Preliminary Site Contamination Report

Lots 831,832 & 833 DP 847683
Reardon's Lane Swan Bay

HEALTH SCIENCE ENVIROMENTAL EDUCATION
ENVIRONMENTAL AUDITOR

Preliminary Site Contamination Report

Lots 831,832 & 833 DP 847683 Reardon's Lane Swan Bay

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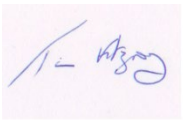

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1. Introduction

Tim Fitzroy & Associates (TFA) has been engaged by Envirosafe Products Pty Ltd to undertake a preliminary site contamination investigation to support a Planning Proposal to be submitted to Richmond Valley Council (RVC) for the establishment of a 43 Lot Rural Residential Subdivision of Lots 831,832 & 833 DP 847683 Reardon's Lane Swan Bay (**see Figure 1).**

This report should be read in conjunction with TFA's General limitations to environmental information in Section 1.5.

1.1 Background

The planning proposal comprises:

- An application to RVC to rezone Lots 831,832 & 833 DP 847683 Reardon's Lane Swan Bay from RU1 Primary Production to R5 Large Lot Residential under Richmond Valley Local Environmental Plan 2012, with a view to future residential development of the land (see **Figure 2**).

1.2 Objectives

This report has been prepared to accompany a Planning Proposal to RVC to specifically address potential contamination issues from past and current uses on Lots 831,832 & 833 DP 847683 Reardon's Lane Swan Bay. The assessment is preliminary in nature and suitable for a planning proposal application only.

State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55) relates to contaminated land issues. Clause 7(1) of SEPP 55 sets out the obligations a planning authority must consider when granting a development application. Clause 7 relevantly provides:

7 Contamination and remediation to be considered in determining development application

(1) A consent authority must not consent to the carrying out of any development on land unless:
(a) it has considered whether the land is contaminated, and
(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.
(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

(3) The applicant for development consent must carry out the investigation required by subclause (2) and must provide a report on it to the consent authority. The consent authority may require the applicant to carry out, and provide a report on, a detailed investigation (as referred to in the contaminated land planning guidelines) if it considers that the findings of the preliminary investigation warrant such an investigation.
(4) The land concerned is:
(a) land that is within an investigation area,
(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,
(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational, or childcare purposes, or for the purposes of a hospital—land:
(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and
(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).

This report has been prepared to satisfy Council that the site is suitable for the use proposed in the planning proposal.

1.3 Summary

This investigation is Tier 1 - preliminary site investigation, which is required to determine if contamination of the site's soil has occurred from past land usage in accordance with NEPM 1999 (2013), DUAP and EPA (1998). The investigation includes obtaining a history of land usage on the site and a preliminary soil-sampling regime. The results of the soil sample analysis are compared with the Health Investigation Levels (HIL's) and Ecological Investigation (EIL's) and Ecological Screening Levels (HSL's) outlined in NEPM 1999 (2013).

An oral site history has been provided by Noel Newman. Mr Newman manages the subject property on behalf of his sister Francis Newman. Ms. Newman purchased by the land approximately 20 years ago. The property has been used to grow sugar cane since 1981. Prior to sugar cane the site was used to grow beef cattle and sorgum.

The Newman family have a strong connection with the land and Swan Bay area as their grandfather owned land adjacent to the said property.

A review of the NSW Agriculture Dipsite locator indicates that there are two decommissioned cattle dipsites within a 2km radius of the subject site; Durrington's and Reardons Lane. The subject site is unaffected by residual contamination from the dipsites.

A total of 45 soil samples plus 4 Quality Assurance soil sample were collected from within the proposed development envelope.

All of the soil samples show contaminant levels well below the relevant Australian and New Zealand Environment and Conservation Council (ANZECC), National Environment Protection Measure (NEPM 2013) HILA *Residential with garden/accessible soil also includes children's day care centres, preschools and primary schools* and *Ecological Soil Investigation Levels* and Ecological Screening Levels (HSL's) (NEPM 2013).

Based on the outcomes of this PSI there is no impediment to approval of Planning Proposal for the proposed rezoning from RU1 Primary Production to R5 Large Lot Residential. Further investigation in accordance with the EPA sampling guidelines is required prior to the issue of a subdivision certificate for large lot residential use.

1.4 Scope of Works

The objective of this preliminary investigation has been to determine if land contamination has occurred from historical and current land use activities occurring on site or immediately nearby. To determine if the site poses a significant risk of harm to end users (and nearby sensitive receptors), available historical information has been reviewed and a number of soil samples have been collected and analysed for a range of contaminants typically associated with the land uses identified as having occurred on site including metals and organochlorines. In addition, the importation of quarry material containing recovered aggregate has been analysed in accordance with the Recovered Aggregate Exemption Criteria (NSW EPA 2014).

The results of the soil analysis are compared to relevant National Environmental Protection Measure (NEPM 1999 updated 2013) guidelines in order to assess the significance of risk. This investigation is considered to be Stage 1 of the Managing Land Contamination Planning Guidelines (DUAP and EPA, 1998) or a Preliminary Site Investigation (PSI; NEPM 1999). If contamination levels exceed the adopted EPA acceptable levels, a detailed investigation is then required (i.e., a Stage 2 investigation or Detailed Site Investigation (DSI)). If the contamination levels are below the relevant acceptable levels, and information gathered as part of the investigation also supports that contamination was unlikely to have occurred; only a Stage 1 (or PSI) investigation would be required.

This preliminary investigation has been used to identify the following:

- Past and present potentially contaminating activities occurring on or near the site; and
- The presence of Potential Contaminants of Concern associated with the identified land uses.

The investigation will also:

- Discuss the site condition;
- Provide a preliminary assessment of the site's contamination status; and
- Assess the need for further investigations.

Relevant documents considered in the preparation of this investigation included:

- ANZECC and NHMRC (1992) Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites;
- Council of Standards Australia (2005) AS 4482.1-2005 Guide to the sampling and investigation of potentially contaminated soil – Non-volatile and semi-volatile compounds;
- NSW DEC (2006) Contaminated Sites – Guidelines for the NSW Site Auditor Scheme 2nd Edition;
- NSW EPA (1995) Contaminated Sites – Sampling Design Guidelines;
- NSW EPA (2011) Guidelines for Consultants Reporting Contaminated Sites; and
- National Environment Protection Council (NEPC) (2013) National Environment Protection (Assessment of Site Contamination) Measure

This preliminary assessment report is written in accordance with the new Contaminated land guidelines (NSW Environment Protection Authority 2020) and the Northern Rivers Regional Councils (NRRC) Regional Policy for the Management of Contaminated Land (NRRC 2006).

1.5 General limitations to environmental information

TFA has conducted the services in a manner consistent with the appropriate levels of care and rigour expected of members of the environmental assessment profession. No warranties or guarantees, expressed or implied, are made.

The findings of this report are strictly limited to identifying the environmental conditions associated with the subject property in regard to site contamination, and does not seek to provide an opinion regarding other aspects of the environment not related to site contamination, or to the suitability of the site in regard to: land use planning and legal use of the land; and/or regulatory responsibilities or obligations (for which a legal opinion should be sought); and/or the occupational health and safety legislation; and/or the suitability of any engineering design. Reviews of such information are only in relation to the contaminated land aspects of any project or site. If specialist technical review of such documents is required, these should be obtained by an appropriate specialist.

The reporting and conclusions are based on the information obtained at the time of the assessments. Changes to the subsurface conditions may occur subsequent to the investigation described, through natural processes or through the intentional or accidental addition of contaminants, and these conditions may change with space and time.

Furthermore, the test methods used to characterise the contamination at each sampling location are subject to limitations and provide only an approximation of the contaminant concentrations. Monitoring and chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

The absence of any identified hazardous or toxic materials at the site should not be interpreted as a warranty or guarantee that such materials do not exist at the site. Therefore, future work at the site which involves subsurface excavation or removal of structures or parts thereof, should be conducted based on appropriate management plans. These should include, inter alia, environmental management plans, including unexpected findings protocols, hazardous building materials management plans, and occupational health and safety plans.

2. Site identification and Surrounds

2.1 Site Description

The subject site is described in Real Property terms as Lots 831, 832 and 833, DP 847683 Reardons Lane Swan Bay. The subject site is approximately 131 hectares. The land is composed of three ridges with gentle slopes, one along Reardon's Lane, the second running roughly north-east through the centre of the proposed subdivision, and the third on the eastern boundary. An access road exists on this central ridge, from which the land slopes gently to the drainage lines to the east and west. Other than some pine trees, the remaining land has been cleared and cultivated for growing sugar cane. Site improvements include two free standing dwellings and 2 sheds.

A site locality diagram that shows the subject site is provided in **Figure 1**. A copy of the proposed planning proposal is located in **Figure 2**.

2.2 Zoning

The subject land is zoned RU1 Rural Production under the Richmond Valley Local Environmental Plan 2012 (see **Appendix A**).

2.3 Surrounding Land use

The subject site is surrounded by sugar cane to the north and east, while there is a forested area to the west and grazing land to the south.

Rural dwellings are located to the immediate west and south east, while the site is approximately 700m south of an existing rural residential subdivision.

2.4 Current Use

There is currently a two-storey dwelling house, 2 sheds and a sugarcane plantation on the subject site.

3. Environmental Setting

3.1 Local Meteorology

A summary of the climatic data from the Evans Head AWS (located approximately 17 km south east of the subject site) is shown in **Table 3.1**.

Table 3.1 Climate Summary Evans Head Weather Station

	Temperature ^{0}C		Rainfall mm	Mean number of raindays
	Minimum	Maximum	Average monthly	
January	21.3	28.0	153.4	14.6
February	21.1	27.6	156.1	14.9
March	20.2	26.6	150.9	16.9
April	17.6	24.0	168.5	15.1
May	15.1	21.5	89.5	13.2
June	13.2	19.4	174.9	14.3
July	12.3	18.9	80.9	11.4
August	13.1	20.1	72.4	7.8
September	15.3	22.1	52.0	9.3
October	16.9	23.6	91.4	12.6
November	18.6	25.3	87.6	11.2
December	19.9	26.6	123.0	13.5

The has a minor slope ranging from about 8 to 13mAHD.

3.3 Geology and Soils

3.3.1 Geology

The site is mostly within the sedimentary landscape (Jurassic Walloon shales and sandstones) while the drainage lines in the north east corner in the lower area reflect Quaternary alluvial soil. Other areas of the existing holding are not being subdivided because of their low lying nature in this black alluvium.

3.3.2 Soils

Based on the Atlas of Australian Soils mapping (accessed October 2021), soil types within the area are expected to:

- Kurosols: Undulating to hilly: hard acidic yellow mottled soils (Dy3.41) and hard acidic red and red mottled soils (Dr2.21) and (Dr3.21 and Dr3.41), with generally flatter areas of sandy acidic yellow mottled soils (Dy5.61) often containing ironstone gravels. Soil dominance varies locally. As mapped, areas

of units Wc7, Tb57, and minor occurrences of units M12 and Mg24 are included.; and

- Hydrosols Coastal plains, generally low lying, poorly drained, and subject to flooding (lower and middle reaches of river flood-plains, swamps, estuarine areas, and tidal marshes): chief soils seem to be friable acidic gley soils (Dg4.11), (Dg4.41), and (Dg4.81); friable acidic yellow mottled soils (Dy5.11); leached sand soils (Uc2.2) and/or (Uc2.3); and sandy acidic yellow mottled soils (Dy5.61), (Dy5.41), and (Dy5.81) in a complex and not well-known pattern, generally as follows: (i) flat to gently sloping areas of (Dg4.11), (Dg4.41), and (Dg4.81) or (Dy5.11), and/or (Ug5.16) and (Ug5.4), with some (Dd3.11) and (Uf6.41); (ii) sandy flats and swamps of (Uc2.2), and/or (Uc2.3), and/or acid peats (0); and (iii) slightly raised sandy areas of (Dy5.61), (Dy5.41), and (Dy5.81) with (Uc2.2) and (Uc4.2). Small areas of units NY2 (Sheet 3) and B9 are included.

The Soil Landscapes of Central and Eastern NSW (NSW Department of Planning, Industry and Environment) classify the site as containing the
:

- New Italy soil landscape
    - undulating rises and low hills separated by broad drainage depressions on the Walloon Coal Measures (sandstone, carbonaceous siltstone, shale, mudstone, coal and minor oil shale). Slopes 2 – 10%; relief 30 – 40 m; elevation 5 – 50 m; and
- Dungarubba soil landscape
    - backplains of lower Richmond River. Relief <5 m; slopes <1%; elevation 1 – 5 m. Extensively cleared open-forest and swamp complex.
    - deep (>150 cm), poorly drained Grey Kandosols (Humic Gleys) and Redoxic/Oxyaquic Hydrosols buried by alluvium (Humic Gleys) within alluvial plain/backplain. Deep (>150 cm), moderately well-drained Brown Dermosols (affinity with Prairie Soils) on levees.

3.4 Acid Sulfate Soils

Tim Fitzroy & Associates (TFA) were initially engaged by NJ & KA Newman in 2013 to undertake a preliminary site investigation under State Planning Policy No.55 and an investigation into the presence of Acid Sulfate Soils(ASS) at Lots 831, 832 and 833, DP 847683 Reardons Lane Swan Bay. In 2021 TFA were engaged by Envirosafe Products Property Pty Ltd to review and update the ASS investigation to support a revised Planning Proposal to be submitted to Richmond Valley Council (RVC) for the establishment of a 43 Lot Rural Residential Subdivision at the subject site.

The subject site is approximately 131 hectares. The bulk of the land is under sugar cane cultivation. A series of cane drains and road crisscross the site. Site improvements include two free standing dwellings, a shed and a large dam.
A total of 43 large residential allotments are proposed ranging in size from 0.750ha to 1.498 ha.

The revised development footprint has been reduced to elevated portions of the subject site such that the proposed works will not disturb acid sulfate soils (see Preliminary

Acid Sulfate Soil Assessment, TFA 27 January 2022). As a consequence, ASS has not been identified as an impediment to the Planning Proposal to be submitted to Richmond Valley Council (RVC) for the establishment of a 43 Lot Rural Residential Subdivision at the subject site.

3.5 Hydrogeology

A search of NSW Department of Primary Industries Office of Water licensed bores within a 2km radius of the site identified 9 registered bores. GW020496 is located on the northern boundary of the subject site at a depth of 3.6m within a shale substrate and is used for stock and domestic purposes. The closest offsite registered groundwater bore GW072758 at a depth of 17.0m is located 103m north west of the subject site.

The results of the groundwater bore search are summarised in **Table 3.2** below and included in full in **Appendix A**.

Table 3.2 Registered Groundwater Drillers Logs in the Locale

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW020496	30BL012256, 30BL027383	Well	Private	Domestic, Stock	Stock			3.60	3.70					0m	On-site
GW072758	30BL155011	Bore	Private	Domestic, Stock	Domestic, Stock		20/06/1994	17.00	17.00	Good	6.00	0.490		103m	North West
GW053329	30BL120553	Bore	Private	Domestic, Irrigation, Stock	Irrigation		01/01/1980	27.00		Salty				185m	South East
GW018112	30BL012255	Bore open thru rock	Private	Domestic, Stock	Domestic, Stock		01/04/1962	24.70	24.70	7001-10000 ppm				255m	North
GW047986	30BL116660	Well	Private	Domestic, Irrigation, Stock	Irrigation			5.50		Salty				308m	South East
GW047987	30BL116661	Bore	Private	Domestic, Irrigation, Stock	Irrigation		01/10/1979	9.00	9.00	V.Salty				403m	South East
GW026681	30BL019318	Bore open thru rock	Private	Domestic, Stock	Domestic, Stock		01/05/1967	9.80	9.80					454m	North
GW305734	30BL183248	Bore	Private	Domestic	Domestic		01/02/2005	18.00	18.00		13.00	0.600		1371m	North
GW305748	30BL183949	Bore	Private	Domestic	Domestic, Stock		10/05/2006	90.00	90.00		66.00	1.200		1594m	West

Given the medium to heavy clays in the subsoil, the risk to groundwater contamination from application of fertilisers, herbicides and insecticides from routine cane farming operations is low.

4. Site History

4.1 Land Use History

An oral site history has been provided by Noel Newman. Mr Newman manages the subject property on behalf of his sister Francis Newman. Ms. Newman purchased by the land approximately 21 years ago. The property has been used to grow sugar cane since 1981. Prior to sugar cane the site was sued to grow beef cattle and sorgum.

The Newman family have a strong connection with the land and Swan Bay area as their grandfather owned land adjacent to the said property. Two dwellings are established on the site. The principal dwelling consists of brick and tile construction (circa 1980's) while the second dwelling appears to be weatherboard with metal roof. A large metal shed is located to the south west of the primary dwelling.

The following sources of information were accessed to assess the history of the Site and the surrounding area:

1. Historical Aerial Photographs
2. Historical Maps
3. Historical Business Directories
4. Historical Mining and Exploration Licences

4.3 Historical Aerial Photography Review

A search of historical aerial photographs was conducted of the subject site in an attempt to identify past uses on or about the future building envelopes. Aerial photographs were reviewed for the followings years: 1964, 1971, 1988, 1998, 2004, 2011 and 2021 (see **Appendix A**). Information garnered from the historical photographs is summarised in **Table 4.1** below:

Table 4.1 Review of Historical Aerial Photographs

Photograph	Site Observations
1964	In 1964 the site is partially cleared of vegetation. The remainder is under native vegetation.
1971	In 1971 a greater proportion of the site (up to 70%) is cleared and appears to be used for agriculture.
1988	By 1988 aerial photography indicates that the site under sugar cane and a large dam in the western portion. Two dwellings are noted in the aerial photo.
1998	By 1998 the colour aerial photography clearly shows the sugar cane paddocks,

Photograph	Site Observations
	the dam, vegetation (possibly cropping) around the dam.
2004	The 2004 aerial photography does not show any significant changes at the subject site.
2011	The 2011 aerial photography shows the vegetation around the dam has been removed. No other changes are noted.
2021	In 2021 the aerial photography shows the dam has been filled in. No other changes are noted.

4.4 Historical Maps

Historical maps from 1942, 1969 and 2015 reflect the progress from undeveloped to farmland (see **Appendix A**). There is no evidence of contaminating activities occurring on or adjacent to the subject site in the historical maps.

4.5 Historical Business Directories

A review of historic business directories did not reveal any past business operating on or within close proximity of the subject site (see **Appendix A**).

4.6 Historical Mining and Exploration Licences

Whilst there are numerous historical exploration leases over the entire area there is no evidence of mining occurring on the subject site or within the vicinity of the subject site (see **Appendix A**).

4.7 Summary of Historical Findings

From the aerial photograph review it appears that the subject site was used for sugar cane from 1971 which has continued till the present.

4.6 Australian and NSW Heritage Register

On 27 October 2021 (see **Appendix A**) a search of the:

- Commonwealth Heritage List did not reveal any heritage listed items on within close proximity of the subject site
- Australian Heritage Trust database did not reveal any heritage listed items on within close proximity of the subject site
- NSW State Heritage Items did not reveal any heritage listed items on within close proximity of the subject site
- Richmond Valley Local Environmental Plan did not reveal any heritage listed items on within close proximity of the subject site.

4.7 State and Local Authority Records

4.7.1Contaminated Land Record Search

4.7.1.1 Contaminated Land Record

A search of the Contaminated Land Record (EPA 2010b) on 27 October 2021 for the Richmond Valley Shire Council Local Government Area (LGA) did not identify any notices on or near the subject site (see **Appendix A**).

4.7.2 Protection of the Environmental Operations Act Licenses

A search of the current list (EPA 2010c) of licensed activities as per Schedule 1 of the Protection of the Environment Operations Act 1997 did not identify any licensed activities within the data set:

4.7.3 Cattle Tick Dip Sites

A search of the NSW Department of Primary Industry (DPI) Cattle Dip Site Locator tool (https://www.dpi.nsw.gov.au/animals-and-livestock/beef-cattle/health-and-disease/parasitic-andprotozoal- diseases/ticks/cattle-dip-site-locator) indicated that there are no cattle dip sites within the 200m nominal EPA residential investigation zone of proposed development (see **Appendix A**). As the closest dip (Durrington's) lies well outside the 200m residential investigation buffer to the proposed development therefore no further investigation is considered necessary.

4.7.4 Integrity Assessment

The site history information documented above is generally consistent with the aerial photographs, and the physical condition of the site. Based on the information available, TFA considers that sufficient historical information and site condition information has been obtained to allow for a thorough investigation of the environmental condition of the site.

5.0 Sampling & Quality Assurance Plan

5.1 Overview of DQO Process

The DQOs process is a planning tool developed to ensure that any data collected is of sufficient quality and quantity to support defensible decision making. It is a process used to define the type, quantity and quality of data needed to support decisions relating to the environmental condition of a site and provides a systematic approach for defining the criteria that a data collection design should satisfy.

It is recognised that the most efficient way to accomplish these goals is to establish criteria for defensible decision making before the data collection begins, and then develop a data collection design based on these criteria. By using the DQOs process to plan the investigation effort, the relevant parties can improve the effectiveness, efficiency and defensibility of a decision in a resource and cost-effective manner. DQOs have been developed to detail the type of data that is needed to meet the overall objectives of this project. The DQO's presented in this document have been developed with procedures stated in the following guidelines:

Prior to conducting site works, TFA undertook the data quality objectives (DQOs) planning process.

Table 5.1 DQOs Planning Process Output – Estimation Process

<table>
<tr><td colspan="7">Step 1 – State the problem
Summarise the contamination problem that will require new environmental data and identify the resources available to resolve the problem.</td></tr>
<tr><td>1.1</td><td colspan="6">Write a brief summary of the contamination problem:
Given the use of the site for agricultural purposes namely sugar cane production and the use of chemical fertilisers, herbicides and pesticides there is a potential for residual contamination of the subject site.</td></tr>
<tr><td rowspan="4">1.2</td><td colspan="6">Identify members of the planning team:</td></tr>
<tr><td>Person</td><td colspan="2">Organisation</td><td colspan="3">Role</td></tr>
<tr><td>Tim Fitzroy</td><td colspan="2">TFA</td><td colspan="3">Project Director</td></tr>
<tr><td>Jacob Fitzroy</td><td colspan="2">TFA</td><td colspan="3">Environmental Economist</td></tr>
<tr><td>1.3</td><td colspan="6">Develop/refine the conceptual site model (CSM) (see Figure 3):
A graphical representation of the conceptual site model for the site is included as Figure 3.
Details are included of historical land use and areas of concern.</td></tr>
<tr><td rowspan="7">1.4</td><td colspan="6">Define the summary exposure scenarios (Y/N)*:</td></tr>
<tr><td>Soil/Dust</td><td>Y</td><td>Groundwater</td><td>Y</td><td>Surface Water</td><td>Y</td></tr>
<tr><td>Dermal</td><td>R/M</td><td>Dermal</td><td></td><td>Dermal</td><td>-</td></tr>
<tr><td>Ingestion</td><td>R/M</td><td>Ingestion</td><td></td><td>Ingestion</td><td>-</td></tr>
<tr><td>Inhalation</td><td>R/M</td><td>Inhalation</td><td></td><td>Inhalation</td><td>-</td></tr>
<tr><td>Ecological</td><td>-</td><td>Ecological</td><td>R/M</td><td>Ecological</td><td>Y</td></tr>
<tr><td colspan="6">* R = residential, RC = recreational, C = commercial worker, M = maintenance worker (i.e., during site works/construction); B = local bores</td></tr>
</table>

Step 1 – State the problem Summarise the contamination problem that will require new environmental data and identify the resources available to resolve the problem.	
	Use of the site for commercial farming practices necessitating the need for use of pesticides, herbicides and fertilisers provides a potential source of residual contamination that requires assessment to inform the applicant and regulatory authorities as to whether the site is suitable for rezoning to R5 Large Lot residential use

Step 2 - Identify the decision To identify the decision that requires new environmental data to address the contamination problem.	
2.1	If identified Contaminants of Concern are detected in soils or groundwater exceed Tier 1 or Tier 2 Risk Assessment Criteria. If the 95% UCL does not exceed Tier 1 of Tier 2 Risk Assessment Criteria a Human health/ ecological pathway is considered to not exist

Step 3 – Identify the inputs to the decision To identify the information that will be required to support the decision and specify which inputs require new environmental measurements.	
	Identify the information that will be required to resolve the decision statements, including existing information and new environmental data, and identify the sources for each item of information required:
	Existing information:
3.1	From the aerial photograph review it appears that the subject site was used for sugar cane from 1971 which has continued till the present. The subject site is within an agricultural precinct and has been used to produce sugar cane for many decades which suggests that there would be a moderate probability of contaminants originating from the Site.
3.2	Identify the information needed to establish the action level: The results of the soil sample analysis are compared with the Health Investigation Levels (HILs) set out in Table 1A (1) of NEPM 1999 (2013) under Residential with garden/accessible soil and the Ecological Soil investigation levels (Table 1B(5) NEPC 2013). NSW EPA (1995) & NEPM 1999 (2013) state that if the contaminant concentration of the site is below a threshold limit, the site can be considered as uncontaminated. As per Section 3.2.2 of Schedule B1 of NEPM 1999 (2013), if Tier 1 investigations levels are exceeded and it is indicated that there is a risk of negative impact to human or ecological health, a site specific risk assessment will be undertaken. Given that the evidence that the site has been used to produce sugar cane for many decades it was decided to undertake sampling of soil onsite.
3.3	Confirm that appropriate analytical methods exist to provide the necessary data: Feasible analytical methods, both field and laboratory will be consistent with existing guidance including being in accordance with NEPM, 1999. Laboratories to be used are NATA accredited and use analytical methods based on USEPA and APHA methods.

Step 4 - Define the boundaries of the study To define the spatial and temporal boundaries that the data must represent to support the decisions.	
4.1	Specify the characteristics that define the population of interest: The investigation area is limited areas to the proposed development footprint Investigation area are presented in Figure 3.
4.2	Define the geographic area and media to which the decision statement applies: The investigation boundary is shown on Figure 1. Media is also stratified depending on the nature of the material encountered (i.e., natural soil), .

Step 4 - Define the boundaries of the study To define the spatial and temporal boundaries that the data must represent to support the decisions.	
4.3	When appropriate, divide the populations into strata that have relatively homogenous characteristics: Populations consist of natural clay beneath the site.
4.4	Determine the time frame to which the decision applies: This timeframe may be affected by other external factors, which may include the following: Inclement weather delaying progress
4.5	Determine when to collect data: Rain conditions will likely limit access. Works will be undertaken during normal working hours.
4.6	Define the scale of the decision making: Update as required
4.7	Identify any practical constraints on data collection: The following constraints are likely to impact data collection: Rain conditions will likely limit access

Step 5 - Develop the analytic (statistical) approach Develop a logical "if …, then …, else …" statement that defines the conditions that would cause the decision maker to choose among alternative actions.	
5.1	Specify the statistical parameter that characterises the population of interest, such as mean, median, maximum or proportion, etc.: The 95% UCL for will be the key characteristic. Other data evaluation will entail: No sample will exceed 250% of the criteria Standard deviation will be < 50% criteria 95% UCL is < criteria
5.2	Specify the action level for the decision: Analytical actions levels based on residential criteria with garden/accessible soil (home-grown produce < 10% fruit and vegetable and no poultry) in NEPM 1999, amended 2013. The criteria is not clean-up criteria; therefore, exceedances will be screened to determine whether further investigation is required.
5.3	Confirm that measurement detection will allow reliable comparisons with the action level: Samples will be collected and submitted for NATA accredited laboratory analysis to determine site conditions. Standard limits of reporting (LOR) are less than the criteria.
5.4	Combine the outputs from the previous DQOs steps and develop an "if ..., then ..., else ..." theoretical decision rule based on the chosen action level: If the statistical parameters of the data exceed applicable action levels, further remediation/assessment or management will be required at the site. If not, no further remediation will be required at the site.

Step 6 – Specify performance or acceptance criteria To specify probability limits for false rejection and false acceptance decision errors.	
6.1	Specify the decision rule as a statistical hypothesis test: Null hypothesis (HO) is the 95% UCL for concentration for soil is > action level; and Alternative hypotheses (HA) the 95% UCL for concentration for soil is ≤ action level.
6.2	Examine consequences of making incorrect decisions from the test: False rejection or Type I error of determining the site is suitable when it is not (wrongly rejects a true HO). Consequence is potential risks to human health and/or the environment. False acceptance or Type II error of determining the site is not suitable when it is (wrongly accepts a false HO). Consequence is unnecessary expenditure of resources or a site not being used for its highest value.
6.3	Place acceptable limits on the likelihood of making decision errors:

Step 6 – Specify performance or acceptance criteria To specify probability limits for false rejection and false acceptance decision errors.	
	Decision errors occur when accurate analytical results generated from tiny samples (sampling unit) are assumed to represent the concentrations of much larger volumes of matrix, but that extrapolation is invalid because confounding variables have not been acknowledged or controlled. No sample result will exceed 250% of the criteria. Standard deviation will be < 50% criteria. 95% UCL is < criteria.

Step 7 – Optimise the design for obtaining data To identify a resource effective sampling and analysis design for generating data that are expected to satisfy the DQOs.				
7.1	Document the final sampling and analysis design, along with a discussion of the key assumptions underlying this design: Refer to SAQP section of report.			
7.2	Detail how the design should be implemented, together with contingency plans for unexpected events: Refer to SAQP section of report.			
7.3	Determine the quality assurance and quality control (QA/QC) procedures that would be performed to detect and correct problems to ensure defensible results: The field QA, and the field and laboratory QC, are described in the sampling, analysis and quality plan (SAQP). In summary, the following QC soil and groundwater samples are proposed in accordance with the NEPM 2013.			
	Field QC samples		Lab QC samples	
	Field duplicate	≥ 5%	Lab blank	≥ 1/lab batch
			Surrogate spike	
			LCS	≥ 1/lab batch
			Matrix spike	≥ 1/media type
	Trip spike (vol)	≥ 1/field batch	Lab duplicate	≥ 10%
7.4	Document the operational details and theoretical assumptions of the selected design in the sampling, analysis, and quality plan (SAQP):			

5.2 Possible Contaminant Sources

Given the current agricultural at the site metals and chemicals may be possible at the site. **Table 5.2** below lists the sources of potential contamination at the site and their associated contaminants of concern. The site has been used for sugar cane production from at least 1971 and has been subject to herbicide and pesticide application which has the potential to be contaminating activities. Based on the site history information, site inspection and surrounding land uses, the potentially contaminating activities were identified as:

- Pesticide use associated with sugar cane production
- Herbicide use to control weeds

Table 5.2 Potential Contaminants of Concern for Identified Activities

Potential contaminants of concern (PCOC) related to these suspected activities are presented below

Potential contaminants of concern (PCOC)	Suspected Activities (source)
Organochlorine/organophosphorus pesticide and herbicide	residual chemicals used for general weed control and pets control
Heavy Metals	metals including arsenic and lead found in pesticides

Technical guidance considered in preparing these DQOs **includes:**

- NSW EPA (formerly Office of Environment and Heritage (OEH)) (2011) Guidelines for
- Consultants Reporting on Contaminated Sites.
- NSW EPA (2017) Guidelines for the NSW Site Auditor Scheme (3rd edition).
- NSW EPA (2012) Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases.
- NSW EPA (2014) Recovered Aggregate Exemption Order
- National Environment Protection Council (NEPC) National Environment Protection
- (Assessment of Site Contamination) Measure 1999 (ASC NEPM (2013)) – Schedule
- B2: Guideline on Site Characterisation (2013).

5.3 Relevant Environmental media

The environmental media considered relevant for the investigation consisted of clay site soils.

5.4 Relevant Environmental Criteria

5.4.1 Soil (general contaminates)

For soil, the appropriate and adopted criteria are based on the ASC NEPM 2013, in particular the health investigation levels (HILs), environmental investigation levels (EILs), environmental screening levels (ESLs) applicable for residential A land use.

HSLs and ESLs – soil type

Based on the nature of the soil, clay soil criteria have been used as the soil type for deriving the HSLs and ESLs.

6 Site Assessment

6.1 Preliminary Site Investigations

The field work was undertaken in general accordance with the DQOs. Field works were conducted on:

- 25 October 2021

All fieldwork was completed by Tim Fitzroy (TFA). TFA undertook sampling of the surface soil and arranged for analysis at the Environmental Analysis Laboratory, Southern Cross University, Lismore in accordance with the Recovered Aggregate Exemption Order (NSW EPA 2014). Further details are provided in section 6.2.

The sampling and analytical strategy and methodology are described below. The results of the assessment are provided in Section 7. Soil sample locations are shown on **Figure 4**.

On the day of the site assessments the weather was fine. Photographs of the subject site can be seen in **Appendix B**.

6.2 Visible Signs of Contamination

The Investigation Area was assessed on foot in order to identify any signs of contamination. In general, no obvious signs of contamination (such as plant stress, surface spills, waste materials, odours etc.) were evident during the site investigation.

6.3 Odours

There were no obvious odours akin to contamination observed during site inspections.

6.4 Flood Potential

There is no likely of flooding on the development site.

6.5 Presence of Drums, Wastes and Fill Material

There was no evidence of drums, waste or fill material.

6.6 Methodology

The objective of this preliminary investigation is to gather information with regard to the type, location, concentration and distribution of contaminants to determine if the subject site (prior to demolition of existing structures) represents a risk of harm to end users and sensitive receptors. To determine this, soil sampling and laboratory analysis has been conducted upon surface soils collected from the study area.

The following sampling, analysis and data quality objectives have been adopted for this site investigation:

- to confirm the soils in the proposed building footprint and immediate vicinity on each of the proposed alteration and additions at the subject site do not pose a risk to human health or the environment through soil contamination.
- to employ quality assurance when sampling, assessing and during evaluation of the subject soils.
- to ensure that decontamination techniques are applied during the sampling procedure and that no cross contamination of samples occurs.

6.6.1 Soil (general contaminates)

On 25 October 2021 forty five (45) soil samples plus 4 QA samples were collected from the proposed development envelope and immediate vicinity in a systematic basis. Soil sampling was conducted as part of a Preliminary Site investigation to support the Planning proposal. Soil samples were analysed for 16 metals, organochlorine and organophosphorus pesticides.

The following basic measures were undertaken by *TFA* to conform to the minimum standards for sampling and quality control procedures:

- Bore holes were developed via a mechanical auger
- Soil samples were collected with a stainless steel trowel and placed in new, clip lock plastic bags. Sampling equipment (stainless steel trowel) was decontaminated between samples by rinsing thoroughly with de-mineralise water, scrubbing with cleanser (Decon 90), and finally re-rinsing with de-mineralised water.
- All samples were collected from the surface soil horizon between 0 and 100 mm below the surface.
- The sampling procedure utilised in this investigation was in accordance with AS 4482.1 – 2005.
- All soil samples (45 +4 QA/QC) were placed into an esky with ice bricks, and delivered to the Environmental Analysis Laboratory at Southern Cross University, Lismore. Metals analysis was conducted by EAL and quality control. Analysis is conducted using a Perkin Elmer ELANDRC-e ICPMS (Inductively Coupled Plasma Mass Spectrometry). Chain of custody forms, laboratory quality assurance and laboratory quality control documentation are available on request.
- Chain of Custody forms, which identified the sample identification codes, the collection dates and the type of analysis to be undertaken were fully completed and delivered with the samples (see **Appendix C**).
- Residual samples were stored, frozen and retained by *Environmental Analysis Laboratory* pending the need for additional or repeat analysis.
- Laboratory Results are available in **Appendix D**.

6.3 Data Usability

All site work was completed in accordance with standard *TFA sampling protocols*, including a QA/QC programme and standard operating procedures.

A data usability assessment has been performed for the sampling undertaken during this investigation, as summarised in **Appendix E** and includes:

- Summary of field quality assurance/quality control

- Field quality control soil samples summary
- Summary of laboratory quality assurance/quality control.

Following this discussion, the data usability assessment shows that the data is of suitable quality to support the conclusions made in this report.

6.4 Conditions Encountered

Access to natural clay soils was favourable. As the samples were surface samples no bore logs have been produced.

7 Analytical Results

The analytical results are presented below.

7.1 Soil

Table 7.1 Results of Laboratory Analysis of Soil for Metals, OCs & OPs

Analyte	Health Criteria 0m to <1m	Ecological Criteria	Management Limits	Site Data			
	HIL/HSL mg/kg	EIL/ESL (mg/kg)	ML (mg/kg)	No. samples analysed	Number of exceedances	Max mg/kg	Meets Screening criteria?
Heavy Metals							
(Arsenic)	100	100		49	0	9	Yes
(Lead)	300	1,100			0	17	Yes
Cadmium	20	-			0	<0.5	Yes
Chromium	100	410			0	13	Yes
Copper	6,000	230			0	25	Yes
Nickel	400	270			0	7	Yes
Zinc	7,400	770			0	58	Yes
Mercury	40	-			0	0.09	Yes
(OCs)							
(Endrin)	10	NL		49	0	<0.2	Yes
(Dieldrin)	6	NL			0	<0.2	Yes
(DDD, DDE and DDT)	240	180			0	<0.2	Yes

The results of soil analysis from all samples onsite indicate compliance with all nominated Health and Ecological Criteria.

8 Discussion and Conceptual Site Model

8.1 Discussion

This investigation is Tier 1 - preliminary site investigation, which is required to determine if contamination of the site's soil has occurred from past land usage in accordance with NEPM 1999 (2013), DUAP and EPA (1998). The investigation includes obtaining a history of land usage on the site and a preliminary soil-sampling regime. The results of the soil sample analysis are compared with the Health Investigation Levels (HIL's) and Ecological Investigation (EIL's) and Ecological Screening Levels (HSL's) outlined in NEPM 1999 (2013).

A total of 45 soil samples plus 4 QA samples were collected from within the proposed development envelope.

All of the soil samples show contaminant levels well below the relevant Australian and New Zealand Environment and Conservation Council (ANZECC), National Environment Protection Measure (NEPM 2013) HILA *Residential with garden/accessible soil also includes children's day care centres, preschools and primary schools* and *Ecological Soil Investigation Levels* and Ecological Screening Levels (HSL's) (NEPM 2013).

8.2 Conceptual Site Model

The conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM for the site, following the site investigation is detailed in Table 8.1 below.

Table 8.1 CSM Discussion

Element	Site Specific Information
Potential sources of contamination and contaminants of concern	Metals, and chemicals may be presents from agricultural land use
Potentially affected media, such as soil	Media consists of soil
Human and ecological receptors.	Potential human & ecological receptors include: • Construction workers; • Residents • Receiving water
Potential and complete exposure pathway to human and/or environmental receptors.	• Subsurface infrastructure

Based on the results of this assessment, the likelihood for chemical contamination to be present in the proposed development envelope is considered to be low to moderate.

9Conclusions

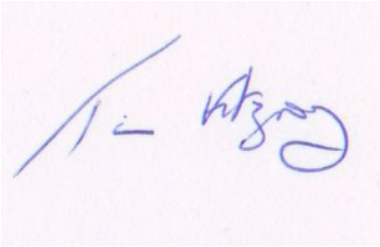
This investigation is Tier 1 - preliminary site investigation, which is required to determine if contamination of the site's soil has occurred from past land usage in accordance with NEPM 1999 (2013), DUAP and EPA (1998). The investigation includes obtaining a history of land usage on the site and a preliminary soil-sampling regime. The results of the soil sample analysis are compared with the Health Investigation Levels (HIL's) and Ecological Investigation (EIL's) and Ecological Screening Levels (HSL's) outlined in NEPM 1999 (2013).

A total of 45 soil samples plus 4 QA samples were collected from within the proposed development envelope.

All of the soil samples show contaminant levels well below the relevant Australian and New Zealand Environment and Conservation Council (ANZECC), National Environment Protection Measure (NEPM 2013) HILA *Residential with garden/accessible soil also includes children's day care centres, preschools and primary schools* and *Ecological Soil Investigation Levels* and Ecological Screening Levels (HSL's) (NEPM 2013).

Based on the outcomes of this PSI there is no impediment to approval of Planning Proposal for the proposed rezoning from RU1 Primary Production to R5 Large Lot Residential. Further investigation in accordance with the EPA sampling guidelines is required prior to the issue of a subdivision certificate for large lot residential use.

This report has been prepared by Tim Fitzroy of Tim Fitzroy & Associates.



Tim Fitzroy
Environmental Health Scientist
Environmental Auditor

References

Australia and New Zealand Environment and Conservation Council (ANZECC), 1992, Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, Australia and New Zealand Environment and Conservation Council.

Environment Protection Authority, 1995, Contaminated Sites Sampling Design Guidelines, Environment Protection Authority, Sydney.

National Environment Protection Council (2013) 'Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater

Council of Standards Australia (2005) AS 4482.1-2005 Guide to the sampling and investigation of potentially contaminated soil – Non-volatile and semi-volatile compounds

NSW DEC (2006) Contaminated Sites – Guidelines for the NSW Site Auditor Scheme 2nd Edition

NSW EPA (2011) Guidelines for Consultants Reporting Contaminated Sites

National Environment Protection Council (NEPC) (2013) National Environment Protection (Assessment of Site Contamination) Measure

Contaminated land guidelines (NSW Environment Protection Authority 2020)

Northern Rivers Regional Councils (NRRC) Regional Policy for the Management of Contaminated Land (NRRC 2006)

Copyright and Usage

Figures

Figure 1 Location map

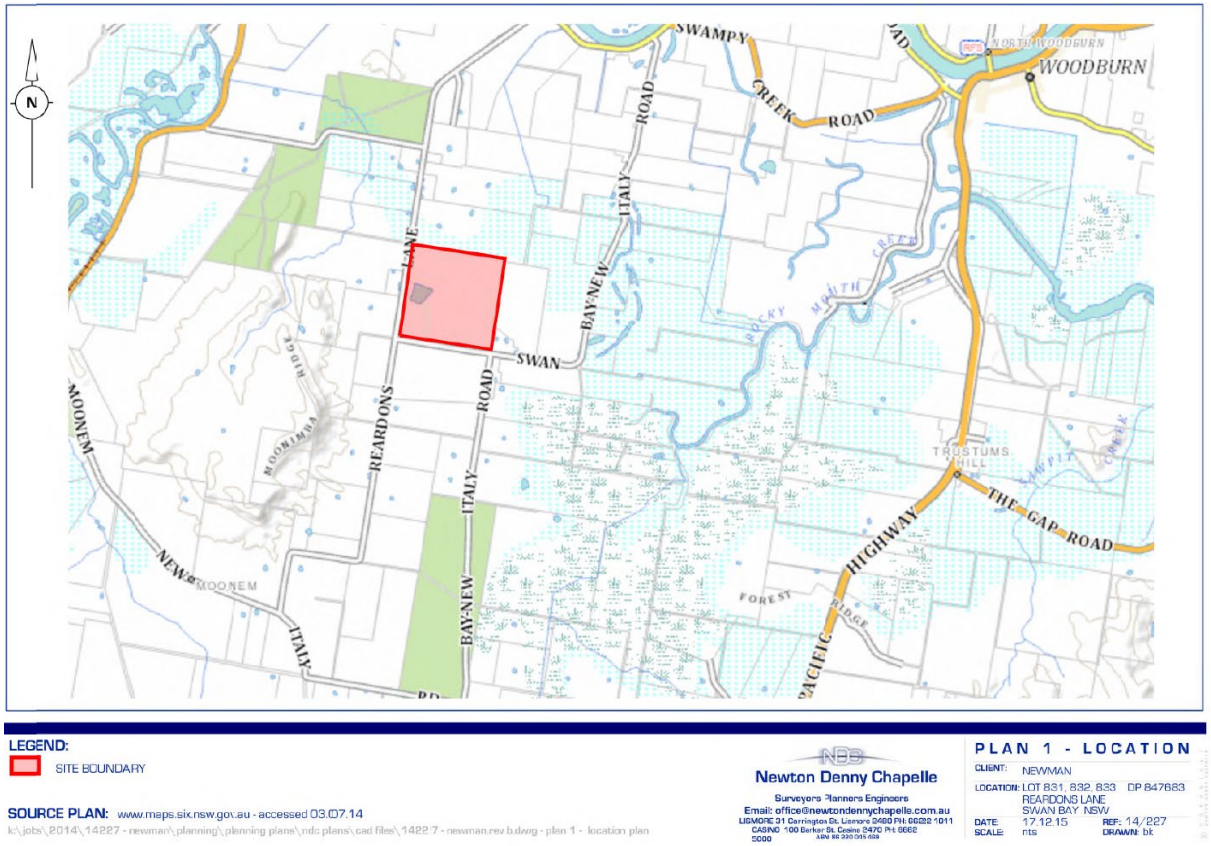


Figure 2 Planning Proposal

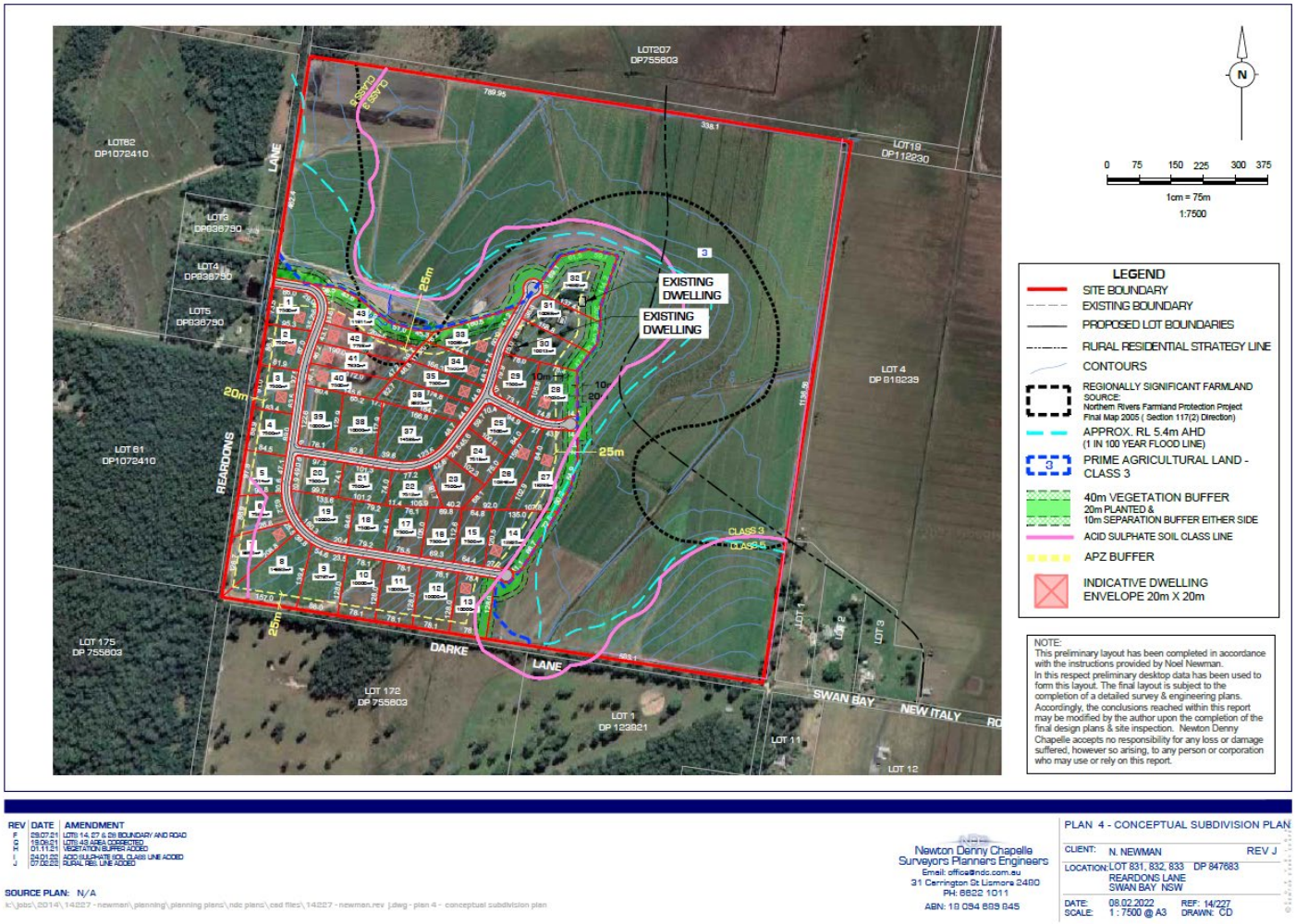


Figure 3 Investigation Area

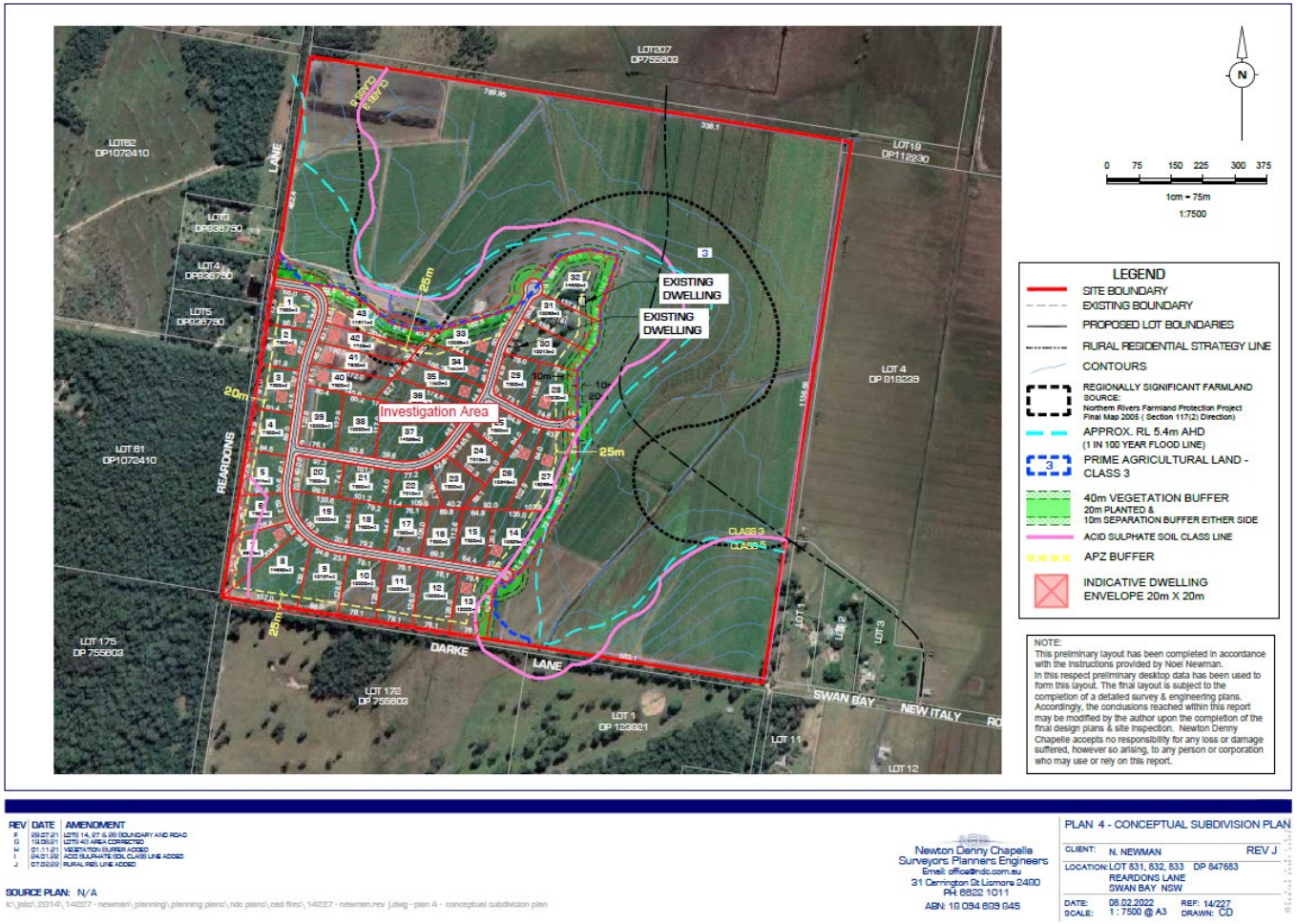
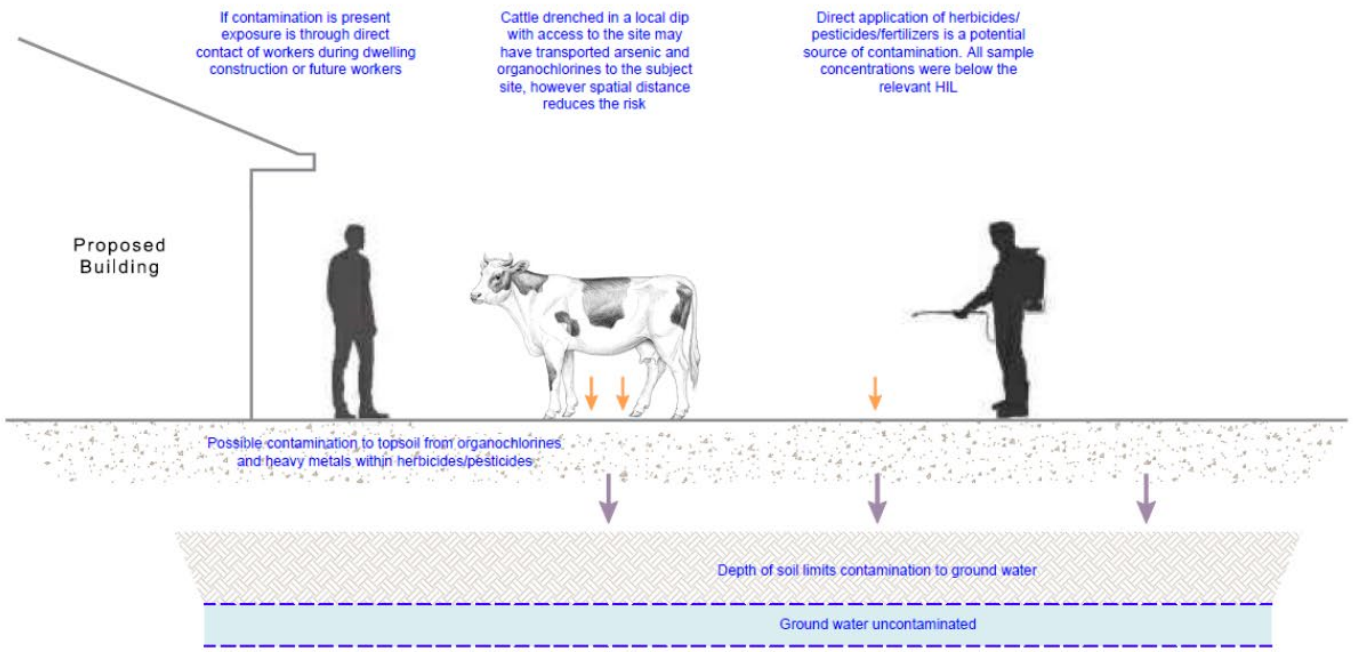


Figure 4 Sample Locations

Illustration 1
Soil Sampling Locations
Revised Planning Proposal for a 43 Lot Rural Residential Subdivision
Lots 831,832 & 833 DP 847683 | Reardon's Lane, Swan Bay

PREPARED BY:
tim fitzroy & associates

Figure 5 Conceptual Site Model



A Lotsearch

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 27 Oct 2021 14:38:45

Reference: LS025745 EP

Address: 395 Reardons Lane, Swan Bay, NSW 2324

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 Finance, Services & Innovation	30/06/2021	30/06/2021	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	13/10/2021	11/10/2021	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	08/10/2021	08/10/2021	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	11/08/2021	11/10/2017	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	27/09/2021	28/04/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	28/09/2021	28/09/2021	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	28/09/2021	28/09/2021	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	08/10/2021	08/10/2021	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	19/08/2021	19/08/2021	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	02/02/2021	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	27/09/2021	27/09/2021	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	27/09/2021	27/09/2021	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	27/09/2021	27/09/2021	Monthly	1000m	4	4	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Cattle dips of the Northern Rivers region	NSW Dept. of Primary Industries	15/02/2021	15/02/2021	Annually	1000m	0	0	1
Points of Interest	NSW Department of Finance, Services & Innovation	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
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 Finance, Services & Innovation	19/08/2021	19/08/2021	Quarterly	1000m	0	1	1
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	22/01/2021	11/12/2020	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	26/10/2020	21/02/2018	Annually	1000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000m	1	1	9
Geological Units 1:100,000	NSW Department of Planning, Industry and Environment	20/08/2014		Annually	1000m	3	3	6
Geological Structures 1:100,000	NSW Department of Planning, Industry and Environment	20/08/2014		Annually	1000m	0	0	1
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	2	2	3
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000m	3	3	6
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	19/08/2021	28/06/2021	Monthly	500m	2	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	3	3	3
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	28/09/2021	28/09/2021	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	28/09/2021	28/09/2021	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	28/09/2021	28/09/2021	Monthly	1000m	9	9	13
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	19/08/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	19/08/2021	13/08/2021	Monthly	1000m	1	1	3
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	19/08/2021	13/08/2021	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	21/10/2021	19/10/2021	Weekly	1000m	1	3	3
Eastern Bushland Database (North Region)	NSW Office of Environment & Heritage	24/07/2016	01/01/1991	None planned	1000m	1	2	4
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	24/02/2021	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	4	4	6
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	10	14	20
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	18/10/2021	18/10/2021	Weekly	10000m	-	-	-

Site Diagram

395 Reardons Lane, Swan Bay, NSW 2324

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 1.28km²

Total Perimeter: 4.53km

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.

Scale:

0 25 50 100 150 200 250
Meters

Data Sources: Aerial Imagery:
© NSW Department of Finance, Services & Innovation

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27 October 2021

Contaminated Land

395 Reardons Lane, Swan Bay, NSW 2324

List of NSW contaminated sites notified to EPA

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

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

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

395 Reardons Lane, Swan Bay, NSW 2324

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

395 Reardons Lane, Swan Bay, NSW 2324

National Waste Management Site Database

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

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

Waste Management Facilities Data Source: Geoscience Australia

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										

National Liquid Fuel Facilities Data Source: Geoscience Australia

PFAS Investigation & Management Programs

395 Reardons Lane, Swan Bay, NSW 2324

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

395 Reardons Lane, Swan Bay, NSW 2324

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

395 Reardons Lane, Swan Bay, NSW 2324

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

EPA Activities

395 Reardons Lane, Swan Bay, NSW 2324

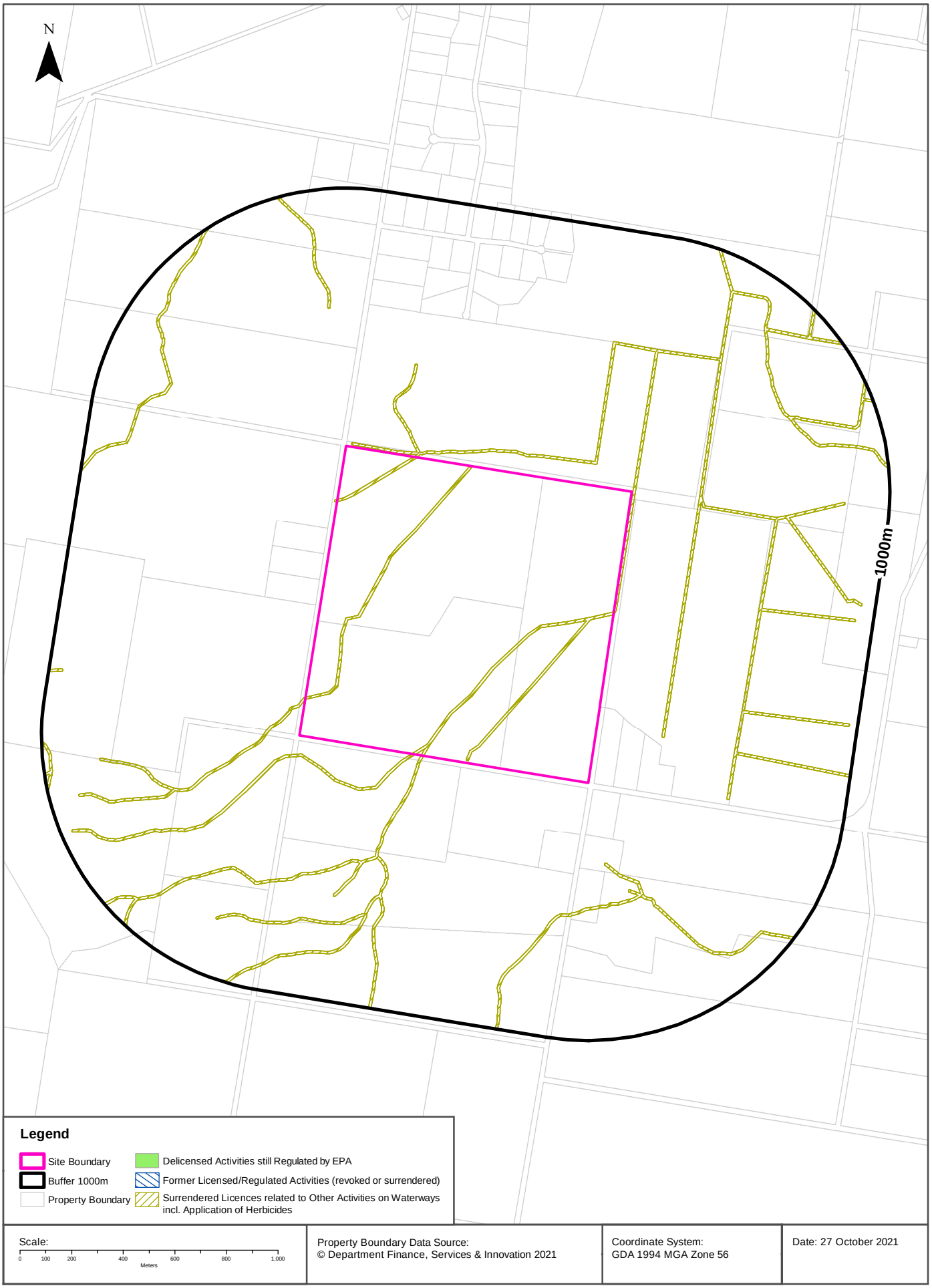
Licensed Activities under the POEO Act 1997

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
N/A	No records in buffer							

Delicensed & Former Licensed EPA Activities

395 Reardons Lane, Swan Bay, NSW 2324



EPA Activities

395 Reardons Lane, Swan Bay, NSW 2324

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
4292	FAR NORTH COAST COUNTY COUNCIL	COUNTY DISTRICT - LISMORE NSW 2480	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
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

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

395 Reardons Lane, Swan Bay, NSW 2324

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

395 Reardons Lane, Swan Bay, NSW 2324

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					

Cattle Dips of the Northern Rivers Region

395 Reardons Lane, Swan Bay, NSW 2324

Cattle Dips

395 Reardons Lane, Swan Bay, NSW 2324

Cattle Dips of the Northern Rivers Region

Cattle dip sites within the dataset buffer:

Dip Name	Road	Town	Dip Status	Licence / Lease Status	Licence / Lease Expiry Date	Distance	Direction
DURRINGTONS	SWAN BAY NEW ITALY RD	VIA WOODBURN	DECOMMISSION	LAPSED	30/11/1998	316m	South East

Cattle dip site data provided by the NSW Department of Primary Industries.

Aerial Imagery 2021

395 Reardons Lane, Swan Bay, NSW 2324

Scale:
0 110 220 330 440
Meters

Data Source Aerial Imagery: © 2021 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 22 October 2021

Aerial Imagery 2011

395 Reardons Lane, Swan Bay, NSW 2324

Scale:
0 110 220 330 440
Meters

Data Source Aerial Imagery: © 2021 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 22 October 2021

Aerial Imagery 2004

395 Reardons Lane, Swan Bay, NSW 2324

Scale:
0 110 220 330 440
Meters

Data Source Aerial Imagery: © 2021 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 22 October 2021

Aerial Imagery 1998

395 Reardons Lane, Swan Bay, NSW 2324

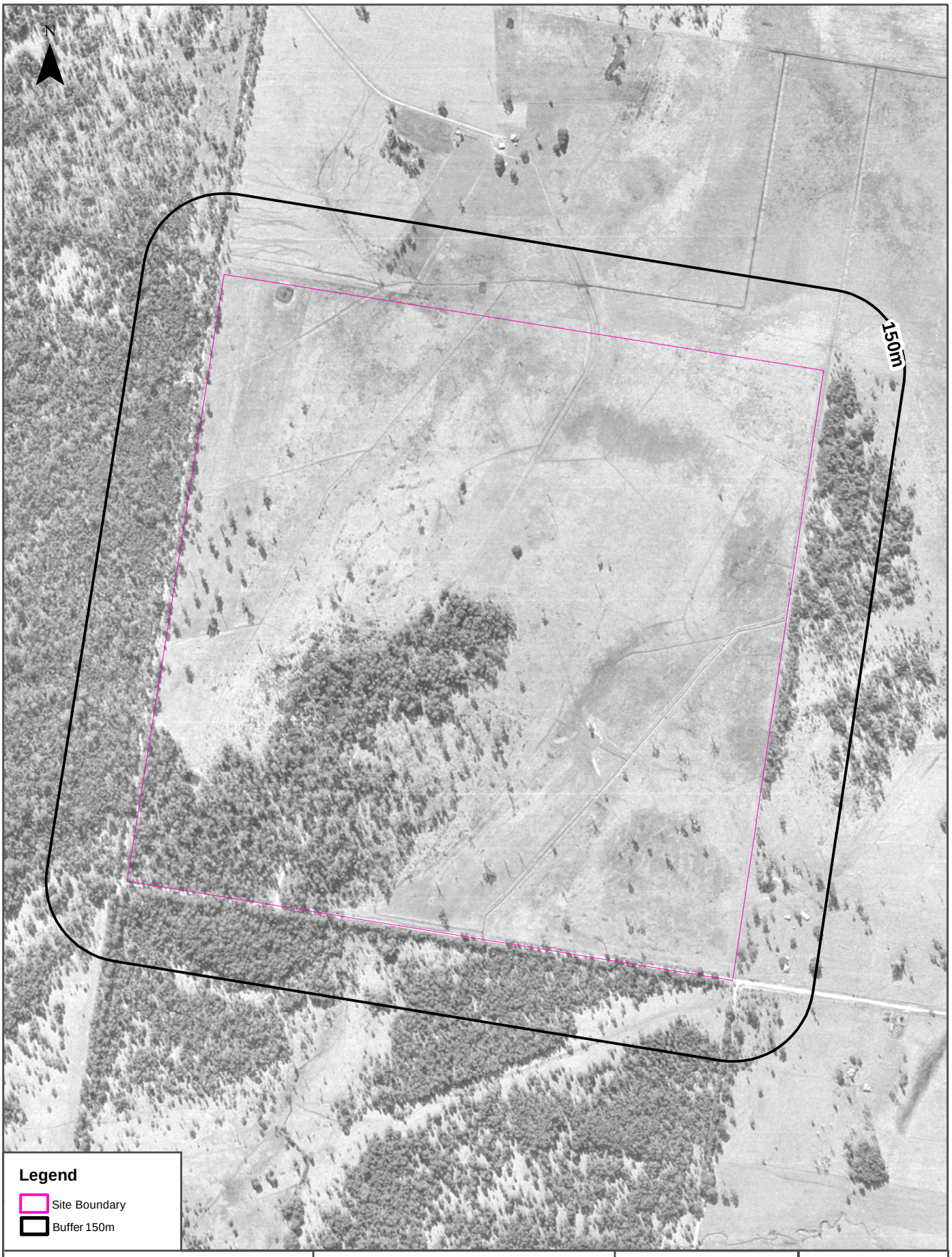
Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 30 October 2021
0 110 220 330 440 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1988

395 Reardons Lane, Swan Bay, NSW 2324

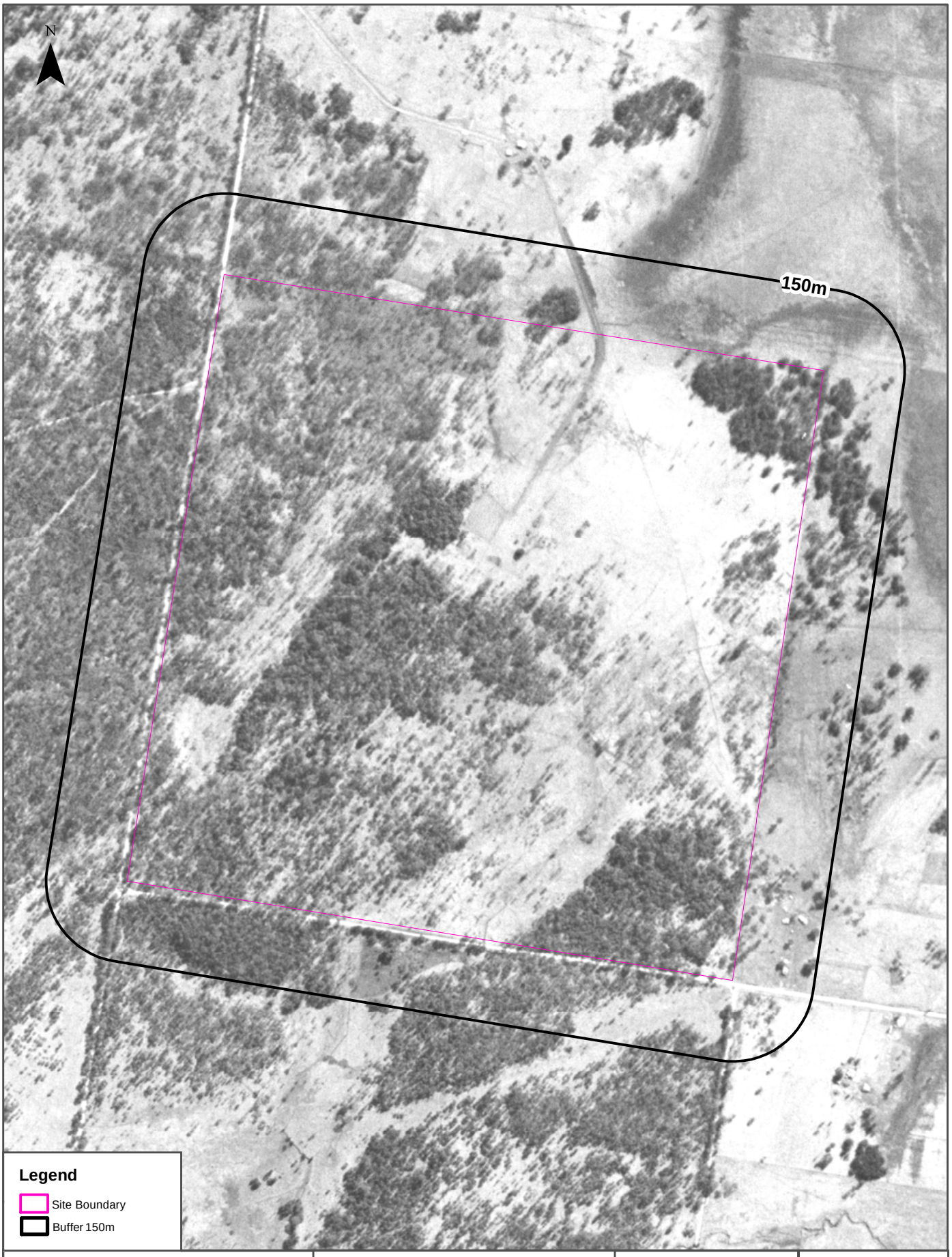
Aerial Imagery 1971

395 Reardons Lane, Swan Bay, NSW 2324



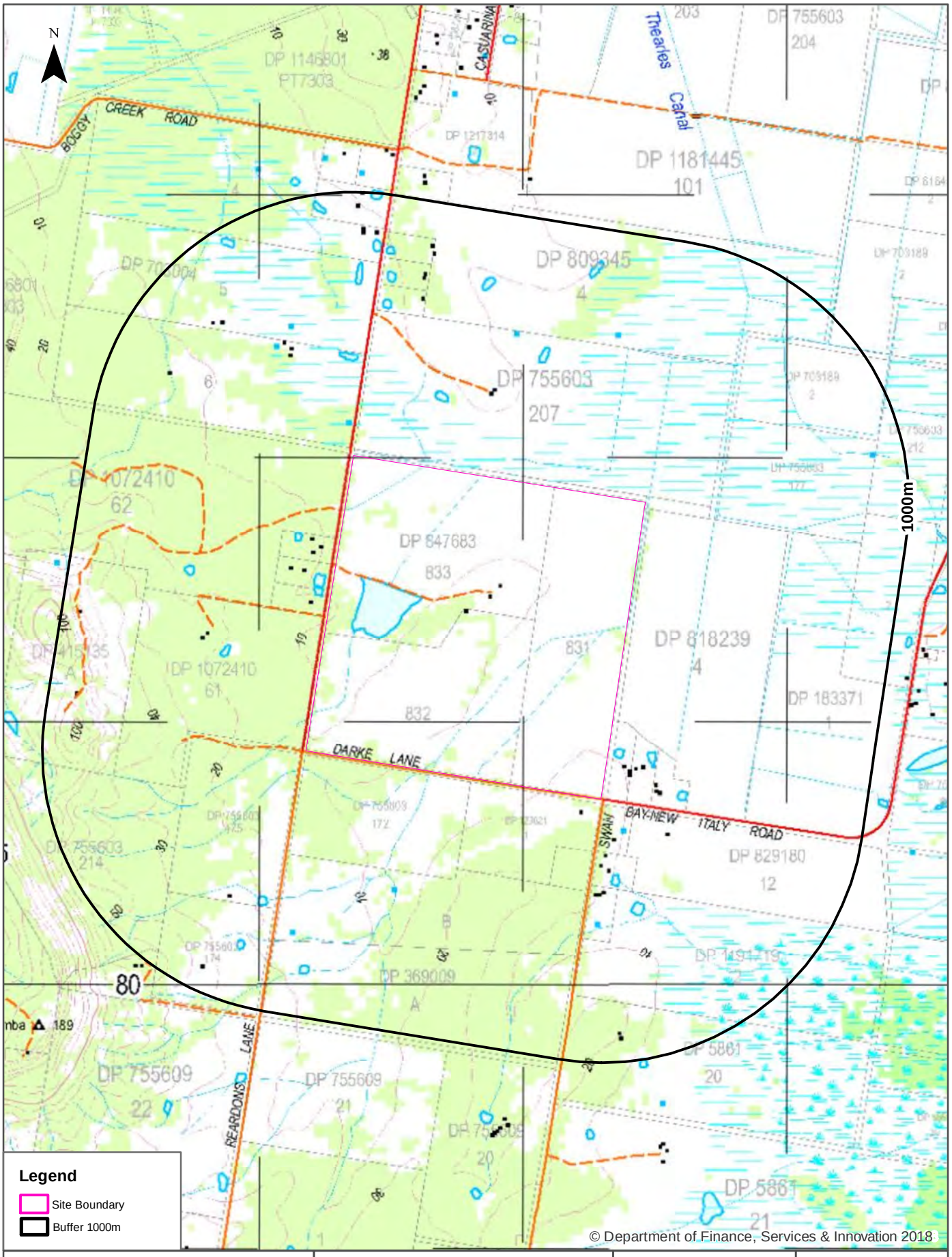
Aerial Imagery 1964

395 Reardons Lane, Swan Bay, NSW 2324



Topographic Map 2015

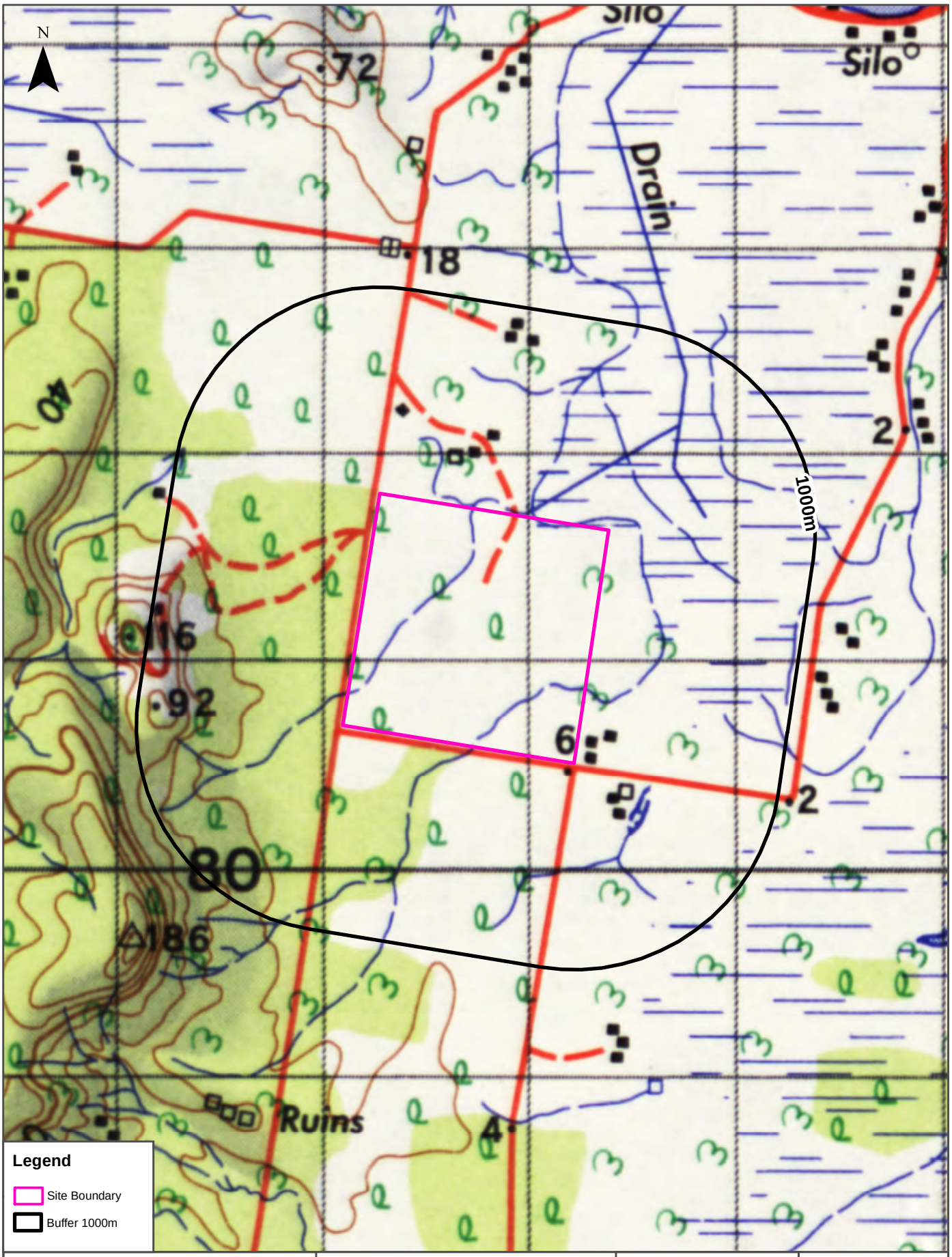
395 Reardons Lane, Swan Bay, NSW 2324



Scale: 0 230 460 690 920 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 October 2021

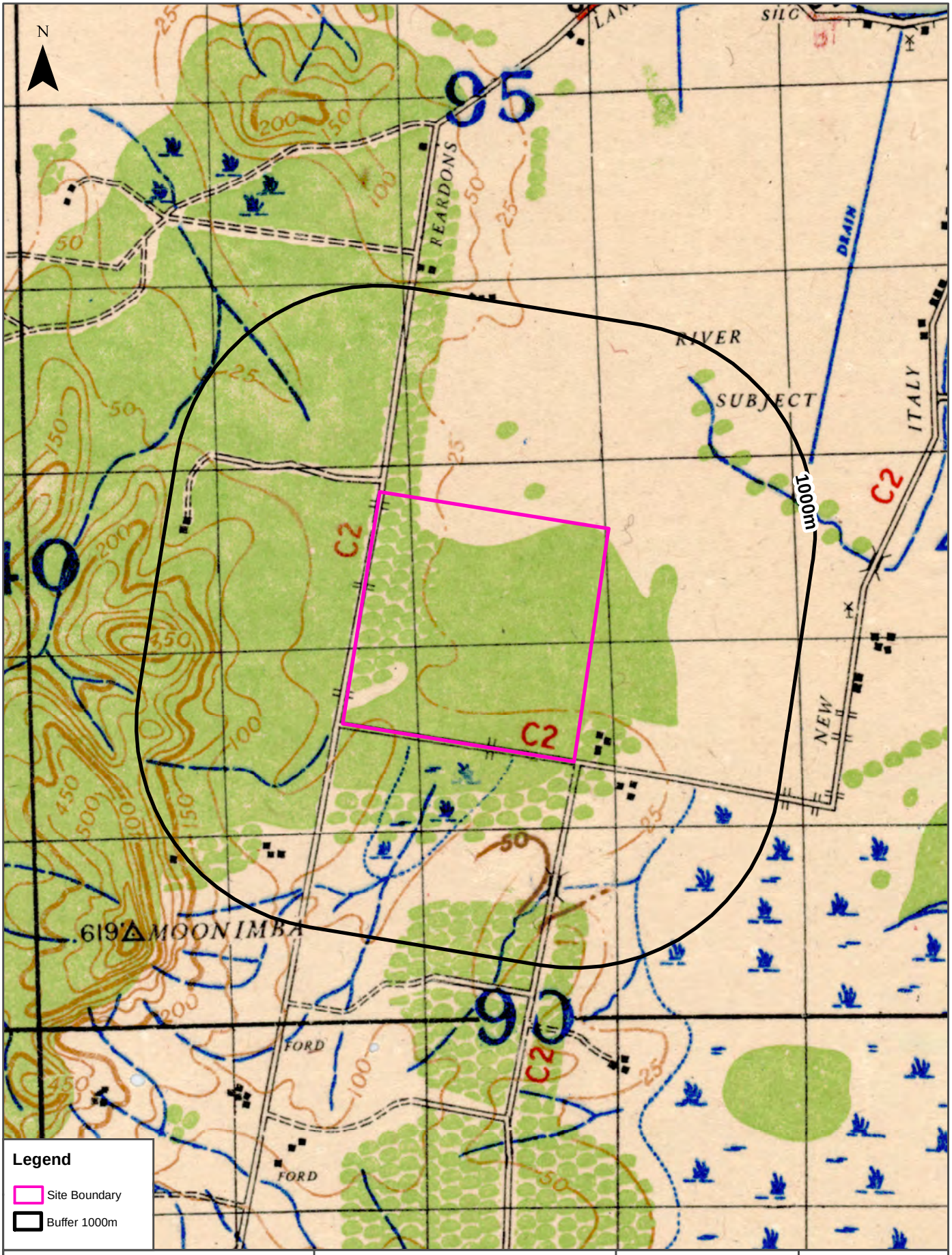
Historical Map 1969

395 Reardons Lane, Swan Bay, NSW 2324



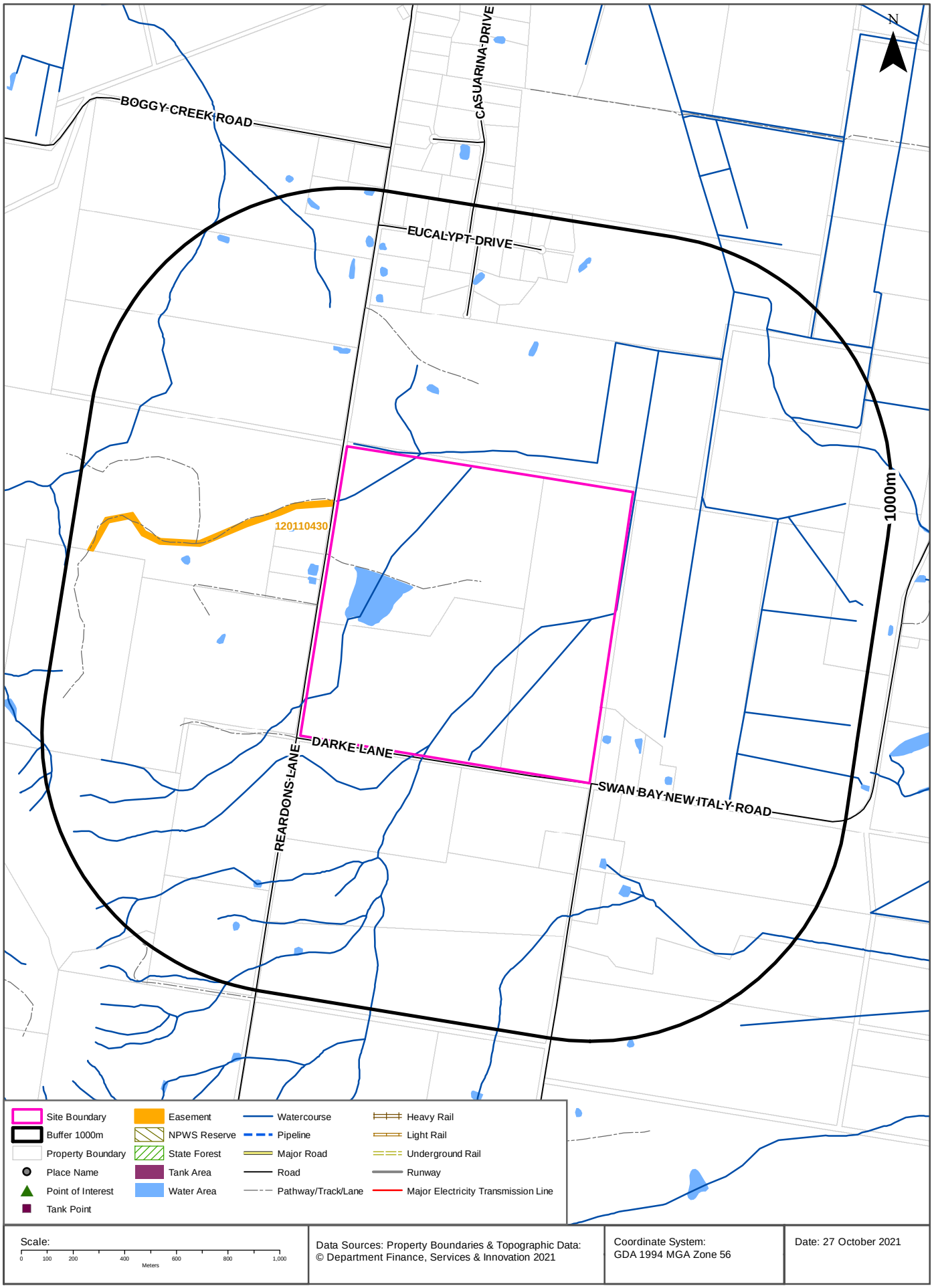
Historical Map c.1942

395 Reardons Lane, Swan Bay, NSW 2324



Topographic Features

395 Reardons Lane, Swan Bay, NSW 2324



Topographic Features

395 Reardons Lane, Swan Bay, NSW 2324

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
N/A	No records in buffer			

Topographic Features

395 Reardons Lane, Swan Bay, NSW 2324

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
120110430	Primary	Undefined		21m	West

Topographic Features

395 Reardons Lane, Swan Bay, NSW 2324

State Forest

What State Forest exist within the dataset buffer?

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

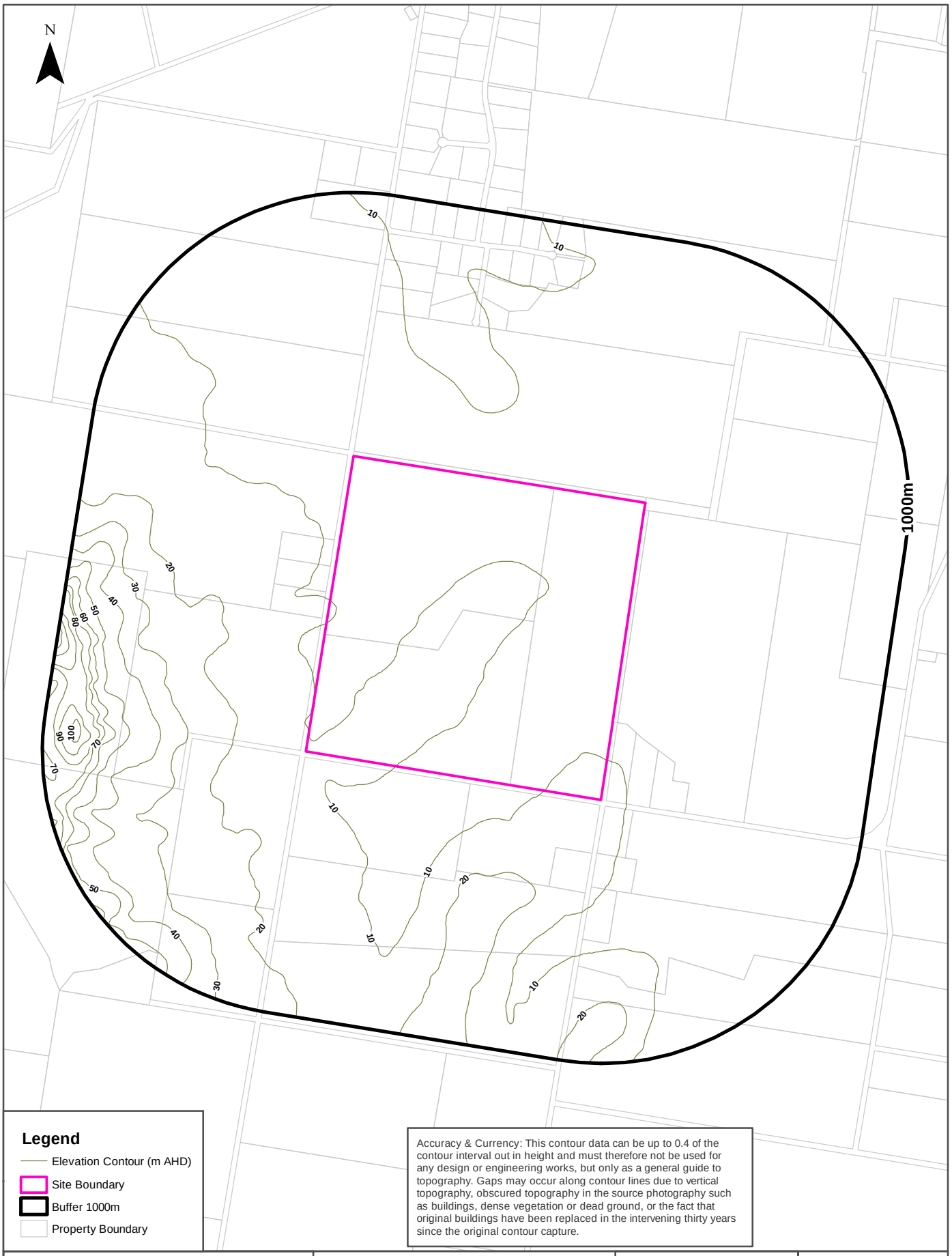
National Parks and Wildlife Service Reserves

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)

395 Reardons Lane, Swan Bay, NSW 2324



Legend

- Elevation Contour (m AHD)
- Site Boundary
- Buffer 1000m
- Property Boundary

Accuracy & Currency: This contour data can be up to 0.4 of the contour interval out in height and must therefore not be used for any design or engineering works, but only as a general guide to topography. Gaps may occur along contour lines due to vertical topography, obscured topography in the source photography such as buildings, dense vegetation or dead ground, or the fact that original buildings have been replaced in the intervening thirty years since the original contour capture.

Scale:	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2021	Coordinate System: GDA 1994 MGA Zone 56	Date: 27 October 2021

0 100 200 400 Meters

Hydrogeology & Groundwater

395 Reardons Lane, Swan Bay, NSW 2324

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive aquifers of low to moderate productivity	0m	On-site

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

395 Reardons Lane, Swan Bay, NSW 2324

Hydrogeology & Groundwater

395 Reardons Lane, Swan Bay, NSW 2324

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW020496	30BL012256, 30BL027383	Well	Private	Domestic, Stock	Stock			3.60	3.70					0m	On-site
GW072758	30BL155011	Bore	Private	Domestic, Stock	Domestic, Stock		20/06/1994	17.00	17.00	Good	6.00	0.490		103m	North West
GW053329	30BL120553	Bore	Private	Domestic, Irrigation, Stock	Irrigation		01/01/1980	27.00		Salty				185m	South East
GW018112	30BL012255	Bore open thru rock	Private	Domestic, Stock	Domestic, Stock		01/04/1962	24.70	24.70	7001-10000 ppm				255m	North
GW047986	30BL116660	Well	Private	Domestic, Irrigation, Stock	Irrigation			5.50		Salty				308m	South East
GW047987	30BL116661	Bore	Private	Domestic, Irrigation, Stock	Irrigation		01/10/1979	9.00	9.00	V.Salty				403m	South East
GW026681	30BL019318	Bore open thru rock	Private	Domestic, Stock	Domestic, Stock		01/05/1967	9.80	9.80					454m	North
GW305734	30BL183248	Bore	Private	Domestic	Domestic		01/02/2005	18.00	18.00		13.00	0.600		1371m	North
GW305748	30BL183949	Bore	Private	Domestic	Domestic, Stock		10/05/2006	90.00	90.00		66.00	1.200		1594m	West

Hydrogeology & Groundwater

395 Reardons Lane, Swan Bay, NSW 2324

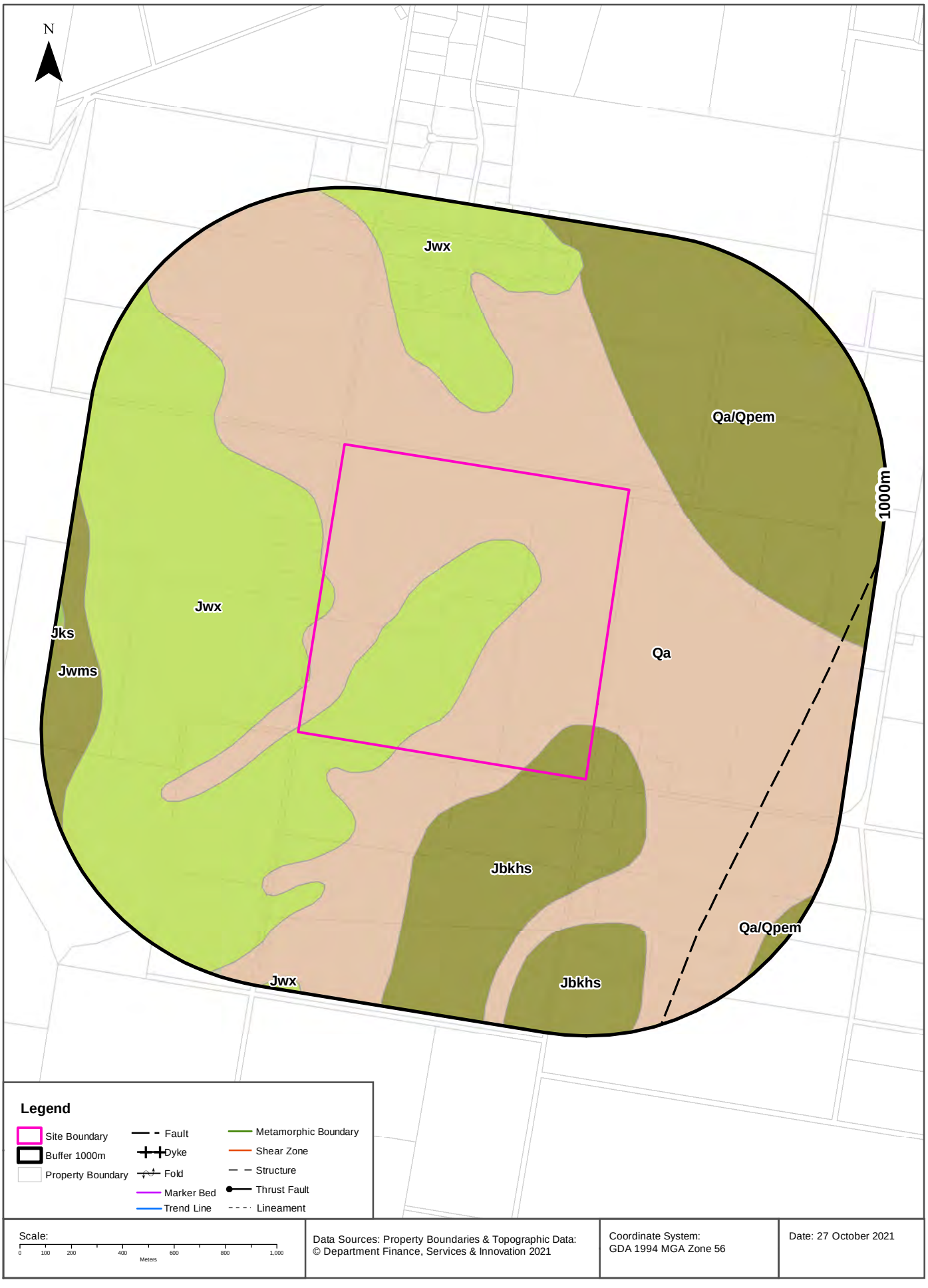
Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW020496	0.00m-0.61m Topsoil 0.61m-3.35m Clay 3.35m-3.66m Shale Water Supply	0m	On-site
GW072758	0.00m-6.00m Sandy Clay 6.00m-17.00m Coal Shale	103m	North West
GW018112	0.00m-0.60m Soil 0.60m-10.36m Silt Clayey Gravel Fine 10.36m-12.19m Coal Shale Carbonaceou 12.19m-15.24m Coal Grey Shale 15.24m-21.33m Clay Jointed Carbonaceou 21.33m-24.69m Clay Coalbands	255m	North
GW047987	0.00m-0.40m Soil Black Topsoil 0.40m-5.00m Subsoil Heavy Clayey 5.00m-6.50m Clay Very Hard Gravel 6.50m-9.00m Clay Grey Soft Gravel Water Supply	403m	South East
GW026681	0.00m-0.60m Soil 0.60m-3.04m Clay 3.04m-6.70m Sandstone Yellow Soft 6.70m-7.62m Shale Coal 7.62m-8.23m Shale Fine Gravel Coal Water Supply 8.23m-9.75m Shale	454m	North
GW305734	0.00m-2.40m sandy soil 2.40m-18.00m shale, sandstone & coal layers	1371m	North
GW305748	0.00m-2.00m soil 2.00m-4.50m clay 4.50m-60.00m sanstone, shale 60.00m-90.00m sandstone	1594m	West

Geology

395 Reardons Lane, Swan Bay, NSW 2324



Geology

395 Reardons Lane, Swan Bay, NSW 2324

Geological Units 1:100,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dist	Dir
Qa	Sand, silt, clay and gravel of alluvial deposits; includes beach, levee and backswamp deposits, point bars, overbank and some residual and colluvial deposits	Undifferentiated alluvial plain	Undifferentiated Alluvial Plain		Quaternary		Woodburn	0m	On-site
Jwx	Shale and minor coal and sandstone: thinnly bedded, grey to purple claystone (some carbonaceous), lithic and sublithic to feldspathic sandstone (arenite and wacke), thin seams and partings of coal; thin nodular ironstone beds	Walloon Coal Measures			Jurassic		Woodburn	0m	On-site
Jbkhs	Coarse quartzose sandstone: fine- to coarse-grained, cross-bedded, thickly to very thickly bedded, quartz to sublithic sandstone (arenite, minor wacke), thin interbeds of siltstone and claystone (some carbonaceous), minor laminite, minor coal	Koukandowie Formation*	Bundamba Group	Marburg Subgroup	Jurassic		Woodburn	0m	On-site
Qa/Qpem	Mud extensively overlain by sand, silt, clay, gravel	Estuarine plain, extensively overlain by alluvial deposits	Estuarine Plain		Quaternary		Woodburn	144m	North East
Jwms	Greenish grey (bronze weathering) sandstone and shale: thickly bedded, low-angle cross-bedded, feldspathic to lithic sandstone (arenite, lesser wacke), with minor pebble conglomerate and siltstone lenses	Walloon Coal Measures			Jurassic		Woodburn	772m	West
Jks	White quartz sandstone: thickly to very thinly bedded, high angle cross-bedding, medium- to very coarse-grained white quartz arenite, minor quartz and lithic conglomerate: commonly with rusty of purple ferruginised weathering profile or with a lateritic	Kangaroo Creek Sandstone			Jurassic		Woodburn	965m	West

Geological Structures 1:100,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Distance	Direction
Fault		Thrust fault, inferred concealed	Woodburn	657m	South East

Geological Data Source : NSW Department of Industry, Resources & Energy

Naturally Occurring Asbestos Potential

395 Reardons Lane, Swan Bay, NSW 2324

Naturally Occurring Asbestos Potential

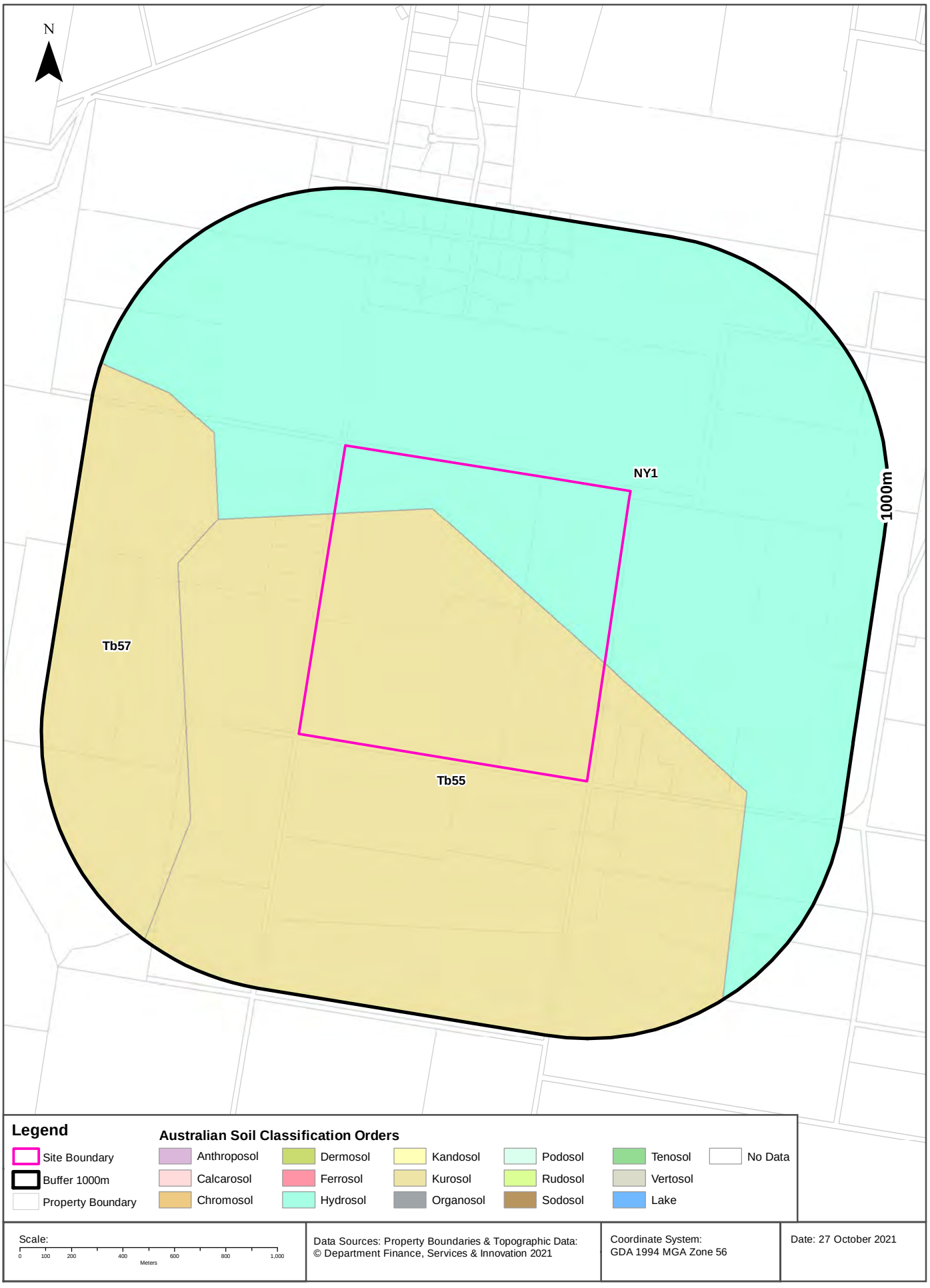
Naturally Occurring Asbestos Potential within the dataset buffer:

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

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

Atlas of Australian Soils

395 Reardons Lane, Swan Bay, NSW 2324



Soils

395 Reardons Lane, Swan Bay, NSW 2324

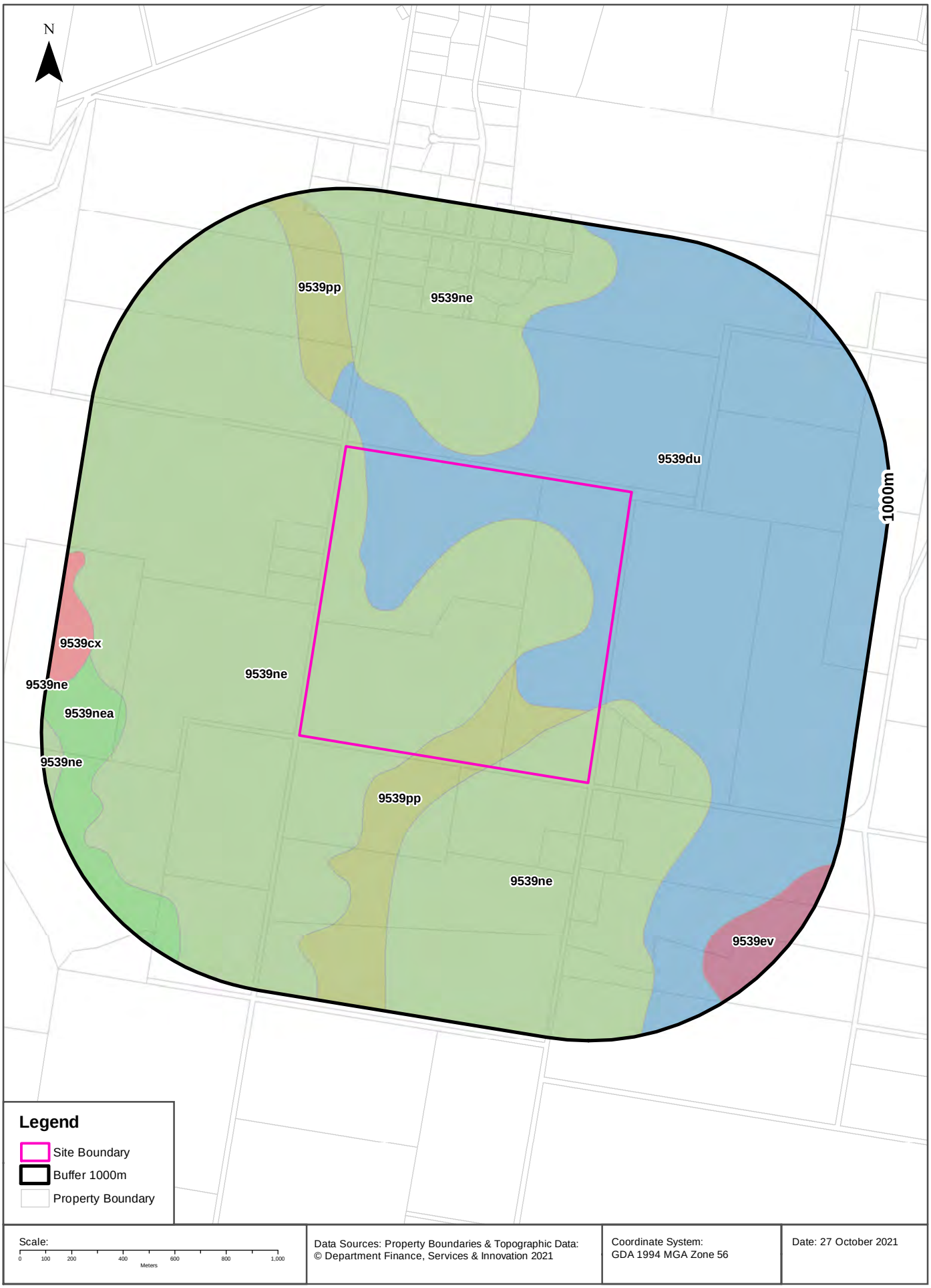
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Tb55	Kurosol	Undulating to hilly: hard acidic yellow mottled soils (Dy3.41) and hard acidic red and red mottled soils (Dr2.21) and (Dr3.21 and Dr3.41), with generally flatter areas of sandy acidic yellow mottled soils (Dy5.61) often containing ironstone gravels. Soil dominance varies locally. As mapped, areas of units Wc7, Tb57, and minor occurrences of units M12 and Mg24 are included.	0m	On-site
NY1	Hydrosol	Coastal plains, generally low lying, poorly drained, and subject to flooding (lower and middle reaches of river flood-plains, swamps, estuarine areas, and tidal marshes): chief soils seem to be friable acidic gley soils (Dg4.11), (Dg4.41), and (Dg4.81); friable acidic yellow mottled soils (Dy5.11); leached sand soils (Uc2.2) and/or (Uc2.3); and sandy acidic yellow mottled soils (Dy5.61), (Dy5.41), and (Dy5.81) in a complex and not well-known pattern, generally as follows: (i) flat to gently sloping areas of (Dg4.11), (Dg4.41), and (Dg4.81) or (Dy5.11), and/or (Ug5.16) and (Ug5.4), with some (Dd3.11) and (Uf6.41); (ii) sandy flats and swamps of (Uc2.2), and/or (Uc2.3), and/or acid peats (0); and (iii) slightly raised sandy areas of (Dy5.61), (Dy5.41), and (Dy5.81) with (Uc2.2) and (Uc4.2). Small areas of units NY2 (Sheet 3) and B9 are included.	0m	On-site
Tb57	Kurosol	Hilly to steep hilly with rock outcrops: soil dominance seems to vary locally between the following (Dy), (Db), and (Dr) soils, namely, shallow forms of hard acidic yellow mottled soils (Dy3.21 and Dy3.41), hard acidic brown soils (Db2.41), and hard acidic red soils (Dr2.21 and Dr2.41). Associated are shallow (Um4) and (Uc4) soils and areas of unit Wc7. Valleys are steep-sided.	438m	West

Soil Landscapes of Central and Eastern NSW

395 Reardons Lane, Swan Bay, NSW 2324



Soils

395 Reardons Lane, Swan Bay, NSW 2324

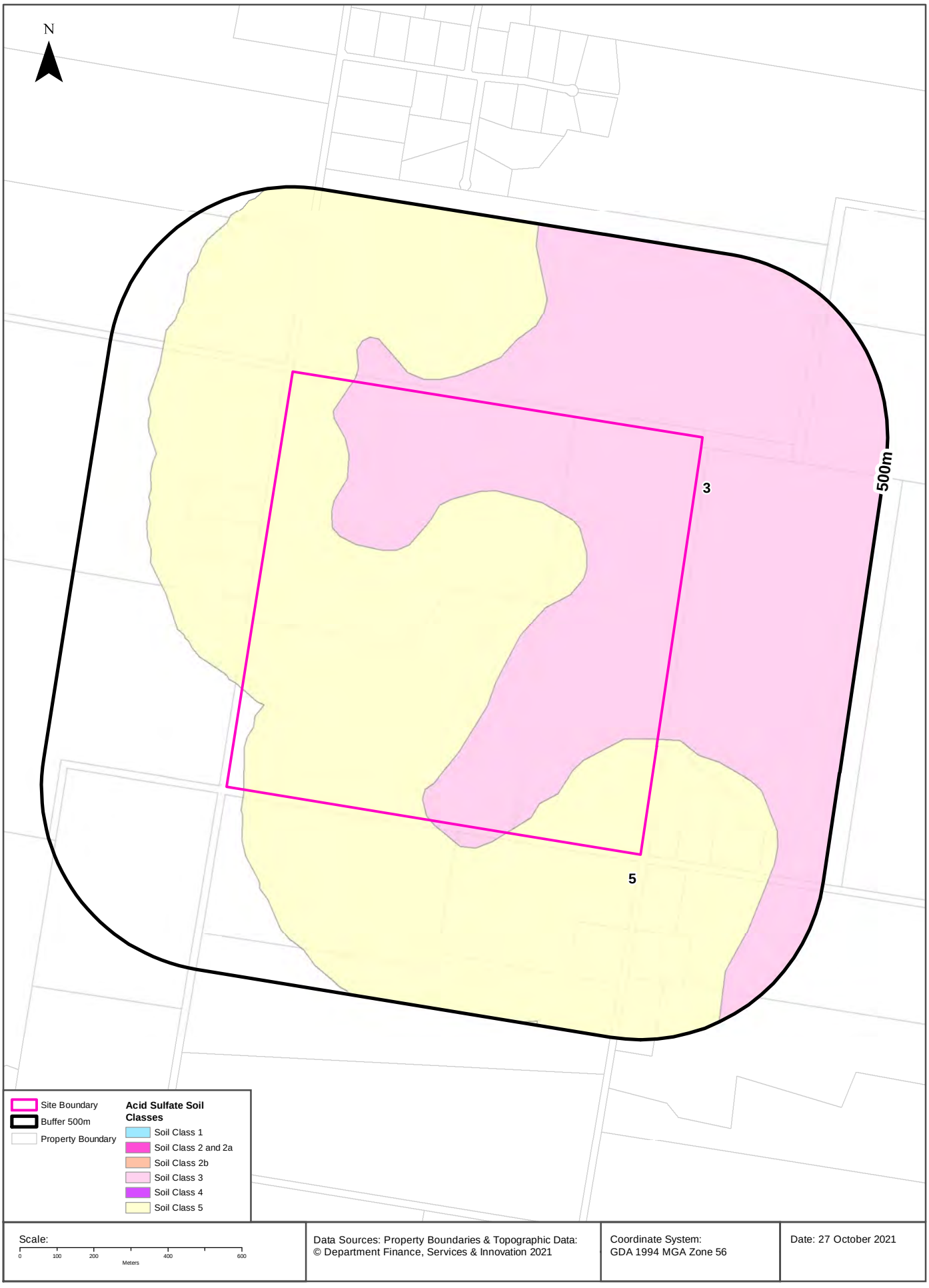
Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
9539ne	New Italy	0m	On-site
9539du	Dungarubba	0m	On-site
9539pp	Pretty Plain	0m	On-site
9539nea	New Italy variant a	677m	South West
9539ev	Everlasting	758m	South East
9539cx	Cliff Road	847m	West

Acid Sulfate Soils

395 Reardons Lane, Swan Bay, NSW 2324



Acid Sulfate Soils

395 Reardons Lane, Swan Bay, NSW 2324

Environmental Planning Instrument - Acid Sulfate Soils

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

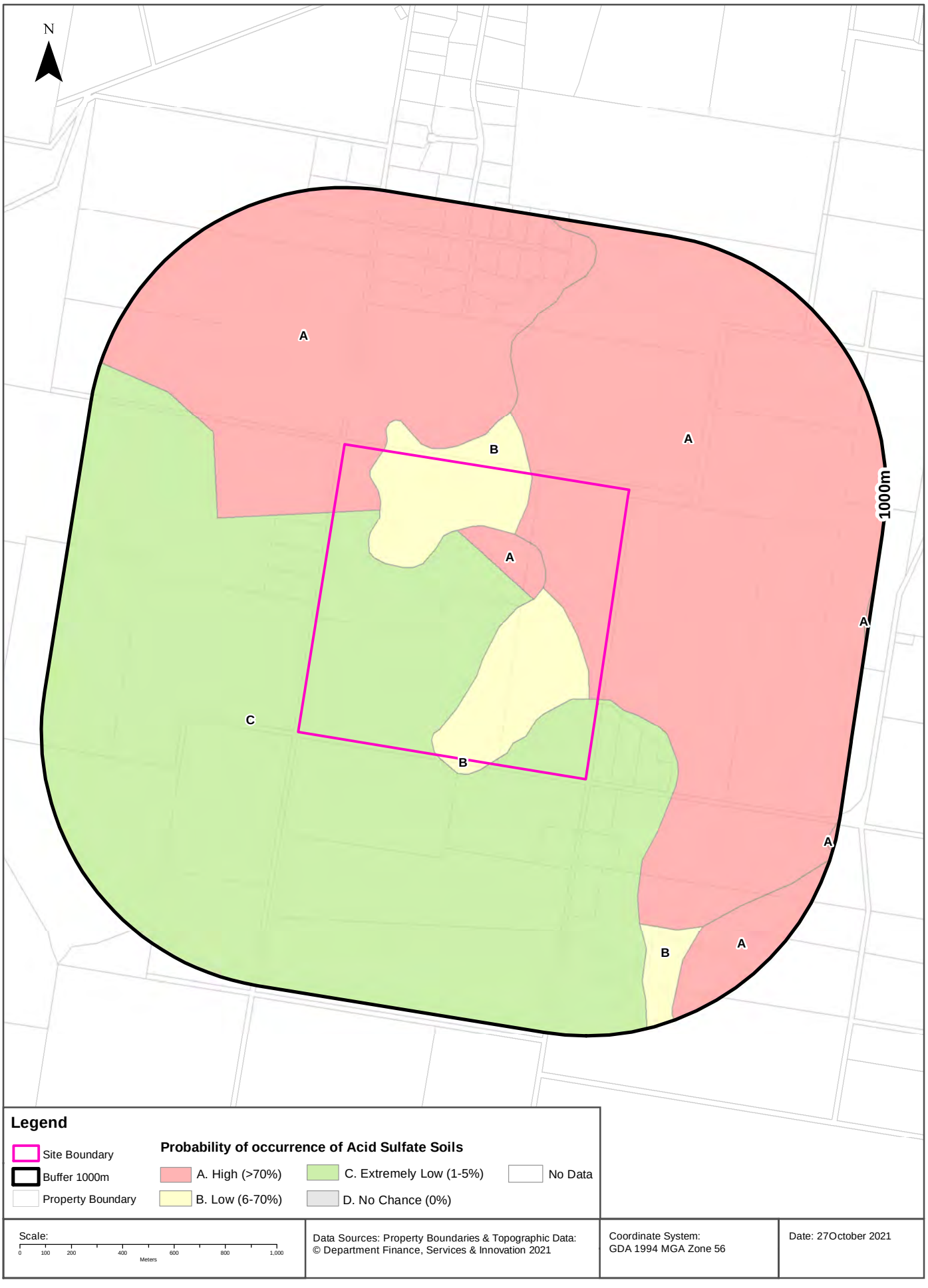
Soil Class	Description	EPI Name
3	Works more than 1 metre below natural ground surface present an environmental risk; Works by which the watertable is likely to be lowered more than 1 metre below natural ground surface, present an environmental risk	Richmond Valley Local Environmental Plan 2012

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

395 Reardons Lane, Swan Bay, NSW 2324



Legend

Site Boundary
Buffer 1000m
Property Boundary

Probability of occurrence of Acid Sulfate Soils

A. High (>70%)
B. Low (6-70%)
C. Extremely Low (1-5%)
D. No Chance (0%)
No Data

Scale: 0 100 200 400 600 800 1,000 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2021

Coordinate System: GDA 1994 MGA Zone 56

Date: 27October 2021

Acid Sulfate Soils

395 Reardons Lane, Swan Bay, NSW 2324

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
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	0m	On-site

Dryland Salinity

395 Reardons Lane, Swan Bay, NSW 2324

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

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

395 Reardons Lane, Swan Bay, NSW 2324

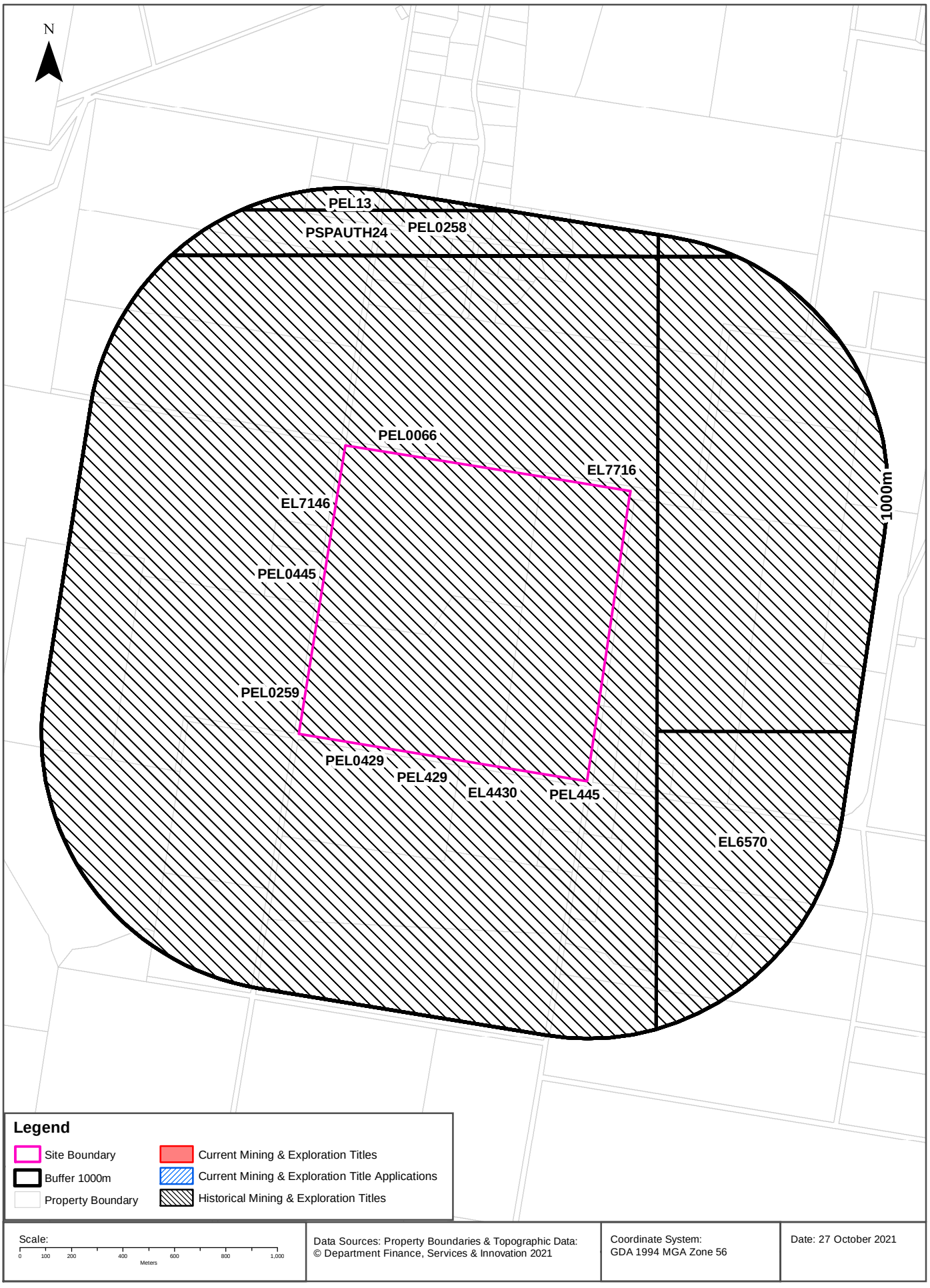
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining & Exploration Titles

395 Reardons Lane, Swan Bay, NSW 2324



Mining

395 Reardons Lane, Swan Bay, NSW 2324

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

395 Reardons Lane, Swan Bay, NSW 2324

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0259	BRIDGE OIL LTD, THE AUSTRALIAN GAS LIGHT CO., CONSOLIDATED PETROLEUM (AUST.) NL, HARTOGEN ENERGY LTD, PROJECT OIL EXPLOR	7/01/1981	6/01/1993	PETROLEUM	Petroleum	0m	On-site
PEL0066	CLARENCE RIVER BASIN OIL EXPLORATION CO. NL			PETROLEUM	Petroleum	0m	On-site
EL7716	NEW ITALY RESOURCES PTY LTD	28 Feb 2011	28 Feb 2013	MINERALS		0m	On-site
EL7146	GRADIENT ENERGY LIMITED	28 May 2008	15 Apr 2011	MINERALS	Geothermal	0m	On-site
PEL0429	SUNOCO INC	26/10/1999	13/11/2002	PETROLEUM	Petroleum	0m	On-site
PEL0445	DART ENERGY (BRUXNER) PTY LTD	19/04/2004	19/10/2015	PETROLEUM	Petroleum	0m	On-site
PEL445	DART ENERGY (BRUXNER) PTY LTD			MINERALS		0m	On-site
EL4430	BHP MINERALS PTY LTD	01 Oct 1992	12 May 1994	MINERALS	Heavy mineral sands	0m	On-site
PEL429	SUNOCO INC.			MINERALS		0m	On-site
EL6570	TIRONZ PTY LIMITED	8 Jun 2006	26 Oct 2013	MINERALS	Ilmenite Rutile Zircon Au	240m	South East
PSPAUTH24	EAST COAST POWER PTY LTD	30/04/2008	30/04/2009	PETROLEUM	Petroleum	737m	North
PEL0258	ENDEAVOUR RESOURCES LTD, CLARENCE PETROLEUM NL, TARGET EXPLORATION PTY LTD, CHARTERHALL OIL AUSTRALIA PTY LTD, OIL COMPA	7/01/1981	27/11/1995	PETROLEUM	Petroleum	737m	North
PEL13	METGASCO LTD			MINERALS		913m	North

State Environmental Planning Policy

395 Reardons Lane, Swan Bay, NSW 2324

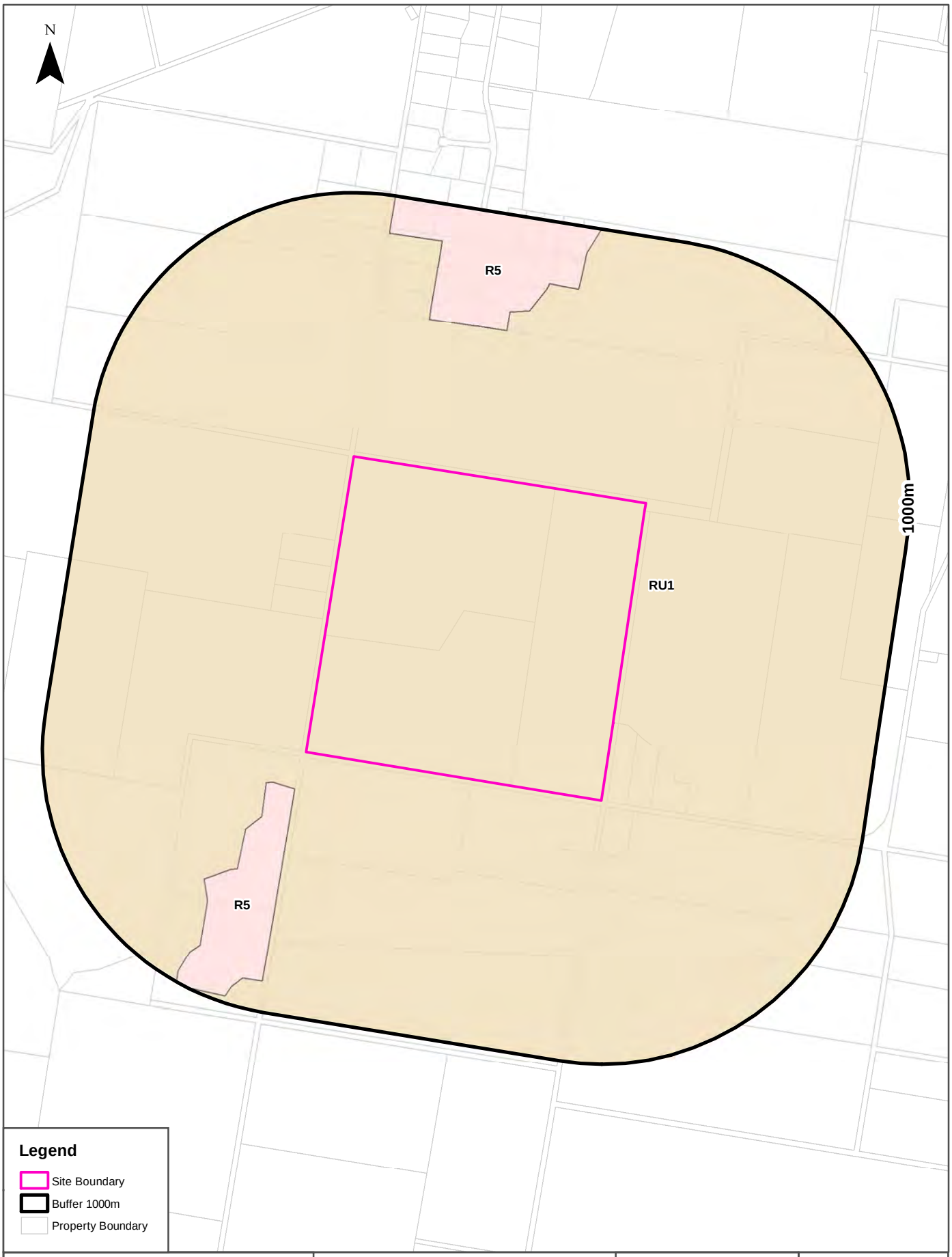
State Significant Precincts

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

395 Reardons Lane, Swan Bay, NSW 2324



Environmental Planning Instrument

395 Reardons Lane, Swan Bay, NSW 2324

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
RU1	Primary Production		Richmond Valley Local Environmental Plan 2012	01/04/2021	01/04/2021	01/04/2021	Amendment No 10	0m	On-site
R5	Large Lot Residential		Richmond Valley Local Environmental Plan 2012	09/03/2012	21/04/2012	01/04/2021		147m	South West
R5	Large Lot Residential		Richmond Valley Local Environmental Plan 2012	13/06/2014	13/06/2014	01/04/2021	Amendment No 4	559m	North

Heritage

395 Reardons Lane, Swan Bay, NSW 2324

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							

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							

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							

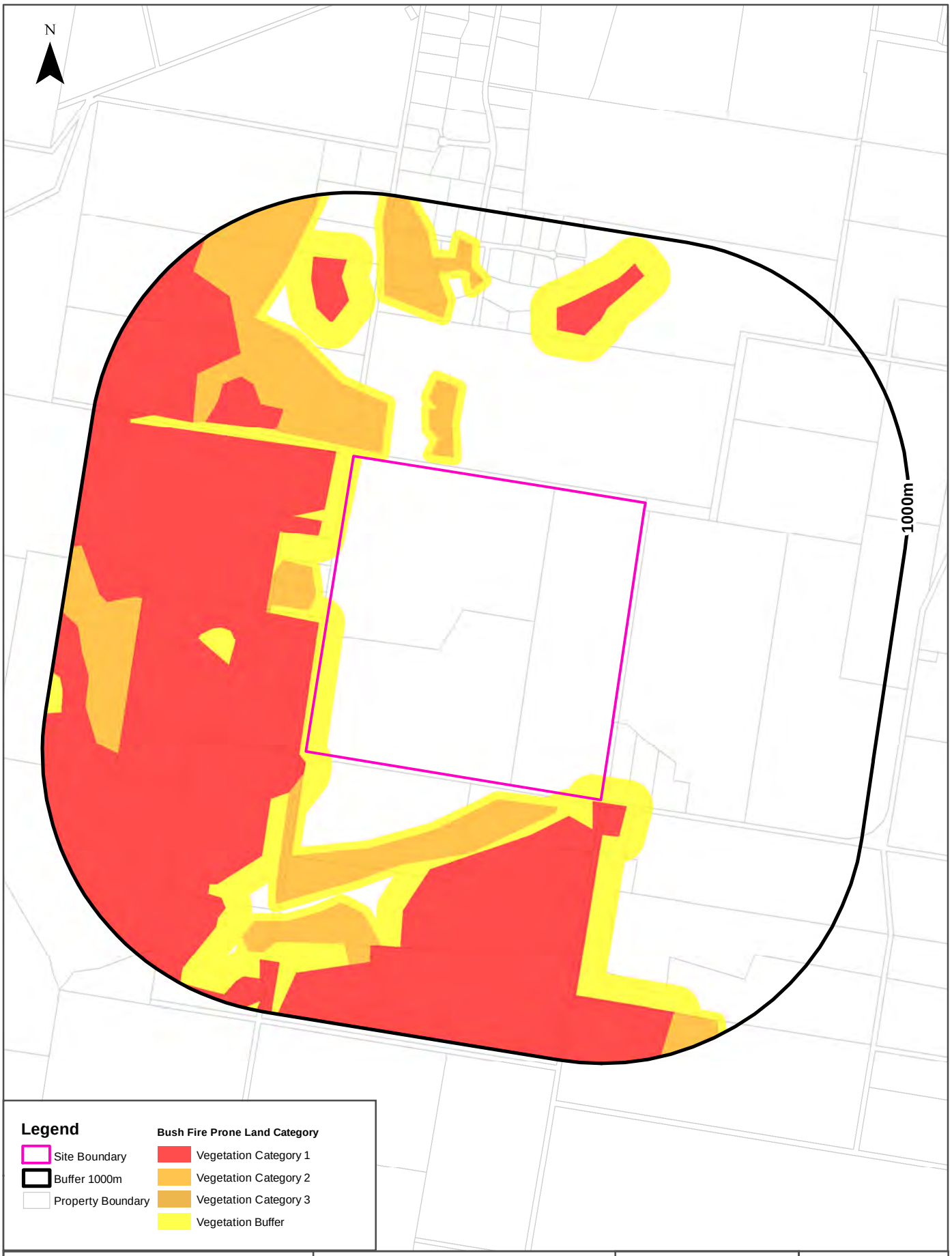
Environmental Planning Instrument - Heritage

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

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

Natural Hazards - Bush Fire Prone Land

395 Reardons Lane, Swan Bay, NSW 2324



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2021. Property Boundaries: © Department Finance, Services & Innovation 2021

Coordinate System: GDA 1994 MGA Zone 56

Date: 27 October 2021

Natural Hazards

395 Reardons Lane, Swan Bay, NSW 2324

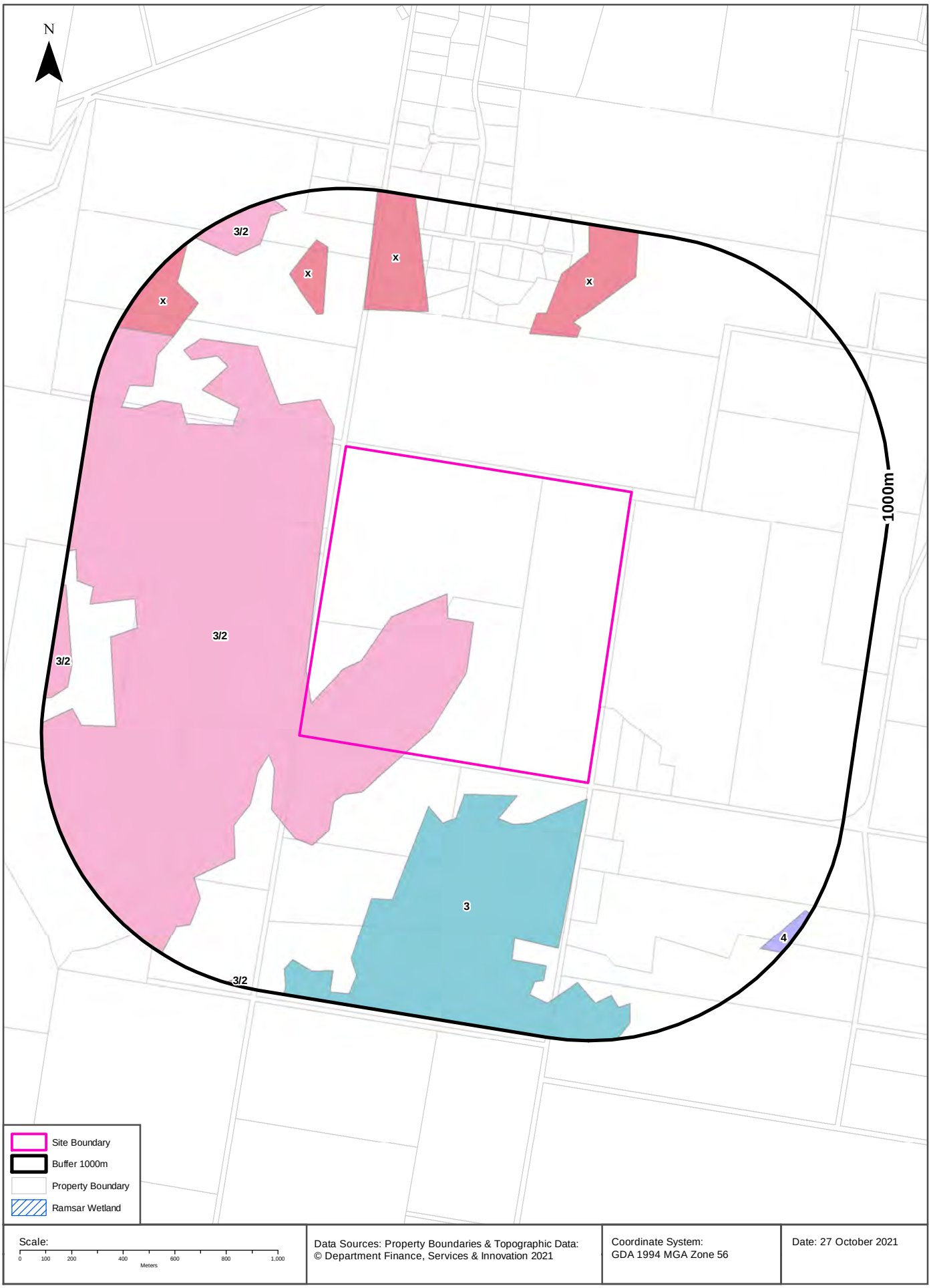
Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	0m	On-site
Vegetation Category 1	9m	South
Vegetation Category 2	24m	North West

Ecological Constraints - Vegetation & Ramsar Wetlands

395 Reardons Lane, Swan Bay, NSW 2324



Ecological Constraints

395 Reardons Lane, Swan Bay, NSW 2324

Vegetation - Eastern Bushland Database (North Region)

What Vegetation exists within the dataset buffer?

Veg Code	Veg Desc	NVISCode	NVISDesc	Distance	Direction
3/2	dry open forest / moist forest	4	Dry forest system	0m	On-site
3	dry open forest	4	Dry forest system	61m	South
x	disturbed forest woodland	23	Disturbed bushland	520m	North West
4	coastal complex	2	Coastal complex	926m	South East

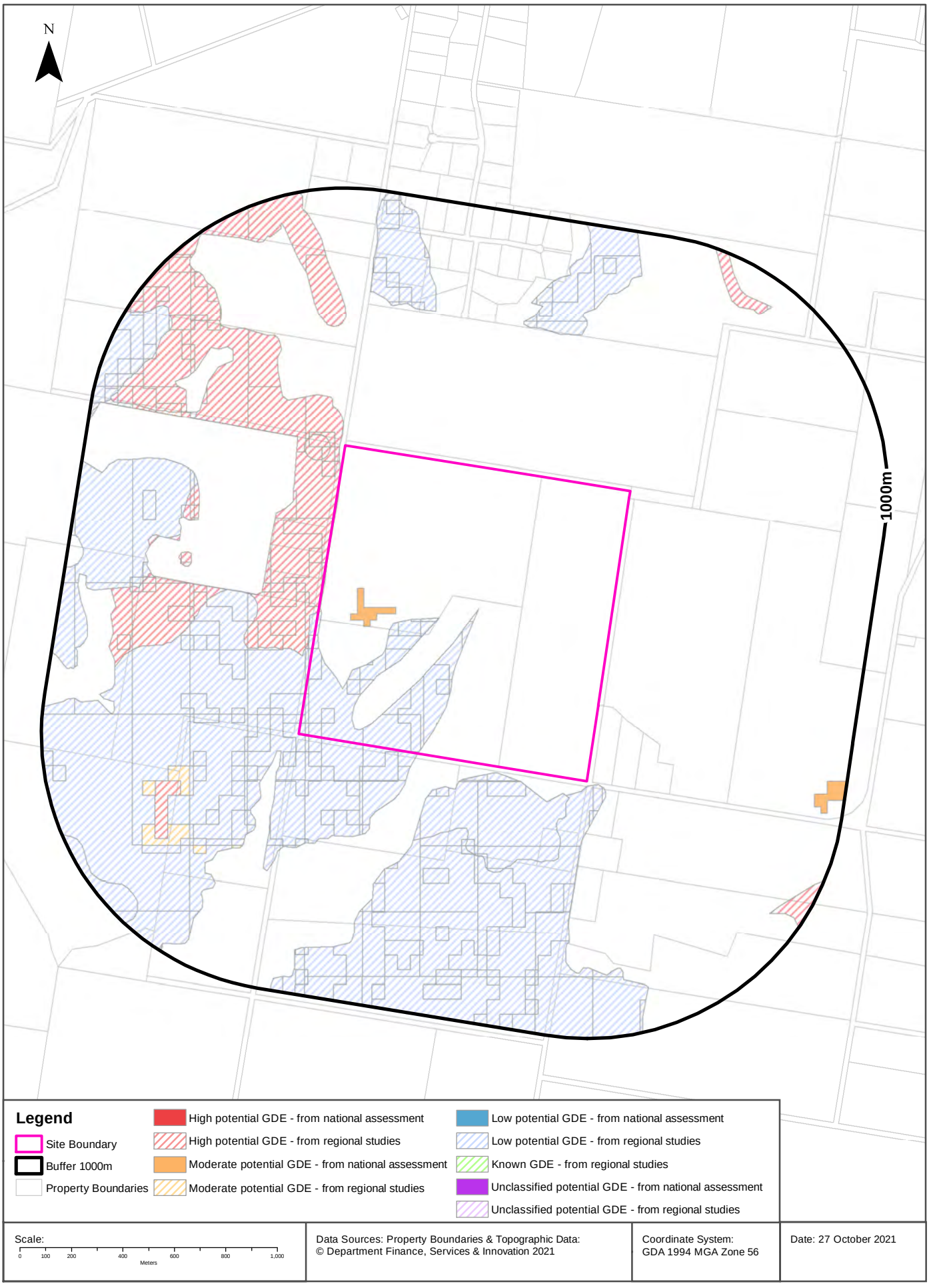
Ramsar Wetlands

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					

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

395 Reardons Lane, Swan Bay, NSW 2324



Ecological Constraints

395 Reardons Lane, Swan Bay, NSW 2324

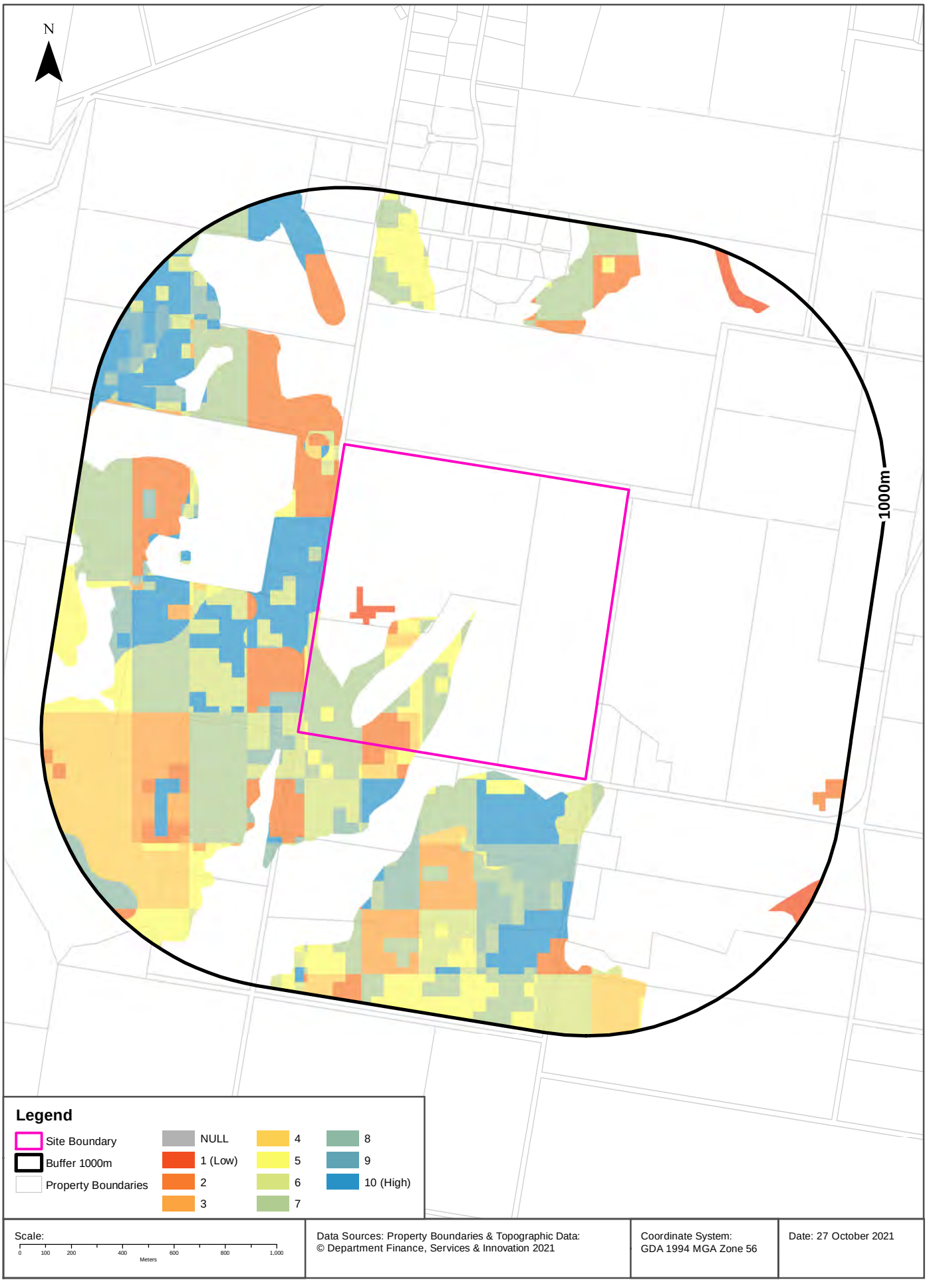
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Aquatic	Moderate potential GDE - from national assessment	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Wetland		0m	On-site
Terrestrial	Low potential GDE - from regional studies	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		0m	On-site
Terrestrial	Low potential GDE - from regional studies	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	High potential GDE - from regional studies	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	Moderate potential GDE - from regional studies	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		442m	South West
Terrestrial	Low potential GDE - from regional studies	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		972m	South West

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

395 Reardons Lane, Swan Bay, NSW 2324



Ecological Constraints

395 Reardons Lane, Swan Bay, NSW 2324

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	7	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	7	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		0m	On-site
Terrestrial	5	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		0m	On-site
Terrestrial	2	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	4	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		0m	On-site
Aquatic	1	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Wetland		0m	On-site
Terrestrial	6	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		0m	On-site
Terrestrial	6	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	10	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	8	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		0m	On-site
Terrestrial	2	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		1m	West
Terrestrial	5	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		30m	North West
Terrestrial	10	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		54m	South
Terrestrial	4	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		81m	North West
Terrestrial	3	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		327m	South
Terrestrial	9	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		814m	North West
Terrestrial	1	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Vegetation		830m	North East
Aquatic	2	Coastal lowlands on weak sedimentary rocks, with littoral and alluvial plains.	Wetland		880m	South East
Terrestrial	8	Dissected plateau margin on granite and metamorphic rocks.	Vegetation		894m	South West
Terrestrial	7	Baslatic plateau terminating southeast in dissected volcanic pile (Mount Warning).	Vegetation		972m	South West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

Ecological Constraints

395 Reardons Lane, Swan Bay, NSW 2324

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Crinia tinnula	Wallum Froglet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Litoria brevipalmata	Green-thighed Frog	Vulnerable	Not Sensitive	Not Listed	
Animalia	Amphibia	Mixophyes iteratus	Giant Barred Frog	Endangered	Category 2	Endangered	
Animalia	Aves	Amaurornis moluccana	Pale-vented Bush-hen	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
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	Botaurus poiciloptilus	Australasian Bittern	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	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	Dromaius novaehollandiae	Emu	Endangered Population	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
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	Grus rubicunda	Brolga	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
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	Limosa lapponica	Bar-tailed Godwit	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	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	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Numenius madagascariensis	Eastern Curlew	Not Listed	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Numenius phaeopus	Whimbrel	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Pandion cristatus	Eastern Osprey	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ptilinopus magnificus	Wompoo Fruit-Dove	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Thalasseus bergii	Crested Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Tringa brevipes	Grey-tailed Tattler	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA;JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Aepyprymnus rufescens	Rufous Bettong	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Chalinolobus nigrogriseus	Hoary Wattled Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Macropus dorsalis	Black-striped Wallaby	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus bifax	Eastern Long-eared Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petauroides volans	Greater Glider	Not Listed	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus australis	Yellow-bellied Glider	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	Vulnerable	
Animalia	Mammalia	Planigale maculata	Common Planigale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Syconycteris australis	Common Blossom-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Thylogale stigmatica	Red-legged Pademelon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Hoplocephalus stephensii	Stephens' Banded Snake	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Arthraxon hispidus	Hairy Jointgrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Belvisia mucronata	Needle-leaf Fern	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Centranthera cochinchinensis	Swamp Foxglove	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Coatesia paniculata	Axe-Breaker	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Cyperus aquatilis	Water Nutgrass	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Dendrobium melaleucaphilum	Spider orchid	Endangered	Category 2	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Desmodium acanthocladum	Thorny Pea	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Doryanthes palmeri	Giant Spear Lily	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Gossia fragrantissima	Sweet Myrtle	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Lindernia alsinoides	Noah's False Chickweed	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Lindsaea incisa	Slender Screw Fern	Endangered	Category 3	Not Listed	
Plantae	Flora	Macadamia tetraphylla	Rough-shelled Bush Nut	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Marsdenia longiloba	Slender Marsdenia	Endangered	Not Sensitive	Vulnerable	
Plantae	Flora	Maundia triglochinoides		Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Melaleuca irbyana	Weeping Paperbark	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Oberonia complanata	Yellow-flowered King of the Fairies	Endangered	Category 2	Not Listed	
Plantae	Flora	Oberonia titania	Red-flowered King of the Fairies	Vulnerable	Category 2	Not Listed	
Plantae	Flora	Paspalidium grandispiculatum		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Polygala linariifolia	Native Milkwort	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Prostanthera palustris	Swamp Mint-bush	Vulnerable	Category 3	Vulnerable	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Rhodomyrtus psidioides	Native Guava	Critically Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Rutidosis heterogama	Heath Wrinklewort	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Syzygium hodgkinsoniae	Red Lilly Pilly	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Tinospora tinosporoides	Arrow-head Vine	Vulnerable	Not Sensitive	Not Listed	

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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B Site Photos

Photo A Subject Site

Photo B Subject site looking east

Photo B Subject Western Boundary Looking south

Photo C Soil Sampling

C Chain of Custody

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 1 of 1

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Company Name:	EAL	Project Name/No:	
Address:	PO Box 157	Purchase Order No:	M 2839
	LISMORE NSW 2480	Results Required By:	
		Telephone:	02 6620 3678
Contact Name:	Graham Lancaster	Facsimile:	
		Email Results:	eal@scu.edu.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL5 TRH/BTEX C6-C40	CL8 TRH/BTEX/PAH	CL11TRH/BTEX/PAH/ Phenols		SV3 OC/OP	SV6 OC/PCB Low Level	SV9 OC/OP/PCB		Speciated Phenolics	Total Cyanide	Asbestos ID	OC	TRH C10-C40	BTEX C6-C9	Hexavalent Cr Vi
M2839/1		1		+		1					+										
				+		↓					+										
↓		↓		+							+										
				+							+										
				+							+										
				+							+										
				+							+										
M2839/49		49		+							+										

Relinquished By:	K Whitney	Date/Time: 27.10.21 1pm.	Received By:	Date/Time 28.10.21 9:25
Relinquished By:		Date/Time:	Received By:	Date/Time
Samples Intact: ~~Yes~~/No		Temperature: Ambient / ~~Chilled~~ 20.8	Sample Cooler Sealed: ~~Yes~~/No	Laboratory Quotation No:
		Comments:		

SGS EHS Sydney COC
SE225149

D Laboratoy Results

RESULTS OF SOIL ANALYSIS

49 samples supplied by Tim Fitzroy & Associates Pty Ltd on 26/10/2021. Lab Job No. M2839.
Samples submitted by Tim Fitzroy. Your Job: 90/2021 Newman.
61 Pine Avenue EAST BALLINA NSW 2478

ANALYTE	METHOD REFERENCE	Sample 1 TFA1	Sample 2 TFA2	Sample 3 TFA3	Sample 4 TFA4	Sample 5 TFA5	Sample 6 TFA6	Sample 7 TFA7	Sample 8 TFA8	Sample 9 TFA9
	Job No.	*M2839/1*	*M2839/2*	*M2839/3*	*M2839/4*	*M2839/5*	*M2839/6*	*M2839/7*	*M2839/8*	*M2839/9*
TEXTURE (SAND, CLAY, SILT)	** inhouse	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
MOISTURE %	** c	21	27	24	22	22	18	31	25	29
SILVER (mg/kg DW)	*a*	<1	<1	<1	<1	<1	<1	<1	<1	<1
ARSENIC (mg/kg DW)	*a*	3	2	3	3	3	3	2	2	2
LEAD (mg/kg DW)	*a*	12	9	9	8	9	15	10	10	10
CADMIUM (mg/kg DW)	*a*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CHROMIUM (mg/kg DW)	*a*	4	6	9	5	7	6	6	7	10
COPPER (mg/kg DW)	*a*	3	6	7	4	6	5	7	3	8
MANGANESE (mg/kg DW)	*a*	49	181	167	161	252	283	127	150	291
NICKEL (mg/kg DW)	*a*	1	3	3	2	3	2	3	1	4
SELENIUM (mg/kg DW)	*a*	<1	<1	<1	<1	<1	<1	<1	<1	<1
ZINC (mg/kg DW)	*a*	7	22	39	16	24	13	26	10	28
MERCURY (mg/kg DW)	*a*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	0.06
IRON (% DW)	*a*	1.29	1.12	1.90	1.28	1.61	1.48	0.92	1.57	1.42
ALUMINIUM (% DW)	*a*	0.98	0.98	1.78	0.98	1.06	1.23	1.13	1.06	1.34
BERYLLIUM (mg/kg DW)	*a*	<1	<1	<1	<1	<1	<1	<1	<1	<1
BORON (mg/kg DW)	*a*	<1	1	<1	<1	<1	1	2	<1	2
COBALT (mg/kg DW)	*a*	<1	2	3	3	3	7	2	3	5
PESTICIDE ANALYSIS SCREEN										
Hexachlorobenzene (HCB) (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan (mg/kg)	*c*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDE (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin (mg/kg)	*c*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin (mg/kg)	*c*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan (mg/kg)	*c*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone (mg/kg)	*c*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Organochlorine Pesticides SUM (mg/kg)	*c*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
Dichlorvos (mg/kg)	*c*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate (mg/kg)	*c*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate) (mg/kg)	*c*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos (Chlorpyrifos Ethyl) (mg/kg)	*c*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion (mg/kg)	*c*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion (mg/kg)	*c*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Organophosphate Pesticides SUM (mg/kg)	*c*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*

METHODS REFERENCE:

a. ^{13}Nitric/HCl digest - APHA 3125 ICPMS
b. ^{13}Nitric/HCl digest - APHA 3120 ICPOES
c. Analysis sub-contracted - SGS report no. SE225149
*** denotes these test procedure or calculation are as yet not NATA accredited but quality control data is available*

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Accreditation No. 14960
Accredited for compliance with ISO/IEC 17025 - Testing

NOTES:

1. HIL A ⁄ Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.
2. HIL B ⁄ Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.
3. HIL C ⁄ Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space.
4. HIL D ⁄ Commercial/industrial, includes premises such as shops, offices, factories and industrial sites.
(REFERENCE: Health Investigation Guidelines from NEPM (National Environmental Protection, Assessment of Site Contamination, Measure), 2013; Schedule B1).
5. Environmental Soil Quality Guidelines, Page 40, ANZECC, 1992.
6. able 1 Maximum values of specific contaminant concentrations for classification without TCLP (NSW EPA 2014, Waste Classification Guidelines Part 1: Classifying Waste)
7. able 2 Maximum values for leachable concentrations and specific contaminant concentrations when used together (NSW EPA 2014, Waste Classification Guidelines Part 1: Classifying Waste)
8. Analysis conducted between sample arrival date and reporting date.
9. ** NATA accreditation does not cover the performance of this service.
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13. Results relate only to the samples tested.
14. This report was issued on 15/11/2021.

Additional NOTES:

DW = Dry Weight. na = no guidelines available

checked: .....
Graham Lancaster (Nata signatory)
Laboratory Manager

Sample 10 TFA10	Sample 11 TFA10 Field Duplicate	Sample 12 TFA11	Sample 13 TFA12	Sample 14 TFA13	Sample 15 TFA14	Sample 16 TFA15	Sample 17 TFA16	Sample 18 TFA17	Sample 19 TFA18	Sample 20 TFA19	Sample 21 TFA20	Sample 22 TFA21	Sample 23 TFA22
M2839/10	*M2839/11*	*M2839/12*	*M2839/13*	*M2839/14*	*M2839/15*	*M2839/16*	*M2839/17*	*M2839/18*	*M2839/19*	*M2839/20*	*M2839/21*	*M2839/22*	*M2839/23*
Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
24	28	17	15	21	29	32	22	17	16	20	25	28	25
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3	3	3	4	2	5	3	3	3	3	6	5	6	5
9	10	7	10	11	10	9	8	8	8	11	11	9	10
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
11	10	6	7	7	13	9	7	8	7	7	6	7	5
13	11	2	4	5	25	6	1	1	2	6	5	4	3
352	312	20	48	72	922	233	31	25	20	73	58	71	41
6	5	<1	<1	2	6	3	<1	<1	<1	1	1	1	<1
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
47	39	15	9	12	58	24	4	6	10	9	15	9	4
0.05	0.05	<0.05	<0.05	<0.05	0.05	0.11	<0.05	<0.05	<0.05	0.06	<0.05	0.07	<0.05
1.40	1.47	2.09	2.35	1.41	3.20	1.93	1.94	3.68	2.70	2.22	1.48	1.44	1.57
1.66	1.72	0.84	1.15	1.58	1.92	1.20	1.13	1.28	1.35	1.34	1.65	1.32	1.26
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4	2	<1	<1	<1	13	2	<1	<1	<1	1	<1	<1	<1
5	6	1	2	5	7	4	<1	<1	<1	1	1	<1	<1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<1	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<1.7	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*

checked: .....
Graham Lancaster (Nata signatory)
Laboratory Manager

Sample 24 TFA23	Sample 25 TFA24	Sample 26 TFA25	Sample 27 TFA26	Sample 28 TFA27	Sample 29 TFA28	Sample 30 TFA29	Sample 31 TFA30	Sample 32 TFA30 Field Duplicate	Sample 33 TFA31	Sample 34 TFA32	Sample 35 TFA33	Sample 36 TFA34	Sample 37 TFA35
M2839/24	*M2839/25*	*M2839/26*	*M2839/27*	*M2839/28*	*M2839/29*	*M2839/30*	*M2839/31*	*M2839/32*	*M2839/33*	*M2839/34*	*M2839/35*	*M2839/36*	*M2839/37*
Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
30	20	26	27	23	23	19	21	23	26	24	23	24	18
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3	5	3	9	3	2	4	4	3	2	3	3	2	4
11	13	13	14	13	10	12	11	10	9	10	11	10	12
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
7	8	8	12	6	4	5	5	4	6	7	5	6	6
2	2	<1	3	4	2	3	4	4	5	2	2	3	4
77	121	33	67	17	14	23	91	81	110	76	36	64	31
<1	1	<1	1	<1	<1	<1	<1	<1	2	1	<1	<1	2
<1	<1	<1	2	<1	<1	<1	1	<1	<1	<1	<1	<1	<1
4	7	3	15	4	3	4	6	4	15	7	5	8	18
0.06	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	0.07	0.08	0.07	0.06	<0.05
1.95	2.56	3.40	9.82	2.19	0.61	1.52	1.27	1.10	1.37	1.65	1.45	1.42	2.31
1.22	0.88	0.97	1.21	1.07	1.42	1.04	1.26	1.56	1.05	0.97	0.97	1.37	0.80
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
<1	1	<1	<1	<1	1	<1	<1	1	<1	<1	<1	<1	<1
<1	1	<1	2	<1	<1	<1	1	1	3	<1	<1	<1	<1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
<1	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.50	<0.2	<0.2	<0.2	<0.2
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
<1.7	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*

checked: .....
Graham Lancaster (Nata signatory)
Laboratory Manager

Sample 38 TFA36	Sample 39 TFA37	Sample 40 TFA38	Sample 41 TFA39	Sample 42 TFA40	Sample 43 TFA41	Sample 44 TFA42	Sample 45 TFA43	Sample 46 TFA44	Sample 47 TFA45	Sample 48 TFA Lab Duplicate 1	Sample 49 TFA Lab Duplicate 2	*RESIDENTIAL A Guideline Limit* *Individual -Column A*
M2839/38	*M2839/39*	*M2839/40*	*M2839/41*	*M2839/42*	*M2839/43*	*M2839/44*	*M2839/45*	*M2839/46*	*M2839/47*	*M2839/48*	*M2839/49*	*See note 1a*
Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	..
18	14	18	31	11	21	18	20	21	25	20	24	..
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	*na*
5	5	4	6	5	8	2	2	2	4	5	2	*100*
10	11	9	11	10	13	9	10	10	17	11	10	*300*
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	*20*
12	10	8	9	7	10	6	6	6	8	6	8	*(<100)*
3	2	1	2	2	2	7	2	4	2	1	5	*6,000*
60	74	60	60	21	41	157	40	91	37	16	125	*3,800*
<1	<1	<1	<1	<1	2	2	<1	2	<1	<1	3	*400*
<1	1	1	<1	<1	1	<1	<1	<1	<1	<1	<1	*200*
8	5	3	5	5	5	12	3	9	4	12	16	*7,400*
<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.05	0.05	<0.05	<0.05	<0.05	0.07	*40*
4.96	5.30	2.89	4.69	3.00	6.84	1.89	1.64	0.86	3.65	1.78	1.52	*na*
1.04	1.06	0.76	0.95	0.90	0.93	0.84	0.70	1.23	1.02	0.82	1.09	*na*
<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	*60*
<1	<1	<1	<1	1	1	2	2	1	2	1	<1	*4,500*
<1	<1	<1	<1	<1	<1	2	<1	6	<1	1	3	*100*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*10*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*6*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*6*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*6*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*240*
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	..
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*240*
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	*6*
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	*10*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*240*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*240*
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	..
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*240*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*240*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*270*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*10*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*300*
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	*10*
<1	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	*<1*	..
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	..
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	..
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	..
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.30	<0.2	<0.2	<0.2	<0.2	*160*
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	..
<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	..
<1.7	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	*<1.7*	..

checked: .....
Graham Lancaster (Nata signatory)
Laboratory Manager

QA/QC Report for EAL Job M2839

49 samples supplied by Tim Fitzroy & Associates Pty Ltd on 26/10/2021. Lab Job No. M2839.

Samples submitted by Tim Fitzroy. Your Job: 90/2021 Newman.

61 Pine Avenue EAST BALLINA NSW 2478

Digest Date: 28/10/2021

Analysis Date: 1/11/2021

	Method	PQL	Digest Blank	LCS % Recovery AGAL 12				DUPLICATE			
		mg/kg	mg/kg	Result 1	Certified Value	Recovery (%)	Pass Limits	Result 1 - M2839/9	Result 2 - M2839/9d	RPD	Pass Limits
METALS & SALTS											
SILVER (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	5.82	**5.63**	**103.4%**	Pass	0.00	0.00	..	Pass
ARSENIC (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	2	<2	3.90	**3.39**	**114.9%**	Pass	2.2	2.5	**13%**	Pass
LEAD (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	30.6	**31.4**	**97.6%**	Pass	10.1	10.2	**1%**	Pass
CADMIUM (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	0.5	<0.5	0.74	**0.77**	**96.3%**	Pass	0.03	0.04	**18%**	Pass
CHROMIUM (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	2	<2	32.8	**33**	**99.3%**	Pass	9.3	9.7	**4%**	Pass
COPPER (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	155	**150**	**103.6%**	Pass	7.3	7.7	**4%**	Pass
MANGANESE (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	493	**500**	**98.7%**	Pass	286	297	**4%**	Pass
NICKEL (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	16.8	**16.6**	**101.0%**	Pass	3.7	4.0	**7%**	Pass
SELENIUM (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	2	<2	1.53	**1.50**	**102.2%**	Pass	0.2	0.6	**90%**	Pass
ZINC (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	184	**182**	**101.2%**	Pass	28	29	**3%**	Pass
MERCURY (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	0.1	<0.1	0.60	**0.53**	**114.1%**	Pass	0.05	0.07	**35%**	Pass
IRON (%)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	0.005	<0.005	2.39	**2.49**	**95.9%**	Pass	1.39	1.45	**4%**	Pass
ALUMINIUM (%)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	0.005	<0.005	1.08	**1.05**	**102.7%**	Pass	1.28	1.39	**9%**	Pass
BERYLLIUM (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	0.66	**0.67**	**98.1%**	Pass	0.54	0.54	**0%**	Pass
BORON (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	5	<5	4.19	**3.46**	**121.0%**	Pass	2.53	1.69	**40%**	Pass
COBALT (mg/kg)	1:3 Nitric/HCl digest - APHA 3125 ICPMS	1	<1	8.31	**8.67**	**95.8%**	Pass	5.2	5.6	**7%**	Pass

Quality Control Global Acceptance Criteria (GAC)

Accuracy

LCS - 1 per analytical batch

LCS - general analytes 70% - 130% recovery

Precision

Laboratory duplicate - 1 every 10 samples, minimum one per analytical batch

Laboratory duplicate RPD GAC - 30%, also applicable - No Limit (<10x PQL), 0-50% (10-20x PQL), 0-20% (>20x PQL)

Notes:

This QA/QC report is specific to job number specified above

LCS: Laboratory Control Standard - Reported as percent recovery

RPD: Relative Percent Difference between two duplicate pieces of analysis

PQL: Practical Quantification Limit also referred to as Limit of Reporting LOR

.. - denotes no sufficient data available

This report was issued on 15/11/2021.

checked:.....
Graham Lancaster

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Graham Lancaster	Manager	Huong Crawford
Client	ENVIRONMENTAL ANALYSIS LABORATORY	Laboratory	SGS Alexandria Environmental
Address	PO BOX 157 LISMORE NSW 2480	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	61 2 6620 3678	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	Graham.Lancaster@scu.edu.au	Email	au.environmental.sydney@sgs.com
Project	**M2839**	SGS Reference	**SE225149 R0**
Order Number	**M2839**	Date Received	28 Oct 2021
Samples	49	Date Reported	08 Nov 2021

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

Teresa NGUYEN
Organic Chemist

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE225149.001 Soil 27 Oct 2021 M2839/1	SE225149.002 Soil 27 Oct 2021 M2839/2	SE225149.003 Soil 27 Oct 2021 M2839/3	SE225149.004 Soil 27 Oct 2021 M2839/4
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Hexachlorobenzene (HCB)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1		<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1		<1	<1	<1	<1
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**98**	**95**	**94**	**93**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Dichlorvos	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7		<1.7	<1.7	<1.7	<1.7
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		**90**	**94**	**94**	**92**
d14-p-terphenyl (Surrogate)	%	-		**92**	**88**	**94**	**96**
Moisture Content Method: AN002 Tested: 1/11/2021							
% Moisture	%w/w	1		**21.4**	**26.6**	**23.8**	**21.9**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE225149.005 Soil 27 Oct 2021 M2839/5	SE225149.006 Soil 27 Oct 2021 M2839/6	SE225149.007 Soil 27 Oct 2021 M2839/7	SE225149.008 Soil 27 Oct 2021 M2839/8
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**91**	**93**	**92**	**92**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**92**	**92**	**92**	**100**
d14-p-terphenyl (Surrogate)	%	-	**96**	**96**	**90**	**96**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**21.8**	**17.8**	**31.3**	**24.5**

Parameter	Units	LOR	Sample Number: SE225149.009 Sample Matrix: Soil Sample Date: 27 Oct 2021 Sample Name: M2839/9	SE225149.010 Soil 27 Oct 2021 M2839/10	SE225149.011 Soil 27 Oct 2021 M2839/11	SE225149.012 Soil 27 Oct 2021 M2839/12
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**93**	**94**	**91**	**90**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**88**	**90**	**96**	**94**
d14-p-terphenyl (Surrogate)	%	-	**80**	**86**	**90**	**98**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**29.2**	**24.2**	**27.7**	**16.5**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE225149.013 Soil 27 Oct 2021 M2839/13	SE225149.014 Soil 27 Oct 2021 M2839/14	SE225149.015 Soil 27 Oct 2021 M2839/15	SE225149.016 Soil 27 Oct 2021 M2839/16
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Hexachlorobenzene (HCB)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1		<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1		<1	<1	<1	<1
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**88**	**91**	**88**	**91**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Dichlorvos	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7		<1.7	<1.7	<1.7	<1.7
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		**92**	**96**	**74**	**97**
d14-p-terphenyl (Surrogate)	%	-		**92**	**100**	**46**	**90**
Moisture Content Method: AN002 Tested: 1/11/2021							
% Moisture	%w/w	1		**15.1**	**21.2**	**29.1**	**32.4**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE225149.017 Soil 27 Oct 2021 M2839/17	SE225149.018 Soil 27 Oct 2021 M2839/18	SE225149.019 Soil 27 Oct 2021 M2839/19	SE225149.020 Soil 27 Oct 2021 M2839/20
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Hexachlorobenzene (HCB)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1		<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1		<1	<1	<1	<1
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**89**	**89**	**90**	**97**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Dichlorvos	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7		<1.7	<1.7	<1.7	<1.7
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		**89**	**92**	**90**	**84**
d14-p-terphenyl (Surrogate)	%	-		**95**	**95**	**94**	**71**
Moisture Content Method: AN002 Tested: 1/11/2021							
% Moisture	%w/w	1		**21.8**	**16.6**	**16.4**	**19.9**

Parameter	Units	LOR	Sample Number: SE225149.021 Sample Matrix: Soil Sample Date: 27 Oct 2021 Sample Name: M2839/21	SE225149.022 Soil 27 Oct 2021 M2839/22	SE225149.023 Soil 27 Oct 2021 M2839/23	SE225149.024 Soil 27 Oct 2021 M2839/24
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**101**	**103**	**96**	**100**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**90**	**96**	**104**	**107**
d14-p-terphenyl (Surrogate)	%	-	**99**	**101**	**93**	**97**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**24.5**	**27.7**	**24.7**	**29.6**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE225149.025 Soil 27 Oct 2021 M2839/25	SE225149.026 Soil 27 Oct 2021 M2839/26	SE225149.027 Soil 27 Oct 2021 M2839/27	SE225149.028 Soil 27 Oct 2021 M2839/28
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**100**	**101**	**98**	**96**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**107**	**107**	**107**	**101**
d14-p-terphenyl (Surrogate)	%	-	**98**	**97**	**93**	**95**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**20.4**	**25.9**	**27.2**	**22.9**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE225149.029 Soil 27 Oct 2021 M2839/29	SE225149.030 Soil 27 Oct 2021 M2839/30	SE225149.031 Soil 27 Oct 2021 M2839/31	SE225149.032 Soil 27 Oct 2021 M2839/32
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**102**	**94**	**99**	**99**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**105**	**100**	**90**	**103**
d14-p-terphenyl (Surrogate)	%	-	**96**	**89**	**97**	**91**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**22.9**	**18.8**	**21.3**	**22.9**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE225149.033 Soil 27 Oct 2021 M2839/33	SE225149.034 Soil 27 Oct 2021 M2839/34	SE225149.035 Soil 27 Oct 2021 M2839/35	SE225149.036 Soil 27 Oct 2021 M2839/36
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**102**	**99**	**103**	**101**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	**1.5**	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**89**	**102**	**108**	**106**
d14-p-terphenyl (Surrogate)	%	-	**92**	**92**	**98**	**93**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**26.2**	**23.5**	**23.4**	**24.2**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE225149.037 Soil 27 Oct 2021 M2839/37	SE225149.038 Soil 27 Oct 2021 M2839/38	SE225149.039 Soil 27 Oct 2021 M2839/39	SE225149.040 Soil 27 Oct 2021 M2839/40
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Hexachlorobenzene (HCB)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1		<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1		<1	<1	<1	<1
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**98**	**99**	**94**	**100**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021							
Dichlorvos	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7		<1.7	<1.7	<1.7	<1.7
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		**102**	**103**	**85**	**86**
d14-p-terphenyl (Surrogate)	%	-		**92**	**96**	**92**	**93**
Moisture Content Method: AN002 Tested: 1/11/2021							
% Moisture	%w/w	1		**18.3**	**17.8**	**13.5**	**18.0**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE225149.041 Soil 27 Oct 2021 M2839/41	SE225149.042 Soil 27 Oct 2021 M2839/42	SE225149.043 Soil 27 Oct 2021 M2839/43	SE225149.044 Soil 27 Oct 2021 M2839/44
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**96**	**92**	**90**	**93**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**100**	**100**	**98**	**98**
d14-p-terphenyl (Surrogate)	%	-	**108**	**108**	**100**	**106**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**30.5**	**10.7**	**21.3**	**18.0**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE225149.045 Soil 27 Oct 2021 M2839/45	SE225149.046 Soil 27 Oct 2021 M2839/46	SE225149.047 Soil 27 Oct 2021 M2839/47	SE225149.048 Soil 27 Oct 2021 M2839/48
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**89**	**93**	**103**	**89**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	**0.3**	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**100**	**106**	**106**	**100**
d14-p-terphenyl (Surrogate)	%	-	**102**	**104**	**104**	**104**
Moisture Content Method: AN002 Tested: 1/11/2021						
% Moisture	%w/w	1	**20.2**	**21.4**	**25.2**	**20.3**

Parameter	Units	LOR	Sample Number SE225149.049 Sample Matrix Soil Sample Date 27 Oct 2021 Sample Name M2839/49
OC Pesticides in Soil Method: AN420 Tested: 1/11/2021			
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1
Total OC VIC EPA	mg/kg	1	<1
Surrogates			
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**91**
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021			
Dichlorvos	mg/kg	0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2
Malathion	mg/kg	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2
Methidathion	mg/kg	0.5	<0.5
Ethion	mg/kg	0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7

Parameter	Units	LOR	Sample Number SE225149.049 Sample Matrix Soil Sample Date 27 Oct 2021 Sample Name M2839/49
OP Pesticides in Soil Method: AN420 Tested: 1/11/2021 (continued)			
Surrogates			
2-fluorobiphenyl (Surrogate)	%	-	**100**
d14-p-terphenyl (Surrogate)	%	-	**100**
Moisture Content Method: AN002 Tested: 1/11/2021			
% Moisture	%w/w	1	**24.4**

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Moisture Content Method: ME-(AU)-[ENV]AN002

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB236002	%w/w	1	2%
	LB236003	%w/w	1	0 - 2%
	LB236004	%w/w	1	0 - 2%

OC Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Hexachlorobenzene (HCB)	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Alpha BHC	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Lindane	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Heptachlor	LB235955	mg/kg	0.1	<0.1	0%	97%	90%
	LB235956	mg/kg	0.1	<0.1	0%	98%	140%
	LB235958	mg/kg	0.1	<0.1	0%	107%	108%
Aldrin	LB235955	mg/kg	0.1	<0.1	0%	90%	81%
	LB235956	mg/kg	0.1	<0.1	0%	91%	129%
	LB235958	mg/kg	0.1	<0.1	0%	103%	106%
Beta BHC	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Delta BHC	LB235955	mg/kg	0.1	<0.1	0%	96%	82%
	LB235956	mg/kg	0.1	<0.1	0%	94%	139%
	LB235958	mg/kg	0.1	<0.1	0%	106%	104%
Heptachlor epoxide	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDE	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Endosulfan	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
Gamma Chlordane	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Alpha Chlordane	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
trans-Nonachlor	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDE	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Dieldrin	LB235955	mg/kg	0.2	<0.2	0%	97%	86%
	LB235956	mg/kg	0.2	<0.2	0%	95%	133%
	LB235958	mg/kg	0.2	<0.2	0%	105%	102%
Endrin	LB235955	mg/kg	0.2	<0.2	0%	102%	94%
	LB235956	mg/kg	0.2	<0.2	0%	94%	134%
	LB235958	mg/kg	0.2	<0.2	0%	102%	102%
o,p'-DDD	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OC Pesticides in Soil Method: ME-(AU)-[ENV]AN420 (continued)

				MB	DUP %RPD	LCS %Recovery	MS %Recovery
o,p'-DDD	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
o,p'-DDT	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Beta Endosulfan	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
p,p'-DDD	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
p,p'-DDT	LB235955	mg/kg	0.1	<0.1	0%	82%	91%
	LB235956	mg/kg	0.1	<0.1	0%	101%	136%
	LB235958	mg/kg	0.1	<0.1	0%	105%	112%
Endosulfan sulphate	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Aldehyde	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Methoxychlor	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Endrin Ketone	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Isodrin	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Mirex	LB235955	mg/kg	0.1	<0.1	0%	NA	NA
	LB235956	mg/kg	0.1	<0.1	0%	NA	NA
	LB235958	mg/kg	0.1	<0.1	0%	NA	NA
Total CLP OC Pesticides	LB235955	mg/kg	1	<1	0%	NA	NA
	LB235956	mg/kg	1	<1	0%	NA	NA
	LB235958	mg/kg	1	<1	0%	NA	NA
Total OC VIC EPA	LB235955	mg/kg	1	<1	0%	NA	NA
	LB235956	mg/kg	1	<1	0%	NA	NA
	LB235958	mg/kg	1	<1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB235955	%	-	93%	2 - 7%	92%	83%
	LB235956	%	-	92%	4 - 5%	90%	100%
	LB235958	%	-	92%	0 - 2%	91%	95%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dichlorvos	LB235955	mg/kg	0.5	<0.5	0%	67%	69%
	LB235956	mg/kg	0.5	<0.5	0%	69%	67%
	LB235958	mg/kg	0.5	<0.5	0%	75%	70%
Dimethoate	LB235955	mg/kg	0.5	<0.5	0%	NA	NA
	LB235956	mg/kg	0.5	<0.5	0%	NA	NA
	LB235958	mg/kg	0.5	<0.5	0%	NA	NA
Diazinon (Dimpylate)	LB235955	mg/kg	0.5	<0.5	0%	95%	99%
	LB235956	mg/kg	0.5	<0.5	0%	86%	90%
	LB235958	mg/kg	0.5	<0.5	0%	101%	106%
Fenitrothion	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
Malathion	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB235955	mg/kg	0.2	<0.2	0%	95%	101%
	LB235956	mg/kg	0.2	<0.2	0%	90%	95%
	LB235958	mg/kg	0.2	<0.2	0%	102%	109%
Parathion-ethyl (Parathion)	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
Bromophos Ethyl	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
Methidathion	LB235955	mg/kg	0.5	<0.5	0%	NA	NA
	LB235956	mg/kg	0.5	<0.5	0%	NA	NA
	LB235958	mg/kg	0.5	<0.5	0%	NA	NA
Ethion	LB235955	mg/kg	0.2	<0.2	0%	82%	89%
	LB235956	mg/kg	0.2	<0.2	0%	68%	67%
	LB235958	mg/kg	0.2	<0.2	0%	120%	105%
Azinphos-methyl (Guthion)	LB235955	mg/kg	0.2	<0.2	0%	NA	NA
	LB235956	mg/kg	0.2	<0.2	0%	NA	NA
	LB235958	mg/kg	0.2	<0.2	0%	NA	NA
Total OP Pesticides*	LB235955	mg/kg	1.7	<1.7	0%	NA	NA
	LB235956	mg/kg	1.7	<1.7	0%	NA	NA
	LB235958	mg/kg	1.7	<1.7	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
2-fluorobiphenyl (Surrogate)	LB235955	%	-	88%	0 - 7%	88%	92%
	LB235956	%	-	106%	1 - 10%	92%	92%
	LB235958	%	-	90%	6%	92%	94%
d14-p-terphenyl (Surrogate)	LB235955	%	-	92%	5 - 15%	92%	94%
	LB235956	%	-	95%	3 - 10%	88%	94%
	LB235958	%	-	96%	4%	98%	102%

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

E Quality Assurance

Data Usability Summary Assessment

All site work was completed in accordance with standard *TFA sampling protocols*, including a quality assurance/quality control (QA/QC) programme and standard operating procedures.

A data usability assessment was performed for the soil data collected by TFA, as summarised in the following tables:

- Table E.1, field QC samples summary,
- Table E.2, summary of field QA/QC, and
- Table E.3, summary of laboratory QA/QC.

Table I.1: Field quality control samples summary

	Total samples	Field duplicates	Lab duplicates
Heavy metals[1]	45	4	4
OPs	45	4	4
OCs	45	4	4

Table I.2: Summary of field QA/QC

Parameter	Complies	Comments[1]
Precision		
Standard operating procedures (SOPs) appropriate and complied with	Yes	All sampling was conducted under standard TFA operating procedures.
Field duplicates	Yes	≥ 5%. RPD[2] criteria < 30% – 50%.
Inter-laboratory duplicates	Yes	≥ 5%. RPD[2] criteria < 30% – 50%.
Accuracy		
Matrix spikes samples appropriate	Yes	≥ 1/media type.
Representativeness		
Sample collection - preservation	Yes	All samples were collected directly into laboratory supplied jars with no headspace. All samples were placed immediately into eskies containing ice.
Field equipment calibrated	N/A	No field equipment that required calibration was used.
Decontamination procedures	Yes	Soil samples were collected using a trowel and gloved hand, which was washed with Decon 90 between locations.
Comparability		
Consistent sampling staff	Yes	All field work was conducted by Tim Fitzroy
Consistent weather/field conditions	Yes	No extreme weather conditions occurred during or before/after the investigation.
Completeness		
Sample logs and field data	Yes	-

Parameter	Complies	Comments[1]
Chain of Custody	Yes	Refer to Appendix C

Notes:
1. For QC samples, specified frequency and acceptance criteria shown.
2. RPD = relative percentage difference.

Table I.3: Summary of laboratory QA/QC

Parameter	Complies	Comments[1]
Precision		
Laboratory duplicates	Yes	≥ 10%, laboratory specified. All laboratory duplicates were within the laboratory specified global acceptance criteria.
Accuracy		
Surrogate spikes	Yes	Organics by GC, 70% - 130%. All surrogates were within the laboratory specified global acceptance criteria.
Matrix spikes analysis appropriate	Yes	≥ 70% - 130%.
Laboratory control samples (LCSs)	Yes	≥ 1/lab batch, 70% - 130%.
Certified reference material (CRM)	N/A	-
Representativeness		
Sample condition	Yes	
Holding times	Yes	
Laboratory blanks	Yes	≥ 1/lab batch, < LORs.
Comparability		
NATA accredited laboratory	Yes	EAL Laboratory Services is a NATA accredited laboratory (Accreditation number 14960).
NEPM methods or similar	Yes	LORs were consistent and appropriate.
Completeness		
Sample receipt	Yes	
Laboratory reports	Yes	

Notes:
1. For QC samples, acceptance criteria shown. Acceptance criteria can vary based on analyte, statistical data and laboratory specific methods. Laboratory specified relates to detected concentrations based on LORs, e.g., result < 10 x LOR = no limit, 10 – 20 x LOR = 0 - 50%, > 20 x LOR = 0 - 20%. See laboratory reports for specific details.

Summary and Discussion
The following issues were identified with the data:

- **Precision:** The data shows no significant variability.
- **Accuracy**: The accuracy of the analysis is confirmed by surrogate, matrix spike and LCS recoveries within the acceptance criteria.
- **Representativeness**: No outliers have been reported for QC samples collected to assist in the qualification of representativeness. It should be noted that no trip spikes or blanks were analysed during the works, but no volatile compounds were PCOCs.
- **Comparability:** The data is considered to be acceptable, with consistent sampling staff and NATA accredited laboratory used and all LORs below the relevant criteria.

- **Completeness**: Laboratory and field documentation is considered to be complete.