Height Datum (AHD).

5.4 Site Regional Meteorology and Hydrogeology

The following climate information from the Commonwealth Bureau of Meteorology website (http://www.bom.gov.au/) can be obtained:

- The highest monthly mean maximum temperature of 35.2°C recorded from 2016 to 2022 at Maitland Airport AWS, approximately 7.0 km away from the site.
- The lowest monthly mean minimum temperature of 4.2°C recorded from 2016 to 2022 at Maitland Airport AWS, approximately 7.0 km away from the site.
- The highset annual rainfall of 986.2mm recorded from 2016 to 2022 at Maitland Airport AWS, approximately 7.0 km away from the site.

5.5 Registered Bore Search

A search of Department Primary Industries - Office of Water records identified no existing groundwater wells located within an approximate distance of < 500 metre from the site.

5.6 Acid Sulphate Soils

The Department for Infrastructure, Planning and Natural Resources (DIPNR) Acid Sulphate Soils Risk Mapping (1997), Maitland Local Environmental Plan and the NSW Environmental Acid Sulphate Soil Risk Mapping eSPADE application indicates that the Site is not expected to be underlain by acid sulphate soils (Class 5 Acid Sulfate Soils). Class 5 Acid Sulfate Soils site is within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk (See Figure 2).

Figure 2. Probability of occurrence of Acid Sulfate Soils Map

5.7 Summary of Site History

5.7.1 Historical Background

Considering the historical aerial photographs, the site consisted of four (4) dwellings located on the western boundary, adjacent to the Owlpen Lane since 1974. Most site areas were vacant ground surfaces, covered by grass and scattered trees. On or before 2005, a new residential dwelling with was built in the central western section of the site and present until the time of the site inspection. There have been minor changes to the site for the past 17 years.

5.7.2 Aerial Photograph Review

An aerial photograph search was conducted on 26 April 2022. The historical aerial photographs were viewed with observations presented in Table 2. Photographs are presented in Appendix A.

Table 2: Aerial Photography Review

Year	Site Observations	Surrounding Area
1974	• Black and white photograph • Four (4) dwellings are located on the western boundary of the site adjacent to Owlpen Lane • Majority of the site is vacant ground surfaces with sparsely populated trees	• Black and white photograph • Residential dwellings located to all sides except to the east • Majority of the surrounding areas are vacant ground surfaces with sparsely populated trees
1984	• No change	• No change
1987	• Black and white photograph •	• No change
1993	• Colour photograph • Four (4) dwellings are located on the western boundary of the site adjacent to Owlpen Lane • Majority of the site is vacant ground surfaces with sparsely populated trees	• Colour photograph • Residential dwellings located to all sides except to the east • Majority of the surrounding areas are vacant ground surfaces with sparsely populated trees
1998	• No change	No change
2007	• Colour photograph • Four (4) dwellings are located on the western boundary of the site adjacent to Owlpen Lane • Additional dwelling located in the central western section of the site • Majority of the site is vacant ground surfaces with sparsely populated trees	• Colour photograph • Residential dwellings located to all sides except to the east • Additional dwellings located to the north • Majority of the surrounding areas are vacant ground surfaces with sparsely populated trees
2010	• No change	• No change
2015	• No change	• No change
2019	• No change	• No change

2021	• No change	• Colour photograph • Residential dwellings located to all sides except to the east • Additional dwellings located to the north • Majority of the surrounding areas are vacant ground surfaces with sparsely populated trees • Recent asphalt roads located to the west for residential subdivision
2022	• No change	• No change

5.8 Site Walkover

The engineers' observations of the site walkover inspection carried out on 28 March 2022 are presented below.

At the time of investigation, the vegetation onsite appeared to be healthy and in good condition, with no signs of vegetation die-back.

Lot. 11/DP1229964: 21 Owlpen Lane

- There was a single-storey residential dwelling adjacent to Owlpen Lane. It was abandoned at the time of the investigation and not in good condition with damages in some parts.
- Broken, old cars were observed to park approximately 20 m away in the north side of the residential dwelling.
- An abandoned shed was present at approximately 40 m at the back of the residential dwelling.
- The remaining area was vacant, covered by grass and scattered trees.

Lot. B/DP348463: 23 Owlpen Lane

- There was a single-storey residential dwelling adjacent to Owlpen Lane.
- A garage was located in the south side of the dwelling.
- A swimming pool existed at the back of the garage.
- All structures at the site were in good condition during the site investigation.
- Cars were observed parking in the front of the garage.
- Grass and trees occupied approximately half of the lot.

Lot. C/DP348463: 25 Owlpen Lane

- There was a single-storey residential dwelling adjacent to Owlpen Lane.
- A garage and shed were located in the north side of the dwelling.
- A shed for animals was located in the south side of the dwelling.
- All structures at the site were in good condition during the site investigation.
- Cars were observed parking in the front of the garage.
- There was a playground at the back of the dwelling with a slide and trampoline.

Lot. D/DP348463: 41 Owlpen Lane

- There was a single-storey residential dwelling adjacent to Owlpen Lane.
- A garage and shed were located in the south side of the dwelling.
- All structures at the site were in good condition during the site investigation.
- Grass and trees occupied approximately a quarter of the lot.

Lot. 10/DP1229964: 33 Owlpen Lane

- Most site areas were vacant, covered by grass and scattered trees.
- A residential dwelling existed in the centre of the lot.
- An earth driveway connecting the residential dwelling to Owlpen Lane was noted.
- During the site investigation, cars were observed parking in the garage and beside the residential dwelling.
- Wastewater was observed to be discharged over the ground surface at the northeast corner of the dwelling.
- Two tanks for storing rainwater were observed in the north end of the dwelling.
- An open garbage stockpile was noted onsite at the east corner of the lot with construction and household wastes.
- All structures at the site were in good condition during the site investigation.

5.9 NSW OEH/EPA Records

A site (Former Ausgrid Depot, Green Street, Telarah) located 810m northeast was identified in the List of NSW Contaminated Sites Notified to the EPA as of 28 April 2022 (Lotsearch in Appendix E).

A Licensed Activity under the POEO Act 1997 was identified onsite (#10393, ALL WATERBODIES IN THE MAITLAND LOCAL GOVERNMENT AREA. A second Licensed

Activity (#3142, AUSTRALIAN RAIL TRACK CORPORATION LIMITED) under the POEO Act 1997 was identified 421 m north from the site. (See Figure 3).

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10393	MAITLAND CITY COUNCIL	ALL WATERBODIES IN THE MAITLAND LOCAL GOVERNMENT AREA	.	MAITLAND	Other activities	Network of Features	0m	On-site
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		AUSTRALIAN RAIL TRACK CORPORATION (ARTC) NETWORK, SYDNEY, NSW 2001		Railway systems activities	Network of Features	421m	North

Figure 3. Licensed Activities under the POEO Act 1997 Map

5.10 Salinity Mapping

The dryland salinity national assessment and salinity potential provided by the Lotsearch (Appendix E) report indicated that the site is in a delineated risk area but no high hazard or risk rating (see Figure 4).

The following observations/inspections were noted onsite:

- ✓ Vegetation growth appeared healthy across the site
- ✓ No water marks or salt crystals observed on the ground surface

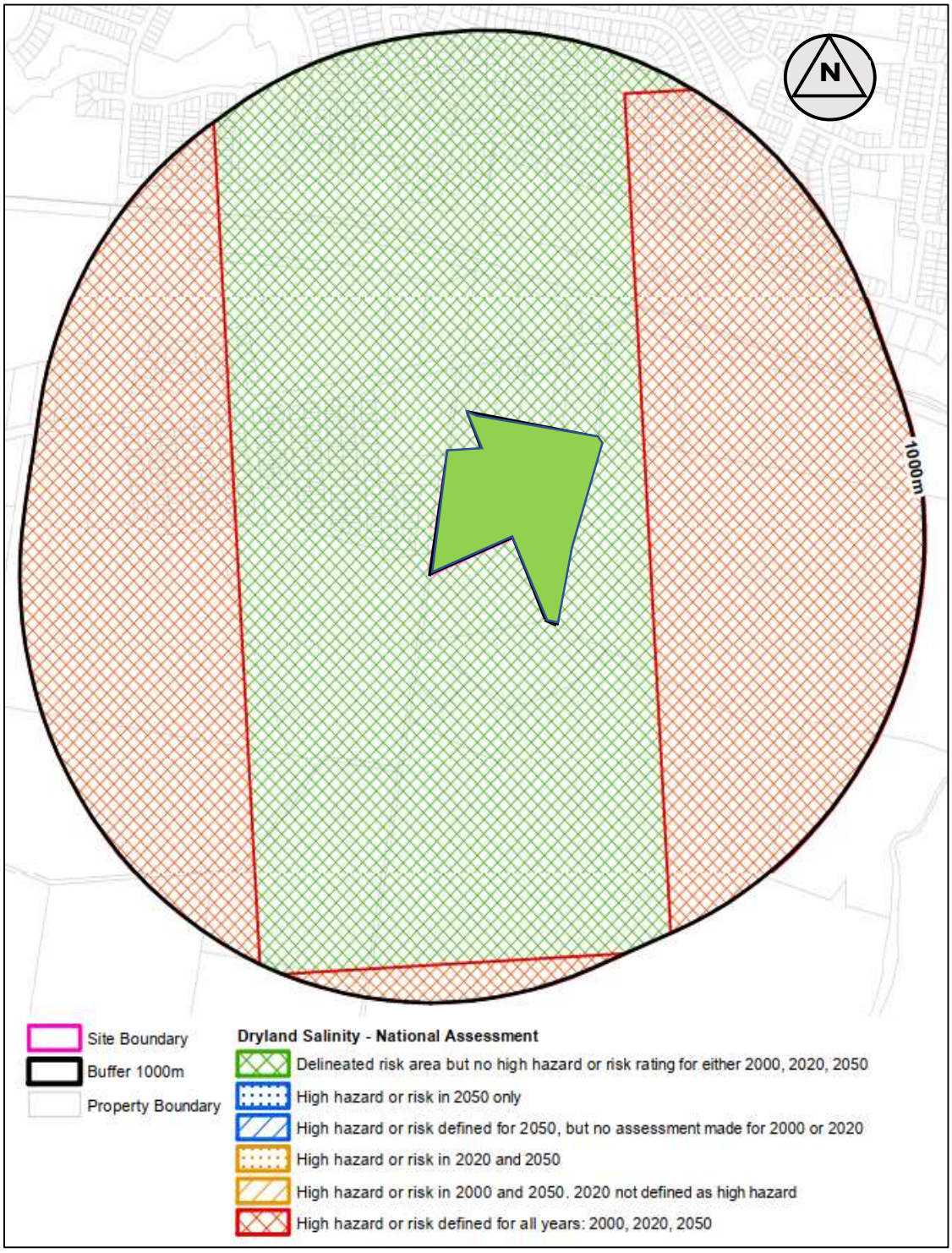

Figure 4. Salinity Potential Map

6. CONCEPTUAL SITE MODEL

6.1 Areas of Environmental Concern

Our assessment of site AECs and COPCs (Table 3) is made based on available site history, aerial photograph interpretation and site walkovers. A map showing locations of identified AECs is provided in Figure 5.

Table 3: Areas of Environmental Concern (AECs) and Contaminants of Primary Concern (COPCs)

AEC	Potential for Contamination	COPC	Contamination Likelihood
A – Areas of Dwelling/Sheds	Heavy metals may have been used underneath dwellings. Sheds or areas surrounding sheds may have been used as fuel storage, oil or drums of unknown content; asbestos sheeting, may include lead-based paints.	HM, OCP/OPP and Asbestos	Medium-High
B – Stockpiles	Contaminants from construction and household wastes may have been distributed onto underlying soil causing surface water contamination, ground water contamination.	HM, TRH, PAH, Phenols, BTEX, OCP/OPP, PCB and Asbestos	Medium
C – Parked Vehicle Zones	Contaminants from old vehicles and areas where vehicles have been parked for prolonged periods of time may contain refuse that may have spilled, leached or been distributed onto underlying soil.	HM, TRH, PAH and BTEX	Medium to High
D – Open drainage channels	During heavy rainfall events, contaminants in drain water may cause potential for environmental contamination to the surrounding soil.	HM, OCP/OPP, PAH, TRH, BTEX	Low-Medium
E – Areas of suspected light agricultural/ cropping	Heavy metals and pesticides used for home-grown gardens may pose potential risk of contamination	HM, TRH and OCP/OPP	Low-Medium

6.2 Potential Receptors and Sensitive Environments

The residents and visitors/workers on site are identified as immediately sensitive environmental receptors. A summary of the identified potential receptors and sensitive environments is detailed below in Table 4.

Table 4: Potential Receptors and Sensitive Environments

Receptors/Environments	Potential Pathway
Human Receptors: • Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct skin contact • Ingestion of contaminated soil • Inhalation via airborne dust
Sensitive Environments: • Site fauna and flora • Stony Creek	• Migration via stormwater run-off or within groundwater • Migration into underlying soil

6.3 Potential for migration and exposure of contamination

During site investigation, several potential receptors for off-site migration of potential contamination has been raised. Site history information and onsite inspection observations indicated a potential for contaminants to present a direct contact and inhalation exposure risk on site. Exposure routes of contaminants could potentially be through direct contact with exposed soils (Heavy Metals, TPH, PAHs, phenols, BTEX, OCP/OPP and PCB) or airborne dust (Asbestos). These exposure risks will "likely", and potentially at its highest risk during any demolition, earthworks, or construction phases within the site.

There is a potential for these contaminates to be present within underlying soils and have the ability to migrate vertically (dispersed up into the atmosphere, or infiltrate down into the groundwater) and migrate horizontally (through stormwater runoff pathways) from the proposed development.

6.4 Assessment of Preliminary Site Investigation and Recommendations

The results of the site history indicated the site has been used for residential. Considering the historical aerial photographs, the site had been vacant since 1984, covered by grass and scattered trees. In 2005, a residential dwelling with a floor size of 317 m^2 was built on the site and present until the time of the site inspection. There have been minor changes to the site for the past 17 years.

Based on the site history and walkthrough, the site is considered to have the following environmental concerns of:

- Areas of dwellings/sheds may currently (of have previously) stored fuel, oils, pesticides, zinc treated (galvanised) metals, lead based paints and/or asbestos.

- Contaminants from the contents of the garbage dump and parked vehicles may have leached, spilled or been distributed onto the underlying soil.
- Open drainage channels may cause environmental contamination to surrounding soil from upstream contaminants during heavy rainfall events.
- Areas of suspected agricultural usage, pesticides, heavy metals and TRHs

To address identified AECs, intrusive soil/water sampling regime is recommended to determine what, if any, remediation is required to render the site fit for residential use. A soil sampling plan is to be developed based on a judgemental or systematic sampling pattern and risk-based assessment.

Assessment shall address each of the identified AECs and assess COPC identified for each AEC (Table 3). Results of the site testing shall be assessed against Site Acceptance Criteria (SAC) with reference to *ASC NEPM (1999, amended 2013).*

7. SAMPLING AND ANALYSIS PROGRAM

A limited SAQP was developed to ensure that data collected for this PSI was representative and provided a robust basis for site assessment decisions considering the areas of environmental concerns identified in Section 6.

Preparation of the SAQP includes:

- Field Screening and Sampling Program;
- Sampling QA/QC;
- Sample Handling, Preservation and Storage Procedures;
- Analytical Program and Site Investigation Data Assessment

7.1 Field Screening and Sampling Program

7.1.1 Data Quality Plan

Investigations at the Site included a review of the preliminary site investigation prior to the commencement of work. The sampling regime for the investigation area of the site was in accordance with the requirements as outlined in the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites.

7.1.2 Visual Inspection

During the sampling works for the site contamination investigation report, a visual inspection was conducted to ensure no suspected asbestos containing materials (ACM) was present. The inspections for ACM were undertaken in a systematic, back and forth fashion over the site to identify suspected ACM.

7.1.3 Soil Sampling Techniques

All techniques used for soil sampling, are based on methods specified by the *National Environmental Protection (Assessment of Site Contamination) Measure (NEPM, 2013).* Experienced personnel of Geotesta collected all the samples for delivery to NATA accredited laboratory of Eurofins MGT. Soil samples for chemical analysis were in a judgemental sampling pattern based on site history and AECs.

7.1.4 Rationale for Sampling Program and Locations

The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience and history of the Site (Judgement Sampling Pattern). All historical investigations and anecdotal evidence

supported the sampling approach adopted and provided for samples to be collected in an unbiased manner. All the AECs including heavy metals, OCP/OPP, PCB, TRH, PAH, BTEX and asbestos concentrations have been targeted.

7.1.5 Sampling Program

Fieldwork for this investigation was carried out on 28th March 2022 and included the drilling of twelve (12) boreholes. The boreholes were advanced by vehicle-mounted auger to a maximum depth of 3.0m below ground level (bgl) as part of Geotechnical Site Investigation in conjunction with this detailed site investigation. The sampling locations are shown in Figure 4. Environmental soil samples were collected from the surface and at lower depths. Standard procedures were used for sampling and soil sampling methodology was completed to meet data quality objectives.

7.1.6 Soil Logging

Boreholes were logged by an experienced environmental/geotechnical engineer in accordance with Standard procedures. The borehole logs are presented in Appendix C.

7.2 Sampling Quality control (QC) / Quality Assurance (QA)

7.2.1 Sampling Procedures

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included a vehicle-mounted auger, stainless steel sampling shovel and a 7mm sieve. All equipment was decontaminated between samplings. The following measures have been utilized during the sampling to achieve the sampling quality controls.

7.2.1.1 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lid. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team and media collected.

7.2.1.2 Sample Tracking and Identification

All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records.

7.2.1.3 Decontamination

All equipment used in the sampling program, which includes a vehicle-mounted auger, stainless steel sampling shovel and a 7mm sieve were decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;

- Cleaning in a solution of Decon-90TM;

- Rinsing in clean demineralised water then wiping with clean lint free cloths.

7.2.1.4 Sample Transport

All samples were packed in ice from the time of collection and were transported under chain of custody from the Site to NATA registered laboratory identified as Eurofins MGT Services in Lane Cove. Collected samples were placed into an ice chilled cooler-box. During the project, the laboratory reported that all the samples arrived intact, with appropriate preservation medium and were analysed within their relative holding times for the respective analytes.

7.2.2 Analytical QA/QC Procedures

Quality control is achieved by utilising NATA accredited laboratories, using standard methods supported by internal duplicates, the checking of high, abnormal, or otherwise anomalous results against background and other chemical results for the sample concerned.

Quality assurance is achieved by confirming field or anticipated results based upon the comparison of field observations with laboratory results. One blind duplicate sample (BD) were taken for one-day sampling and was duplicate sample of parent samples EBH1. Trip blank and trip spikes supplied by Eurofins were incorporated into the QA/QC procedure.

The laboratory undertakes additional duplicate analysis as part of their internal quality assurance program. Chain of Custody documentations were used to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

8. SAMPLING PROGRAM

8.1 Field Investigation

Fieldwork for this investigation was carried out on 28 March 2022 and included drilling of twelve (12) boreholes. Boreholes were advanced by a vehicle-mounted auger to a maximum depth of 3.0 m below ground level (bgl). The sampling locations are shown in Figure 6. Environmental soil samples were collected from approximately 0.4 – 0.6 m below ground level (gbl) and held for selected analysis.

During the sampling works a visual inspection was also conducted to ensure no suspected asbestos containing materials (ACM) were visible. The inspections for asbestos were undertaken in a systematic, back and forth fashion over the site to identify suspected ACM.

8.2 Analytical Program

Samples were to be analysed to provide information for the characterisation of the most likely contaminated soils. This allowed the assessment of soils samples against the Site Acceptance Criteria. All analyses were to be carried out by NATA certified laboratory Eurofins MGT in accordance with Chain of Custody (CoC) instructions supplied by Geotesta. The samples were checked for heavy metals, OCP/OPP, PAH, TRH, BTEX and Asbestos. Summary of the soil laboratory analyses is presented in Table 5. The details of sample types and depths are provided in Table 6.

Table 5: Summary of soil laboratory program

COC	Number of samples analysed
Suite B7A[1]	12
Suite B15[2]	12
Asbestos	12

Notes:

[1]Suite B7A: **TRH, BTEX, PAH, Phenols, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Mercury**

[2]Suite B15: **OCP, OPP, PCB**

*Blind duplicate and EIL background sample tested for Heavy Metals

^pH, CEC, % Clay used for EIL determined using Sample# EBH1

Table 6: Samples Depth and Requested Lab Tests

Sample ID (EBH)	Depth (m)	Sample Type	Heavy Metals	Suite B7A	Suite B15	Asbestos
EBH1	~ 0.5–0.6	Silty Clay		x	x	x
EBH2	~ 0.4–0.5	Silty Clay		x	x	x
EBH3	~ 0.4–0.5	Silty Clay		x	x	x
EBH4	~ 0.4–0.5	Silty Clay		x	x	x
EBH5	~ 0.4–0.5	Silty Clay		x	x	x
EBH6	~ 0.4–0.5	Silty Clay		x	x	x
EBH7	~ 0.4–0.5	Silty Clay		x	x	x
EBH8	~ 0.4–0.5	Silty Clay		x	x	x
EBH9	~ 0.4–0.5	Silty Clay		x	x	x
EBH10	~ 0.4–0.5	Silty Clay		x	x	x
EBH11	~ 0.4–0.5	Silty Clay		x	x	x
EBH12	~ 0.4–0.5	Silty Clay		x	x	x

[1]Suite B7A: **TRH, BTEX, PAH, Phenols, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Mercury**
[2]Suite B15: **OCP, OPP, PCB**

Heavy Metals such as arsenic, copper, lead, etc., Total Recoverable Hydrocarbons - 1999 NEPM Fractions, TRH: Total recoverable hydrocarbons, PAH: Polycyclic aromatic hydrocarbons, BTEX: Benzene, toluene, ethyl benzene, xylene, Polychlorinated Biphenyls (PCB), Spectated Phenols, Total Recoverable Hydrocarbons - 2013 NEPM Fractions, Chromium (hexavalent), Cyanide (total) and Fluoride

9. ASSESSMENT CRITERIA

9.1 Heavy metals, PAH, PCB, OCP/OPP, Phenols and Asbestos

Based on the proposed development, Health Investigation levels (HIL) of Residential A with soil access (*ASC NEPM 1999, amended 2013*) have been adopted as the Soil Assessment Criteria (SAC) for metals, OCP, OPP and PAH for this investigation.

The bonded asbestos Health Screening Levels (HSLs) in soils (*NEPM 2013*) were also adopted for the Site. In addition to soil samples tested for asbestos, the 'presence/absence' of asbestos in soil material has been adopted as the SAC. Generic Ecological Investigation Levels (EILS) will also be used to assess the site to confirm suitability for the proposed residential land use.

Table 7 presents HILs for heavy metals, PAH, pesticides (OCP/OPP) and HSLs asbestos.

Table 7: Site Assessment Criteria for Soils (mg/kg)

Analytes	HILs-Residential A[1]	HSLs-Residential A[1]
Arsenic	100	--
Cadmium	20	--
Chromium (VI)	100	--
Copper	6000	--
Lead	300	--
Mercury (inorganic)	40	--
Nickel	400	--
Zinc	7400	--
Total PAHs	300	--
Benzo(a)PyreneTEQ	3	--
Phenols	3000	--
PCB	1	--
Pesticides: (Aldrin/DielDrin), Chlordane DDT+DDE+DDD Chlorpyrifos	 6 50 240 160	 -- -- --
Asbestos: Bonded ACM[2], Friable Asbestos[3] (FA), Asbestos Fines[4] (AF), Surface Asbestos (0.1m)	 -- -- --	 0.01% 0.001% No Visible

1- Criteria adopted for residential areas of the Site
2- Bonded ACM (bonded Asbestos) - asbestos-containing-material which is in sound condition and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). Bonded ACM refers to, in this instance, material that cannot pass a 7 mm x 7 mm sieve.
3- Fibrous Asbestos - friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This material is in a degraded condition such that it can be broken or crumbled by hand pressure.

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

9.2 Total Recoverable Hydrocarbons (TRH) and Benzene Toluene Ethylbenzene Xylene (BTEX)

The NEPM (2013) provides Health Screening Levels (HSLs), Ecological Screening Levels (ESLs) and Management Limits (MLs) for TRH fractions in soil based on concerns regarding ecological impacts, inhalation of vapours and direct contact with contaminant sources. The Fraction Number (i.e. hydrocarbon compound range) is identified and compared against the prescribed HSL, ESL and ML values. HSLs, ESLs and MLs take into consideration the followings:

- ✓ Carbon number range, indicated by a Fraction Number (F1, F2, F3 or F4);
- ✓ Type of soil (sand, silt or clay);
- ✓ Depth to the source of contamination;
- ✓ Intended land-use

For this Site, the intended land use is HSL A – Residential with garden/accessible soil and the soil type was clay within a depth range of 0-1.0 m, 1.0 - < 2.0 m and 2.0 - < 4.0 m. The criteria are summarised in Tables 8 and 9 below. They are obtained from Table 1A(3) (HSL A & HSL B), Table 1B(6) (fine soils) and Table 1B(7) (fine soils) in NEPM (2013).

Table 8: NEPM 2013 BTEX and TRH Criteria – HSL Criteria for 0-1m, 1-<2m and 2-<4m

Analytes	HSL-A(Clay) 0-1.0m	HSL-A (Clay) 1-<2.0m	HSL-A (Clay) 2-<4.0m
Benzene	0.7	1	2
Toluene	480	NL	NL
Ethylbenzene	NL	NL	NL
Xylene	110	310	NL
F1: C6-C10	50	90	150
F2:C10-C16	280	NL	NL
F3: C16-C34	N/A	N/A	N/A
F4: C34-C40	N/A	N/A	N/A

NL = Not Limiting (i.e. the soil vapour concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario).
N/A = Not applicable as F3 and F4 are non-volatile and hence are not of concern for vapour intrusion.
***'Fine' refers to the soil texture grading as per NEPM 1999.
1 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion* – 0-1.0m
2 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion* – 1-<2.0m
3 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion* – 2-<4.0m

Table 9: NEPM 2013 BTEX and TRH Criteria, ESL and ML Criteria for 0-1m, 1-<2m and 2-<4m

Analytes	NEPM 2013 Amendment TRH Criteria (mg/kg dry wt.) ESL (Fine*)	NEPM 2013 Amendment TRH Criteria (mg/kg dry wt.) ML (Fine*)
Benzene	65	
Toluene	105	
Ethylbenzene	125	
Xylene	45	
F1: C6-C10	180	800
F2:C10-C16	120	1000
F3: C16-C34	1300	3500
F4: C34-C40	5600	10000

'Fine' refers to the soil texture grading as per NEPM 1999.
1 NEPM 2013 Amendment Table 1B(6) – ESLs for TPH fractions, BTEX and benzo(a)pyrene in soil.
2 NEPM 2013 Amendment Table 1B(7) – Management Limits for TPH fractions F1-F4 in soil.

9.3 Ecological Investigation Levels

Ecological Investigation Levels (EILS) were also used to assess the site to confirm suitability for the proposed residential land use.

The current version of the NEPM (2013) specifies default EILs for arsenic, DDT and naphthalene.

NEPM (2013) specifies a methodology for the derivation of site-specific EILs for nickel, chromium III, copper, lead and zinc. The derivation process requires determination of ambient background concentrations (ABC) and added contaminant limits (ACLs) for these chemicals, and the EIL is then calculated as the ABC plus the ACL.

Sample# EBH5 soil properties were measured for the site-specific derivation of ACLs for Cr(III), Cu, Ni and Zn. Soil properties include:

- pH
- Cation Exchange Capacity (CEC)
- % Clay

Table 10 presents EILs derived from the measured soil properties in sample# EBH5 for aged soils in Urban Residential/Public Open Space and utilising ABC levels derived from sample# EIL.

Table 10: NEPM (2013) EILs for Urban Residential and Public Open Spaces

Analyte	pH	CEC^	Clay Content*	ABC	ACL	EIL
Zinc	6.1	8.5	-	23	400	423
Copper	6.1	8.5	-	-	190	190
Chromium (III)	-	-	27 %	65 [2]	400	465
Nickel	-	8.5	-	6	170	176
Lead	-	-	-	13	1100	1,113
Arsenic	-	-	-	-	-	100
DDT	-	-	-	-	-	180
Naphthalene	-	-	-	-	-	170

Note(s):

1. ABC = ambient background concentrations, ACL = added contaminant limits, ESL = ecological screening levels, CEC = cation exchange capacity;
2. Total Chromium utilised

10. RESULTS

10.1 Subsurface Conditions

A summary of sub-surface soil conditions encountered in the site is presented below:

Based on the fieldwork results, a topsoil/fill layer to a maximum depth of 1.0m, comprising of Silty Clay material, was observed in most boreholes.

The material below the topsoil/fill material was mostly Silty CLAY. Shale or Sandstone was encountered in most boreholes at the depths of 0.7m to 1.3m, except boreholes EBH1, EBH9, and EBH14.

Groundwater was not encountered in any of the boreholes.

10.2 Laboratory Analytical Results

Selected soil samples were analysed for the COPCs. A summary of analytical results follows. The laboratory documentation is presented in Appendix D.

10.2.1 Heavy Metals (HM)

A total of twelve (12) soil samples were analysed for heavy metals. The results of the laboratory results for the heavy metal components are presented in Table 11. The 95% UCL was calculated as a statistical analysis of the heavy metal detections including minimum, maximum and average along with the adopted SAC, and is shown in Table 12.

Table 11: Heavy Metal Detections in soil samples (mg/kg)

	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
EBH1[1]	**8.6**	<0.4	**21**	<5	**21**	<0.1	<5	**25**
EBH2	**7.0**	<0.4	**32**	<5	**14**	<0.1	**5.3**	**9.7**
EBH3	<2	<0.4	**5.3**	<5	**5.5**	<0.1	<5	**5.6**
EBH4	<2	<0.4	<5	<5	**8.8**	<0.1	<5	**13**
EBH5	**4.5**	<0.4	**17**	<5	**7.0**	<0.1	<5	<5
EBH6	**2.7**	<0.4	**9.1**	<5	**6.3**	<0.1	<5	**9.0**
EBH7	<2	<0.4	<5	<5	**6.8**	<0.1	<5	**9.5**
EBH8	<2	<0.4	<5	<5	**5.1**	<0.1	<5	<5
EBH9	<2	<0.4	**6.6**	<5	**12**	<0.1	<5	**13**
EBH10	**7.6**	<0.4	**34**	<5	**18**	<0.1	**6.1**	**13**

	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
EBH11	<2	<0.4	<5	<5	<5	<0.1	<5	<5
EBH12	<2	<0.4	<5	<5	<5	<0.1	<5	<5

Note- Chromium is total chromium and includes trivalent and hexavalent chromium.

Table 12: Statistical analysis of Heavy Metal Detections in Soil samples (mg/kg)

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Samples count	12	12	12	12	12	12	12	12
Minimum	2.2	-	5.3	-	5.1	-	5.3	5.6
Maximum	**8.6**	-	**34**	-	**21**	-	**6.1**	**23**
Average	3.1	-	11.5	-	9.1	-	3.0	9.0
Standard Deviation	3.00	#	11.76	#	5.93	#	#	6.64
95% Confidence	1.90	#	7.47	#	3.77	#	#	4.22
NEPM 2013 HIL	**100**	**20**	**100***	**6000**	**300**	**40**	**400**	**7400**
NEPM 2013 EIL	**100**	**--**	**465****	**190**	**1,113**	**--**	**176**	**423**
No. of HIL Exceedance	0	0	0	0	0	0	0	0

* Note: Hexavalent Chromium

** Note: Trivalent Chromium

[1] Note: Highest concentration in the duplicate and parent sample is excluded in sample count.

- insufficient data points

The laboratory analysis detected concentrations of Arsenic, Chromium, Lead, Nickel and Zinc within the soil samples recovered. All detected concentrations were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).

No concentrations of cadmium, copper, and mercury were detected and were therefore within the adopted site assessment criteria (HIL A and EIL).

10.2.2 Organochlorine Pesticides / Organophosphorus Pesticides (OCP/OPP)

A total of twelve (12) samples were analysed for a range of Organochlorine and Organophosphorus pesticides. Table 13 shows the OCP/OPP detections.

Table 13: OCP/OPP (Pesticides) Detections in soil samples (mg/kg)

	DDT+DDE +DDD	Aldrin and Dieldrin	Endrin	Chlordanes Total	Toxaphene	Chlorpyrifos
EBH 1	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 3	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 4	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 5	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 6	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 7	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 8	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 9	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 10	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 11	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH 12	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
NEPM 2013 HIL	**240**	**6**	**10**	**50**	**20**	**170**
No. of HIL Exceedance	0	0	0	0	0	0

No concentrations of OCP/OPP were detected within all the recovered samples and were therefore within the adopted Site Assessment Criteria (SAC).

10.2.3 Polycyclic Aromatic Hydrocarbons (PAH)

A total of twelve (12) samples were analysed for a range of PAH. Total PAH detections are shown in Table 14.

Table 14: Total PAH Detections in soil samples (mg/kg)

	Total PAH	Benzo(a) Pyrene TEQ (Upper Bound)	Naphthalene
EBH 1	< 0.5	1.2	< 0.5
EBH 2	< 0.5	1.2	< 0.5
EBH 3	< 0.5	1.2	< 0.5
EBH 4	< 0.5	1.2	< 0.5
EBH 5	< 0.5	1.2	< 0.5
EBH 6	< 0.5	1.2	< 0.5
EBH 7	< 0.5	1.2	< 0.5
EBH 8	< 0.5	1.2	< 0.5
EBH 9	< 0.5	1.2	< 0.5
EBH 10	< 0.5	1.2	< 0.5
EBH 11	< 0.5	1.2	< 0.5
EBH 12	< 0.5	1.2	< 0.5
NEPM 2013	**300**	**3**	**170**
No of NEPM Exceedance	**0**	**0**	**0**

TEQ- Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF. The TEQ is calculated by the laboratory and the upper bound is calculated assuming the concentrations of PAH are at laboratory reporting limits i.e., 0.5mg/kg

No concentrations of PAHs (Total) and Naphthalene were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted site assessment criteria (SAC).

10.2.4 Total Recoverable Hydrocarbons (TRH) - 2013 NEPM Fractions

A total of twelve (12) samples were analysed for TRH. TRH detections are presented in Table 15.

Table 15: Total TRH Detections in soil samples (mg/kg)

	F1: C6-C10	F2: C10-C16	F3: C16-C34	F4: C34-C40
EBH 1	< 20	< 50	< 100	< 100
EBH 2	< 20	< 50	< 100	< 100
EBH 3	< 20	< 50	< 100	< 100
EBH 4	< 20	< 50	< 100	< 100
EBH 5	< 20	< 50	< 100	< 100
EBH 6	< 20	< 50	< 100	< 100
EBH 7	< 20	< 50	< 100	< 100
EBH 8	< 20	< 50	< 100	< 100
EBH 9	< 20	< 50	< 100	< 100
EBH 10	< 20	< 50	< 100	< 100
EBH 11	< 20	< 50	< 100	< 100
EBH 12	< 20	< 50	< 100	< 100
HSL	**50**	**280**	**NL**	**NL**
ESL	**180**	**120**	**1300**	**5600**
ML	**800**	**1000**	**3500**	**10000**
No of HSL/ESL/ML Exceedance	**0**	**0**	**0**	**0**

No concentrations of TRHs were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted Site Criteria (HSL, ESL and ML).

10.2.5 Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) - 2013 NEPM Fractions

A total of twelve (12) samples were analysed for BTEX. BTEX detections are presented in Table 16.

Table 16: Total BTEX Detections in soil samples (mg/kg)

	Benzene	Toluene	Ethylbenzene	Xylene
EBH 1	< 0.1	< 0.1	< 0.1	< 0.3
EBH 2	< 0.1	< 0.1	< 0.1	< 0.3
EBH 3	< 0.1	< 0.1	< 0.1	< 0.3
EBH 4	< 0.1	< 0.1	< 0.1	< 0.3
EBH 5	< 0.1	< 0.1	< 0.1	< 0.3
EBH 6	< 0.1	< 0.1	< 0.1	< 0.3
EBH 7	< 0.1	< 0.1	< 0.1	< 0.3
EBH 8	< 0.1	< 0.1	< 0.1	< 0.3
EBH 9	< 0.1	< 0.1	< 0.1	< 0.3
EBH 10	< 0.1	< 0.1	< 0.1	< 0.3
EBH 11	< 0.1	< 0.1	< 0.1	< 0.3
EBH 12	< 0.1	< 0.1	< 0.1	< 0.3
HSL	**0.7**	**480**	**NL**	**110**
ESL	**65**	**105**	**125**	**45**
No. of HSL/ESL Exceedance	**0**	**0**	**0**	**0**

No concentrations of BTEXN were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the Site Criteria (HSL and ESL).

10.2.6 Phenols

A total of twelve (12) samples were analysed for Phenols. Phenol detections are presented in Table 17.

Table 17: Phenol Detections in soil samples (mg/kg)

	Phenols	Pentachlorophenol	Cresols
EBH 1	< 0.5	< 1	< 0.5
EBH 2	< 0.5	< 1	< 0.5
EBH 3	< 0.5	< 1	< 0.5
EBH 4	< 0.5	< 1	< 0.5
EBH 5	< 0.5	< 1	< 0.5
EBH 6	< 0.5	< 1	< 0.5
EBH 7	< 0.5	< 1	< 0.5
EBH 8	< 0.5	< 1	< 0.5
EBH 9	< 0.5	< 1	< 0.5
EBH 10	< 0.5	< 1	< 0.5
EBH 11	< 0.5	< 1	< 0.5
EBH 12	< 0.5	< 1	< 0.5
HSL	**3000**	**100**	**400**
No. of HSL/ESL Exceedance	**0**	**0**	**0**

No concentrations of Phenols were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted Site Criteria.

10.2.7 Other Organics – Polychlorinated Biphenyls (PCBs)

A total of twelve (12) samples were analysed for PCBs. PCB detections are presented in Table 18.

Table 18: PCB Detections in soil samples (mg/kg)

	Total PCBs
EBH 1	< 0.1
EBH 2	< 0.1
EBH 3	< 0.1
EBH 4	< 0.1
EBH 5	< 0.1
EBH 6	< 0.1
EBH 7	< 0.1
EBH 8	< 0.1
EBH 9	< 0.1
EBH 10	< 0.1
EBH 11	< 0.1
EBH 12	< 0.1
HSL	**1**
No. of HSL/ESL Exceedance	**0**

No concentrations of PCB were detected above the laboratory limits of reporting (LOR) within the recovered samples analysed and were therefore within the adopted Site Assessment Criteria (SAC).

10.2.8 Asbestos

All sample locations were visually assessed for the presence of visible asbestos containing materials (ACM) within the surface soils. No Asbestos was detected above the Reporting Limit of 0.001% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC).

10.3 Evaluation Analytical Quality Assurance

10.3.1 Duplicate Sample

The laboratory quality control measures are assessed based on a duplicate sample which was collected during the field works. The Relative Percentage Difference (RPD) values between primary/parent sample EBH1 and the duplicate sample BD1 was calculated to assess the results. A zero RPD means perfect agreement of results between the primary and duplicate sample whilst an RPD above 200% indicates total disagreement in results. Any value >50% RPD will be noted and discussed, as per Standards Australia requirements, with respect to its acceptability for inclusion in the dataset.

An acceptable RPD of 30% was adopted for this assessment, however, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.

The following table presents the RPD results for the duplicate collected and pairs of results obtained above the laboratory detection limits.

Table 19: Relative Percentage Difference against EBH1 and BD1

Chemical	EBH1	BD1	RPD%
Arsenic	**2.2**	**8.6**	**74**
Cadmium	<0.4	<0.4	-
Chromium	**7.1**	**21**	**66**
Copper	<5	<5	-
Lead	**15**	**21**	**29**
Mercury	<0.1	<0.1	-
Nickel	<5	<5	-
Zinc	**8.5**	**25**	**66**

Adapted from Eurofins Certificate of Analysis 876397-S (Appendix D)

The RPD for the duplicate samples analysed by the primary laboratory (Eurofins MGT) were between 29 % and 31 %. RPD values for Arsenic, Chromium, and Zinc were greater than 50% possibly due to the inhomogeneity nature of the soil samples. RPD values could not be determined for Cadmium, Copper, Mercury, and Nickel as the results were below the Limit of Reporting (LOR). The highest heavy metal concentration was utilised in the results table for sample# EBH1.

10.3.2 Trip Spike

The trip spike sample assesses the loss of volatile compounds through field handling and transport procedures. The trip spike is a sand sample spiked with a known concentration of BTEX by the analytical laboratory. The sample is transported to and from the site with the primary samples and is analysed to determine the percentage of BTEX recovered.

Upon analysis, the recovery rates were between 86% and 90% of the known concentration (refer to Table 20). Therefore, the field and transport procedures were considered satisfactory for minimising the potential loss of volatile compounds from the primary samples.

Table 20. Trip Spike Recovery (%)

Sample	Benzene	Toluene	Ethyl-benzene	o-Xylene	m+p Xylene
Trip Spike	110	110	110	110	110
Assessment Criteria	70 – 130	70 – 130	70 – 130	70 – 130	70 – 130

Adapted from Eurofins Certificate of Analysis 876397-S (Appendix D)

10.3.3 Trip Blank

The trip blank sample assesses the potential for the primary sample to be affected by external and environmental factors during transport between the site and laboratory. The trip blank sample consists of blank sand which is transported to and from the site and laboratory with the primary samples.

Upon analysis, no concentrations of BTEX were detected (refer to Table 21). As such, there is a minimal potential for cross-contamination to have occurred during the field and trip handling procedures.

Table 21. Trip Blank Sample Results (mg/kg)

Analyte	TB
Benzene	<0.1
Toluene	<0.1
Ethyl-benzene	<0.1
o-Xylene	<0.1
m+p Xylene	<0.2

Adapted from Eurofins Certificate of Analysis 876397-S (Appendix D)

11. DISCUSSION

The historical review indicated residential usage of the site since at least 1974. The historical information indicates that broken, old cars has been parked next to the side since 2015 and an open garbage dump has existed on the site since 2019. Based on the historical review of the site, the site can be considered as a medium risk of soil and or groundwater contamination. The site inspection indicated that open drainage channels and parked cars may pose environmental contamination concerns to the surrounding soil.

The soil sampling and analysis program conducted as part of the PSI indicates that there is no widespread significant soil contamination across the site. The analytical results for all chemicals assessed were below the adopted site assessment criteria for the assessment.

A summary of the laboratory results are presented as the following:

- The laboratory analysis detected concentrations of arsenic, chromium, lead, nickel and zinc within the soil samples recovered. All detected concentrations were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL). No concentrations of cadmium, copper, and mercury were detected and were therefore within the adopted site assessment criteria (HIL A and EIL).
- No concentrations of OCP/OPP were detected within all the recovered samples and were therefore within the adopted Site Assessment Criteria (SAC).
- No concentrations of PAHs (Total) and Naphthalene were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted site assessment criteria (SAC).
- No concentrations of TRHs were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted Site Criteria (HSL, ESL and ML).
- No concentrations of BTEXN were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the Site Criteria (HSL and ESL).
- No concentrations of Phenols were detected above the laboratory limits of reporting (LOR) within the samples analysed and were therefore within the adopted Site Criteria.
- No concentrations of PCB were detected above the laboratory limits of reporting (LOR) within the recovered samples analysed and were therefore within the adopted Site Assessment Criteria (SAC).

- No Asbestos was detected above the Reporting Limit of 0.001% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC).

12. CONCLUSIONS AND RECOMMENDATIONS

The PSI conducted at 21-33 Owlpen Lane, Farley, NSW 2320 was undertaken by Geotesta to investigate the likelihood of the presence of contamination on the site.

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending an additional Data Gap Contamination Assessment is undertaken.
- Due to the existence of a data-gap in this investigation, a further assessment post demolition of the existing structures/dwellings is required to address further potential AECs identified previously and to determine if any contamination hotspots exist within the footprint of the existing sheds and dwellings. The Gap Assessment scope must also include the following:

    - Any stockpiles and areas under stockpiled materials that were not assessed at the time of the PSI or are new to site, will require sampling as part of the Data Gap Assessment.

DOCUMENT CONTROL

Date	Version	Report Prepared By:	Report Reviewed and Issued by:
05 July 2022	Rev (0)	**Ngoc Thang Pham** BEng MSc PhD Geological Engineer	**Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant

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Eurofins, 30 March 2022, Certificate of Analysis 876397-S, prepared for GEOTESTA

Eurofins, 30 March 2022, Certificate of Analysis 876397-AID, prepared for GEOTESTA

Lotsearch, 33 Owlpen Lane, Farley, NSW 2320, Reference: LS031553 EP, 28 April 2022

Information about this report

The report contains the results of a contamination investigation conducted for a specific purpose and client. The results should not be used by other parties, or for other purposes, as they may contain neither adequate nor appropriate information. In particular, the investigation does not cover contamination issues unless specifically required to do so by the client.

Test Hole Logging

The information on the test hole logs (boreholes, test pits, exposures etc.) is based on a visual and tactile assessment, except at the discrete locations where test information is available (field and/or laboratory results). The test hole logs include both factual data and inferred information.

Groundwater

Unless otherwise indicated, the water levels presented on the test hole logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The actual groundwater level may differ from this recorded level depending on material permeability (i.e. depending on response time of the measuring instrument). Further, variations of this level could occur with time due to such effects as seasonal, environmental and tidal fluctuations or construction activities. Confirmation of groundwater levels, phreatic surfaces or piezometric pressures can only be made by appropriate instrumentation techniques and monitoring programmes.

Interpretation of Results

The discussion or recommendations contained within this report normally are based on a site evaluation from discrete test hole data. Generalized, idealized or inferred subsurface conditions (including any geotechnical cross-sections) have been assumed or prepared by interpolation and/or extrapolation of these data. As such these conditions are an interpretation and must be considered as a guide only.

Change in Conditions

Local variations or anomalies in the generalized ground conditions do occur in the natural environment, particularly between discrete test hole locations. Additionally, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Furthermore, conditions may change at the site from those encountered at the time of the geotechnical investigation through construction activities and constantly changing natural forces.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed or reported should be referred to GEOTESTA for appropriate assessment and comment.

Environmental Verification

Verification of the environmental/contamination assumptions and/or model is an integral part of the design process-investigation, construction verification, and performance monitoring. Variability is a feature of the natural environment and, in many instances, verification of soil or rock quality, or foundation levels, is required. There may be a requirement to extend foundation depths, to modify a foundation system or to conduct monitoring as a result of this natural variability. Allowance for verification by geotechnical personnel accordingly should be recognized and programmed during construction.

Reproduction of Reports

Where it is desired to reproduce, the information contained in our contamination report, or other technical information, for the inclusion in contract documents or engineering specification of the subject development, such reproductions should include at least all of the relevant test hole and test data, together with the appropriate standard description sheets and remarks made in the written report of a factual or descriptive nature.

Figure 5: Areas of Environmental Concerns

Figure 6: Environmental Soil Sampling Locations

Appendix A

Aerial Photographs

Aerial Photo 1974

Aerial Photo 1984

Aerial Photo 1987

Aerial Photo 1993

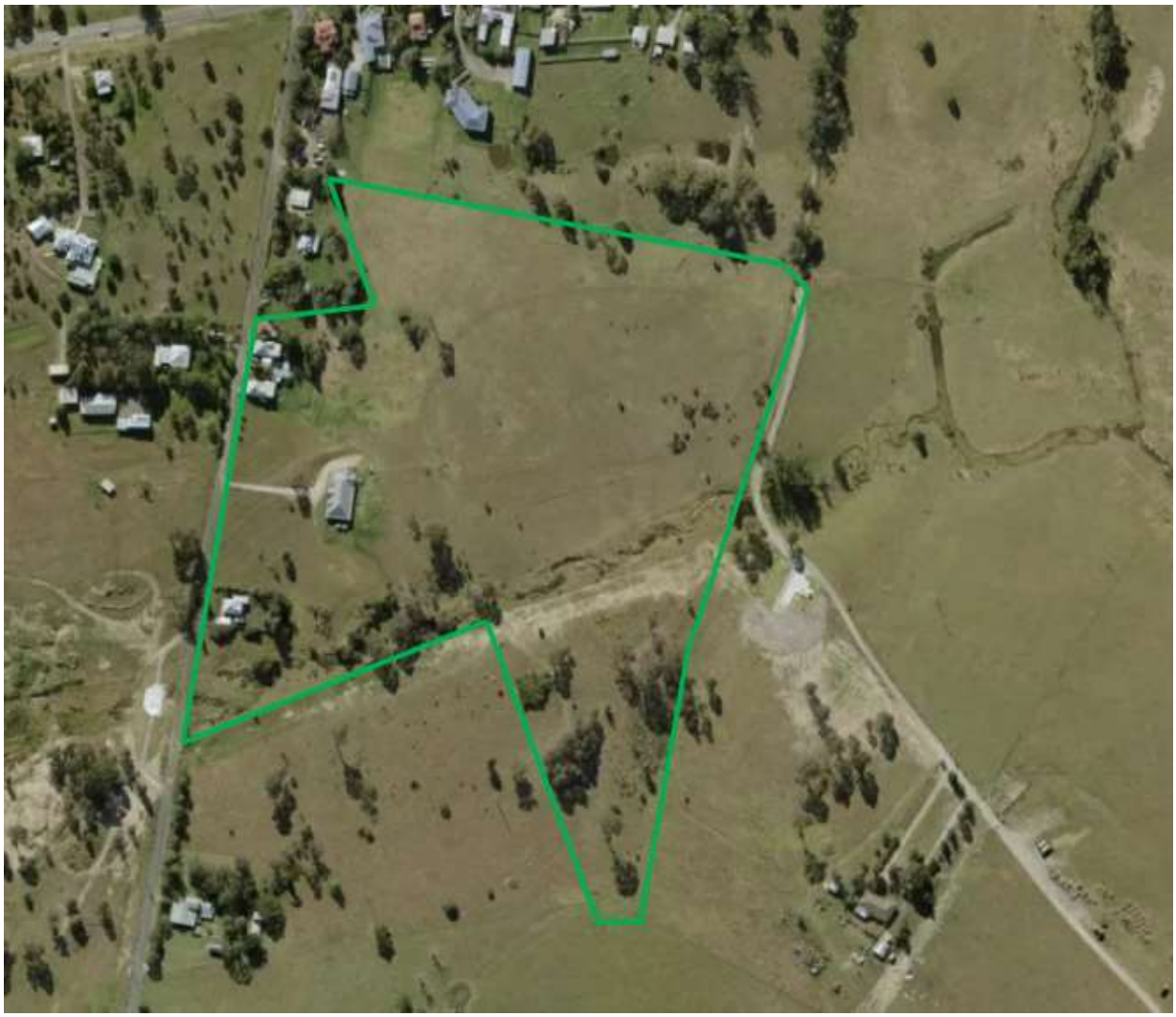
Aerial Photo 1998

Aerial Photo 2007

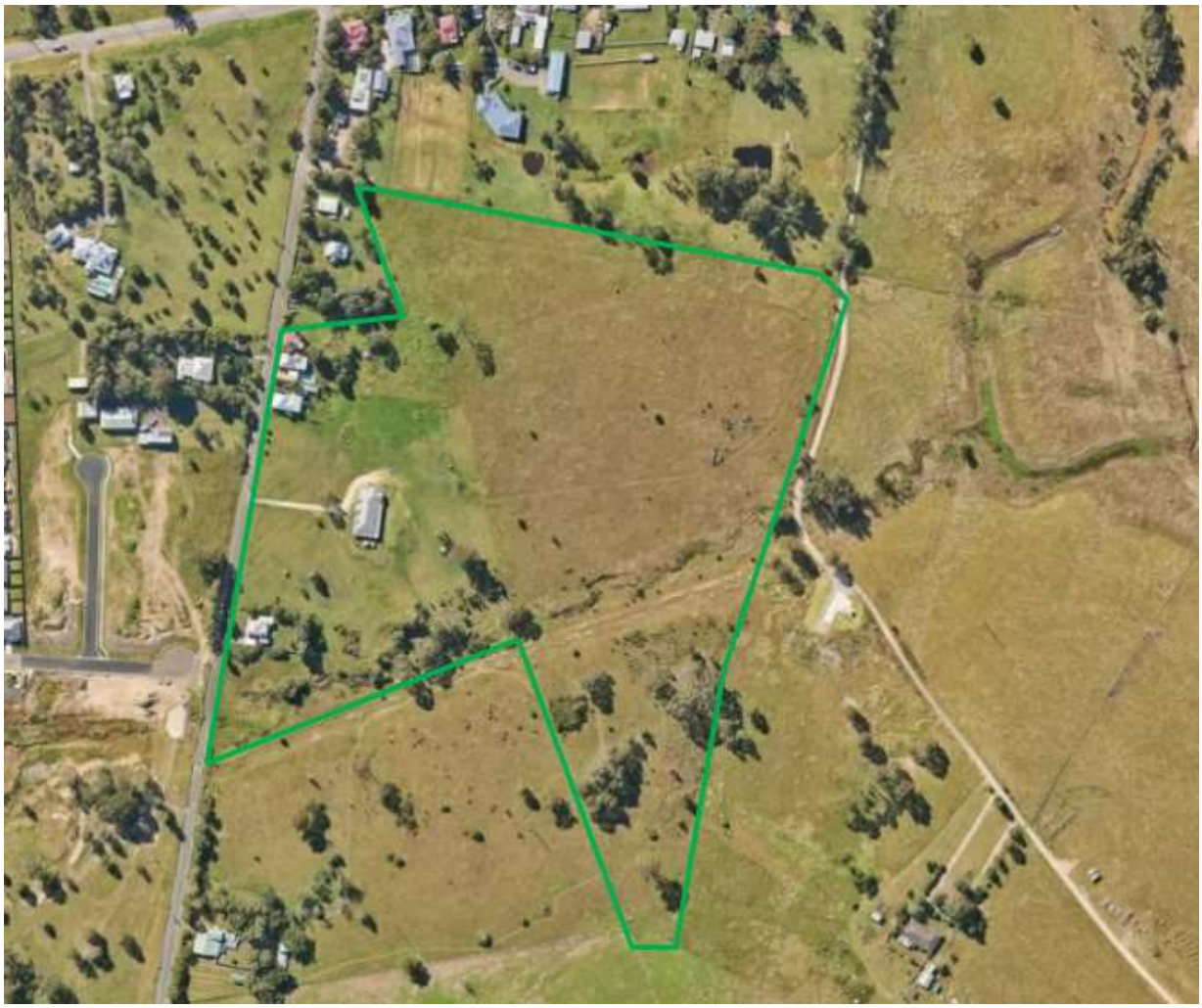
Aerial Photo 2010

Aerial Photo 2015

Aerial Photo 2019



Aerial Photo 2021



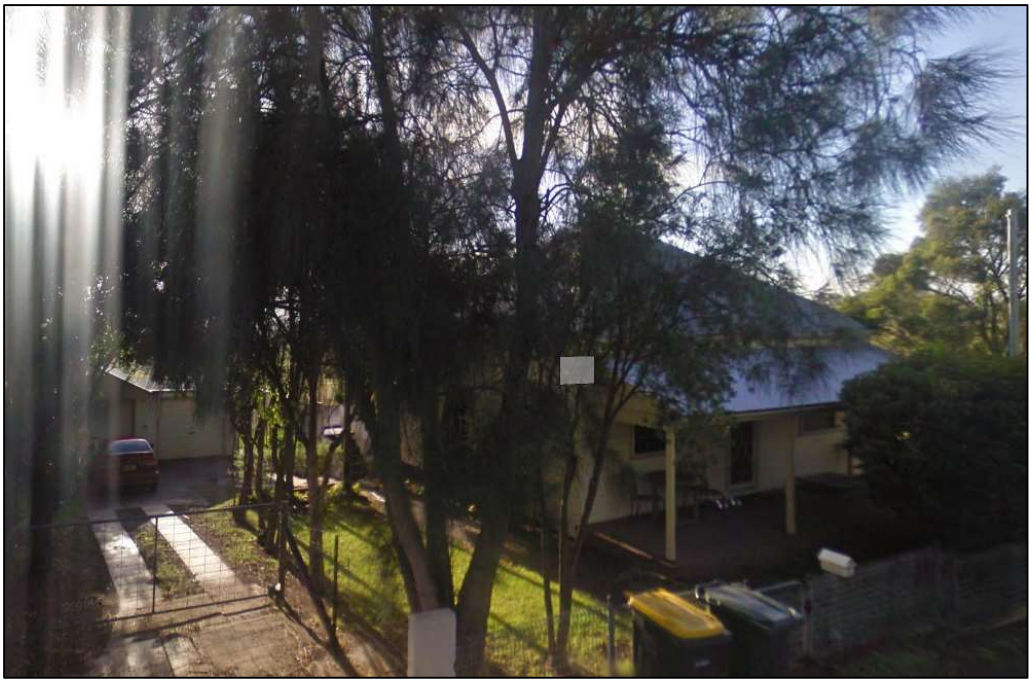
Aerial Photo 2022

Appendix B

Photographic Log

Photograph 1: 21 Owlpen Lane, Farley, NSW 2320, viewed from the northwest of the dwelling.

Photograph 2: 23 Owlpen Lane, Farley, NSW 2320, viewed from the southwest of the dwelling.



Photograph 3: 25 Owlpen Lane, Farley, NSW 2320, viewed from the northwest of the dwelling.

Photograph 4: 33 Owlpen Lane, Farley, NSW 2320, viewed from the northeast of the dwelling.

Photograph 5: 41 Owlpen Lane, Farley, NSW 2320, viewed from the northwest of the dwelling.

Appendix C

Borehole Logs

EBH1, BD1 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.5	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist-Wet	Poor Compacted	
0.5-3.0	CI	Silty CLAY: medium plasticity, yellow brown; trace medium-grained sand	Moist-Wet	Firm to Hard	EBH1 and BD1 collected at 0.5-0.6m. Groundwater was not encountered.

EBH2 – Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, black brown	Moist	Poor Compacted	
0.2-1.1	CI	Silty CLAY: low – medium plasticity, yellow brown, mottled red	Moist	Stiff	EBH2 collected at 0.4-0.5m Groundwater was not encountered
1.1-1.3		SHALE: grey, very low strength, extremely weathered	Moist	Very Low Strength	

EBH3 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.3	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist	Poorly Compacted	
0.3-1.0	CI	Silty CLAY: medium plasticity, yellow brown	Moist	Firm	EBH3 collected at 0.4-0.5m Groundwater was not encountered
1.0-1.1		SHALE: grey, very low strength, extremely weathered, trace sandstone pieces.	Moist	Very Low Strength	

EBH4 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.3	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist	Poorly Compacted	
0.3-1.3	CI	Silty CLAY: medium plasticity, orange brown	Moist	Stiff	EBH4 collected at 0.4-0.5m. Groundwater was not encountered.
1.3-1.6		SHALE: grey, very low strength, extremely weathered	Moist	Very Low Strength	

EBH5 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist	Poorly Compacted	
0.2-0.9	CI	Silty CLAY: medium plasticity, yellow brown, mottled red grey; trace ironstone pieces	Moist	Firm to Very Stiff	EBH5 collected at 0.4-0.5m. Groundwater was not encountered.
0.9-1.0		SHALE: brown, very low strength, extremely weathered, trace sandstone pieces	Moist	Very Low Strength	

EBH6 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.3	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist	Poorly Compacted	
0.3-0.9	CI	Silty CLAY: orange brown, mottled red grey	Moist	Firm to Very Stiff	EBH6 collected at 0.4-0.5m. Groundwater was not encountered.
0.9-1.0		SHALE: grey, with red planar layers, extremely weathered, trace sandstone pieces	Moist	Very Low Strength	

EBH7 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist	Poorly Compacted	
0.2-1.0	CI	Silty CLAY: medium plasticity, orange brown	Dry-Moist	Firm to Very Stiff	EBH7 collected at 0.4-0.5m. Groundwater was not encountered.
1.0-1.1		SHALE: grey, extremely weathered	Moist	Very Low Strength	

EBH8 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, dark brown	Moist	Poorly Compacted	
0.2-1.3	CI	Silty CLAY: medium plasticity, orange brown, mottled red grey	Moist	Firm to Very Stiff	EBH8 collected at 0.4-0.5m. Groundwater was not encountered.
1.3-1.4		SHALE: grey, low plasticity, extremely weathered	Moist	Very Low Strength	

EBH9 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.3	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, dark brown	Moist	Poorly Compacted	
0.3-1.8	CI	Silty CLAY: medium plasticity, brown	Moist	Firm to Very Stiff	EBH9 collected at 0.4-0.5m. Groundwater was not encountered.

EBH10 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.3	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown, trace gravel	Moist	Poorly Compacted	
0.3-0.9	CI	Silty CLAY: medium plasticity, orange brown	Moist	Firm to Very Stiff	EB10 collected at 0.4-0.5m. Groundwater was not encountered.
1.3-1.4		SHALE: grey, low plasticity, extremely weathered	Moist	Very Low Strength	

EBH11 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.3	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown, trace gravel	Moist	Poorly Compacted	
0.3-1.5	CI	Silty CLAY: medium plasticity, grey	Moist-Wet	Firm to Hard	EB11 collected at 0.4-0.5m. Groundwater was not encountered.
1.5-1.7		SHALE: grey, extremely weathered, trace sandstone, indistinct laminations	Moist-Wet	Very Low Strength	

EBH12 & EIL – Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL/FILL: Silty CLAY, medium plasticity, brown	Moist	Poorly Compacted	
0.2-0.7	CI	Silty CLAY: low - medium plasticity, yellow brown; trace sand	Moist	Stiff	EBH12 and EIL collected at 0.4-0.5m. Groundwater was not encountered.
0.7-0.8		SANDSTONE: grey brown, extremely weathered	Moist	Very Low Strength	

Appendix D

Laboratory Documentation

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
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Phone: +617 3902 4600
Email: EnviroSampleQLD@eurofins.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: EnviroSampleVic@eurofins.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name :	Geotesta	Contact Name:	Victor Kirpichnikov / Dr. Mohammad Bazyar	Purchase Order :	NE1165
Office Address :	Unit 06, 20-22 Foundry Road, Seven Hills 2147	Project Manager :	Victor Kirpichnikov / Dr. Mohammad Bazyar	PROJECT Number :	NE1165
Phone:	452454418	Email for results :	vk@geotesta.com.au, mb@geotesta.co	PROJECT Name :	21-33 Owlpen Lane Farely

COC Number :
Eurofins | mgt quote ID :
Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Analytes

	Sample ID	Date	Matrix	B7A & B15	Asbestos ID in soil - NEPM & WA Guidelines - 0.001% w/w	Heavy Metal M8	CEC	pH	% clay	BTEX and Volatile TRH's	Containers: 500P	250P	125P	60ml plastic	40mL vial	200ml glass	Jar	Zip lock bag	Sample comments:
1	EBH1	29/03/2022	Soil	X	X												X	X	7mm sieved for
2	EBH2	29/03/2022	Soil	X	X												X	X	7mm sieved for
3	EBH3	29/03/2022	Soil	X	X												X	X	7mm sieved for
4	EBH4	29/03/2022	Soil	X	X												X	X	7mm sieved for
5	EBH5	29/03/2022	Soil	X	X		X	X	X								X	X	7mm sieved for
6	EBH6	29/03/2022	Soil	X	X												X	X	7mm sieved for
7	EBH7	29/03/2022	Soil	X	X												X	X	7mm sieved for
8	EBH8	29/03/2022	Soil	X	X												X	X	7mm sieved for
9	EBH9	29/03/2022	Soil	X	X												X	X	7mm sieved for
10	EBH10	29/03/2022	Soil	X	X												X	X	7mm sieved for
11	EBH11	29/03/2022	Soil	X	X												X	X	7mm sieved for
12	EBH12	29/03/2022	Soil	X	X												X	X	7mm sieved for
13	BD1	29/03/2022	Soil			X											X		
14	EIL	29/03/2022	Soil			X											X		
15	TripSpike and Trip Blank	29/03/2022	QAQC							X									2 x QAQC vials
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			
24																			
25																			

Laboratory Staff

Relinquished By: Victor Kirpichnikov
Date & Time:: 29/03/22
Signature:

Received By: Acay
Date & Time: 30/03 5:00pm
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 7.1

Report number: 876397.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Attention: **Victor Kirpichnikov (GEOTESTA)**

Report **876397-S**
Project name 21-33 OWLPEN LANE FARELY
Project ID NE1165
Received Date Mar 30, 2022

Client Sample ID			**EBH1**	**EBH2**	**EBH3**	**EBH4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Ap0000725**	**S22-Ap0000726**	**S22-Ap0000727**	**S22-Ap0000728**
Date Sampled			**Mar 29, 2022**	**Mar 29, 2022**	**Mar 29, 2022**	**Mar 29, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	114	74	99	106
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			EBH1	EBH2	EBH3	EBH4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000725	S22-Ap0000726	S22-Ap0000727	S22-Ap0000728
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 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
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	116	119	103	108
p-Terphenyl-d14 (surr.)	1	%	107	104	104	100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	125	113	110
Tetrachloro-m-xylene (surr.)	1	%	115	114	109	111
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			EBH1	EBH2	EBH3	EBH4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000725	S22-Ap0000726	S22-Ap0000727	S22-Ap0000728
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	104	106	98	100
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	125	113	110
Tetrachloro-m-xylene (surr.)	1	%	115	114	109	111
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			EBH1	EBH2	EBH3	EBH4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000725	S22-Ap0000726	S22-Ap0000727	S22-Ap0000728
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	105	101	95	87
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	2	mg/kg	2.2	7.0	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.1	32	5.3	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	15	14	5.5	8.8
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	5.3	< 5	< 5
Zinc	5	mg/kg	8.5	9.7	5.6	13
% Moisture	1	%	19	24	33	30

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000729	S22-Ap0000730	S22-Ap0000731	S22-Ap0000732
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000729	S22-Ap0000730	S22-Ap0000731	S22-Ap0000732
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	108	109	69	80
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 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
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	112	109	102	108
p-Terphenyl-d14 (surr.)	1	%	103	97	98	102
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000729	S22-Ap0000730	S22-Ap0000731	S22-Ap0000732
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	113	112	106	120
Tetrachloro-m-xylene (surr.)	1	%	113	110	103	112
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	102	102	100	109

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000729	S22-Ap0000730	S22-Ap0000731	S22-Ap0000732
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	113	112	106	120
Tetrachloro-m-xylene (surr.)	1	%	113	110	103	112
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	99	93	88	88
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	2	mg/kg	4.5	2.7	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	17	9.1	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	7.0	6.3	6.8	5.1
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	9.0	9.5	< 5
% Moisture	1	%	19	25	34	35
% Clay	1	%	27	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	54	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.1	-	-	-

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000729	S22-Ap0000730	S22-Ap0000731	S22-Ap0000732
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	8.5	-	-	-

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000733	S22-Ap0000734	S22-Ap0000735	S22-Ap0000736
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	146	112	101	88
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 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
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000733	S22-Ap0000734	S22-Ap0000735	S22-Ap0000736
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	101	95	96	86
p-Terphenyl-d14 (surr.)	1	%	92	90	94	105
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	102	93	98	77
Tetrachloro-m-xylene (surr.)	1	%	104	96	101	100
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000733	S22-Ap0000734	S22-Ap0000735	S22-Ap0000736
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	100	81	88	69
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	102	93	98	77
Tetrachloro-m-xylene (surr.)	1	%	104	96	101	100
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000733	S22-Ap0000734	S22-Ap0000735	S22-Ap0000736
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	87	83	84	86
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	2	mg/kg	< 2	7.6	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.6	34	< 5	< 5
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	12	18	< 5	< 5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	6.1	< 5	< 5
Zinc	5	mg/kg	13	13	< 5	< 5
% Moisture	1	%	31	26	30	34

Client Sample ID			BD1	EIL	TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000737	S22-Ap0000738	S22-Ap0000739	S22-Ap0000740
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	-	< 20
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	137
Heavy Metals						
Arsenic	2	mg/kg	8.6	15	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	21	65	-	-
Copper	5	mg/kg	< 5	< 5	-	-
Lead	5	mg/kg	21	13	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	< 5	6.3	-	-
Zinc	5	mg/kg	25	23	-	-

Client Sample ID			BD1	EIL	TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Ap0000737	S22-Ap0000738	S22-Ap0000739	S22-Ap0000740
Date Sampled			Mar 29, 2022	Mar 29, 2022	Mar 29, 2022	Mar 29, 2022
Test/Reference	LOR	Unit				
% Moisture	1	%	19	21	-	-
TRH C6-C10	1	%	-	-	110	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	110	-
TRH C6-C9	1	%	-	-	110	-
BTEX						
Benzene	1	%	-	-	110	-
Ethylbenzene	1	%	-	-	110	-
m&p-Xylenes	1	%	-	-	110	-
o-Xylene	1	%	-	-	110	-
Toluene	1	%	-	-	110	-
Xylenes - Total	1	%	-	-	110	-
4-Bromofluorobenzene (surr.)	1	%	-	-	136	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Apr 05, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Apr 05, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Apr 05, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Apr 01, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
% Clay	Brisbane	Apr 06, 2022	14 Days
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Apr 05, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	Apr 05, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Apr 07, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 21-33 OWLPEN LANE FARELY
Project ID: NE1165

Order No.:
Report #: 876397
Phone: 1300852 216
Fax:

Received: Mar 30, 2022 5:00 PM
Due: Apr 6, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X									
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	EBH1	Mar 29, 2022		Soil	S22-Ap0000725		X			X	X		X		
2	EBH2	Mar 29, 2022		Soil	S22-Ap0000726		X			X	X		X		
3	EBH3	Mar 29, 2022		Soil	S22-Ap0000727		X			X	X		X		
4	EBH4	Mar 29, 2022		Soil	S22-Ap0000728		X			X	X		X		
5	EBH5	Mar 29, 2022		Soil	S22-Ap0000729	X	X	X		X	X	X	X		
6	EBH6	Mar 29, 2022		Soil	S22-		X			X	X		X		

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 21-33 OWLPEN LANE FARELY
Project ID: NE1165

Order No.:
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Phone: 1300852 216
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Received: Mar 30, 2022 5:00 PM
Due: Apr 6, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X									
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
					Ap0000730										
7	EBH7	Mar 29, 2022		Soil	S22-Ap0000731		X			X	X		X		
8	EBH8	Mar 29, 2022		Soil	S22-Ap0000732		X			X	X		X		
9	EBH9	Mar 29, 2022		Soil	S22-Ap0000733		X			X	X		X		
10	EBH10	Mar 29, 2022		Soil	S22-Ap0000734		X			X	X		X		
11	EBH11	Mar 29, 2022		Soil	S22-Ap0000735		X			X	X		X		
12	EBH12	Mar 29, 2022		Soil	S22-Ap0000736		X			X	X		X		

eurofins | Environment Testing

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Project Name: 21-33 OWLPEN LANE FARELY
Project ID: NE1165

Order No.:
Report #: 876397
Phone: 1300852 216
Fax:

Received: Mar 30, 2022 5:00 PM
Due: Apr 6, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X									
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
13	BD1	Mar 29, 2022		Soil	S22-Ap0000737				X		X				
14	EIL	Mar 29, 2022		Soil	S22-Ap0000738				X		X				
15	TRIP SPIKE	Mar 29, 2022		Soil	S22-Ap0000739										X
16	TRIP BLANK	Mar 29, 2022		Soil	S22-Ap0000740									X	
Test Counts						1	12	1	2	12	14	1	12	1	1

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

Units

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

Terms

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

QC - Acceptance Criteria

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

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

Results <10 times the LOR: No Limit

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

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

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

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

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

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QC Data General Comments

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

Quality Control Results

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

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

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Total Non-Halogenated Phenol*	mg/kg	< 0			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	81			70-130	Pass	
TRH C10-C14	%	76			70-130	Pass	
Naphthalene	%	104			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
TRH C6-C10	%	80			70-130	Pass	
TRH C6-C10	%	105			70-130	Pass	
TRH >C10-C16	%	75			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	70			70-130	Pass	
Toluene	%	80			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	%	81			70-130	Pass	
m&p-Xylenes	%	82			70-130	Pass	
o-Xylene	%	81			70-130	Pass	
Xylenes - Total*	%	82			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	72			70-130	Pass	
Acenaphthylene	%	72			70-130	Pass	
Anthracene	%	73			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	72			70-130	Pass	
Benzo(b&j)fluoranthene	%	122			70-130	Pass	
Benzo(g.h.i)perylene	%	71			70-130	Pass	
Benzo(k)fluoranthene	%	70			70-130	Pass	
Chrysene	%	71			70-130	Pass	
Dibenz(a.h)anthracene	%	71			70-130	Pass	
Fluoranthene	%	71			70-130	Pass	
Fluorene	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	71			70-130	Pass	
Naphthalene	%	71			70-130	Pass	
Phenanthrene	%	122			70-130	Pass	
Pyrene	%	72			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	117			70-130	Pass	
4.4'-DDD	%	112			70-130	Pass	
4.4'-DDE	%	123			70-130	Pass	
4.4'-DDT	%	119			70-130	Pass	
a-HCH	%	114			70-130	Pass	
Aldrin	%	123			70-130	Pass	
b-HCH	%	123			70-130	Pass	
d-HCH	%	119			70-130	Pass	
Dieldrin	%	120			70-130	Pass	
Endosulfan I	%	121			70-130	Pass	
Endosulfan II	%	115			70-130	Pass	
Endosulfan sulphate	%	115			70-130	Pass	
Endrin	%	121			70-130	Pass	
Endrin aldehyde	%	114			70-130	Pass	
Endrin ketone	%	120			70-130	Pass	
g-HCH (Lindane)	%	122			70-130	Pass	
Heptachlor	%	122			70-130	Pass	
Heptachlor epoxide	%	116			70-130	Pass	
Hexachlorobenzene	%	128			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	119			70-130	Pass	
Dimethoate	%	115			70-130	Pass	
Ethion	%	111			70-130	Pass	
Fenitrothion	%	107			70-130	Pass	
Methyl parathion	%	124			70-130	Pass	
Mevinphos	%	113			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1016	%	116			70-130	Pass	
Aroclor-1260	%	124			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	127			25-140	Pass	
2.4-Dichlorophenol	%	129			25-140	Pass	
2.4.5-Trichlorophenol	%	111			25-140	Pass	
2.4.6-Trichlorophenol	%	98			25-140	Pass	
2.6-Dichlorophenol	%	126			25-140	Pass	
4-Chloro-3-methylphenol	%	111			25-140	Pass	
Pentachlorophenol	%	116			25-140	Pass	
Tetrachlorophenols - Total	%	71			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	92			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	73			25-140	Pass	
2-Nitrophenol	%	120			25-140	Pass	
2.4-Dimethylphenol	%	89			25-140	Pass	
2-Methylphenol (o-Cresol)	%	85			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	79			25-140	Pass	
4-Nitrophenol	%	107			25-140	Pass	
Dinoseb	%	74			25-140	Pass	
Phenol	%	127			25-140	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Chromium	%	105			80-120	Pass	
Copper	%	109			80-120	Pass	
Lead	%	110			80-120	Pass	
Mercury	%	120			80-120	Pass	
Nickel	%	106			80-120	Pass	
Zinc	%	109			80-120	Pass	
LCS - % Recovery							
% Clay	%	95			70-130	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-Ma65904	NCP	%	74			70-130	Pass	
TRH >C10-C16	S22-Ma65904	NCP	%	71			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Ma65222	NCP	%	105			70-130	Pass	
Acenaphthylene	S22-Ma65222	NCP	%	103			70-130	Pass	
Anthracene	S22-Ma65222	NCP	%	97			70-130	Pass	
Benz(a)anthracene	S22-Ma65222	NCP	%	108			70-130	Pass	
Benzo(a)pyrene	S22-Ma65222	NCP	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Ma65222	NCP	%	111			70-130	Pass	
Benzo(g.h.i)perylene	S22-Ma65222	NCP	%	105			70-130	Pass	
Benzo(k)fluoranthene	S22-Ma65222	NCP	%	100			70-130	Pass	
Chrysene	S22-Ma65222	NCP	%	101			70-130	Pass	
Dibenz(a.h)anthracene	S22-Ma65222	NCP	%	106			70-130	Pass	
Fluoranthene	S22-Ma65222	NCP	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	S22-Ma65222	NCP	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ma65222	NCP	%	104			70-130	Pass	
Naphthalene	S22-Ma65222	NCP	%	104			70-130	Pass	
Phenanthrene	S22-Ma65222	NCP	%	110			70-130	Pass	
Pyrene	S22-Ma65222	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Ma65222	NCP	%	99			70-130	Pass	
4.4'-DDD	S22-Ma65222	NCP	%	103			70-130	Pass	
4.4'-DDE	S22-Ma65222	NCP	%	104			70-130	Pass	
4.4'-DDT	S22-Ma65222	NCP	%	110			70-130	Pass	
a-HCH	S22-Ma65222	NCP	%	98			70-130	Pass	
Aldrin	S22-Ma65222	NCP	%	81			70-130	Pass	
b-HCH	S22-Ma65222	NCP	%	102			70-130	Pass	
d-HCH	S22-Ma65222	NCP	%	98			70-130	Pass	
Dieldrin	S22-Ma65222	NCP	%	98			70-130	Pass	
Endosulfan I	S22-Ma65222	NCP	%	104			70-130	Pass	
Endosulfan II	S22-Ma65222	NCP	%	95			70-130	Pass	
Endosulfan sulphate	S22-Ma65222	NCP	%	93			70-130	Pass	
Endrin	S22-Ma65222	NCP	%	108			70-130	Pass	
Endrin aldehyde	S22-Ma65222	NCP	%	93			70-130	Pass	
Endrin ketone	S22-Ma65222	NCP	%	94			70-130	Pass	
g-HCH (Lindane)	S22-Ma65222	NCP	%	108			70-130	Pass	
Heptachlor	S22-Ma65222	NCP	%	117			70-130	Pass	
Heptachlor epoxide	S22-Ma65222	NCP	%	101			70-130	Pass	
Hexachlorobenzene	S22-Ma65222	NCP	%	109			70-130	Pass	
Methoxychlor	S22-Ma65222	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S22-Ma65222	NCP	%	109			70-130	Pass	
Dimethoate	S22-Ap0001091	NCP	%	122			70-130	Pass	
Ethion	S22-Ma65222	NCP	%	106			70-130	Pass	
Fenitrothion	S22-Ma65222	NCP	%	98			70-130	Pass	
Methyl parathion	S22-Ma65222	NCP	%	116			70-130	Pass	
Mevinphos	S22-Ma65222	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S22-Ma65222	NCP	%	95			70-130	Pass	
Aroclor-1260	S22-Ma65222	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N22-Ma62797	NCP	%	91			75-125	Pass	
Cadmium	N22-Ma62797	NCP	%	85			75-125	Pass	
Chromium	N22-Ma62797	NCP	%	166			75-125	Fail	Q08
Copper	N22-Ma62797	NCP	%	95			75-125	Pass	
Lead	N22-Ma62797	NCP	%	112			75-125	Pass	
Mercury	N22-Ma62797	NCP	%	105			75-125	Pass	
Nickel	N22-Ma62797	NCP	%	101			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Ap0000733	CP	%	91			70-130	Pass	
Naphthalene	S22-Ap0000733	CP	%	74			70-130	Pass	
TRH C6-C10	S22-Ap0000733	CP	%	92			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX				Result 1					
Benzene	S22-Ap0000733	CP	%	92			70-130	Pass	
Toluene	S22-Ap0000733	CP	%	81			70-130	Pass	
Ethylbenzene	S22-Ap0000733	CP	%	86			70-130	Pass	
m&p-Xylenes	S22-Ap0000733	CP	%	95			70-130	Pass	
o-Xylene	S22-Ap0000733	CP	%	92			70-130	Pass	
Xylenes - Total*	S22-Ap0000733	CP	%	94			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S22-Ma65903	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-Ma65903	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-Ma65903	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S22-Ma65903	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-Ma65903	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Ma65903	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N22-Ma62795	NCP	mg/kg	4.6	2.7	58	30%	Fail	Q15
Cadmium	N22-Ma62795	NCP	mg/kg	0.9	1.3	28	30%	Pass	
Chromium	N22-Ma62795	NCP	mg/kg	360	720	26	30%	Pass	
Copper	N22-Ma62795	NCP	mg/kg	62	82	62	30%	Fail	Q02
Lead	N22-Ma62795	NCP	mg/kg	22	130	98	30%	Fail	Q02
Mercury	N22-Ma62795	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	N22-Ma62795	NCP	mg/kg	21	23	69	30%	Fail	Q15
Zinc	N22-Ma62795	NCP	mg/kg	650	1700	19	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ap0000800	NCP	%	26	29	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	N22-Ma56948	NCP	%	5.0	5.0	<1	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	S22-Ap0000729	CP	uS/cm	54	64	16	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S22-Ap0000729	CP	pH Units	6.1	6.0	<1	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S22-Ap0000729	CP	meq/100g	8.5	6.7	23	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ap0000732	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Ap0000732	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Ap0000732	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ap0000732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Ap0000732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Ap0000732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Ap0000732	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Ap0000732	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Ap0000732	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Ap0000733	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S22-Ap0000733	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S22-Ap0000733	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S22-Ap0000733	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-Ap0000733	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S22-Ap0000733	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S22-Ap0000733	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S22-Ap0000733	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S22-Ap0000733	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S22-Ap0000733	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S22-Ap0000733	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S22-Ap0000733	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	S22-Ap0000733	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S22-Ap0000733	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S22-Ap0000733	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-Ap0000733	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S22-Ap0000733	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S22-Ap0000733	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S22-Ap0000733	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Ap0000734	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S22-Ap0000734	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S22-Ap0000734	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S22-Ap0000734	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-Ap0000734	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S22-Ap0000734	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S22-Ap0000734	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S22-Ap0000734	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S22-Ap0000734	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S22-Ap0000734	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S22-Ap0000734	CP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S22-Ap0000734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	S22-Ap0000734	CP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S22-Ap0000734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S22-Ap0000734	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-Ap0000734	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S22-Ap0000734	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S22-Ap0000734	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S22-Ap0000734	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Gabriele Cordero	Senior Analyst (NSW)
Sayeed Abu	Senior Analyst (NSW)
Jonathon Angell	Senior Analyst (NSW)
Mary Makarios	Senior Analyst (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Certificate of Analysis

Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Attention:	Victor Kirpichnikov (GEOTESTA)
Report	876397-AID
Project Name	21-33 OWLPEN LANE FARELY
Project ID	NE1165
Received Date	Mar 30, 2022
Date Reported	Apr 13, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name 21-33 OWLPEN LANE FARELY
Project ID NE1165
Date Sampled Mar 29, 2022
Report 876397-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
EBH1	22-Ap0000725	Mar 29, 2022	Approximate Sample 379g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH2	22-Ap0000726	Mar 29, 2022	Approximate Sample 458g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH3	22-Ap0000727	Mar 29, 2022	Approximate Sample 305g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH4	22-Ap0000728	Mar 29, 2022	Approximate Sample 540g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH5	22-Ap0000729	Mar 29, 2022	Approximate Sample 385g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH6	22-Ap0000730	Mar 29, 2022	Approximate Sample 417g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH7	22-Ap0000731	Mar 29, 2022	Approximate Sample 451g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH8	22-Ap0000732	Mar 29, 2022	Approximate Sample 344g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
EBH9	22-Ap0000733	Mar 29, 2022	Approximate Sample 442g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH10	22-Ap0000734	Mar 29, 2022	Approximate Sample 337g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH11	22-Ap0000735	Mar 29, 2022	Approximate Sample 456g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH12	22-Ap0000736	Mar 29, 2022	Approximate Sample 520g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Apr 01, 2022	Indefinite

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NATA # 1261 Site # 18217

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 21-33 OWLPEN LANE FARELY
Project ID: NE1165

Order No.:
Report #: 876397
Phone: 1300852 216
Fax:

Received: Mar 30, 2022 5:00 PM
Due: Apr 6, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X									
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	EBH1	Mar 29, 2022		Soil	S22-Ap0000725		X			X	X		X		
2	EBH2	Mar 29, 2022		Soil	S22-Ap0000726		X			X	X		X		
3	EBH3	Mar 29, 2022		Soil	S22-Ap0000727		X			X	X		X		
4	EBH4	Mar 29, 2022		Soil	S22-Ap0000728		X			X	X		X		
5	EBH5	Mar 29, 2022		Soil	S22-Ap0000729	X	X	X		X	X	X	X		
6	EBH6	Mar 29, 2022		Soil	S22-		X			X	X		X		

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Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X									
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
					Ap0000730										
7	EBH7	Mar 29, 2022		Soil	S22-Ap0000731		X			X	X		X		
8	EBH8	Mar 29, 2022		Soil	S22-Ap0000732		X			X	X		X		
9	EBH9	Mar 29, 2022		Soil	S22-Ap0000733		X			X	X		X		
10	EBH10	Mar 29, 2022		Soil	S22-Ap0000734		X			X	X		X		
11	EBH11	Mar 29, 2022		Soil	S22-Ap0000735		X			X	X		X		
12	EBH12	Mar 29, 2022		Soil	S22-Ap0000736		X			X	X		X		

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Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X									
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
13	BD1	Mar 29, 2022		Soil	S22-Ap0000737				X		X				
14	EIL	Mar 29, 2022		Soil	S22-Ap0000738				X		X				
15	TRIP SPIKE	Mar 29, 2022		Soil	S22-Ap0000739										X
16	TRIP BLANK	Mar 29, 2022		Soil	S22-Ap0000740									X	
Test Counts						1	12	1	2	12	14	1	12	1	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

22-Ap0000725 to 22-Ap0000727 and 22-Ap0000729 to 22-Ap0000735: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

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

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Appendix E

Lotsearch

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Apr 2022 08:54:32

Reference: LS031553 EP

Address: 33 Owlpen Lane, Farley, NSW 2320

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	06/04/2022	06/04/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	25/06/2019	25/06/2019	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	19/04/2022	11/04/2022	Monthly	1000m	0	0	1
Contaminated Land Records of Notice	Environment Protection Authority	05/04/2022	05/04/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	02/03/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/05/2021	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	15/02/2021	13/07/2012	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority	28/03/2022	14/07/2021	Monthly	2000m	0	0	1
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	06/04/2022	06/04/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	06/04/2022	06/04/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	06/04/2022	06/04/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	03/03/2022	03/03/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	05/04/2022	05/04/2022	Monthly	1000m	1	1	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	05/04/2022	05/04/2022	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	05/04/2022	05/04/2022	Monthly	1000m	3	4	7
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	1
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	4
State Forest	Forestry Corporation of NSW	25/02/2021	14/02/2021	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	Annually	1000m	1	2	2
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	6

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	1	1	7
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000m	1	1	5
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	06/04/2022	18/02/2022	Monthly	500m	1	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	2
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	1
Current Mining Titles	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	7	7	9
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	2	16
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	19/08/2021	25/06/2021	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	06/04/2022	25/03/2022	Monthly	1000m	0	0	3
Bush Fire Prone Land	NSW Rural Fire Service	26/04/2022	08/12/2021	Weekly	1000m	2	2	4
Lower Hunter and Central Coast Regional Vegetation Survey	NSW Office of Environment & Heritage	28/02/2015	16/11/2009	As required	1000m	0	0	13
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	0	0	3
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	0	0	8
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	26/04/2022	26/04/2022	Weekly	10000m	-	-	-

Site Diagram

33 Owlpen Lane, Farley, NSW 2320

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 30267m²

Total Perimeter: 901m

Scale: 0 25 50 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

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

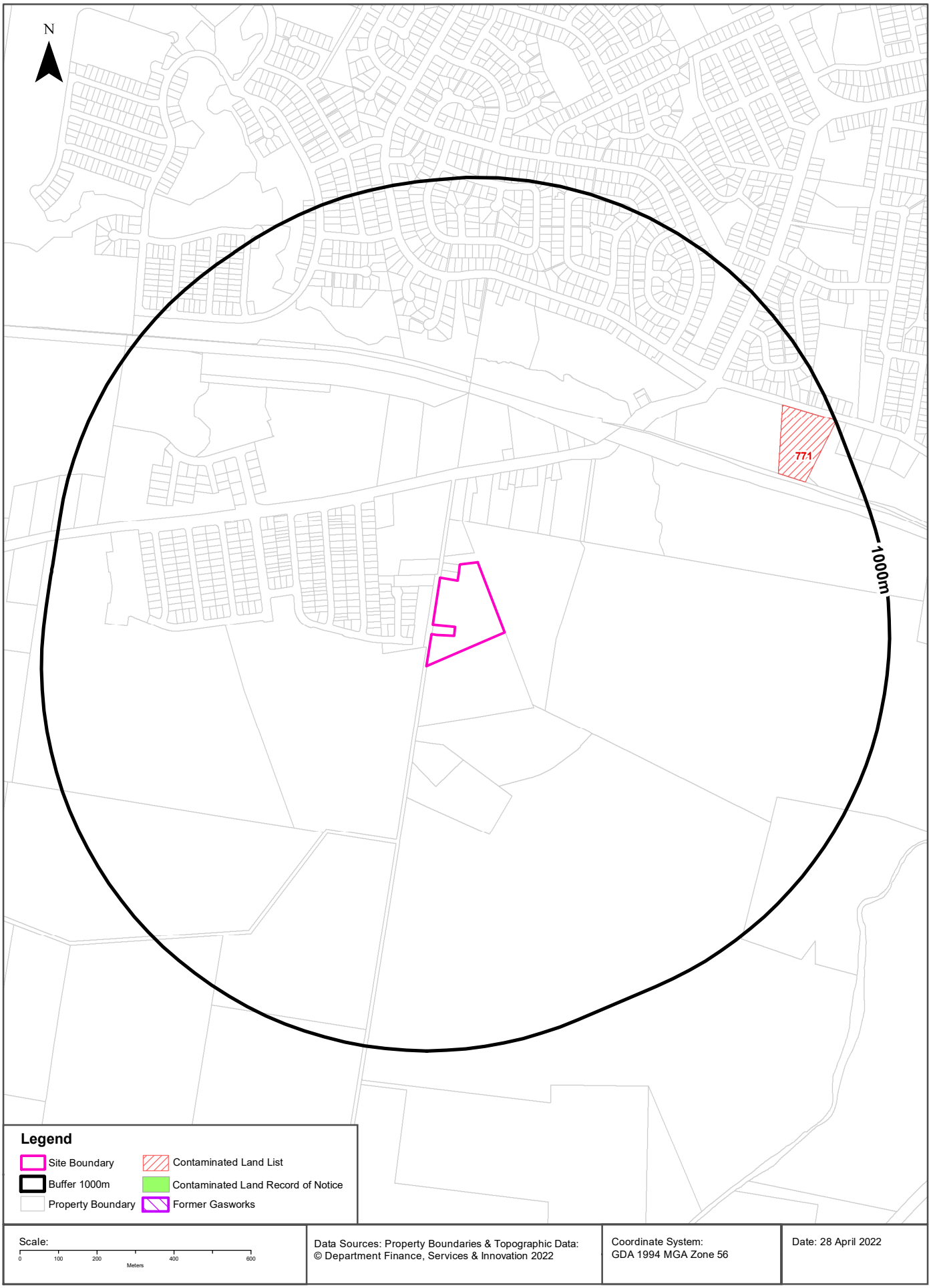
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 28 April 2022

Contaminated Land

33 Owlpen Lane, Farley, NSW 2320



Contaminated Land

33 Owlpen Lane, Farley, NSW 2320

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
771	Former Ausgrid Depot	Green Street	Telarah	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	810m	North East

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

33 Owlpen Lane, Farley, NSW 2320

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority

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

Former Gasworks

Former Gasworks within the dataset buffer:

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

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

33 Owlpen Lane, Farley, NSW 2320

National Waste Management Site Database

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

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

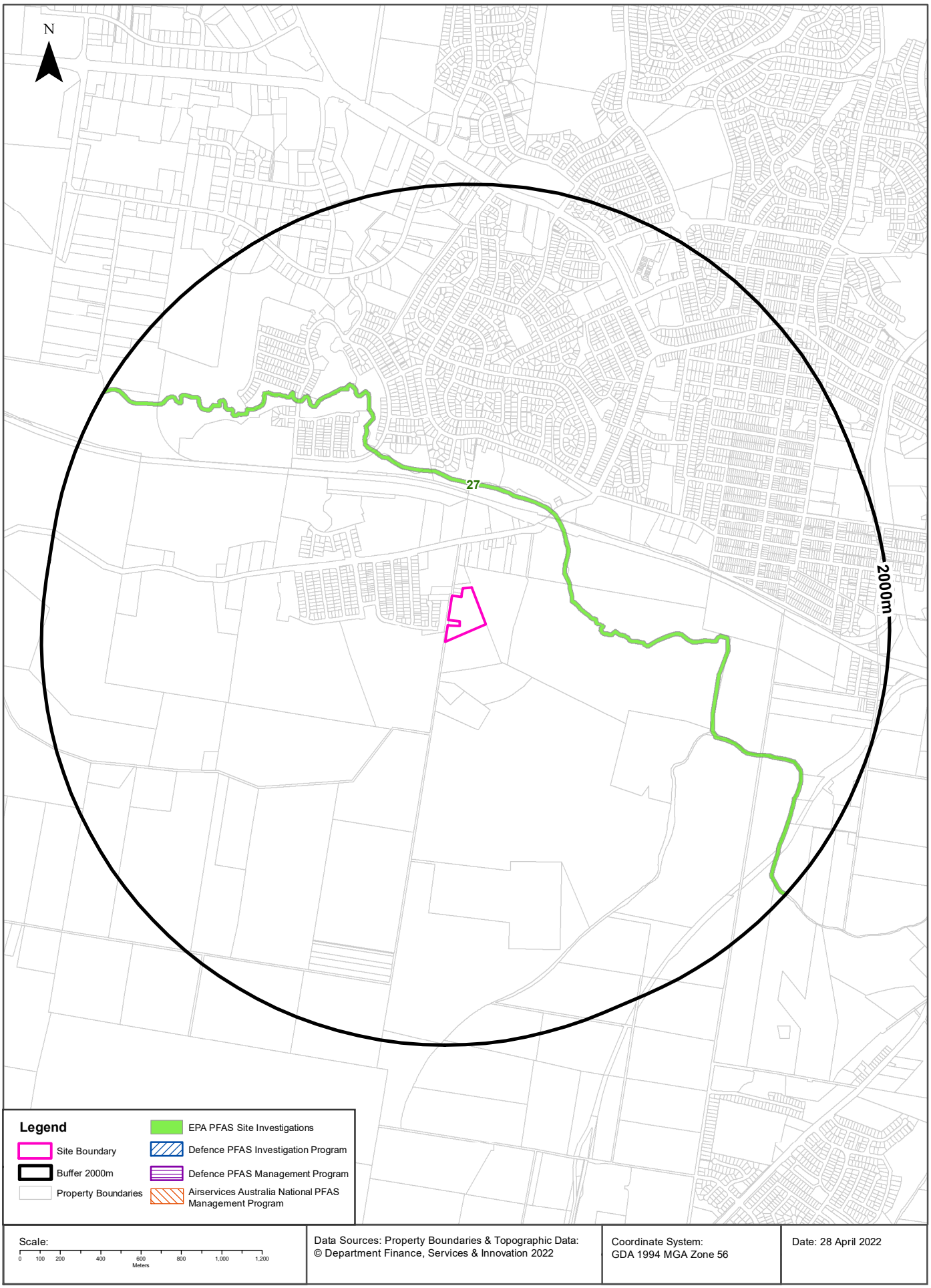
National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

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

PFAS Investigation & Management Programs

33 Owlpen Lane, Farley, NSW 2320



PFAS Investigation & Management Programs

33 Owlpen Lane, Farley, NSW 2320

EPA PFAS Investigation Program

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

Map ID	Site	Address	Loc Conf	Dist	Dir
27	Rutherford, Truegain	62 Kyle St, Rutherford NSW 2320 + Stoney, Fishery & Wallis Creeks downstream	Network of Features	430m	North East

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

33 Owlpen Lane, Farley, NSW 2320

Defence 3 Year Regional Contamination Investigation Program

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

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

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

EPA Other Sites with Contamination Issues

33 Owlpen Lane, Farley, NSW 2320

EPA Other Sites with Contamination Issues

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

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

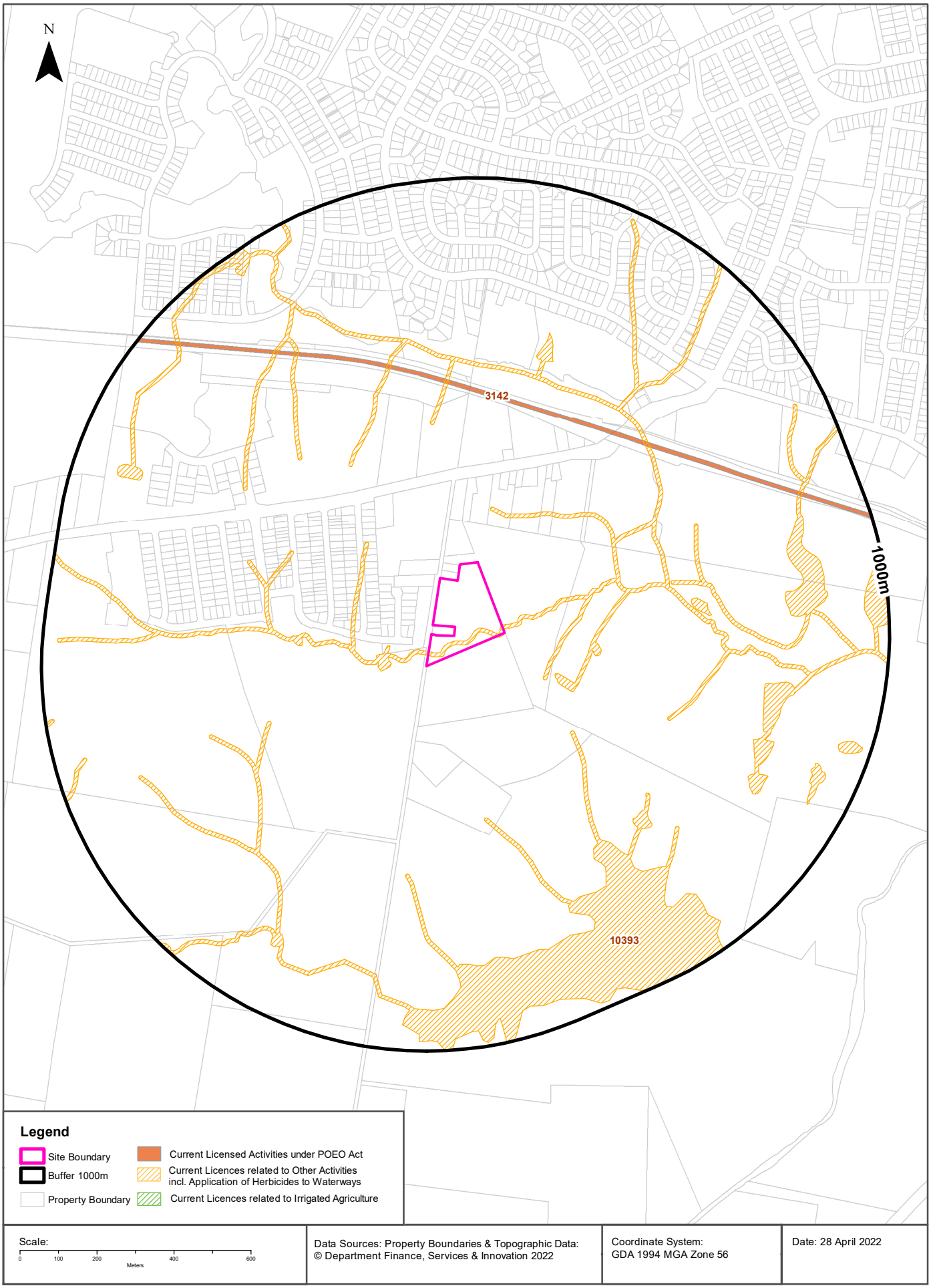
Sites within the dataset buffer:

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

EPA Other Sites with Contamination Issues: Environment Protection Authority

Current EPA Licensed Activities

33 Owlpen Lane, Farley, NSW 2320



EPA Activities

33 Owlpen Lane, Farley, NSW 2320

Licensed Activities under the POEO Act 1997

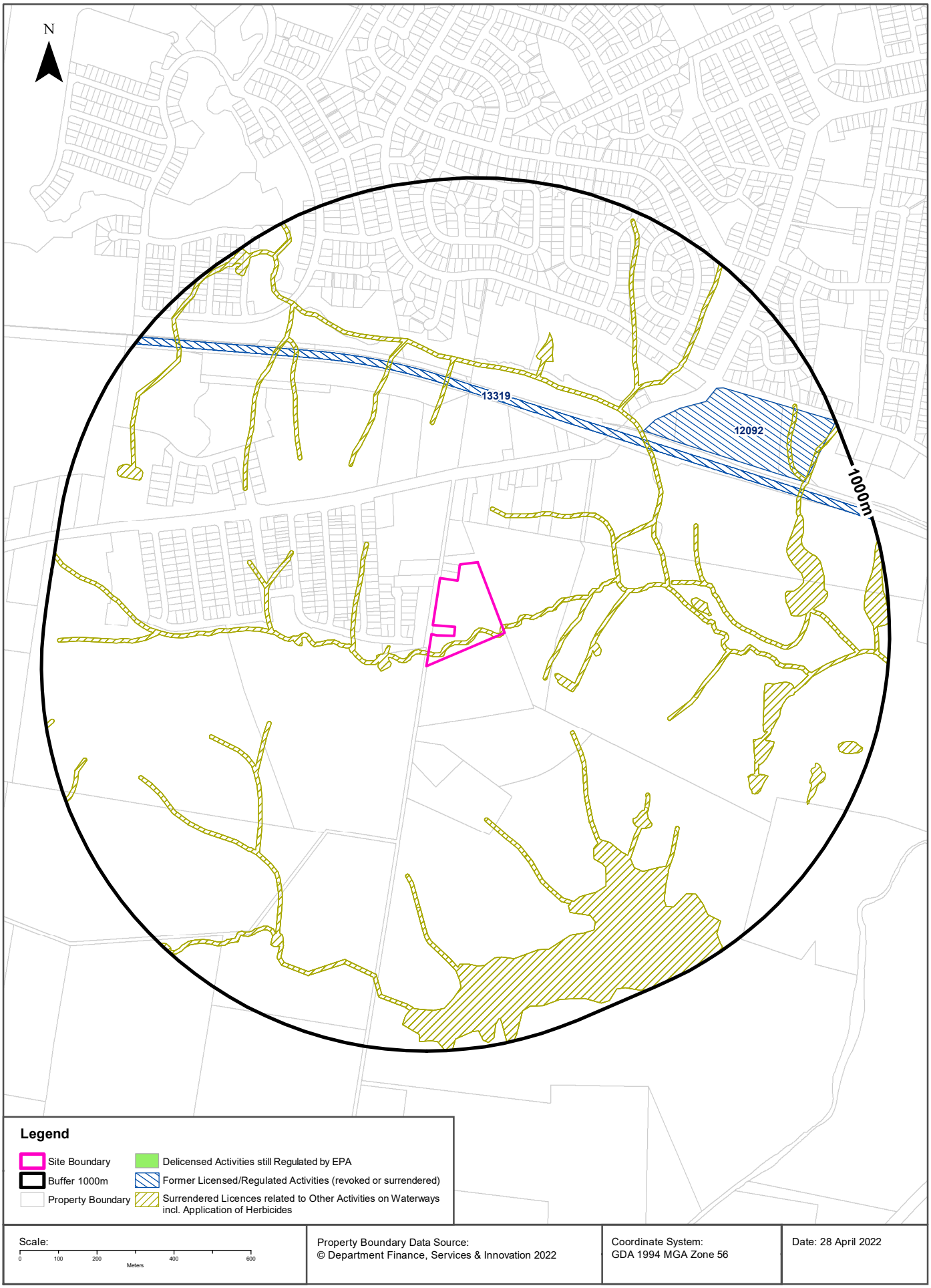
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10393	MAITLAND CITY COUNCIL	ALL WATERBODIES IN THE MAITLAND LOCAL GOVERNMENT AREA	.	MAITLAND	Other activities	Network of Features	0m	On-site
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		AUSTRALIAN RAIL TRACK CORPORATION (ARTC) NETWORK, SYDNEY, NSW 2001		Railway systems activities	Network of Features	421m	North

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

33 Owlpen Lane, Farley, NSW 2320



EPA Activities

33 Owlpen Lane, Farley, NSW 2320

Delicensed Activities still regulated by the EPA

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

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

Delicensed Activities Data Source: Environment Protection Authority

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
12439	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	Soil Conservation Service, Waterways within the Hunter Valley Flood Mitigation Scheme, MAITLAND	Surrendered	13/02/2007	Other Activities - Application of Herbicides	Area Match	0m	South East
13319	AUSTRALIAN RAIL TRACK CORPORATION LIMITED	Maitland to Minimbah Third Track, Main Northern Railway, MAITLAND	Surrendered	16/11/2010	Crushing, grinding or separating; Extractive Activities	Network of Features	416m	North
13319	AUSTRALIAN RAIL TRACK CORPORATION LIMITED	Maitland to Minimbah Third Track, Main Northern Railway, MAITLAND	Surrendered	16/11/2010	Railway systems activities	Network of Features	416m	North
12092	AUSGRID OPERATOR PARTNERSHIP	AUSGRID Maitland Depot, 35 Green Street, RUTHERFORD	Surrendered	18/08/2004	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Premise Match	548m	North East

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

33 Owlpen Lane, Farley, NSW 2320

Business Directory Records 1950-1991
Premise or Road Intersection Matches

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

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

Business Directory Records 1950-1991
Road or Area Matches

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

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

Historical Business Directories

33 Owlpen Lane, Farley, NSW 2320

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

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

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

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

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

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

Aerial Imagery 2021

33 Owlpen Lane, Farley, NSW 2320

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 28 April 2022
0 30 60 90 120 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2015

33 Owlpen Lane, Farley, NSW 2320

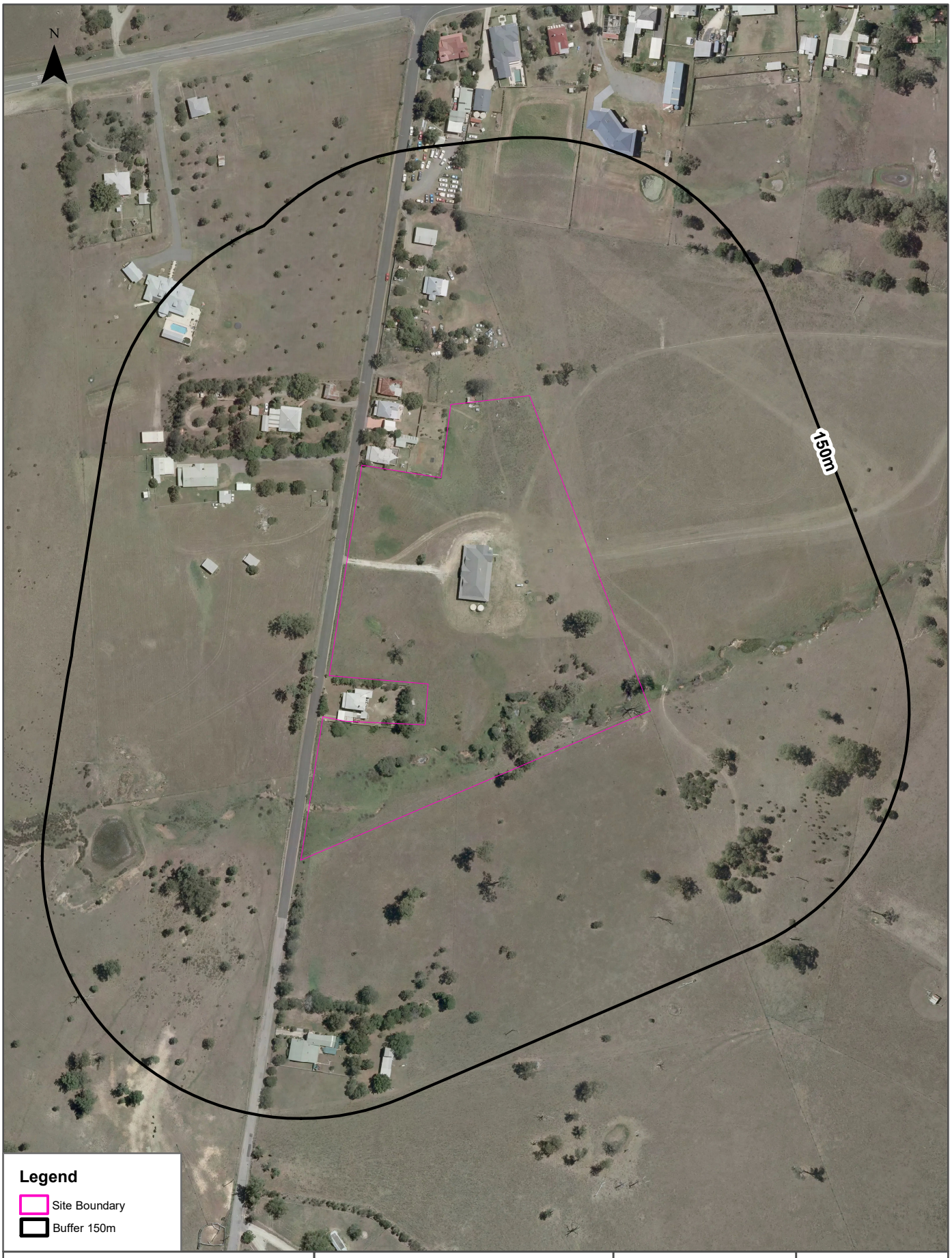
Aerial Imagery 2013

33 Owlpen Lane, Farley, NSW 2320

Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 April 2022

Aerial Imagery 2010

33 Owlpen Lane, Farley, NSW 2320



Aerial Imagery 2006

33 Owlpen Lane, Farley, NSW 2320

Scale:
0 30 60 90 120
Meters

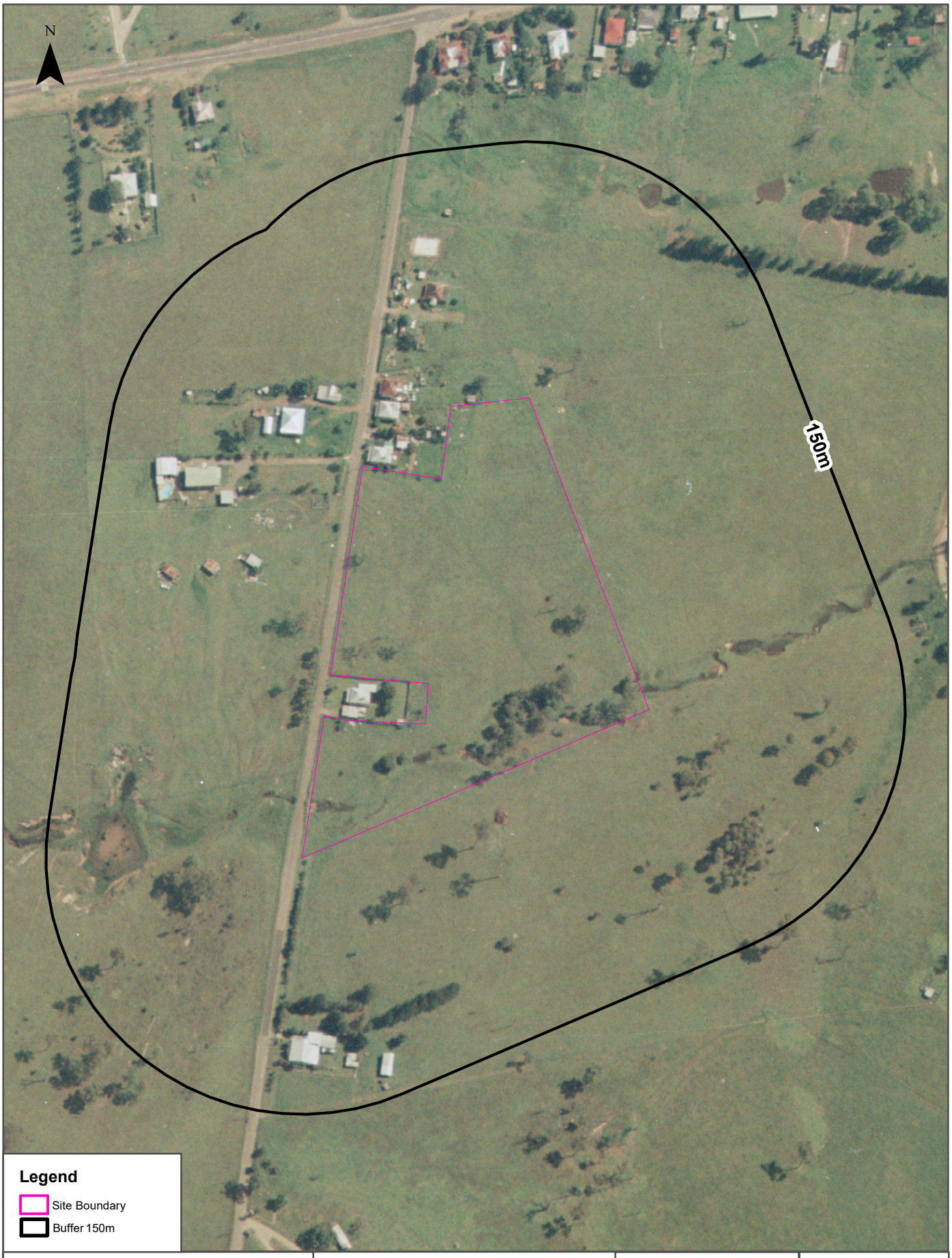
Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 April 2022

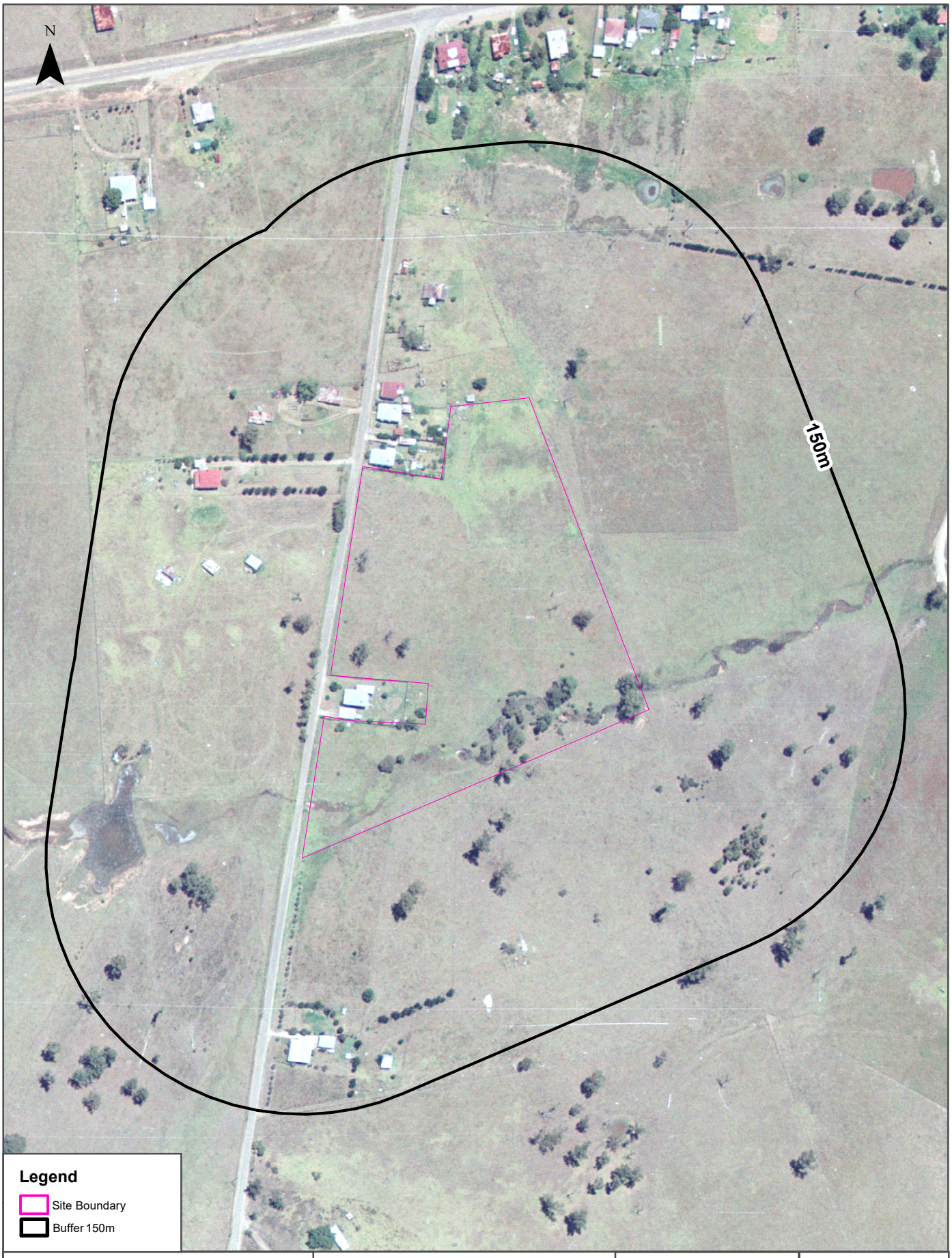
Aerial Imagery 1993

33 Owlpen Lane, Farley, NSW 2320



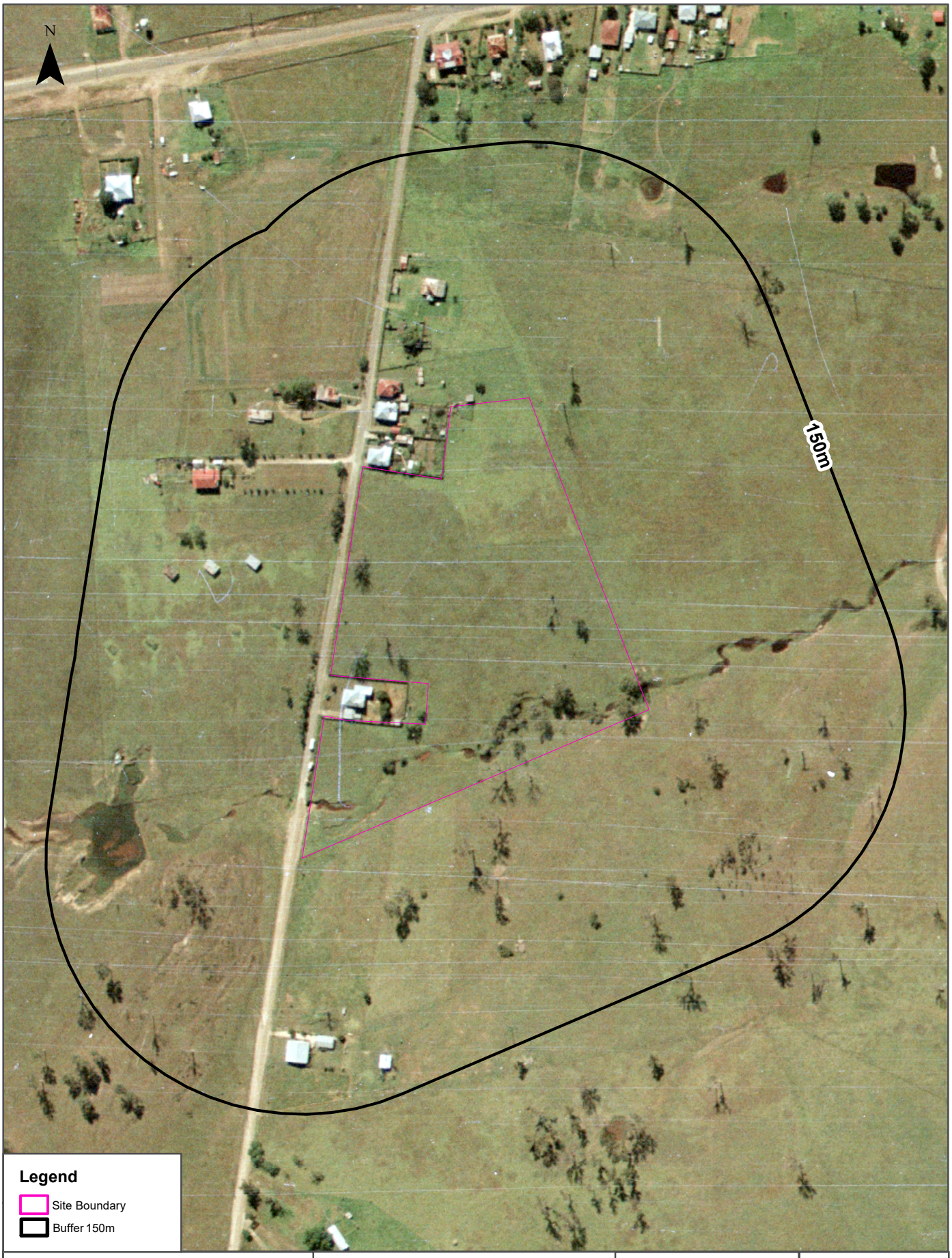
Aerial Imagery 1983

33 Owlpen Lane, Farley, NSW 2320



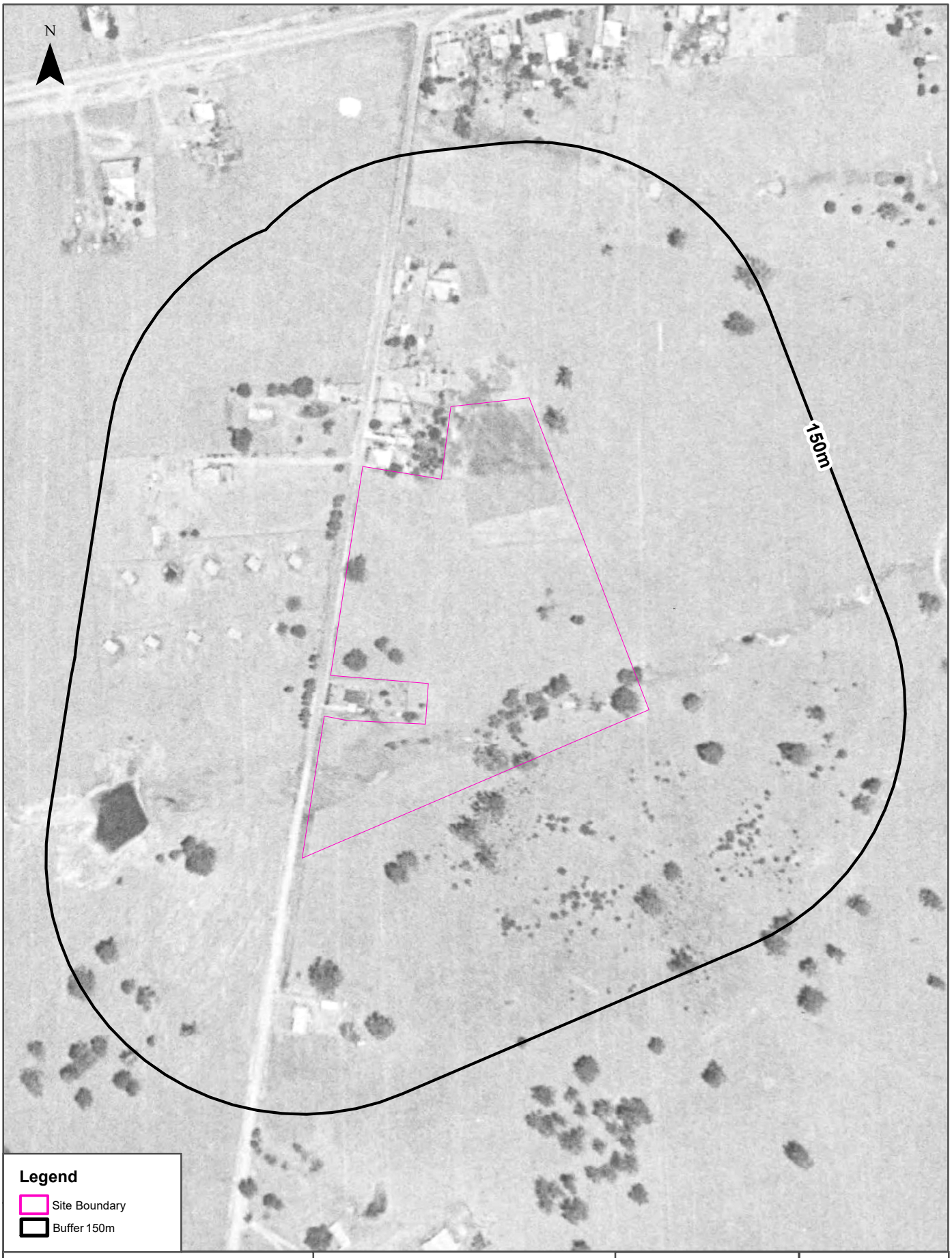
Aerial Imagery 1976

33 Owlpen Lane, Farley, NSW 2320



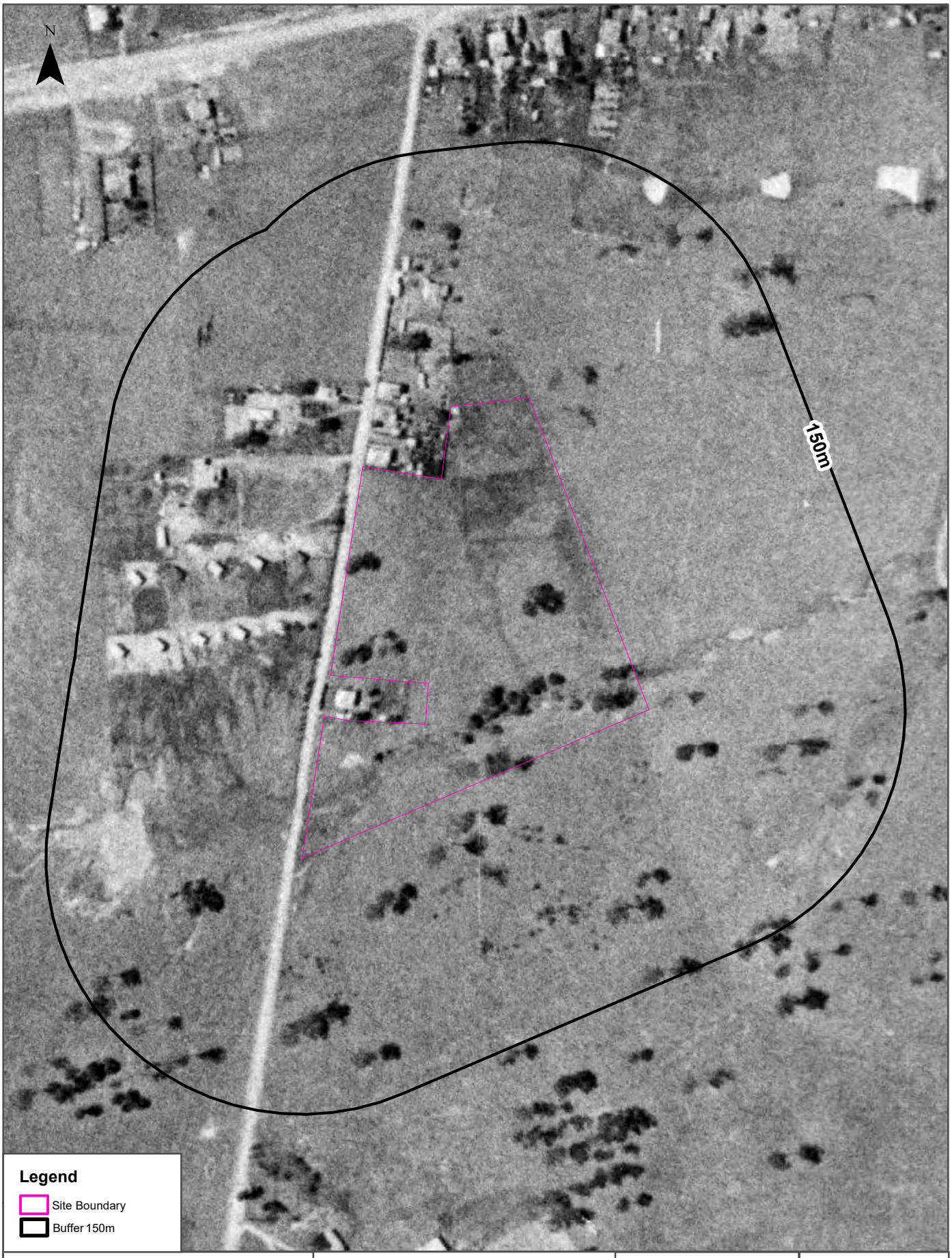
Aerial Imagery 1966

33 Owlpen Lane, Farley, NSW 2320



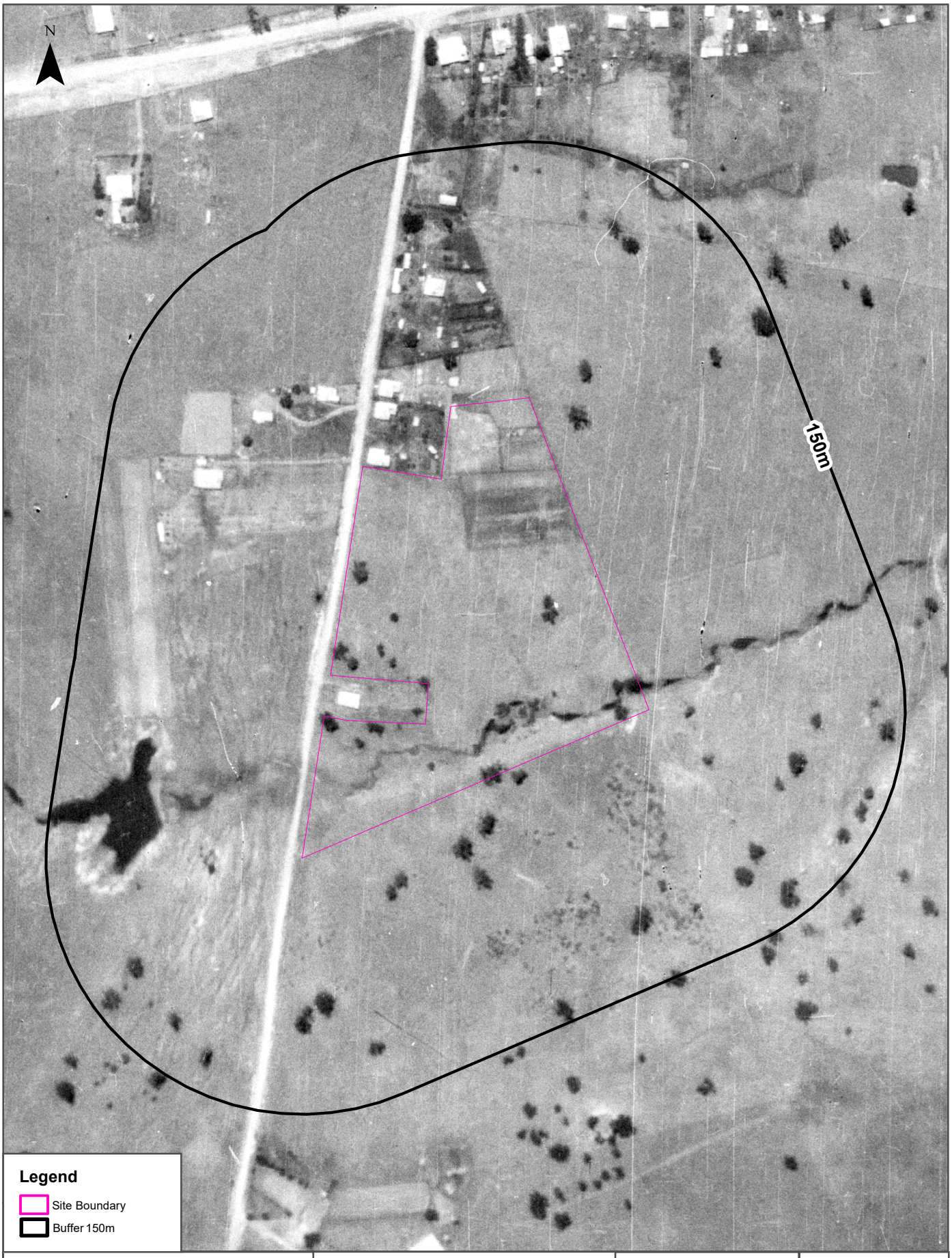
Aerial Imagery 1954

33 Owlpen Lane, Farley, NSW 2320



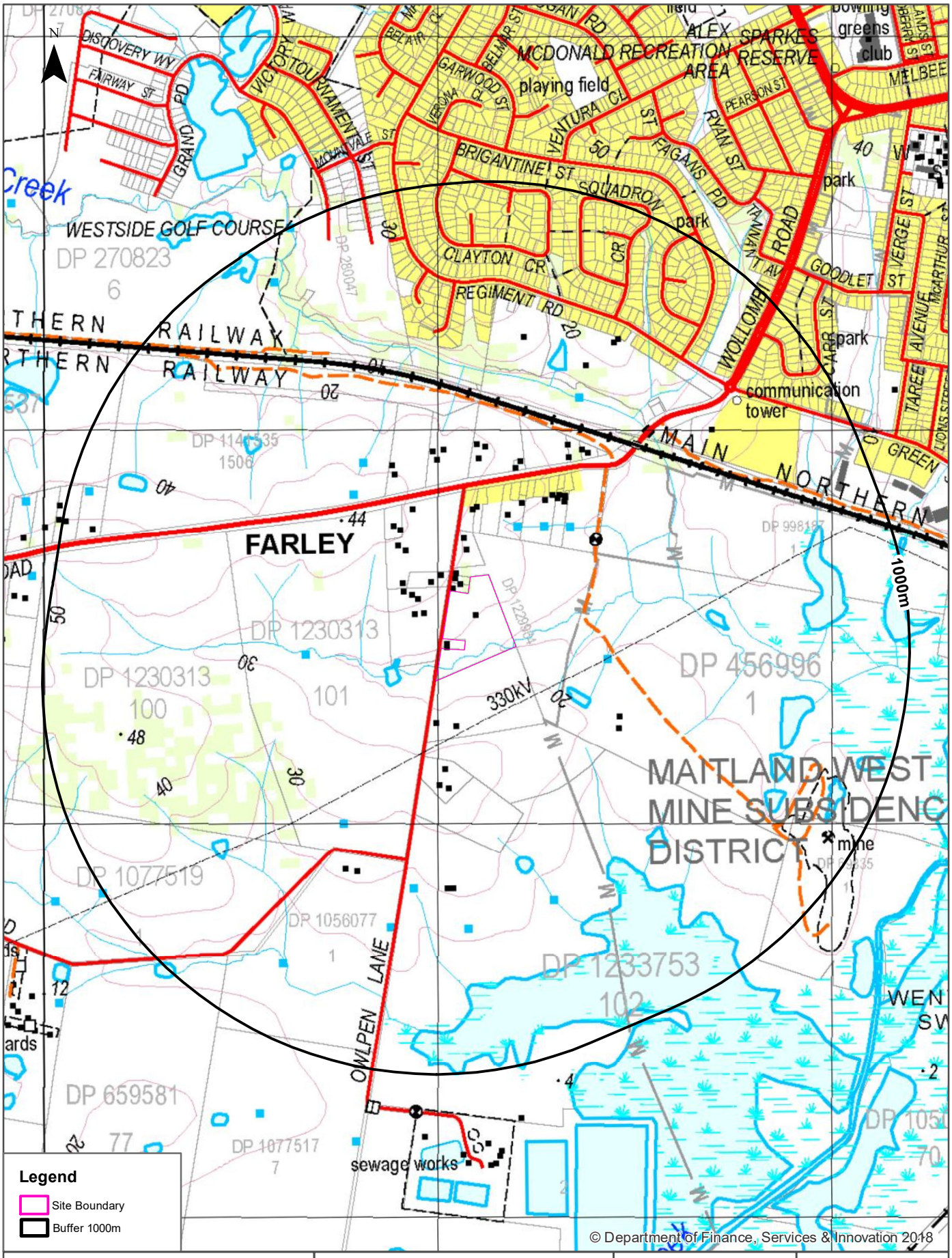
Aerial Imagery 1938

33 Owlpen Lane, Farley, NSW 2320



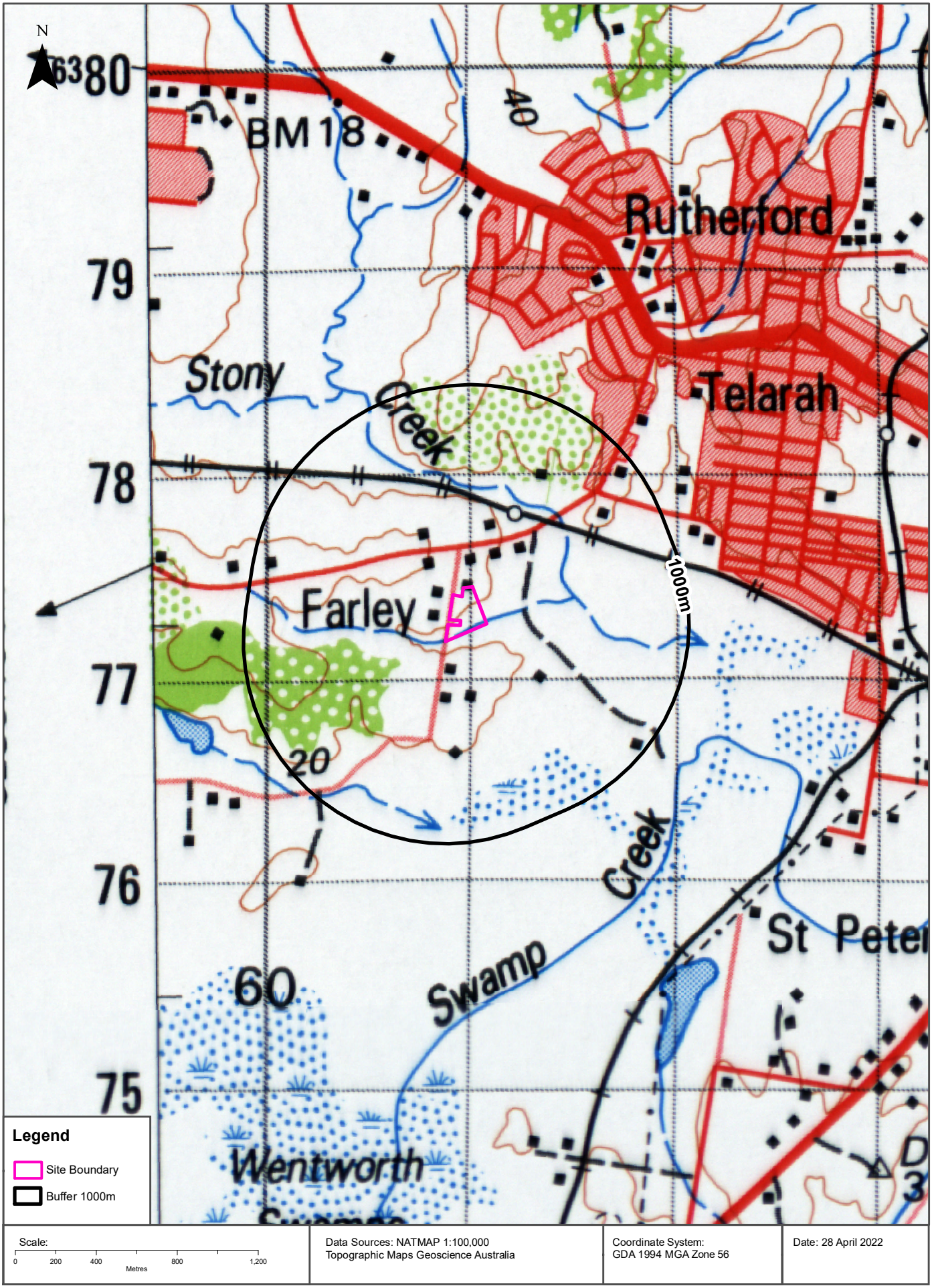
Topographic Map 2015

33 Owlpen Lane, Farley, NSW 2320



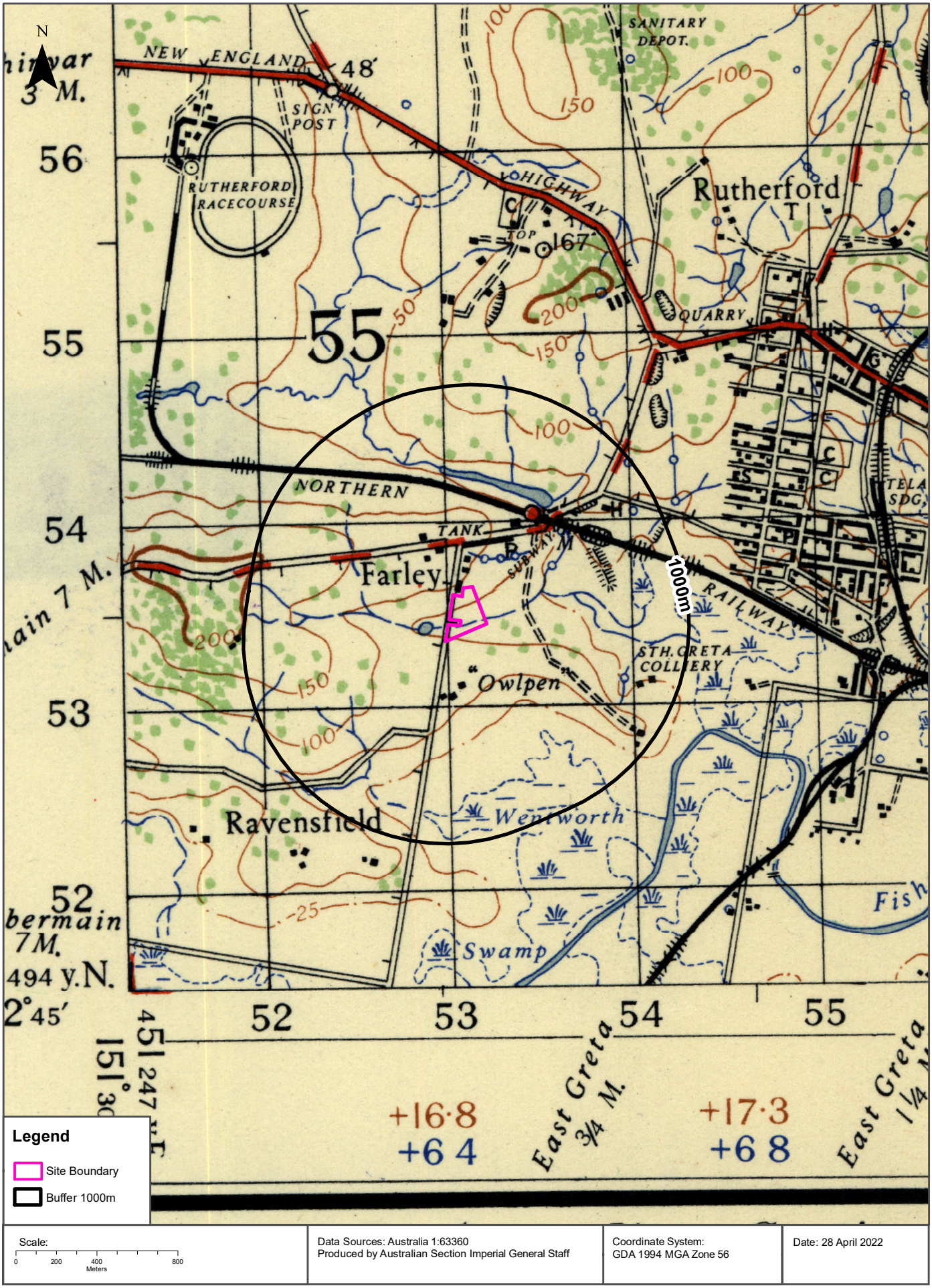
Historical Map 1981

33 Owlpen Lane, Farley, NSW 2320



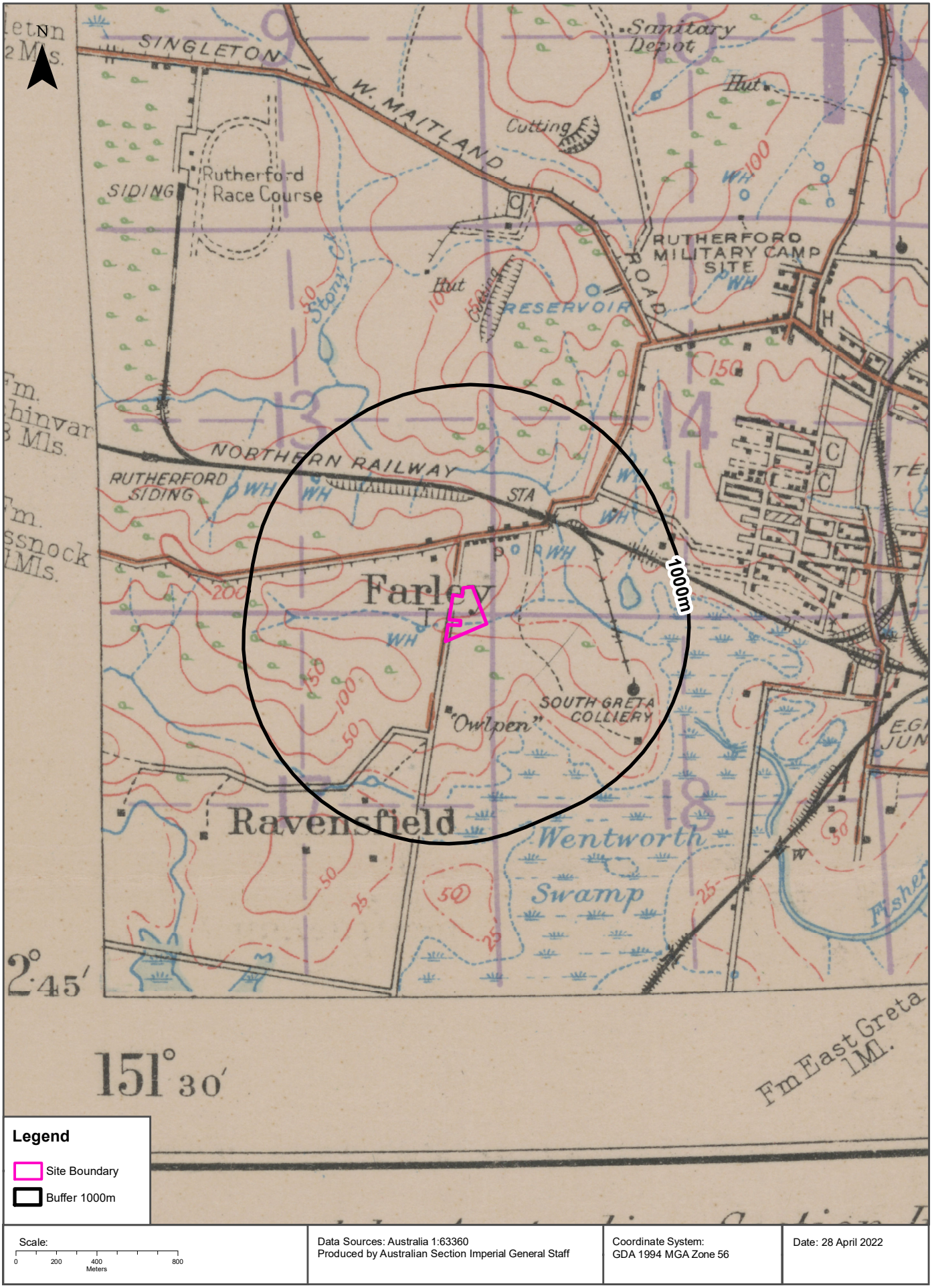
Historical Map c.1942

33 Owlpen Lane, Farley, NSW 2320



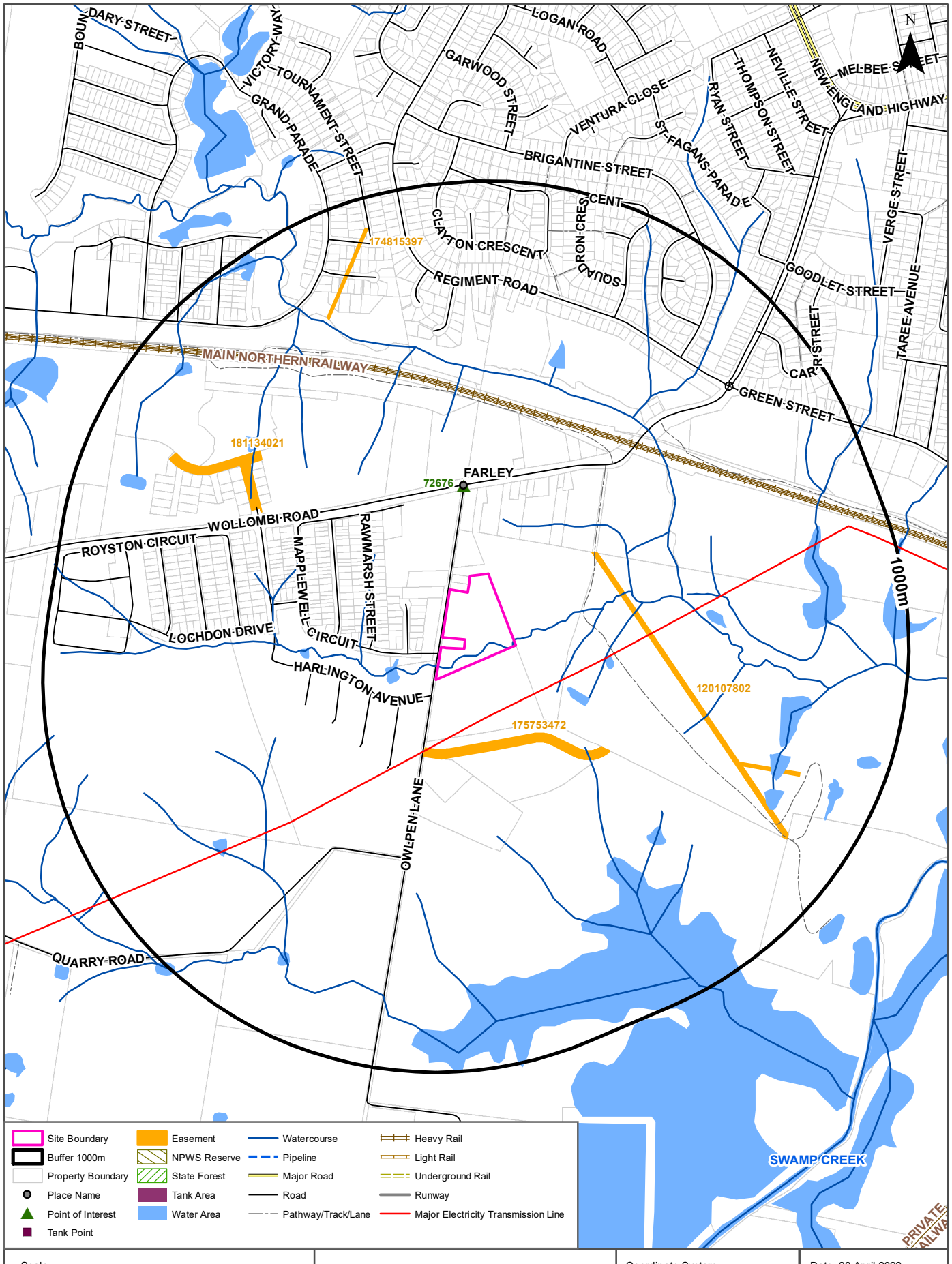
Historical Map c.1925

33 Owlpen Lane, Farley, NSW 2320



Topographic Features

33 Owlpen Lane, Farley, NSW 2320



Topographic Features

33 Owlpen Lane, Farley, NSW 2320

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
72676	Village	FARLEY	230m	North

Topographic Features

33 Owlpen Lane, Farley, NSW 2320

Tanks (Areas)

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

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

Tanks (Points)

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

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

Major Easements

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
175753472	Primary	Right of way	21m	177m	South
120107802	Primary	Undefined		267m	East
181134021	Primary	Right of way	Var	519m	North West
174815397	Primary	Right of way	6m	745m	North

Topographic Features

33 Owlpen Lane, Farley, NSW 2320

State Forest

What State Forest exist within the dataset buffer?

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

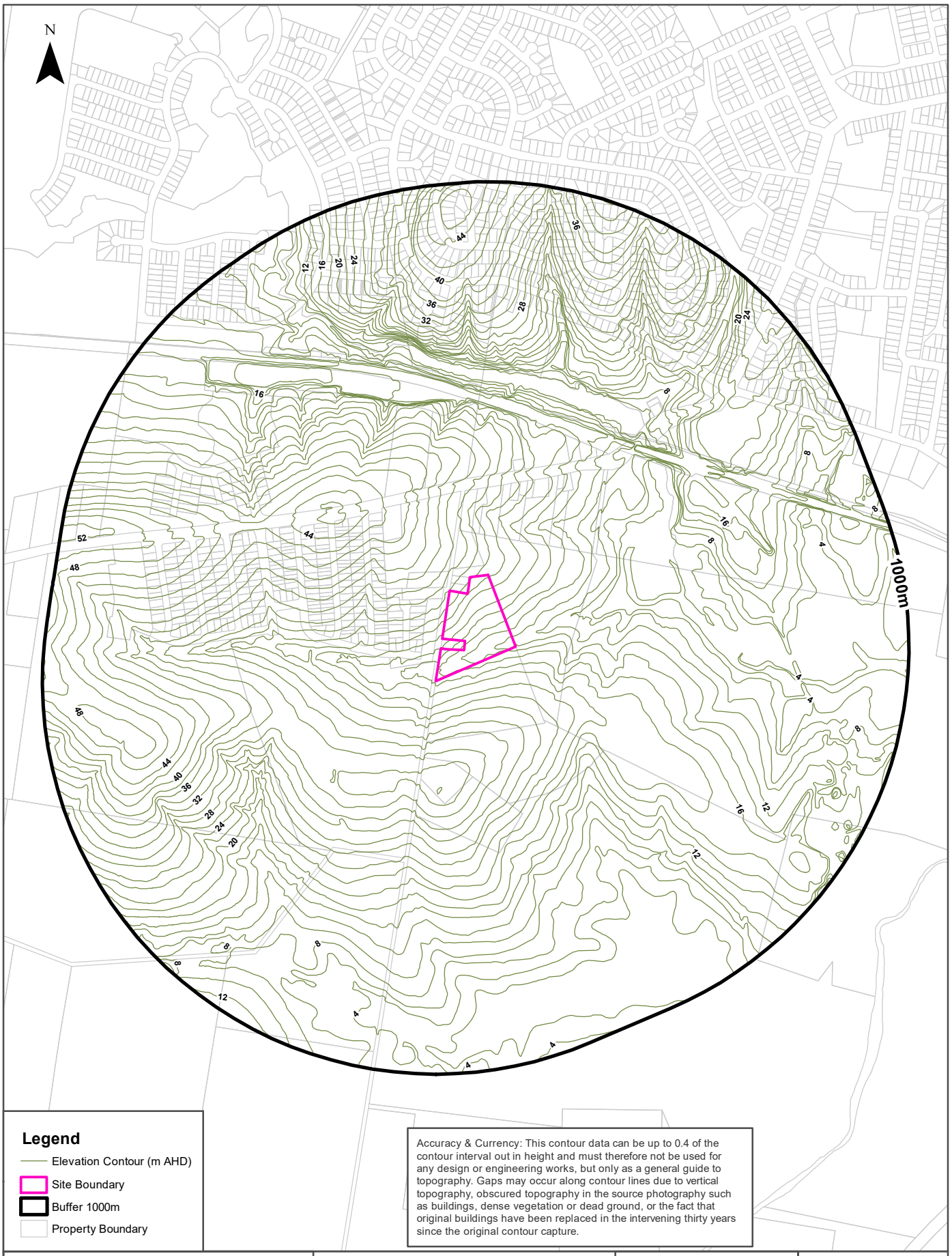
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

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

Elevation Contours (m AHD)

33 Owlpen Lane, Farley, NSW 2320



Hydrogeology & Groundwater

33 Owlpen Lane, Farley, NSW 2320

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site
Porous, extensive highly productive aquifers	21m	North East

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

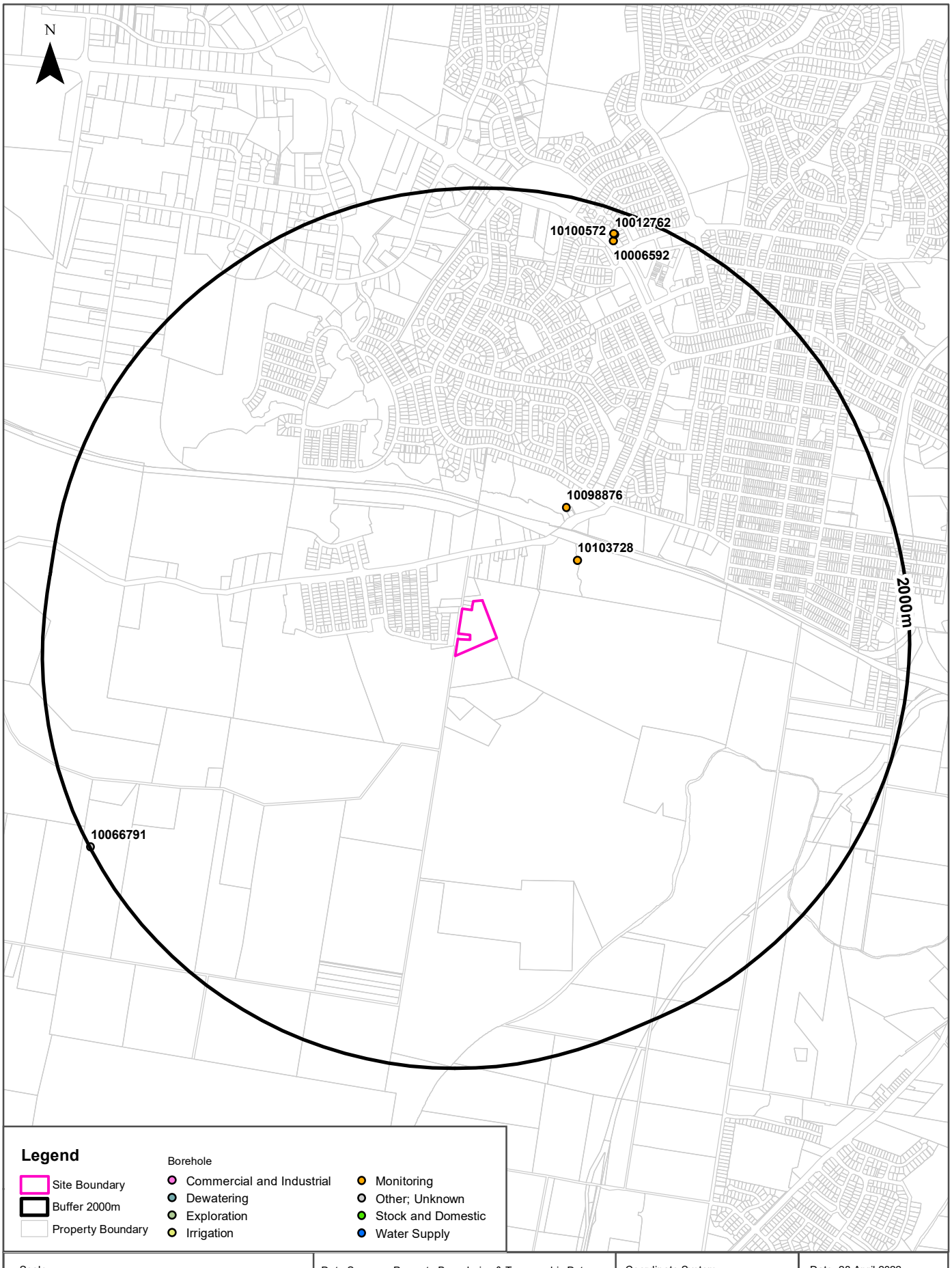
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

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

Groundwater Boreholes

33 Owlpen Lane, Farley, NSW 2320



Hydrogeology & Groundwater

33 Owlpen Lane, Farley, NSW 2320

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10103728	GW201357	Monitoring	Functional	03/12/2009	6.00		AHD				500m	North East
10098876	GW201353	Monitoring	Functional	03/12/2009	6.20		AHD				607m	North East
10006592	GW202694	Monitoring	Functional	16/08/2011	7.45		AHD				1852m	North
10012762	GW202692	Monitoring	Functional	16/08/2011	9.00		AHD				1885m	North
10100572	GW202693	Monitoring	Functional	16/08/2011	7.50		AHD				1887m	North
10066791	GW029088	Unknown	Unknown		39.00		AHD				1995m	South West

Hydrogeology & Groundwater

33 Owlpen Lane, Farley, NSW 2320

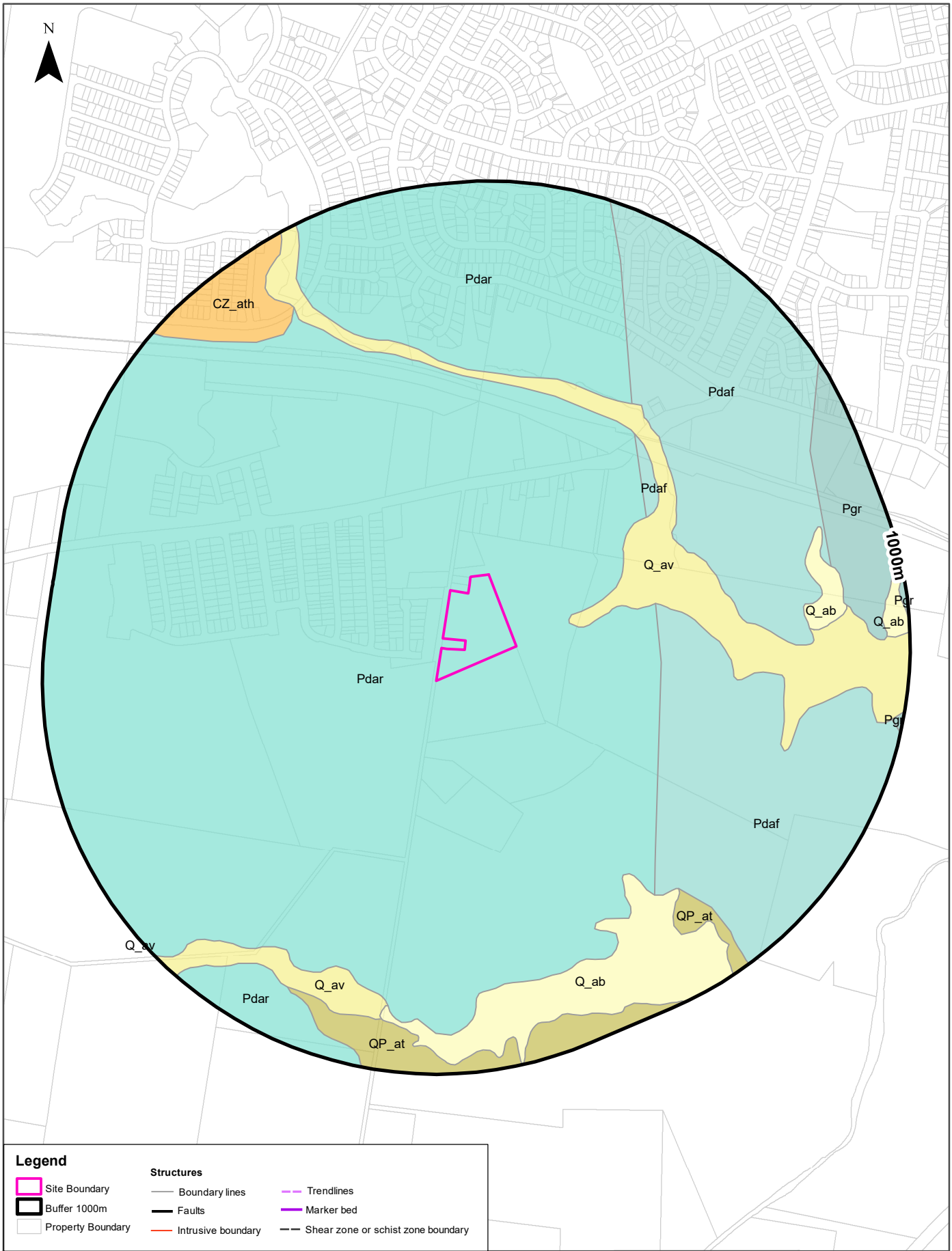
Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10103728	0.00m-0.20m Clayey Sand, brown, fine-medium 0.20m-6.00m Sandy Clay, light brown-light grey, fine-medium	500m	North East
10098876	0.00m-1.50m Sandy Clay, grey, fine 1.50m-6.20m Sandy Clay, grey yellow, fine	607m	North East
10006592	0.00m-0.50m Silty Clay; grey mottled red, dry, very high plasticity 0.50m-2.50m Silt, Sandy; trace sand, red, dry, low plasticity 2.50m-6.50m Silt, Clayey; red, dry, medium plasticity, @ 7m brown, @ 7.45m refusal	1852m	North
10012762	0.00m-0.50m Silty Clay; red, dry, low plasticity 0.50m-1.00m Silty Clay; brown, moist, very high plasticity 1.00m-2.00m Silty Clay; dark brown 2.00m-3.50m Silty Clay; light brown 3.50m-8.00m Silt, Clayey; red, dry, trace plasticity 8.00m-9.00m Silty Clay; grey, dry, high plasticity, @9m refusal	1885m	North
10100572	0.00m-1.00m Silt, Clayey; brown, dry, trace plasticity, @ 1m trace gravel 1.00m-7.50m Silty Clay; brown, dry, high plasticity, @ 3m brown-grey, @ 4.5m grey, mottled red, @ 5m grey, @ 6.5m brown, @ 7.5m refu	1887m	North
10066791	0.00m-6.10m Clay Sand 6.10m-24.38m Shale Water Supply 24.38m-39.01m Sandstone	1995m	South West

Geology

33 Owlpen Lane, Farley, NSW 2320



Geology

33 Owlpen Lane, Farley, NSW 2320

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pdar	Rutherford Formation	Siltstone, marl and minor sandstone.	/Dalwood Group//Rutherford Formation//	Permian (base) to Permian (top)	Siltstone	0m
Q_av	Alluvial valley deposits	Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel.	/Alluvium//Alluvial valley deposits//	Quaternary (base) to Now (top)	Clastic sediment	147m
Pdaf	Farley Formation	Poorly sorted, light- and dark-grey, micaceous sandy siltstone, silty sandstone, mudstone and shale; sporadic thin limestone near Pokolbin; abundant marine fossils.	/Dalwood Group//Farley Formation//	Permian (base) to Lopingian (top)	Siltstone	363m
Q_ab	Alluvial backswamp deposits	Organic-rich mud, peat, silt, clay.	/Alluvium//Alluvial backswamp deposits//	Quaternary (base) to Now (top)	Organic rich sediment	640m
QP_at	Alluvial terrace deposits	Silt, clay, (fluvially-deposited) fine- to medium-grained quartz-lithic sand, polymictic gravel.	/Alluvium//Alluvial terrace deposits//	Quaternary (base) to Now (top)	Clastic sediment	740m
CZ_ath	Alluvial terrace deposits - high-stand facies	High-level terrace deposits of sand and gravel.	/Alluvium//Alluvial terrace deposits/Alluvial terrace deposits - high-stand facies/	Neogene (base) to Now (top)	Sand	775m
Pgr	Greta Coal Measures	Sandstone, siltstone, pellet claystone, coal, chert, sporadic conglomerate.	/Greta Coal Measures////	Permian (base) to Permian (top)	Sandstone	824m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

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

Naturally Occurring Asbestos Potential

33 Owlpen Lane, Farley, NSW 2320

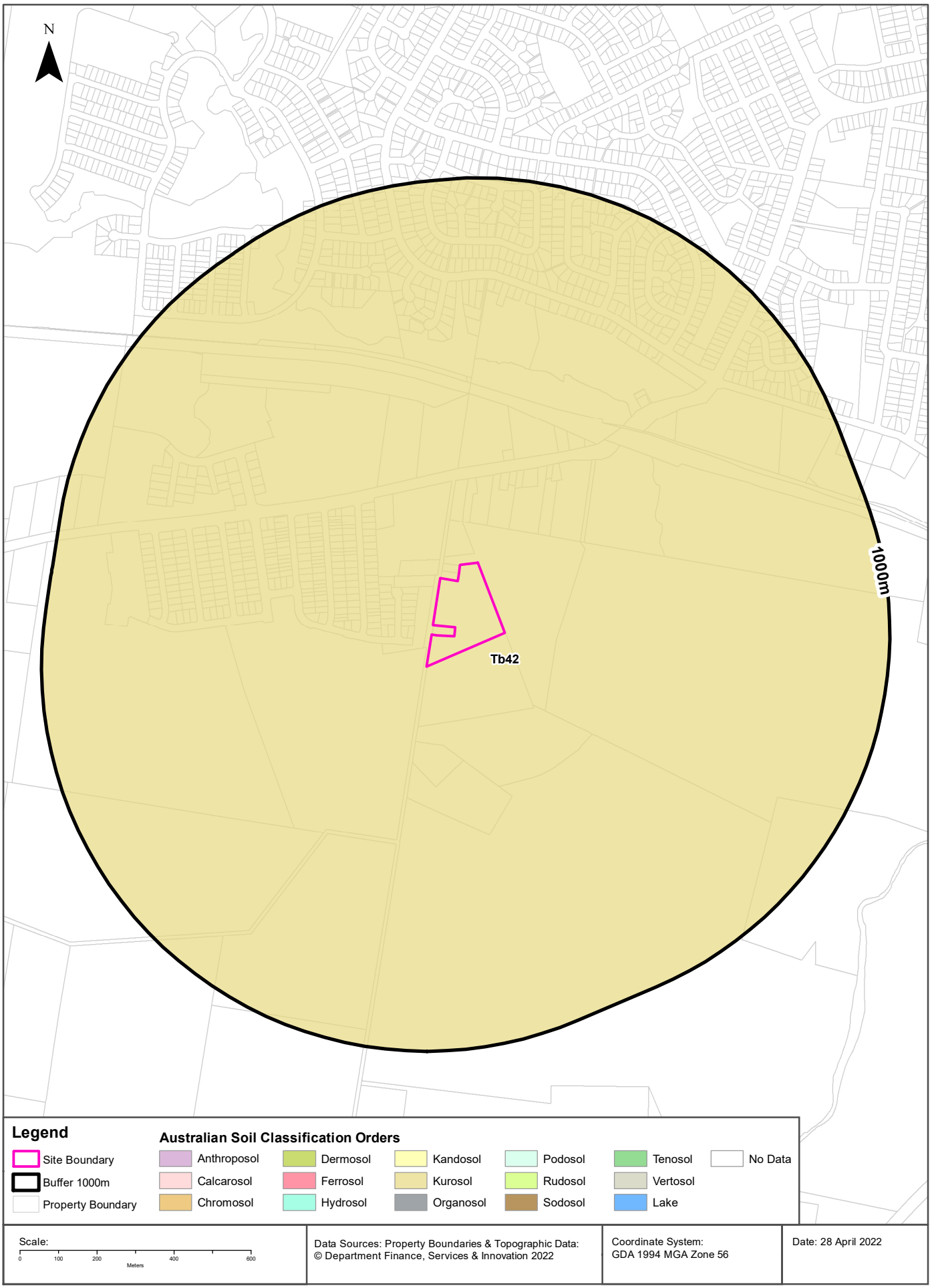
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

Atlas of Australian Soils

33 Owlpen Lane, Farley, NSW 2320



Soils

33 Owlpen Lane, Farley, NSW 2320

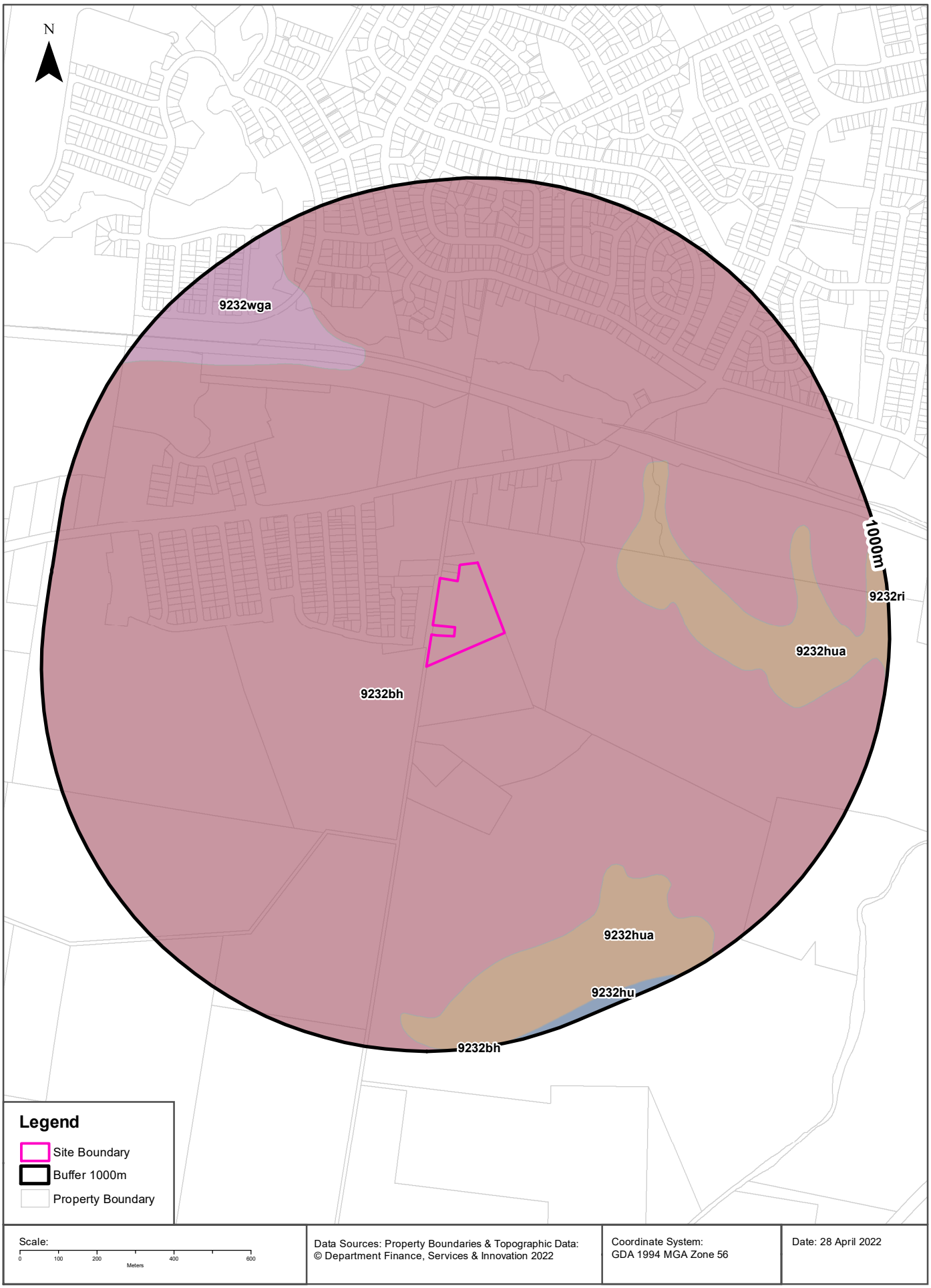
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Tb42	Kurosol	Undulating to hilly with a general ridge, slope, and valley sequence throughout; some outcropping sandstone or conglomerate on the ridges, occasionally some escarpments: chief soils are hard acidic yellow mottled soils (Dy3.41), possibly with (Dy3.42). Associated are: narrow ridges of shallow (Dy3.41) and (Dr3.41) soils, both often containing ironstone gravel; (Dr2.41) soils on broader ridges some broad sandy flats of (Dy5.81) soils containing ironstone gravels; dunes of (Uc1.2) soils on local sand deposits; and various undescribed soils along the streams where salinity is a common local feature.	0m	On-site

Soil Landscapes of Central and Eastern NSW

33 Owlpen Lane, Farley, NSW 2320



Soils

33 Owlpen Lane, Farley, NSW 2320

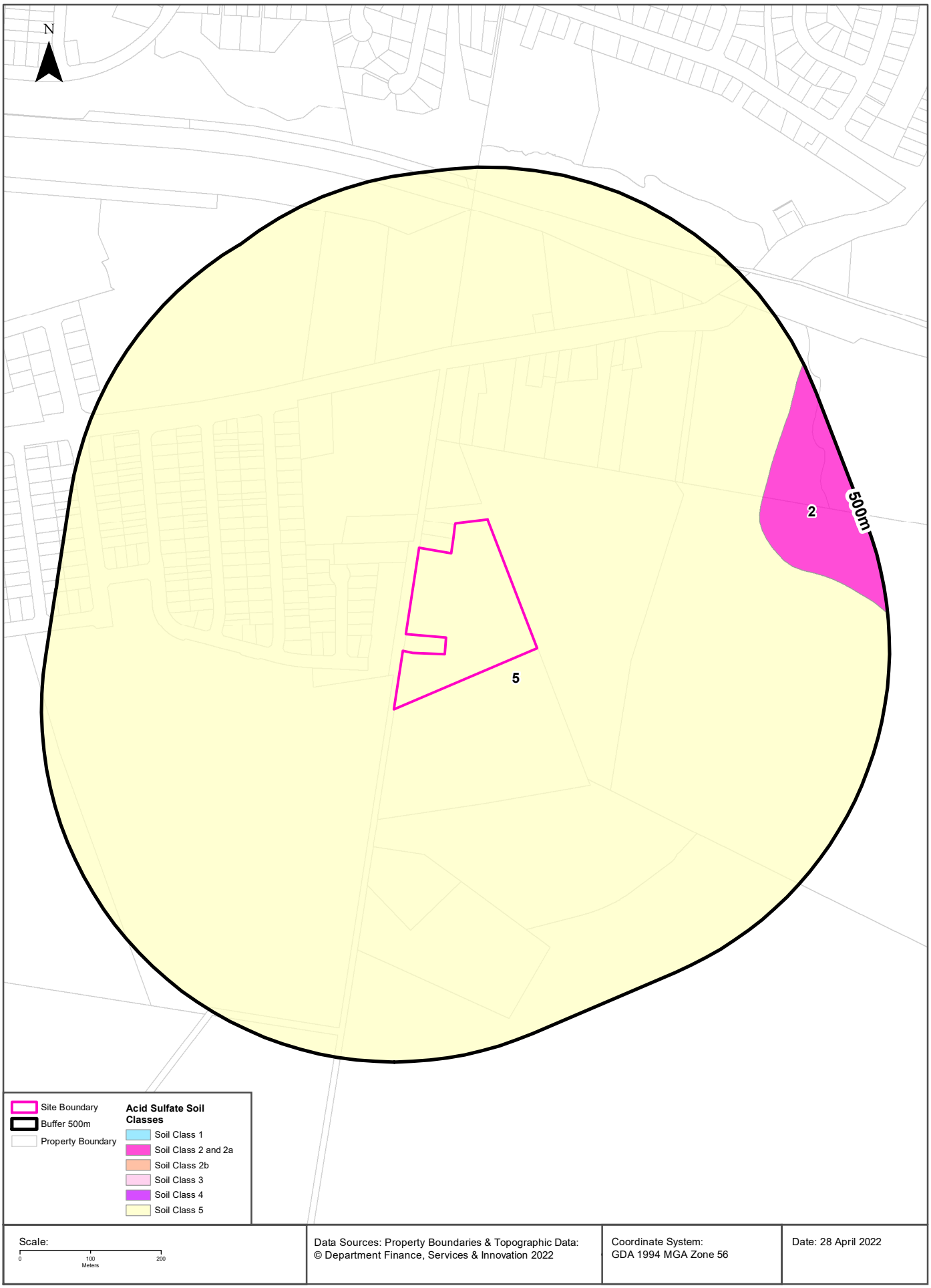
Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
9232bh	Bolwarra Heights	0m	On-site
9232hua	Hunter variant a	327m	South East
9232wga	Wallalong variant a	580m	North West
9232hu	Hunter	965m	South
9232ri	Rivermead	995m	East

Acid Sulfate Soils

33 Owlpen Lane, Farley, NSW 2320



Acid Sulfate Soils

33 Owlpen Lane, Farley, NSW 2320

Environmental Planning Instrument - Acid Sulfate Soils

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

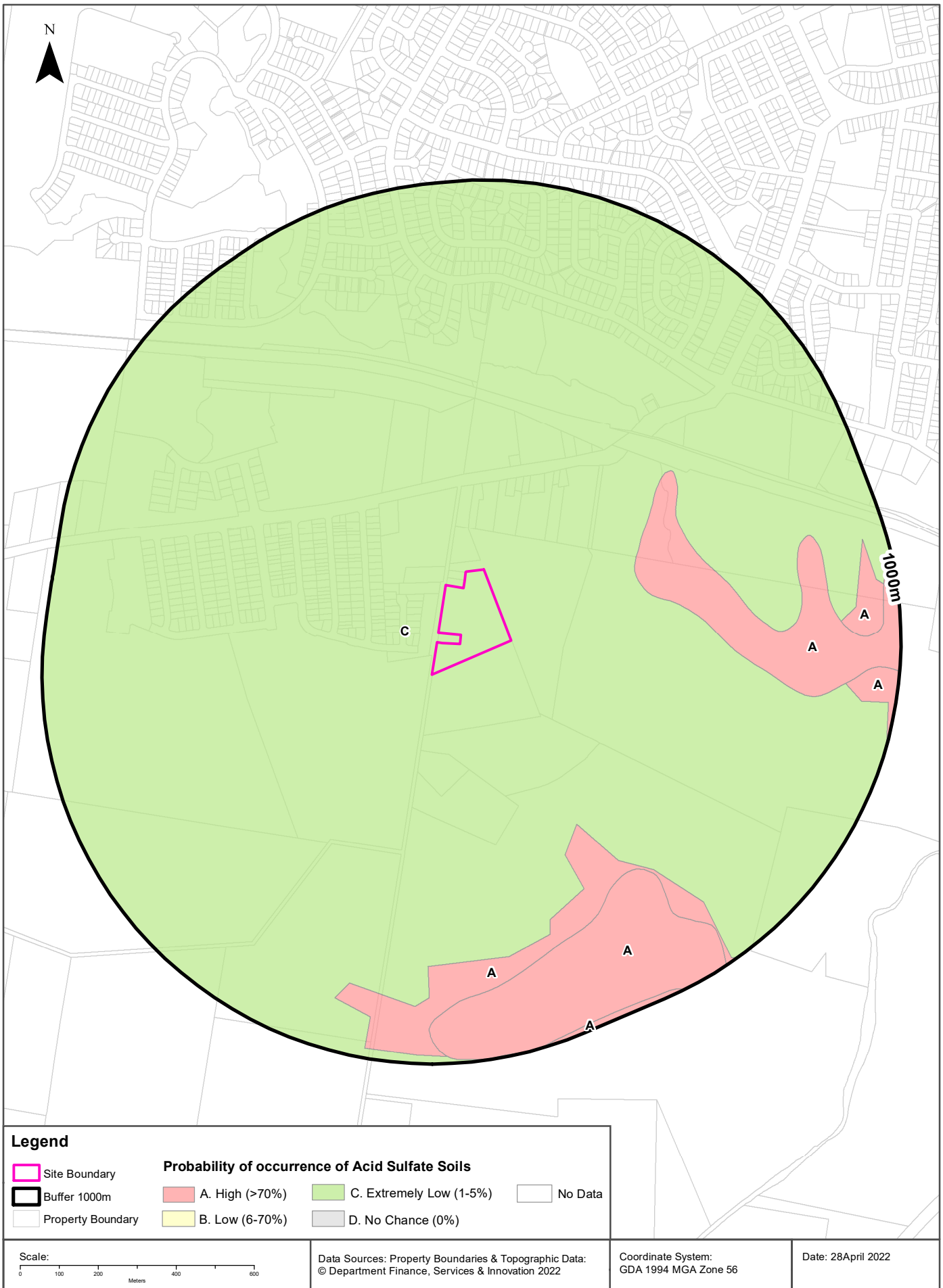
Soil Class	Description	EPI Name
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land that is below 5 metres AHD and by which the watertable is likely to be lowered below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk	Maitland Local Environmental Plan 2011

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

Soil Class	Description	EPI Name	Distance	Direction
2	Works below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered present an environmental risk	Maitland Local Environmental Plan 2011	357m	East

Atlas of Australian Acid Sulfate Soils

33 Owlpen Lane, Farley, NSW 2320



Acid Sulfate Soils

33 Owlpen Lane, Farley, NSW 2320

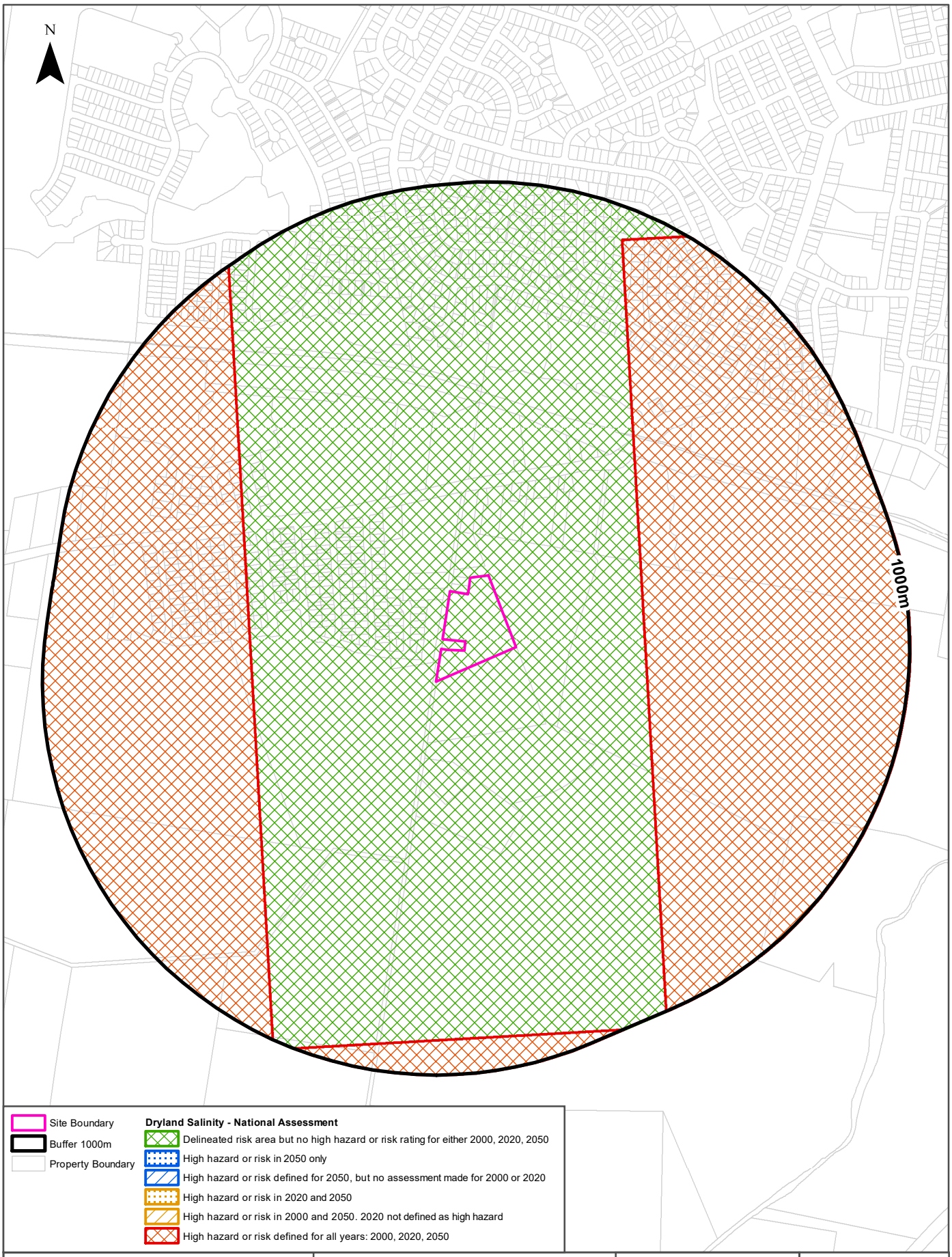
Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	846m	East

Dryland Salinity

33 Owlpen Lane, Farley, NSW 2320



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 April 2022

Dryland Salinity

33 Owlpen Lane, Farley, NSW 2320

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

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

Yes

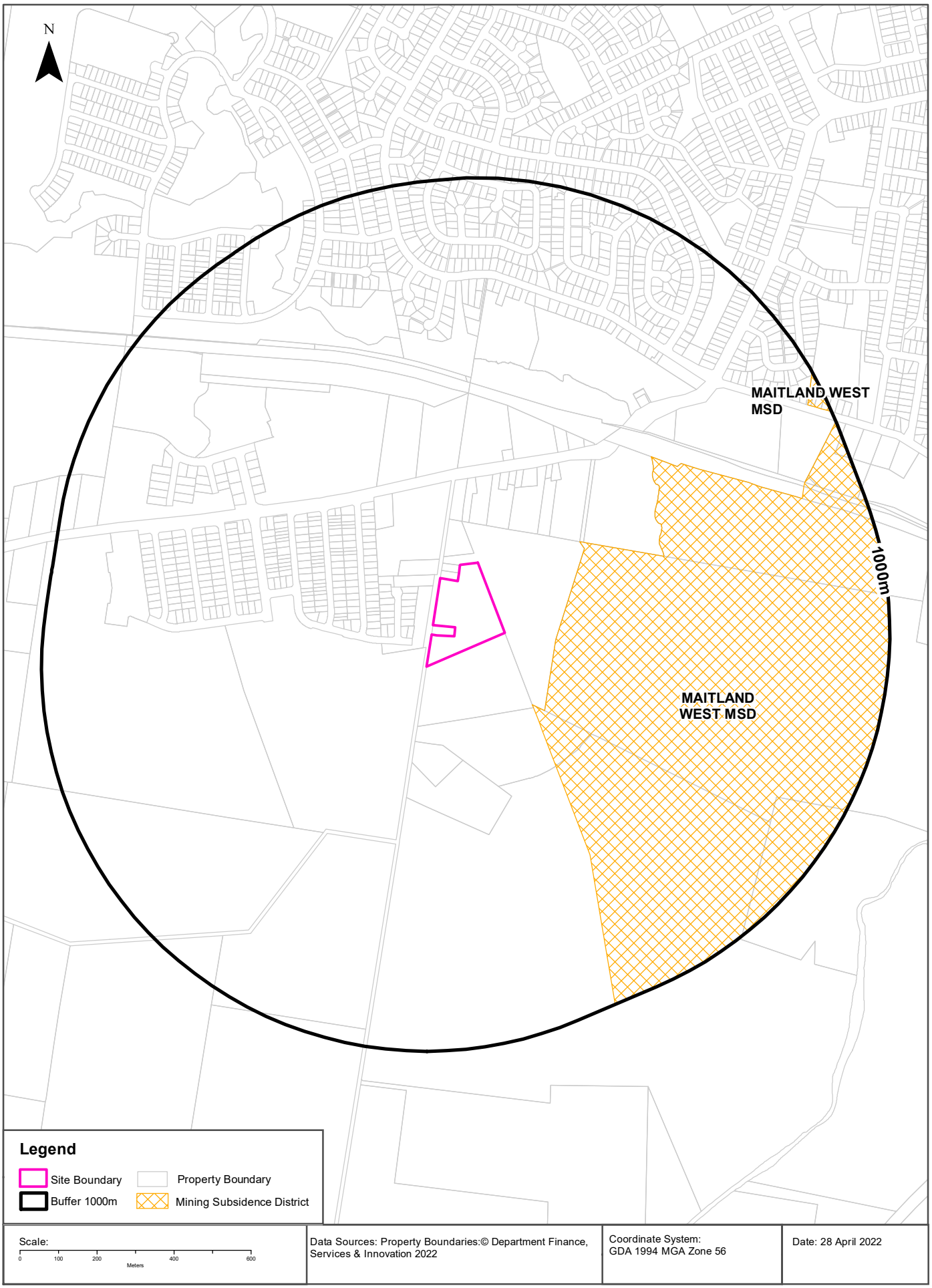
What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
Delineated risk area but no high hazard or risk rating	Delineated risk area but no high hazard or risk rating	Delineated risk area but no high hazard or risk rating	0m	On-site
High hazard or risk	High hazard or risk	High hazard or risk	327m	East

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

Mining Subsidence Districts

33 Owlpen Lane, Farley, NSW 2320



Mining

33 Owlpen Lane, Farley, NSW 2320

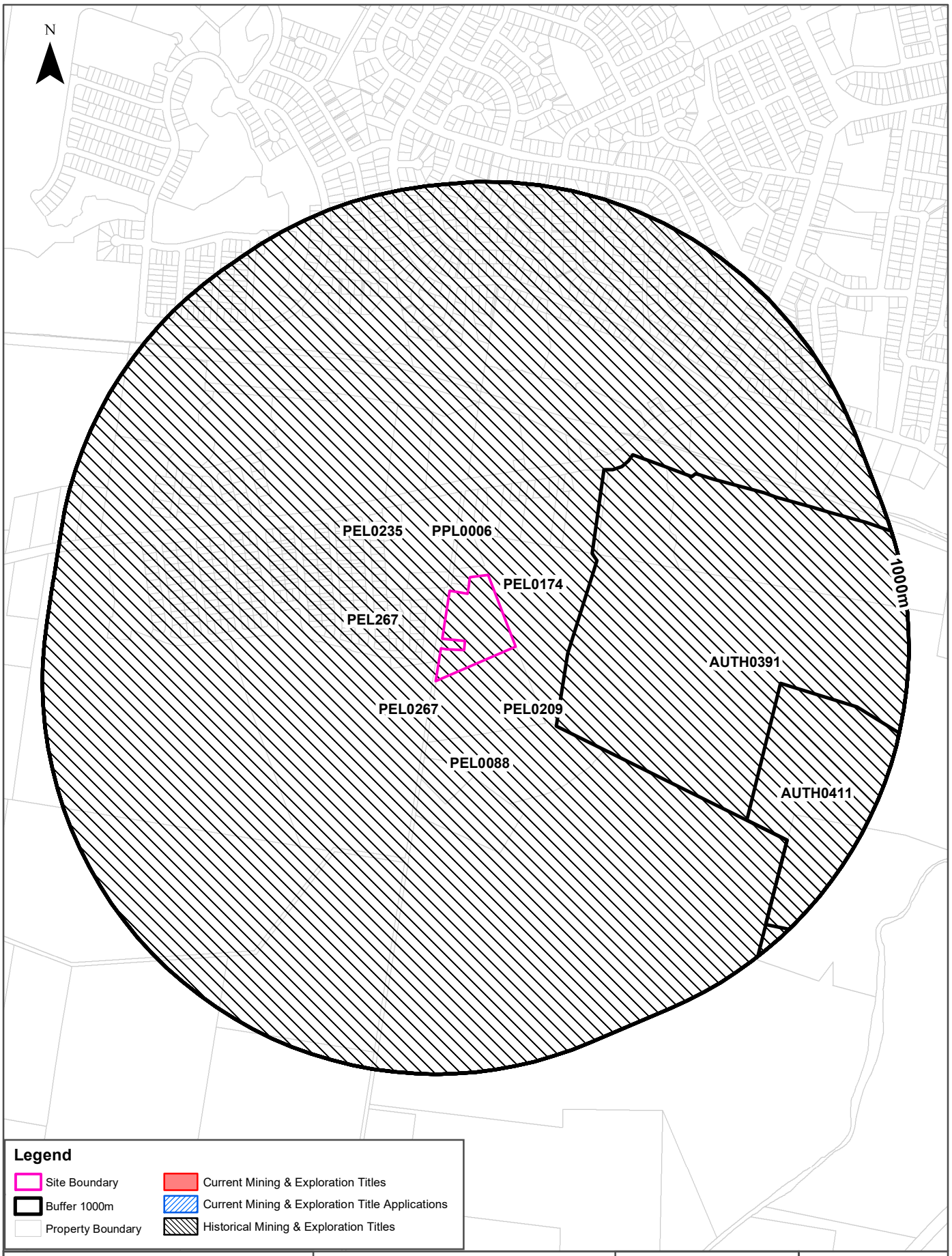
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
MAITLAND WEST	133m	East

Mining & Exploration Titles

33 Owlpen Lane, Farley, NSW 2320



Mining

33 Owlpen Lane, Farley, NSW 2320

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

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

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

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

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

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

Mining

33 Owlpen Lane, Farley, NSW 2320

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0267	SYDNEY OIL CO (NSW) PTY LTD, MANVANE PTY LTD AUSTRALIA NL, BASE RESOURCES LTD, SEAHAWK OIL AUSTRALIA NL, READING & BATES	20/01/1984	6/07/2015	PETROLEUM	Petroleum	0m	On-site
PPL0006	PLANET EXPLORATION	15/05/1905		PETROLEUM	Petroleum	0m	On-site
PEL0174	NSW OIL AND GAS COMPANY NL			PETROLEUM	Petroleum	0m	On-site
PEL0209	EARTH RESOURCES AUSTRALIA PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL0235	EASTMET LTD	17/04/1980		PETROLEUM	Petroleum	0m	On-site
PEL0088	PLANET EXPLORATION COMPANY PTY LTD			PETROLEUM	Petroleum	0m	On-site
PEL267	AGL UPSTREAM INVESTMENTS PTY LIMITED			MINERALS		0m	On-site
AUTH0391	SOUTH MAITLAND COLLIERIES PTY LIMITED	29 Apr 1987	29 Apr 1991	COAL	Coal	133m	East
AUTH0411	SOUTH MAITLAND COLLIERIES PTY LIMITED	19 Apr 1990	19910419	COAL	Coal	676m	South East

State Environmental Planning Policy

33 Owlpen Lane, Farley, NSW 2320

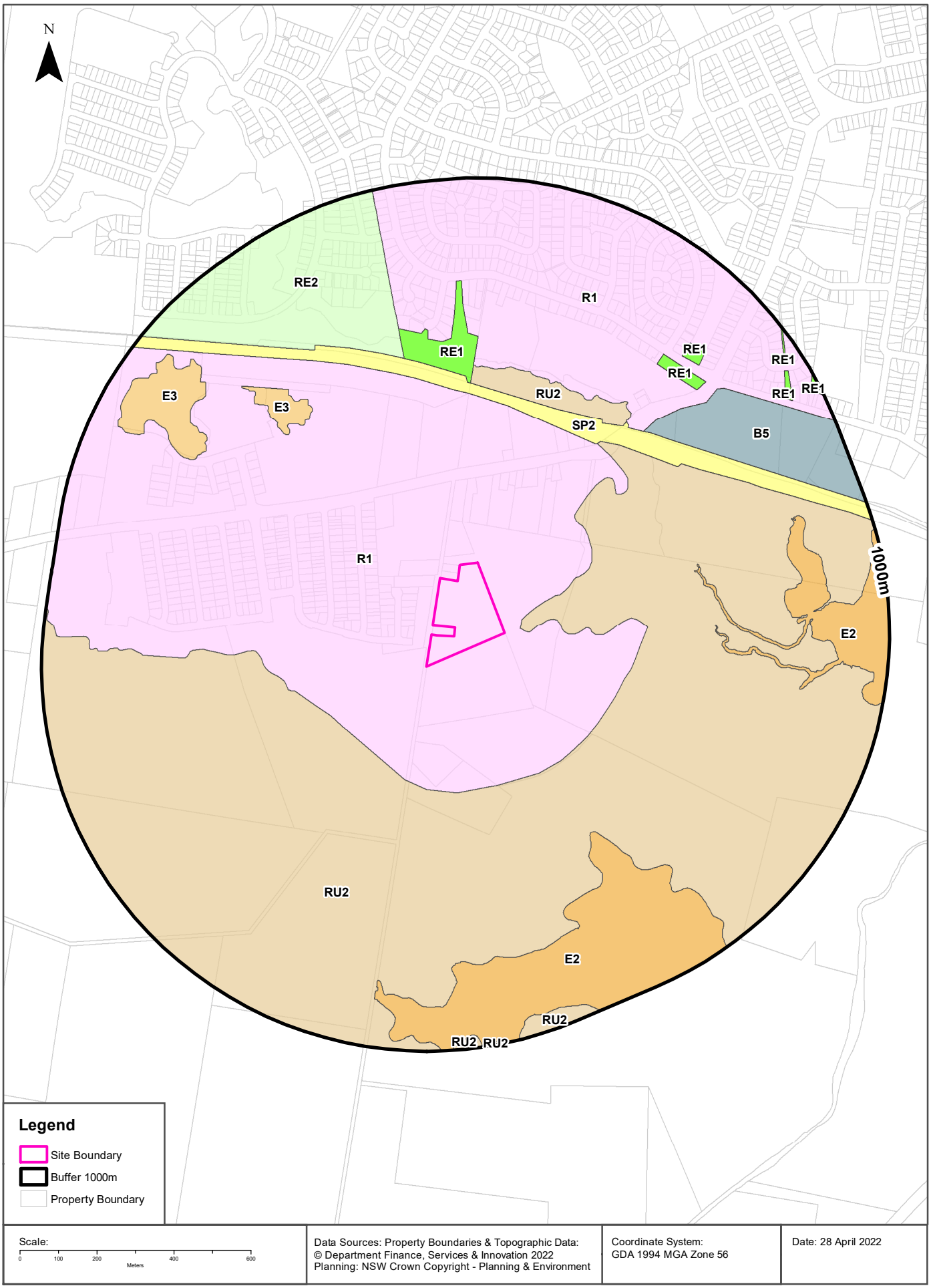
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

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

EPI Planning Zones

33 Owlpen Lane, Farley, NSW 2320



Environmental Planning Instrument

33 Owlpen Lane, Farley, NSW 2320

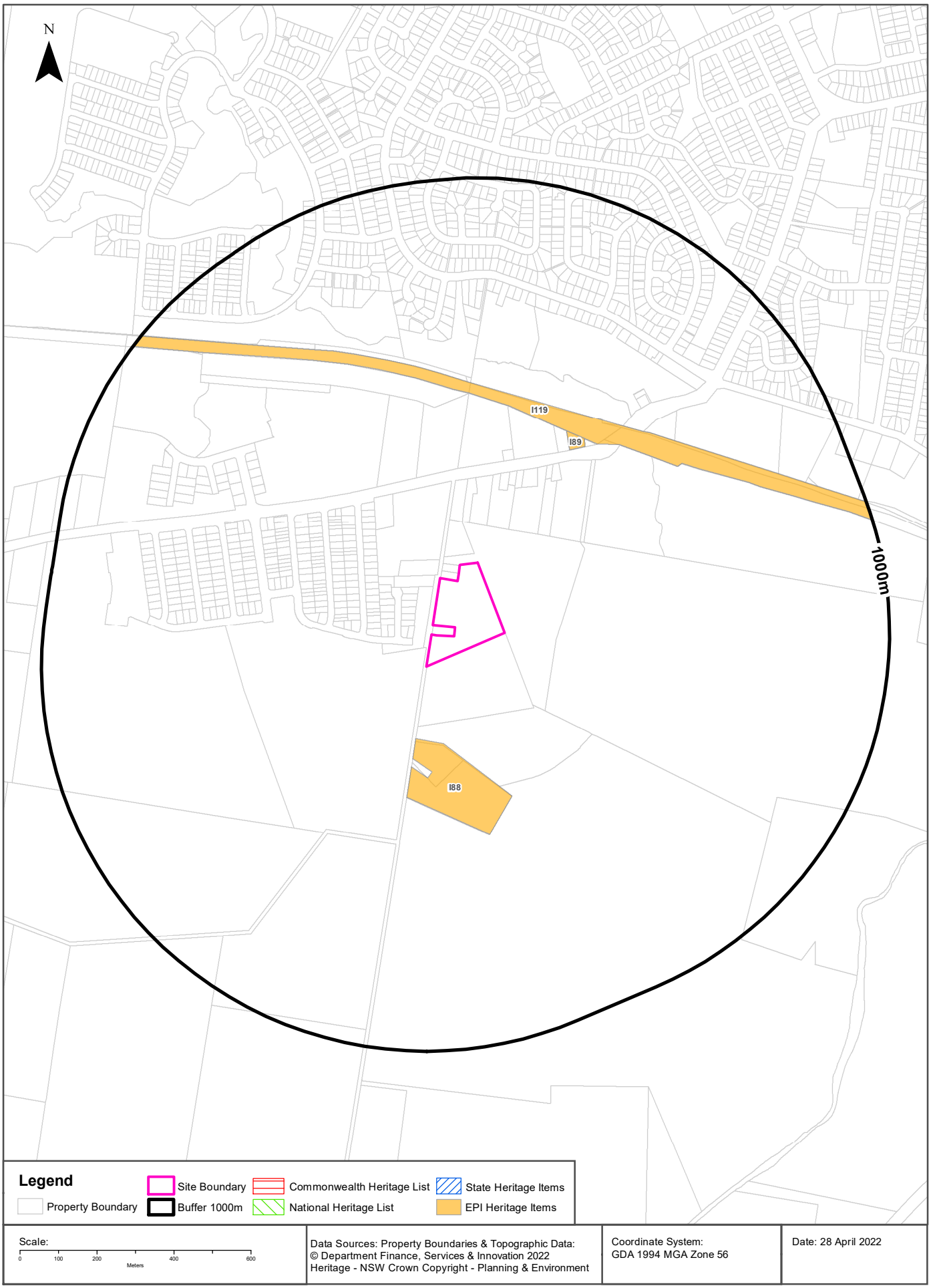
Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R1	General Residential		Maitland Local Environmental Plan 2011	18/01/2013	18/01/2013	16/07/2021	Amendment No 1	0m	On-site
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		41m	South
SP2	Infrastructure	Railway	Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		405m	North
RU2	Rural Landscape		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		442m	North
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		468m	North
R1	General Residential		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		502m	North
E2	Environmental Conservation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		518m	South East
E3	Environmental Management		Maitland Local Environmental Plan 2011	18/01/2013	18/01/2013	16/07/2021	Amendment No 1	534m	North West
B5	Business Development		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		548m	North East
RE2	Private Recreation		Maitland Local Environmental Plan 2011	25/08/2017	25/08/2017	16/07/2021	Amendment No 21	556m	North West
E3	Environmental Management		Maitland Local Environmental Plan 2011	18/01/2013	18/01/2013	16/07/2021	Amendment No 1	693m	North West
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		695m	North East
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		754m	North East
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		903m	North East
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		949m	North East
RE1	Public Recreation		Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	16/07/2021		971m	North East

Heritage Items

33 Owlpen Lane, Farley, NSW 2320



Heritage

33 Owlpen Lane, Farley, NSW 2320

Commonwealth Heritage List

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

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

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

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

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

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

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

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

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

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

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I88	Owlpen	Item - General	Local	Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	14/01/2022	189m	South
I89	Government Railway (Station Masters House)	Item - General	Local	Maitland Local Environmental Plan 2011	14/01/2022	14/01/2022	14/01/2022	378m	North East
I119	Government Railway	Item - General	Local	Maitland Local Environmental Plan 2011	16/12/2011	16/12/2011	14/01/2022	406m	North East

Heritage Data Source: NSW Crown Copyright - Planning & Environment
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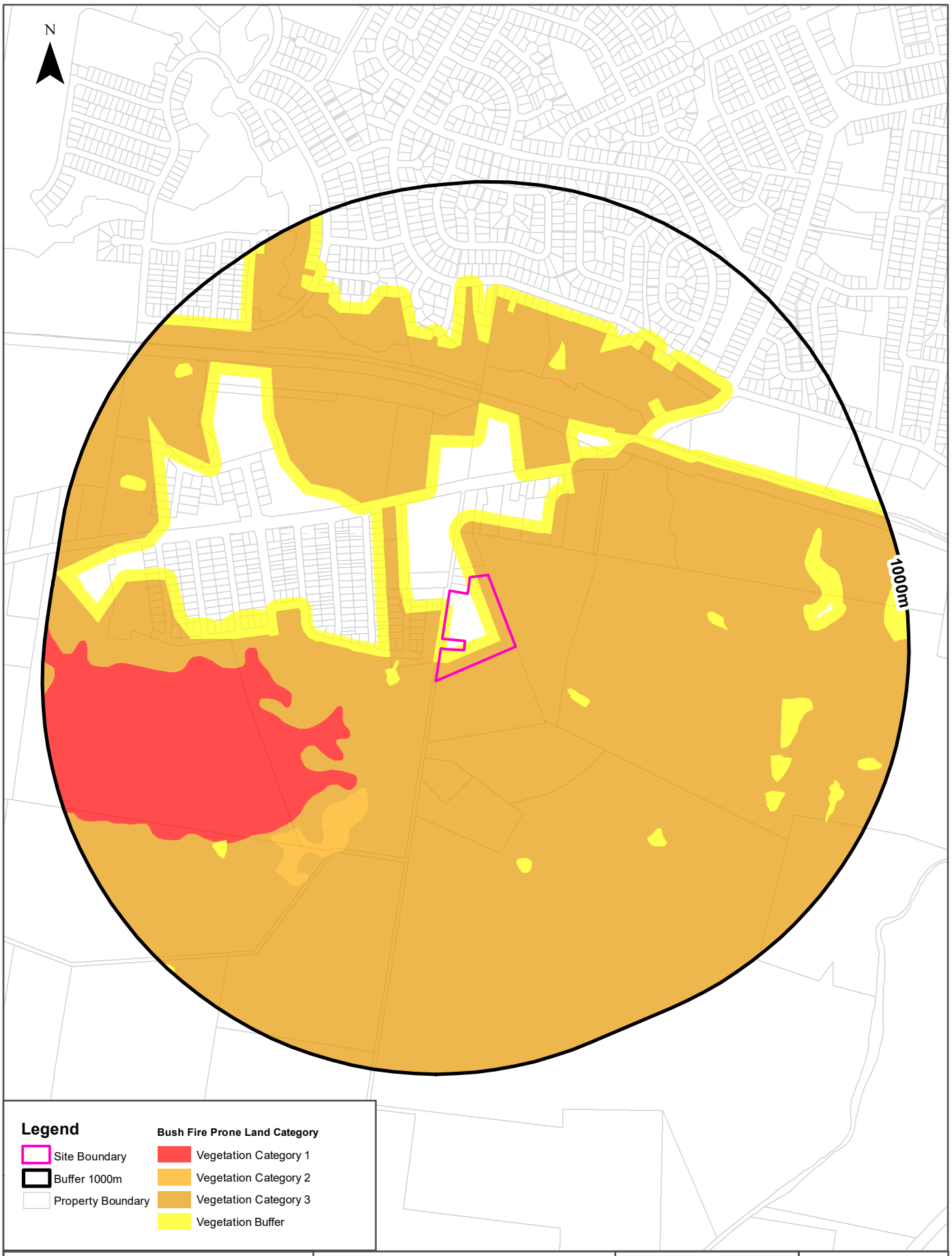
Natural Hazards - Bush Fire Prone Land

33 Owlpen Lane, Farley, NSW 2320



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2022. Property Boundaries: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 28 April 2022

Natural Hazards

33 Owlpen Lane, Farley, NSW 2320

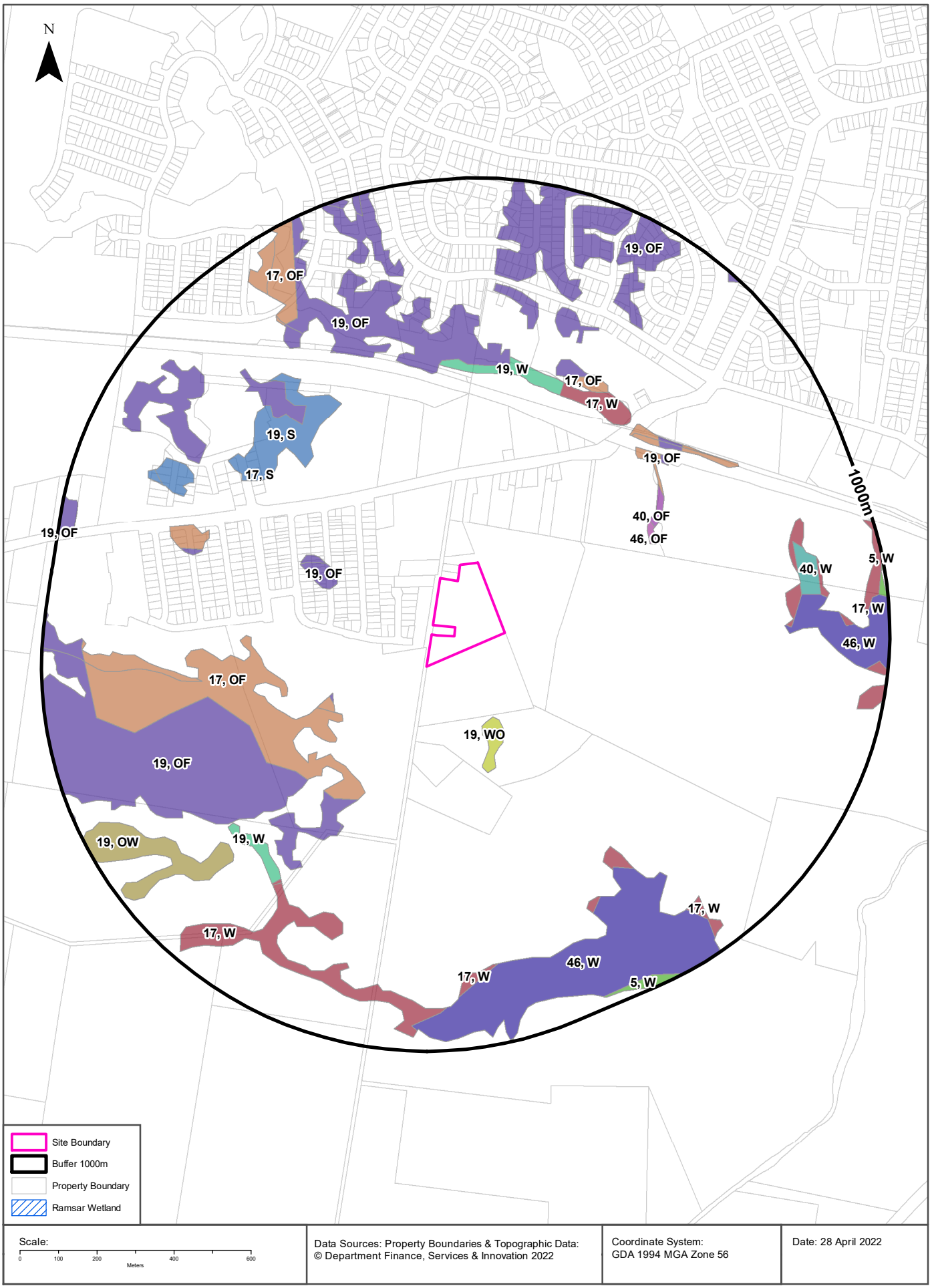
Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 3	0m	On-site
Vegetation Buffer	0m	On-site
Vegetation Category 1	247m	West
Vegetation Category 2	326m	South West

Ecological Constraints - Vegetation & Ramsar Wetlands

33 Owlpen Lane, Farley, NSW 2320



Ecological Constraints

33 Owlpen Lane, Farley, NSW 2320

Lower Hunter and Central Coast Regional Vegetation Survey

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

Map Id	Unit Desc	Canopy Code	Canopy Cover	Species	Distance	Direction
19	Hunter Lowland Redgum Forest	WO	Sparse (Woodland) 20-<50% cover	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	188m	South
17	Lower Hunter Spotted Gum - Ironbark Forest	OF	Mid Dense (Open Forest) 50-<100% cover	C. maculata / E. fibrosa / E. punctata	253m	South West
19	Hunter Lowland Redgum Forest	OF	Mid Dense (Open Forest) 50-<100% cover	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	254m	South West
46	Freshwater Wetland Complex	OF	Mid Dense (Open Forest) 50-<100% cover	Ludwigia peploides subsp montevidensis / Paspalum distichum / Eleocharis sphacelata / Juncus usitatus	434m	North East
19	Hunter Lowland Redgum Forest	S	Scrub	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	454m	North West
40	Swamp Oak Rushland Forest	OF	Mid Dense (Open Forest) 50-<100% cover	C. glauca / Melaleuca ericifolia / Baumea juncea	454m	North East
19	Hunter Lowland Redgum Forest	W	Wetland	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	482m	North
17	Lower Hunter Spotted Gum - Ironbark Forest	W	Wetland	C. maculata / E. fibrosa / E. punctata	485m	North East
17	Lower Hunter Spotted Gum - Ironbark Forest	S	Scrub	C. maculata / E. fibrosa / E. punctata	528m	North West
46	Freshwater Wetland Complex	W	Wetland	Ludwigia peploides subsp montevidensis / Paspalum distichum / Eleocharis sphacelata / Juncus usitatus	669m	South East
19	Hunter Lowland Redgum Forest	OW	Very Sparse (Open Woodland) 10-20% cover	E. tereticornis / E. punctata / E. crebra / A. floribunda / C. maculata	691m	South West
40	Swamp Oak Rushland Forest	W	Wetland	C. glauca / Melaleuca ericifolia / Baumea juncea	775m	East
5	Alluvial Tall Moist Forest	W	Wetland	E. saligna / S. glomulifera / Glochidion ferdinandi	965m	South East

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

Ramsar Wetlands

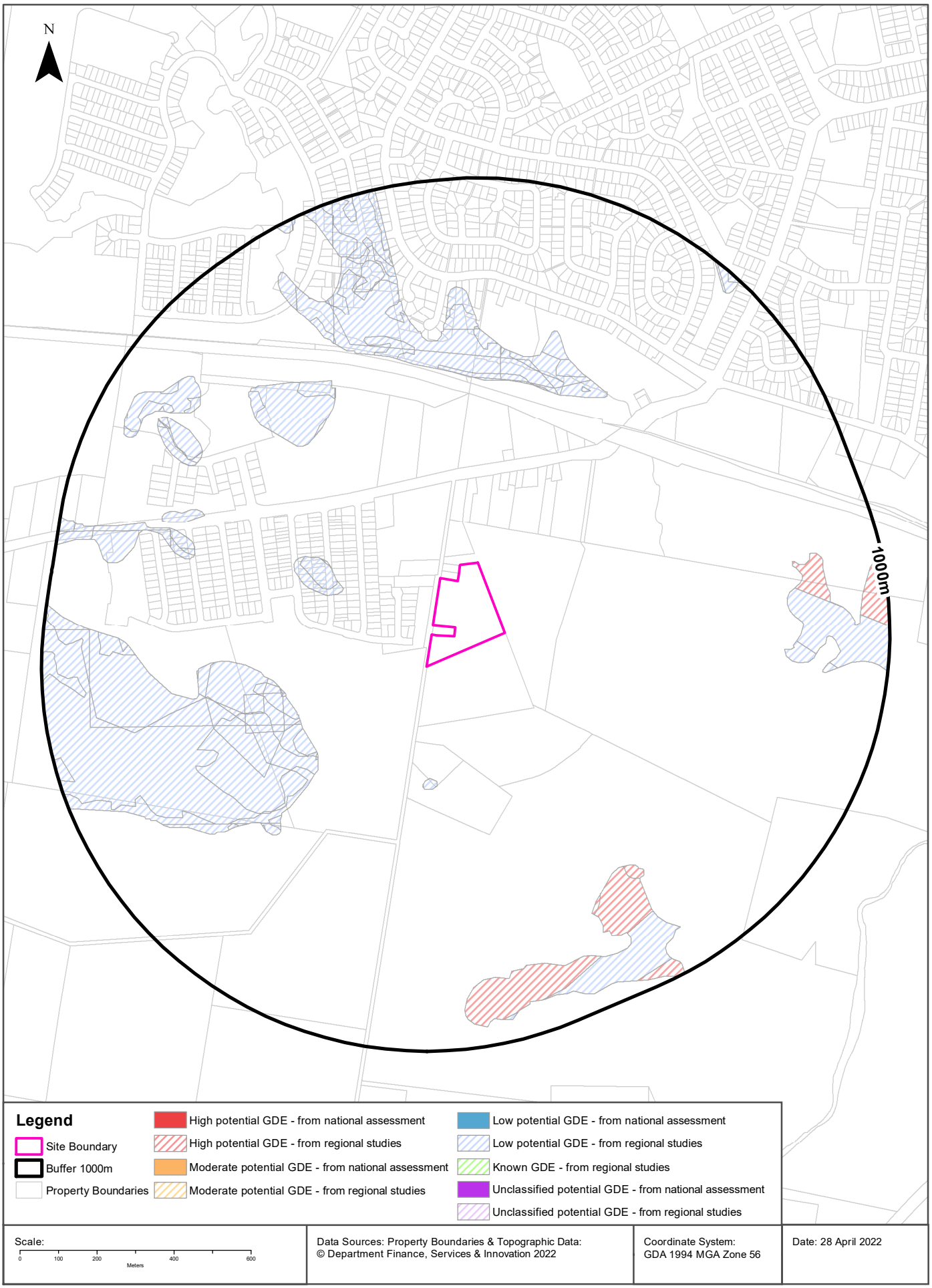
What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

33 Owlpen Lane, Farley, NSW 2320



Ecological Constraints

33 Owlpen Lane, Farley, NSW 2320

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		246m	West
Terrestrial	Low potential GDE - from regional studies	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		658m	North East
Terrestrial	High potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		676m	South

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

33 Owlpen Lane, Farley, NSW 2320

Ecological Constraints

33 Owlpen Lane, Farley, NSW 2320

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	4	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		246m	West
Terrestrial	8	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		264m	West
Terrestrial	10	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		355m	West
Terrestrial	7	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		357m	West
Terrestrial	5	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		358m	West
Terrestrial	6	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		429m	North
Terrestrial	8	Plateau flank dissected into narrow strike ridges and valleys.	Vegetation		658m	North East
Terrestrial	2	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		679m	East

Ecological Constraints

33 Owlpen Lane, Farley, NSW 2320

NSW BioNet Atlas

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

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Irediparra gallinacea	Comb-crested Jacana	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ixobrychus flavicollis	Black Bittern	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Limosa limosa	Black-tailed Godwit	Vulnerable	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Numenius minutus	Little Curlew	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Pluvialis fulva	Pacific Golden Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pluvialis squatarola	Grey Plover	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Sterna hirundo	Common Tern	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Sternula albifrons	Little Tern	Endangered	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thinornis cucullatus cucullatus	Eastern Hooded Dotterel	Critically Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Tringa glareola	Wood Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Pseudomys novaehollandiae	New Holland Mouse	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Endangered	Not Sensitive	Endangered	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia bakeri	Marblewood	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia bynoeana	Bynoe's Wattle	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Callistemon linearifolius	Netted Bottle Brush	Vulnerable	Category 3	Not Listed	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus parramattensis subsp. decadens		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Persoonia pauciflora	North Rothbury Persoonia	Critically Endangered	Category 3	Critically Endangered	
Plantae	Flora	Pterostylis chaetophora		Vulnerable	Category 2	Not Listed	
Plantae	Flora	Pterostylis gibbosa	Illawarra Greenhood	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodomyrtus psidioides	Native Guava	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Rutidosis heterogama	Heath Wrinklewort	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Syzygium paniculatum	Magenta Lilly Pilly	Endangered	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

Location Confidences

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

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

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