



Preliminary Site Investigation (PSI)

AGL Broader Employment Transition Area

AGL Macquarie Pty Ltd

29 November 2024

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Executive Summary

AGL Macquarie Pty Ltd (AGL) has engaged GHD Pty Ltd (GHD) to prepare a Planning Proposal (the Planning Proposal) which seeks to amend *Muswellbrook Local Environmental Plan 2009* (the LEP) to make industrial land uses, compatible infrastructure and related uses permissible with consent via the inclusion of an additional Local Provision, and the creation of a new key sites map. The Planning Proposal is limited to 105.4 hectares of the approximately 10,000 hectares of land owned by AGL in the vicinity of the Bayswater Power Station (BPS) and former Liddell Power Station (LPS). The Planning Proposal relates to Part Lot 2 DP1095515 (Sites 1 and 2) and Part Lot 601 DP1019325, Part Lot 34 DP 752486 and Part Lot 145 DP 752486 (Site 3).

This report details a Preliminary Site Investigation (PSI) for Sites 1, 2 and 3, which AGL are proposing for future redevelopment. The purpose of the PSI is to identify potential contamination issues at these three proposed sites and provide recommendations for further investigations (as required) to progress the Proposal.

The scope of work for the PSI included the following:

- Review of existing available site history information including historical aerial photographs and existing contamination assessments relating to the three sites.
- Groundwater bore search.
- Review of geology, hydrology, hydrogeology and topography information for the three sites.
- Assessment of neighbouring land uses including any potentially contaminating activities.
- A search of the contaminated land record and list of notified sites maintained by the NSW EPA under the *Contaminated Land Management Act 1997* (CLM Act).
- Complete a site inspection of the three sites.
- Preparation of this report with reference to NSW EPA 2020 and the National Environment Protection Council NEPC (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended 2013 (NEPM) summarising the results of the desktop review, and provision of recommendations for further investigations (as required).

A summary of the findings from the site inspection and desktop review is provided as follows:

- General:
 - A search of the contamination land record and list of notified sites maintained by the NSW EPA under the CLM Act confirms that:
 - The BPS and LPS sites were notified to the EPA under section 60 of the CLM Act with the EPA determining that regulation under the CLM Act was not required.
 - No part of BPS or the former LPS, including Sites 1 to 3, are listed on the contaminated land record as currently regulated by the EPA under the CLM Act.
 - All three sites (which include the whole of Site 1 and Site 2 and the southern portion of Site 3) are currently within the premises of BPS environment protection licence (EPL) 779 held by AGL. The EPL authorises the scheduled activities of electricity generation, coal works and chemical storage as well as related activities. It is understood that these activities have been primarily conducted around the main infrastructure and plant areas at the BPS and the former LPS, and not at Sites 1 to 3 which have been used as further detailed below.
- Site 1 was formerly used as a lay down area and is currently used for car parking for BPS contractors. A portion of the coal conveyor is also located at the northern corner of Site 1. The site history is as follows:
 - Prior to 1980, Site 1 and its surrounding areas were vacant and undeveloped with terracing visible as early as 1958.
 - Significant developments surrounding Site 1 were noted in 1980, with the coal handling and preparation area located to the north, the BPS Power Block Area is located to the south and a coal conveyor to the north constructed between 1980 to 1994.
 - The northern portion of Site 1 was used for auxiliary coal stockpile.

- Some structures at the southern boundary of the site. It is understood that Site 1 has been used as a laydown area for works associated with BPS on an ongoing basis since BPS was first constructed in the 1980s. This was first noted in aerial photos from 2008 but is understood to have been ongoing intermittently since BPS was constructed.
- A portion of the site is currently used to provide car parking for BPS contractors and can accommodate approximately 300 vehicles daily.
- Site 2 was formerly used as a lay down area is not currently used for any operational purpose and its site history is as follows:
 - The area was previously used for assembly of large pieces of infrastructure such as boiler components, the electrical supply system and the fire water system for the site during construction of the power station.
 - A transformer was previously located in the southern portion of Site 2.
 - The area was cut out of the hillside with natural excavated material being used to level the site.
 - No operational activities are currently conducted at Site 2.
 - A sedimentation pond is currently located adjacent to this site, on the northeastern side of the site.
- Site 3 is not currently used for any operational purpose except for the Ravensworth ash slurry line and return water line located in its southern portion. Its site history is as follows:
 - The M series conveyor located at the southern portion of the site was first noted in the 1970 aerial photograph. This was reported to be no longer in use at the time of inspection.
 - The Ravensworth ash slurry line and return water line located south of the M series was first noted in the 2008 aerial photograph. AGL have confirmed that this is still operational and is used to support the BPS. Historical ash slurry and return water leaks along the lines were also reported.
 - Lake Liddell was first noted in the 1970 aerials having been constructed as part of the construction of the former LPS.
 - No other significant changes within Site 3 are noted from the aerial photographs.

Based on the desktop review and the site inspection, the following potential contamination sources have been identified:

- Potential use of fill material in all sites.
- Potential use of herbicides and/or pesticides for weed spraying on all sites.
- Potential spills of fuel/oils from vehicles in the parking lot or equipment in the laydown area in Site 1.
- Potential presence of asbestos and lead based paints on surface soils in the vicinity of the conveyors in Site 3 and in previous locations of structures in Site 1.
- Potential contamination from long-term use of the coal supply conveyor in the northern corner of Site 1.
- Potential migration of contamination from long-term use of adjacent areas for coal handling operations and power station uses on all sites.
- Historical use of Site 2 as a large Items Assembly Area during the BPS construction.
- Historical leaks along the Ravensworth ash slurry line and return water line.

A number of contamination investigations have been completed to date for the BPS and former LPS site. While these did not generally focus on Sites 1 to 3 which are outside the main operational areas of the power stations, some of these reports included soil or groundwater sampling within the sites. The available data shows that:

- Site 1 – To date no soil or groundwater testing has been completed in Site 1. It is noted however, that based on data from the adjoining area, a GIS Mapping Tool developed by Kleinfelder in 2019 included approximately half of Site 1 in a broader area identified as exceeding applicable criteria for a Residential Land use scenario which requiring a very high remediation effort to achieve Residential criteria. Based on this, the indicative land capacity for this site was classified for commercial/industrial land use which is consistent with the uses proposed as part of the Planning Proposal which is limited to industrial uses.

- Site 2 – Coal fines and ash were noted within soils in this area which was considered to be anthropogenic in nature and distribution. An ammonia concentration in groundwater was also identified in one of the existing wells as exceeding the ANZECC (2000) 95% level of protection trigger value for slightly to moderately disturbed freshwater ecosystems. No other soil or groundwater exceedances of applicable health and ecological criteria were noted in this area. Based on the GIS Mapping Tool developed by Kleinfelder in 2019, the indicative land capacity for this site was classified for recreational/nonsensitive agricultural land use. GHD notes that the indicative land capacity assigned using the GIS Mapping Tool is for a more sensitive use than are proposed under the Planning Proposal, meaning that the assigned indicative land capacity would also accommodate the industrial energy hub related uses proposed under the Planning Proposal.
- Site 3 – One soil sample taken from a soil bore in Site 3 in 2013 had concentrations of contaminants of potential concern (COPC) in this area was considered to likely represent background levels for soils. Another soil bore was undertaken in 2015 and none of the soil samples exceeded applicable criteria. Based on the GIS Mapping Tool developed by Kleinfelder in 2019, the indicative land capacity for this site was classified for recreational/nonsensitive agricultural land use. GHD notes that the indicative land capacity assigned using the GIS Mapping Tool is for a more sensitive use than are proposed under the Planning Proposal, meaning that the assigned indicative land capacity would also accommodate the industrial energy hub related uses proposed under the Planning Proposal.

The overall likelihood for significant chemical contamination to be present within Sites 1, 2 and 3 is considered to be moderate based on the current use and past activities and the surrounding areas. In addition, all sites are listed as having been notified under the CLM Act as part of the notification of the broader BPS site although it is noted that the EPA has determined that regulation under the CLM Act of the BPS site is not required.

Based on this, additional investigations will be required to assess the potential nature and extent of contamination on sites 1 to 3. Noting that the Planning Proposal does not propose to change the use of the land from a contamination perspective in that the sites are currently used for power station related purposes, being a type commercial/industrial use from a contamination perspective and the further uses proposed as part of the Planning Proposal are also commercial/industrial uses. It is expected that each of Sites 1 to 3 can be made suitable for the uses permitted by the Planning Proposal.

The contamination status of Sites 1 to 3 will be further investigated and assessed as part of future development applications under the *Environmental Planning and Assessment Act 1979* (NSW) for any new uses within Sites 1 to 3 as required by *State Environmental Planning Policy (Resilience and Hazards) 2021*. It is expected that this would include the preparation of Detailed Site Investigation (DSI) Reports and that, should these identify that any remediation is required, any development consents granted for any new uses would include conditions requiring the completion of remediation and validation prior to the new uses commencing.

It is recommended that the information from this PSI be considered in developing a detailed Sampling, Analysis and Quality Plan (SAQP) for the DSIs to accompany any future development applications for Sites 1, 2 and 3. The DSI should include chemical analysis of soil samples for the contaminants of potential concern (COPC) identified in this PSI and assess whether, having regard to the specifics of the development proposed, any remediation or management is required to make the land suitable for that purpose. It is recommended that the SAQP include the following:

- Objectives of the site characterisation including specifics of the new development proposed.
- Proposed field works including sample numbers and proposed locations, sampling media, sampling depths.
- Sampling methodology and techniques (test pits, hand augers, boreholes, etc.).
- The proposed analytical suite based on the PSI and identified COPC.
- Field and laboratory quality assurance/quality control (QA/QC) requirements.

Contents

1.	Introduction	1
1.1	Project background and overview	1
1.2	Purpose of report	6
1.3	Scope of works	6
1.4	Limitations and assumptions	6
2.	Site description	7
2.1	Site identification	7
2.2	Site observations	8
2.3	Environmental setting	9
3.	Desktop investigation	11
3.1	Aerial photograph review	11
3.2	Previous investigation reports	14
3.3	Publicly available information	17
3.3.1	NSW Environment Protection Authority	17
3.3.2	Other information	20
4.	Preliminary conceptual site model	21
4.1	Sources	21
4.2	Pathways	22
4.3	Potential receptors	22
5.	Conclusions and recommendations	23
6.	References	26

Table index

Table 2.1	Site identification summary	7
Table 2.2	Site environmental setting	9
Table 3.1	Review of historical aerial photographs	11
Table 3.2	Summary of Previous Investigations relating to sites 1 to 3	14
Table 3.3	NSW EPA dataset	18
Table 3.4	Publicly available database search of land uses	20
Table 4.1	Potential Contamination Sources	21

Figure index

Figure 1.1	Site Locations	2
Figure 1.2	Site 1	3
Figure 1.3	Site 2	4
Figure 1.4	Site 3	5

Appendices

Appendix A	Photolog
Appendix B	Site 1 Lotsearch Report – LS057866 EP
Appendix C	Site 2 Lotsearch Report – LS057867 EP
Appendix D	Site 3 Lotsearch Report – LS057868 EP

List of abbreviations

Abbreviation	Definition
ACM	Asbestos Containing Material
AEC	Area of Environmental Concern
AGL	AGL Macquarie Pty Ltd
APECS	Additional Pre-Existing Contamination Study
ASS	Acid Sulphate Soil
bgl	Below ground level
BPS	Bayswater Power Station
BTEXN	Benzene, Toluene, Ethyl benzene, Xylenes, Naphthalene
CLM Act	Contaminated Land Management Act 1997 (incorporating amendments made by the Contaminated Land Management Amendment Act 2003)
COPC	Chemical of potential concern
CSM	Conceptual Site Model
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
DSI	Detailed Site Investigation
EPA	NSW Environment Protection Authority
EPL	Environmental Protection Licence
ESA	Environmental Site Assessment
NSW EPA	NSW Environment Protection Authority
Ha	Hectare
ID	Identification
LEP	Local Environmental Plan
LGA	Local Government Area
LOR	Limit of Reporting
LPS	Liddell Power Station
mAHD	Metres Australian Height Datum
mbgl	Metres below ground level
mbTOC	Metres below Top of Casing
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NOA	Naturally occurring asbestos
OCP	Organochlorine Pesticide
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
POEO	Protection of the Environment Operations
PSI	Preliminary Site Investigation
SAQP	Sampling, Analysis and Quality Plan

Abbreviation	Definition
TDS	Tomago Development Site
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
VOC	Volatile organic compounds

1. Introduction

AGL Macquarie Pty Ltd (AGL) has engaged GHD Pty Ltd (GHD) to prepare a Planning Proposal (the Planning Proposal) that seeks to amend *Muswellbrook Local Environmental Plan 2009* (the LEP) to make industrial land uses, compatible infrastructure and related uses permissible with consent via the inclusion of an additional Local Provision, and the creation of a new key sites map. The Planning Proposal is limited to 105.4 hectares of the approximately 10,000 hectares of land owned by AGL in the vicinity of the Bayswater Power Station (BPS) and south of the former Liddell Power Station (LPS). The Planning Proposal relates to Part Lot 2 DP1095515 (Site 1 and 2) and Part Lot 601 DP1019325, Part Lot 34 DP 752486 and Part Lot 145 DP 752486 (Site 3). A Preliminary Site Investigation (PSI) for Sites 1, 2 and 3 was undertaken to progress the Proposal. The locations of the three sites are presented in Figure 1.1 to Figure 1.4.

1.1 Project background and overview

AGL owns the operating BPS and the adjoining former LPS site. In line with the commitments in its Climate Transition Action Plan released in 2022, AGL ceased to operate LPS in April 2023 and has committed to close BPS by 2033.

AGL has lodged State significant development (SSD) application 24937520 seeking development consent for the Liddell Future Land Use and Enabling Works project which covers the demolition and rehabilitation of the operational areas of the former LPS sites. While no new uses are proposed as part of the SSD application, AGL ultimately proposes to redevelop the former LPS site into an integrated industrial Energy Hub or similar ongoing commercial/industrial uses and to adopt the same approach to the BPS site, once BPS closes.

The proposed changes to the LEP aim to provide a flexible approach to future development on Sites 1 to 3, pending any broader rezoning of the sites that may occur following the closure of BPS, to allow for a range of land uses to occur in accordance with state and local government expectations. Allowing the transition to commence prior to the closure of BPS, and as the LPS is rehabilitated, will mitigate the social and economic impacts in the Upper Hunter associated with the closure of the former LPS.

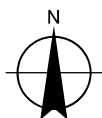
The Hunter Regional Plan 2041 identifies the land owned by AGL as an opportunity to co-locate other employment generating activities on the LPS and BPS sites to establish an integrated industrial Energy Hub. The Environmental Impact Statement prepared in support of the pending SSD application for the Liddell Future Land Use and Enabling Works project, also prepared by GHD, identifies the future opportunities within the overall locality based on the availability of rail, highway access, and infrastructure.

AGL are currently engaging with Muswellbrook Shire Council (Council) and the Department of Planning, Housing and Infrastructure (DPHI) to discuss potential options to ensure that these opportunities are fully realised. In the meantime, the Planning Proposal aims to enable a flexible approach to future development on Sites 1 to 3 pending any broader rezoning of the former LPS and BPS sites to allow for a range of land uses to occur in accordance with state and local government expectations. Due to the nature of the LPS and BPS sites, industrial related uses are considered compatible with the existing character of the locality.



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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56



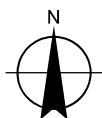
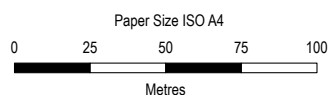
AGL
Broader Employment
Transition Area Planning Proposal

Project No. 12624330
Revision No. A
Date 23/02/2024

Site Map

FIGURE 1.1





AGL
Broader Employment
Transition Area Planning Proposal

Project No. 12624330
Revision No. B
Date 23/02/2024

Map Projection: Transverse Mercator
Horizontal Datum: GDA2020
Grid: GDA2020 MGA Zone 56

Site 2 details

FIGURE 1.3

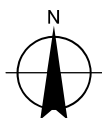


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Grid: GDA2020 MGA Zone 56



AGL
Broader Employment
Transition Area Planning Proposal

Site 3 details

Project No. 12624330
Revision No. B
Date 23/02/2024

FIGURE 1.4

1.2 Purpose of report

The purpose of the PSI is to inform the preparation of a Planning Proposal with regard to the potential contamination issues within the three proposed sites and provide recommendations as to the suitability of each site for future industrial development.

1.3 Scope of works

The scope of work for the PSI includes the following:

- Review of existing available site history information including historical aerial photographs and existing contamination assessments relating to the three sites.
- Groundwater bore search.
- Review of geology, hydrology, hydrogeology and topography information for the three sites.
- Assessment of neighbouring land uses including any potentially contaminating activities.
- A review of NSW EPA notices under the Contaminated Land Management Act 1997 (CLM Act).
- Complete a site inspection of the three sites.
- Preparation of this report with reference to NSW EPA 2020 and the National Environment Protection Council NEPC (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999*, as amended 2013 (NEPM) summarising the results of the desktop review, and provision of recommendations for further investigations (as required).

1.4 Limitations and assumptions

This report has been prepared by GHD for AGL Macquarie Pty Ltd and may only be used and relied on by AGL Macquarie Pty Ltd for the purpose agreed between GHD and AGL Macquarie Pty Ltd as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than AGL Macquarie Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in this report.

Historical land titles and Council information (Section 10.7 certificates or register of development or building applications) were not reviewed as part of the desktop study. No soil, sediment, surface water or groundwater sampling was completed as part of this desktop study.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

The site inspection undertaken in respect of this Report was limited to visual inspections only and constrained by the particular site conditions, such as access to roads and tracks, and within properties and buildings, and dense vegetation.

Site conditions (including the presence of hazardous substances and/or site contamination) may change after the date of this Report. GHD does not accept responsibility arising from, or in connection with, any change to the site conditions. GHD is also not responsible for updating this report if the site conditions change.

GHD has prepared this report on the basis of information provided by AGL Macquarie Pty Ltd, Lotsearch and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Except as otherwise expressly stated in this Report, GHD makes no warranty, statement or representation of any kind concerning the suitability of the site for any purpose or the permissibility of any use, development or re-development of the site.

2. Site description

2.1 Site identification

A summary of identification details for the three sites are provided in Table 2.1.

Table 2.1 Site identification summary

Information	Details						
Street address/location	New England Highway, Muswellbrook, NSW 2333						
Lot and DP numbers	Site 1: Part Lot 2 DP10955151 ¹ Site 2: Part Lot 2 DP1095515 Site 3: Part Lot 34 DP752486, Part Lot 601 DP1019325, Lot 145 DP 752486 ²						
Site area	Site 1: 10.5 hectares (ha) Site 2: 9.8 ha Site 3: 85.1 ha Total area: 105.4 ha						
Local Government Area (LGA)	Muswellbrook Shire Council						
Land Use Zoning	Site 1: SP2 – Infrastructure, RU1 – Primary Production Site 2: SP2 – Infrastructure Site 3: SP2 – Infrastructure, RU1 – Primary Production						
Current site use	All sites are outside of the main BPS and LPS plant infrastructure areas, however, Sites 1 and 2 and the southern portion of Site 3 which include the M series conveyor and Ravensworth ash slurry lines and return water lines are located in the existing BPS Environmental Protection Licence (EPL779). The remaining area of Site 3 is not included in any existing EPL. As per the site inspection and information from AGL representative, the current site usage is described as: Site 1: Vacant with a portion of the site currently used as a parking lot for BPS contractors. The coal supply conveyor also traverses the northern corner of the site. (wholly within existing BPS site). Site 2: Vacant (Wholly within existing BPS site). Site 3: Vacant except for the portion of the site currently used as part of the Ravensworth ash slurry lines and return water lines used to support the BPS (partially part of the existing BPS site).						
Proposed Land Use	Industrial land uses, compatible infrastructure and related uses all of which would constitute commercial/industrial uses from a contamination land use perspective.						
Surrounding land use	The surrounding land uses of each site within a 1 km search radius includes the following: <table border="1"> <thead> <tr> <th>Site</th><th>Surrounding land use</th></tr> </thead> <tbody> <tr> <td>Site 1</td><td><u>North</u> – Coal handling and preparation area including portions of the Coal supply conveyor, Chilcotts Gully (northeast) <u>South</u> – Power Block Area (adjacent) <u>West</u> – Access road (adjacent), Fresh water dam <u>East</u> – BPS contractor's compound (adjacent), Coal handling and preparation area</td></tr> <tr> <td>Site 2</td><td><u>North</u> – Surface water pond (adjacent), vacant lots followed by the Tinkers Creek <u>South</u> – Vacant lot (adjacent), Coal supply conveyor, Fresh Water Dam <u>West</u> – Vacant lot <u>East</u> – Vacant lot (adjacent), Coal supply conveyor, Tinkers Creek, access road, Coal handling and preparation area (adjacent), Chilcotts Gully</td></tr> </tbody> </table>	Site	Surrounding land use	Site 1	<u>North</u> – Coal handling and preparation area including portions of the Coal supply conveyor, Chilcotts Gully (northeast) <u>South</u> – Power Block Area (adjacent) <u>West</u> – Access road (adjacent), Fresh water dam <u>East</u> – BPS contractor's compound (adjacent), Coal handling and preparation area	Site 2	<u>North</u> – Surface water pond (adjacent), vacant lots followed by the Tinkers Creek <u>South</u> – Vacant lot (adjacent), Coal supply conveyor, Fresh Water Dam <u>West</u> – Vacant lot <u>East</u> – Vacant lot (adjacent), Coal supply conveyor, Tinkers Creek, access road, Coal handling and preparation area (adjacent), Chilcotts Gully
Site	Surrounding land use						
Site 1	<u>North</u> – Coal handling and preparation area including portions of the Coal supply conveyor, Chilcotts Gully (northeast) <u>South</u> – Power Block Area (adjacent) <u>West</u> – Access road (adjacent), Fresh water dam <u>East</u> – BPS contractor's compound (adjacent), Coal handling and preparation area						
Site 2	<u>North</u> – Surface water pond (adjacent), vacant lots followed by the Tinkers Creek <u>South</u> – Vacant lot (adjacent), Coal supply conveyor, Fresh Water Dam <u>West</u> – Vacant lot <u>East</u> – Vacant lot (adjacent), Coal supply conveyor, Tinkers Creek, access road, Coal handling and preparation area (adjacent), Chilcotts Gully						

¹ Lot 2 DP1095515 is identified under BPS (ERM, 2013a)

² Lot 34 DP752486, Lot 601 DP1019325 and Lot 145 DP 752486 are identified under LPS (ERM, 2013b)

Information	Details	
	Site 3	North – Lake Liddell (adjacent), Coal handling and preparation area, LPS
		South –New England Highway (adjacent), Pikes Creek, Ash Dam (south-west)
		West –Coal Loading infrastructure, Hunter Valley Gas Turbines, Chilcotts
		Gully
		East – Vacant lot (adjacent)

2.2 Site observations

A site inspection was completed by GHD on 25 June 2024. A photograph log is presented in Appendix A. Details of the site observations for each site are discussed below.

Site 1

Site 1 is divided into two sections by a bitumen road that runs through the middle of the site from west to east (see Photograph 1). The northern portion of the site is vegetated, with a downward slope observed towards the north (see Photograph 2). Patches of grass were observed in this area. Located adjacent north is the Coal Handling and preparation area (see Photograph 2). As per AGL representative, the northern portion of Site 1 was also used for auxiliary coal stockpile. A portion of the coal supply conveyor is located at the northern corner of Site 1.

Located in the southern portion of the site is a cleared unsealed lot currently used as a parking area for BPS contractors (see Photograph 3 and 4). Stockpiles composed predominantly of gravels were observed along the western and southern boundary of the car park (see Photographs 3 and 4). The car park appears to have been covered with materials similar to the stockpiles. Disturbed surfaces as evidenced by some cleared patches of land in the grassed area east of the car park was also noted (see Photograph 6). An area of excavation was also noted south of the car park adjacent to water infrastructure (see Photograph 7). Based on conversations with the AGL representative, the contractor car park can accommodate approximately 300 workers daily. Other areas of the southern section of the site were grassed with some trees and shrubs present (see Photograph 5). The Power Block Area is located east and south of the site (see Photographs 1, 5 and 7).

Site 2

Site 2 is relatively flat and covered with grass and was vacant (see Photograph 8). Sparse trees were visible surrounding the site and disturbed patches of grass are sporadically present (see Photograph 8 and 9). Fencing was observed at the northern boundary of Site 2 and a sedimentation pond was located adjacent to it (see Photograph 10), and Tinkers Creek was located further north. The BPS is located south-east of the site (see Photograph 9) while a freshwater dam is positioned to the south. As per AGL representative, a transformer was previously located in the fenced area located at the southwest portion of Site 2 (see Photograph 8).

Site 3

Site 3 is vacant with no significant activity observed onsite and its immediate vicinity except for the southern portion that is part of the Ravensworth ash slurry line and return water line. AGL have confirmed the line is currently operational and supports BPS. Historical ash leaks from the ash slurry line and water leaks from the return water line were also previously reported. Site 3 is gently undulating and slopes down to the north towards Lake Liddell (see Photographs 11 and 12). The site is grassed with scattered trees observed across the site. Electrical lines were also observed (see Photograph 12). An unsealed road is located within the southern portion of the site within site boundaries and surrounded by grass and trees (see Photographs 13 and 16). The M series conveyor 2-5 was observed at the southern portion of the site but was reported by the AGL representative to no longer be in use as a coal conveyor (see Photographs 13, 15 and 16). A platform used to access the northern portion of the site traversing the conveyor was also observed (see Photograph 15). It is noted that some portions of the conveyor including the platform were rusting (see Photographs 15). The former LPS is visible north of the site, across Lake Liddell (see Photograph 12). Concrete stakes were observed within the central eastern portion of the site, which could potentially mark the location of underground mains onsite (see Photograph 14).

2.3 Environmental setting

The following sections provide an overview of the environmental setting of the three sites as obtained from Lotsearch Reports LS057866 EP (26 June 2024) for Site 1 (Appendix B), LS057867 EP (26 June 2024) for Site 2 (Appendix C) and LS057868 (26 June 2024) for Site 3 (Appendix D) and publicly available information.

Table 2.2 Site environmental setting

Setting	Site conditions								
Topography	<p>Site 1 has an elevation of 192 metres Australian Height Datum (mAHD) at the western section decreasing to 164 mAHD at the northern and eastern boundary. During the site inspection a downward slope towards the north was observed (see Photograph 2, Appendix A).</p> <p>Site 2 is relatively flat with an elevation of 178 mAHD at the western boundary decreasing to 156 mAHD at the eastern boundary.</p> <p>Site 3 is gently undulating and slopes down to the north towards Lake Liddell, with an elevation of 180 mAHD at the southern boundary decreasing to 140 mAHD at the northern boundary.</p>								
Hydrology	<p>Lake Liddell is located within 200 m north-northeast of Site 3. Several unnamed water bodies draining towards Lake Liddell are also located within Site 3.</p> <p>Tinkers Creek is located approximately 150 m north and within 100 m east of Site 2 and approximately 150 m west of Site 1. Chilcotts Gully is located approximately 250 m west of Site 3, 800 m northeast of Site 1 and 1 km east of Site 2. Pikes Creek is located approximately 550 m south of Site 3. All of the creeks are expected to flow to the north towards Lake Liddell.</p> <p>A freshwater dam is located approximately 250 m west of Site 1 and 400 m south of Site 2. Several other surface water dams are located within 1 km of the sites.</p>								
Geology and soils	<p>Geological information for the sites and surrounding areas as described in the Lotsearch Reports is summarised below.</p> <table border="1"> <thead> <tr> <th>Unit Name</th><th>Site</th></tr> </thead> <tbody> <tr> <td>Mulbring Siltstone (Pmtm) classified as medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils</td><td>Site 1, Site 3</td></tr> <tr> <td>Branxton Formation (Pmtb) classified as conglomerate, sandstone, siltstone</td><td>Site 1, Site 2</td></tr> <tr> <td>Saltwater Creek Formation (Pwts) classified as quartz-lithic sandstone with rare shaly partings and laminae, siltstone, tuffaceous claystone beds and sporadic thin coal plies</td><td>Site 3</td></tr> </tbody> </table> <p>Based on the Australian Soil Classification (ASC) and Atlas of Australian Soils, Sodosol (Oc10) is present on all three sites and their surrounding areas. This is characterised by rolling to hilly country with some steep slopes, gently undulating hilltops, low cliffs, and occasionally escarpments; traversed by flat to undulating valleys: chief soils are hard alkaline and neutral red brown, yellow, and dark soils: red (Dr2.33), (Dr2.23), (Dr2.43), (Dr2.32), (Dr2.22); brown (Db1.33) (Db1.43); yellow (Dy2.33), (Dy2.43), (Dy3.43), (Dy3.42); dark (Dd1.33), (Dd1.43), (Dd1.42) (Dr2.32) notably occurs on gravelly hill-tops. Associated are: the (Ug5) soils of unit Ke12, which forms soil complexes with the above (D) soils in some areas; some basaltic hills and knolls of (Ug5.1) (Ug5.3), (Db3.12), (Gn3.42), and (Um6) soils; some (Uf6.31) and/or (Gn3.13) soils; some (Um4.1 and/or (Um4.2) soils and possibly other shallow (Um) or (Uc) soils on steep slopes; (Dy3.41) (Dr3.41), and (Dr2.41) soils as for unit Tb41; and various (Um) and (Uc) soils along the streams where some salinity is evident. This unit is very broad, and the soil pattern is complex. Northward it grades towards the soil conditions found in units Qb19 and Ob14, having similarities to unit Ob10 in the Murrurundi area. To the south-east it grades into unit Tb42, the boundary between the two units is indefinite.</p> <p>Based on the soil logs completed during investigations by Environmental Strategies (ES) in 2018, fill material composed of sand, gravelly clay and sandy clay were observed from 0.0 metres below ground level (mbgl) to 3.0 mbgl, underlain by sandy clay and silty sand from 0.40 mbgl were observed in the test pits. Natural materials composed of silty clay/clayey silt/gravel were observed from 0.0 mbgl to 16.00 mbgl, underlain by bedrock composed of either siltstone or sandstone to a maximum depth of 30 mbgl (ES 2018).</p>	Unit Name	Site	Mulbring Siltstone (Pmtm) classified as medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils	Site 1, Site 3	Branxton Formation (Pmtb) classified as conglomerate, sandstone, siltstone	Site 1, Site 2	Saltwater Creek Formation (Pwts) classified as quartz-lithic sandstone with rare shaly partings and laminae, siltstone, tuffaceous claystone beds and sporadic thin coal plies	Site 3
Unit Name	Site								
Mulbring Siltstone (Pmtm) classified as medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils	Site 1, Site 3								
Branxton Formation (Pmtb) classified as conglomerate, sandstone, siltstone	Site 1, Site 2								
Saltwater Creek Formation (Pwts) classified as quartz-lithic sandstone with rare shaly partings and laminae, siltstone, tuffaceous claystone beds and sporadic thin coal plies	Site 3								
Acid sulfate soils (ASS)	<p>According to the Atlas of Australian Acid Sulfate Soils (ASS) database, there is a low probability of (6%-70%) occurrence of ASS on all three sites. It is noted that a High probability (>70%) of occurrence of ASS was identified 145 m west of Site 1 and 377 m southwest of Site 2 which are potentially associated with the freshwater dam. A High probability (>70%) of occurrence of ASS was also noted 1 m northeast of Site 3 which is potentially associated with Lake Liddell and approximately 500 m south of Site 3 which is potentially associated with the water ponds in the area.</p>								

Setting	Site conditions
Naturally occurring asbestos (NOA)	An examination of the online NSW NOA map shows that there are no records of naturally occurring asbestos potential within any of the three sites.
Hydrogeology and groundwater bore search	<p>Hydrogeology onsite includes fractured or fissured, extensive aquifers of low to moderate productivity. As no water supply bores within the 2 km search radius were identified for any of the sites, it is considered there is no local reliance on groundwater bores as a source of water (Appendix B, Appendix C and Appendix D).</p> <p>Limited portions of Site 2 (LS057867 EP Appendix C) and Site 3 (LS057868, Appendix D)) were identified to have low potential Groundwater Dependent Ecosystems (GDE) from regional studies with vegetation ecosystem type.</p> <p>Investigations completed by ES in 2018 found that groundwater levels at Site 2 ranged from 5.957 metres below Top of Casing (mbTOC) to 10.837 mbTOC (ES 2018).</p> <p>There are currently no groundwater monitoring wells located within Sites 1 and 3, however, groundwater levels from the existing groundwater monitoring wells within a 500 m search radius from the sites recorded:</p> <ul style="list-style-type: none"> – Groundwater levels around Site 1 ranged from 4.05 mbTOC to 7.47 mbTOC to the north, 1.36 mbTOC to 3.598 mbTOC to the east and 3.47 mbTOC to 7.56 mbTOC to the south (ES, 2018). – Groundwater levels southwest of Site 3 ranged from 1.423 mbTOC to 3.390 mbTOC with the groundwater expected to flow east towards Site 3 (Kleinfelder, 2024). However, it is noted, that no groundwater was observed in the soil bore advanced in the southern portion of Site 3 to a maximum depth of 15 mbgl during the 2014 investigation. No groundwater was observed in this bore after being left for a period of 72 hours (ERM 2014a).

3. Desktop investigation

The following sections provide an overview of the desktop historical information for the sites as obtained from Lotsearch Reports LS057866 EP (26 June 2024) for Site 1 (Appendix B), LS057867 EP (26 June 2024) for Site 2 (Appendix C) and LS057868 (26 June 2024) for Site 3 (Appendix D), and other publicly available information sources as well as the previous contamination investigations provided by AGL.

3.1 Aerial photograph review

A selection of historical aerial photographs were examined in order to assess past activities and land uses at the sites. Photographs were examined from the years 1958, 1967, 1970, 1980, 1994, 2008, 2017, 2021, and 2023.

Table 3.1 *Review of historical aerial photographs*

Site	Year	Site Observations
Site 1 LS057866 EP, Appendix B	1958 (Black and white)	Site 1 and its surrounding areas are vacant and undeveloped, however, images of lines across Site 1 could suggest terracing. Majority of Site 1 and its surrounding areas are cleared except for some sparse vegetation west of the site. Tinkers Creek, located north of Site 1, and an unnamed water body which traverses the southern and eastern portion of Site 1, are also visible.
	1967 (Black and white)	There is no significant change from the 1958 aerial photograph, except for the increase in vegetation, west and to south of Site 1. An unsealed access road traversing the western portion of Site 1 is now visible. Other roads further west and north of Site 1 are also visible.
	1970 (Black and white)	Site 1 remains vacant, and no significant development is visible. The access road at the western portion of Site 1 is more prominent. This road now connects to another unsealed road traversing the site from north-east to south-west. The Freshwater Dam that is located west of Site 1 is also now visible. Surface disturbance on portions of the lot located adjacent west of Site 1 is also notable with several roads also visible north, west and south of Site 1.
	1980 (Colour)	Site 1 and its surrounding areas are now cleared of vegetation except for the lots west of Site 1 and no more evidence of terracing is visible. Surface disturbances are visible across Site 1 and its surrounding areas with several access roads visible. Several vehicles across Site 1 and its surrounding areas are also visible. A distinct cleared area with a bunded square area is also visible in the southern portion of Site 1 while there is a series of white rectangular objects located in the northeastern boundary of Site 1. Some structures west and east of Site 1 are also visible.
	1994 (Colour)	Site 1 remains vacant except for one structure located in the south-western portion of the site. There is less evidence of the bund around the square area in the southern portion. An access road traversing the middle of Site 1 from west to east is also visible. Sparse vegetation is visible across Site 1. The surrounding areas are now developed including the coal supply conveyor located at the northern boundary, the Coal Handling and preparation area to the north and the Power Block Area adjacent south of Site 1. The contractor's compound immediately east is also visible. The structures to the west of Site 1 are no longer visible. There are also more vegetation west of Site 1 and an access road is visible.
	2008 (Colour)	No significant change from the previous aerial photograph except for some grown vegetation along the site boundaries. The structure noted in the 1994 aerial photograph is no longer visible. Some structures at the southern boundary are partially visible, with some portions covered by smoke. A coal supply conveyor located northeast of Site 1 is also visible.

Site	Year	Site Observations
	2017 (Colour)	The southwest portion of Site 1 is now covered with grass, unlike the northern portion of the site, where only patches of grass are visible. A rectangular shaped dam is also visible towards the northern boundary. Some debris, which is potentially part of the conveyor, is also visible adjacent the northern boundary of Site 1. Some coal is also visible on the ground surface at the northeastern portion of Site 1. The structures at the southern boundary are not completely visible due to smoke cover. No other significant change from the previous aerial photograph is noted.
	2021 (Colour)	The central portion of Site 1 is now being used as a carpark. More vegetation are also visible at the north-west portion of Site 1. Some coal are still visible on the ground surface at the northeastern portion of Site 1 and the conveyor at the northern boundary is still damaged. The area at the southern boundary of Site 1 is now visible and appears to be used as a laydown area with several crates/metals visible. No significant changes to the rest of Site 1 from the previous aerial photograph are visible.
	2023 (colour)	There are less visible stored crates/metals in the southern boundary of Site 1. A stockpiled material is located at the western portion while black staining on the ground surface is visible at the eastern portion of the parking lot. No other significant change from the previous aerial photograph is noted.
Site 2 LS057867 EP, Appendix C	1958 (Black and white)	Site 2 and its surrounding areas are vacant and undeveloped. Majority of Site 2 is cleared with some trees visible towards the middle of the site and surrounding areas, particularly to the south-west. Tinkers Creeks located north and east of the Site 2 is visible.
	1967 (Black and white)	Site 2 and its surrounding areas remains vacant and undeveloped, with an increasing density of vegetation surrounding the site. Access roads along the eastern and southern boundary of Site 2 are also visible.
	1970 (Black and white)	Site 2 and its surrounding areas remains vacant and undeveloped. The area south of Site 2 is currently being developed with visible surface disturbances and tracks. A portion of the Fresh Water Dam located south-west of Site 2 is also visible.
	1980 (Colour)	Site 2 remains vacant and undeveloped. The lot located south of Site 2 is now vegetated with several visible access roads. An unsealed road east of Tinkers Creek is now visible and the lots located further east of Site 2 are being developed as evidenced by the visible surface disturbances and presence of vehicles. A long white structure is also visible east of Site 2.
	1994 (Colour)	The site remains vacant and undeveloped. However, Site 2 appears to have been disturbed between the 1980s and the current aerial photograph now being divided into small rectangular sections. An access road is located east of Site 2 and a sedimentation pond is visible adjacent the northern boundary. The connection between the access road and Site 2 has a lighter colour. The surrounding areas have also been developed with the coal supply conveyor running parallel the southern boundary, and a road and the Coal Handling and preparation area to the east now visible.
	2008 (Colour)	Sparse vegetation is visible within Site 2 and unsealed access roads traversing the site from south to north are visible. Site 2 appears to be more disturbed with the rectangular sections less visible. A square fenced area at the south-west corner of Site 2 is also visible. A coal supply conveyor located near the eastern boundary of Site 2 is also visible.
	2017 (Colour)	Site 2 has more vegetation and the access roads first noted in the 2008 are more prominent. No other significant change from the previous aerial photograph is visible.
	2021 (Colour)	No significant change from the previous aerial photograph.
	2023 (colour)	Majority of Site 2 had been cleared with grass. The rectangular squares are no longer visible.

Site	Year	Site Observations
Site 3 LS057868, Appendix D	1958 (Black and white)	Site 3 and its surrounding areas are vacant and undeveloped. Majority of Site 3 is cleared with some trees visible across the site and it's surrounds.
	1967 (Black and white)	Site 3 remains vacant and undeveloped. The New England Highway located south of Site 3 is visible. A gully at the south-west corner and middle portion of Site 3 is also visible. Several small water dams are visible in the surrounding areas.
	1970 (Black and white)	Lake Liddell located north of Site 3 is now visible. Several access roads located at the northern boundary and south-west corner are also present. Some structures south-west of Site 3 are visible. The M series conveyor running from east to west across Site 3 is also visible. The gully at the central portion of the site is now less visible.
	1980 (Colour)	Some electric transmission towers are visible south of Site 3. The gully at the central portion of Site 3 is now more visible. There appears to be several trenches, northwest of the M series conveyor.
	1989 (Colour)	The site remains vacant and undeveloped. The northern boundary of Site 3 appears to be closer to Lake Liddell and the banks of the lake have changed. The trenches northwest of the M conveyor are now less visible. The Bayswater Ash Dam and an infrastructure are visible south of Site 3. No other changes from the previous aerial is noted.
	1994 (Colour)	No significant change from the previous aerial photograph.
	2008 (Colour)	The Ravensworth ash slurry line and return water line south of the M series conveyor is now visible. No other significant change from the previous aerial photograph is noted.
	2017 (Colour)	No significant change from the previous aerial photograph except for the presence of a small triangular dam near the central portion of the M conveyor located to its south.
	2021 (colour)	No significant change from the previous aerial photograph.
	2023 (colour)	No significant change from the previous aerial photograph.

Based on the review of historical aerial photographs, Site 1 and its surrounding areas were cleared prior to the 1980s but not materially developed until around the 1980s when the construction of BPS commenced. Prior to that, the area was vacant and undeveloped apart from clearing, most likely for agricultural purposes.

From the 1980's when construction of BPS commenced, significant developments surrounding Site 1 was then noted, with the coal handling and preparation area located to the north, the Power Block Area being located to the south and a coal conveyor to the north constructed between 1980 to 1994. Some structures at the southern boundary of the site, which is used as a laydown area for the construction of BPS and during ongoing major work periods, were first noted in 2008. The parking lot located at the southern portion of Site 1 was first noted in the 2021 aerial photograph.

There has been minimal site activity in Site 2, however, the site is reported to have been used as a laydown area and was visibly disturbed in the 1994 aerals suggesting that it was used for this purpose between 1980 to 1994 which resulted to the visible rectangular shapes within the site in the 1994 aerial photograph. Most of the development occurred in the surrounding lots east of the site between 1980s to 1994 with some development noted adjacent south of the site in the 1970 aerial photograph.

There has been minimal site activity in Site 3, with the site remaining vacant and undeveloped apart from the now redundant M series conveyor and the operational Ravensworth ash slurry line and return water line . Lake Liddell, which was constructed as part of LPS, was first noted in the 1970 aerals. The M series conveyor located at the southern portion of the site running from west to east was also first noted in the 1970 aerals. No other significant changes onsite had been noted since then while developments further south of the site were first noted in 1989. In 2008, the Ravensworth ash slurry line and return water line located south of the M series conveyor was first noted.

3.2 Previous investigation reports

A number of previous investigations have been conducted within and surrounding the area. The following reports were reviewed as part of this assessment:

- Kleinfelder 2023, Baseline Contamination Assessment Report, Liddell Future Land Use and Enabling Works Project, (SSD 24937520), 13 February 2024.
- AECOM 2023, PFAS Long-term Environmental Management Plan 2022, Bayswater Power Station, 24 March 2023.
- AECOM 2023, PFAS Long-term Environmental Management Plan 2022, Liddell Power Station, 24 March 2023.
- AECOM 2019, Stage 2 PFAS Investigation, Liddell and Bayswater Power Stations, 28 June 2019.
- Kleinfelder 2019, Contamination Land Use Constraint Study Bayswater and Liddell Power Stations, AGL Macquarie, 13 June 2019.
- Environmental Strategies 2018a, Volume 2 of 7: Bayswater Power Station Additional Pre-existing Contamination Study, 1510RP01 BPS APECS – Final, February 2018.
- Environmental Strategies 2018b, Volume 3 of 7: Liddell Power Station, NSW, Additional Pre-existing Contamination Study, 1510RP01 BPS APECS – Final, February 2018.
- ERM 2014a, Project Symphony, Bayswater Power Station, Stage 2 Environmental Site Assessment, Macquarie Generation, Document Ref: 0224193RP01, January 2014.
- ERM 2014b, Project Symphony Liddell Power Station, Stage 2 Environmental Site Assessment, Macquarie Generation, Report Ref. 0213879RP02, January 2014.
- ERM 2013a, Bayswater Power Station Preliminary Environmental Site Assessment, Macquarie Generation – Project Symphony, Document Ref: 0213879RP01_DRAFT Rev02, October 2013.
- ERM, 2013b, Macquarie Generation – Project Symphony Liddell Power Station, Preliminary Environmental Site Assessment, Report Ref. 0224198RP02_DRAFT Rev02, October 2013.

Each of these relate to areas which are broader than sites 1 to 3 and so have only been reviewed and summarised in this section to the extent relevant to sites 1 to 3.

Table 3.2 Summary of Previous Investigations relating to sites 1 to 3

Site	Details	Results
1,2,3	<p>Kleinfelder 2019, Contamination Land Use Constraint Study Bayswater and Liddell Power Stations</p> <p><i>(This section only details information from the report that are relevant to the sites.)</i></p> <p>Kleinfelder was commissioned by AGL Macquarie (AGLM) to conduct a desktop contamination land use constraints study (Stage 1) aimed at informing the broader future land use planning of the AGLM and holdings following closure of the BPS and LPS.</p> <p>The key deliverable of the study was the development of an interactive and multifunctional GIS mapping tool that identified the following:</p> <ul style="list-style-type: none"> – Local contamination constraints across the BPS and LPS based on the results of recent investigations. – Potential remediation effort as required to make land parcels suitable for a practicable land use, taking into consideration for a sustainable and cost-efficient approach. 	<p>Site 1</p> <p>No samples reported on as part of this report were collected within Site 1. However, approximately half of Site 1 was included in a broader area which exceeded applicable criteria for a Residential Land use scenario and was identified as requiring a very high remediation effort. However, GHD notes that these findings were based on the 400 x 400 m grid cell and that no actual sample (of any matrix) was collected within Site 1 (based on the previous investigations that were used as part of the Land Use Classification mapping tool).</p> <p>Based on the over-all land use constraints and remediation effort mapping, the indicative land use capacity for Site 1 was classified for commercial/industrial use while Sites 2 and 3 were classified for recreational/nonsensitive agriculture use.</p> <p>The following recommendations were made:</p> <ul style="list-style-type: none"> – The GIS mapping tool should be utilised only as a preliminary contamination screening tool. – Further detailed stages of site investigation, contamination assessment, remediation and/or management will be required to any future proposed development.

Site	Details	Results
	<p>The land use constraints tool used a 400 x 400 m grid cell that was considered to provide a sensible scale of land use. Each grid cell was assigned a land use classification based on the remediation effort required to make the land suitable for the least sensitive land use based on the maximum land use criteria in a single sample. However, it is noted that only selected samples of the figures were provided in the report. These were the only figures that were reviewed by GHD.</p>	
1,2,3	<p>ES 2018a, Volume 2 of 7: Bayswater Power Station Additional Pre-existing Contamination Study <i>(This section only details information from the report that are relevant to the sites.)</i></p> <p>Environmental Strategies (ES) were engaged by AGL Macquarie to complete an Additional Pre-Existing Contamination Study (AGLM APECS) of Bayswater Power Station, Liddell Power Station, Lake Liddell and Tomago Development Site (TDS) for the purposes of identifying pre-existing contamination as of 2 September 2014 being the date on which AGL purchased the sites.</p> <p>The general scope of works carried out included:</p> <ul style="list-style-type: none"> Review of reports and relevant documents relevant to the sites. Assessment of data gaps and identification of uncertainties and issues that require further investigation to define, to the extent practicable, the nature and extent of contamination and to make determination s where the contamination is "pre-existing contamination". Development of a sampling and analysis plan Development of a health, safety and environmental plan to guide the proposed field investigation. Completion of field investigation to close assessed data gaps. Specifically, the following were completed in Site 2: <ul style="list-style-type: none"> Collection of sediment samples in two locations. Advancement of four test pits at a maximum depth of 3.00 m. Advancement of two boreholes with depths of 8.0 m and 30.0 m and conversion of both bores to groundwater monitoring wells. Collection of groundwater samples from one existing and two newly installed wells. Preparation of an assessment report. 	<p>Site 1</p> <p>No data relevant to Site 1 was contained in this report.</p> <p>Site 2</p> <ul style="list-style-type: none"> Site 2 was identified as Areas of Environmental Concern (AEC) 29 - Old Laydown Area. The groundwater onsite ranged from 5.957 mbTOC to 10.837 mbTOC. Coal fines and ash were noted within soils across parts of the BPS, including within Site 2 (AEC 29), which was considered to be anthropogenic in nature and distribution. It was considered that the ash and coal observed in the across BPS would have been present at and prior to Completion and were considered to be predominately pre-existing contamination. An ammonia concentration of 4.7 mg/L in one of the wells within Site 2 (B_29_ESMW02B) was above the pH dependent ANZECC (2000) 95% level of protection trigger value for slightly to moderately disturbed freshwater ecosystems of 1.99 mg/L. The elevated ammonia identified in groundwater in BPS is considered to be a pre-existing contamination and/or pollution which was predominantly present before Completion. <p>Site 3</p> <ul style="list-style-type: none"> Based on the review of ES, the sampling point location BY_MW32 located in Site 3 was considered likely to represent background levels for soils. COPC concentrations of soil in this sampling location were below the adopted screening criteria with the majority of the measured concentrations below or close to the laboratory's limit of reporting (LOR). One borehole (B_62_ESSB03) located within Site 3 was advanced from AEC 62 (M series coal conveyor) to a maximum depth of 3.0 mbgl. Fill material composed of gravelly silt was observed at 0.40 mbgl underlain by natural clay. No groundwater was observed in this location. All COPCs were below the adopted screening criteria.
3	<p>ES 2018b, Volume 3 of 7: Liddell Power Station Additional Pre-existing Contamination Study</p> <p>The main objective of this report was to:</p> <ul style="list-style-type: none"> Define, to the extent practical, the nature and extent of contamination on the LPS site identified in the ERM report and at other locations assessed as part of the LPS Additional Pre-Existing Contamination Study (APECS) program. <p>and</p>	<p>Sites 1 and 2</p> <p>No data relevant to Sites 1 or 2 was contained in this report.</p> <p>Site 3</p> <p>Based on the review of ES, the sampling point location BY_MW32 located in Site 3 was considered likely to represent background levels for soils. COPC concentrations of soil in this sampling location were</p>

Site	Details	Results
	<ul style="list-style-type: none"> – Make determination whether the contamination identified was pre-existing contamination. <p>The same scope of work for the BPS APECS (ES 2018a) were completed for this investigation. No sample was collected in any of the sites as part of this investigation, however, the results of the ERM 2014 investigation was reviewed including one sample (BY-MW32) located in Site 3.</p>	below the adopted screening criteria with the majority of the measured concentrations below or close to the LOR.
1, 2, 3	<p>ERM 2014, Project Symphony, Bayswater Power Station, Stage 2 Environmental Site Assessment (This section only details information from the report that are relevant to the sites.)</p> <p>ERM was commissioned by Macquarie Generation to undertake a Stage 2 Environmental Site Assessment (Stage 2 ESA) at BPS to gather soil, sediment, surface water and groundwater data in order to develop a baseline assessment of environmental conditions at the site. This included investigations in Sites 2 and 3 but no sampling in site 1.</p> <p>Scope of Works:</p> <p>Site 2</p> <ul style="list-style-type: none"> – A total of 11 soil bores distributed across Site 2 were advanced to assess soil and groundwater. – Only one of the four proposed wells was installed since no groundwater was encountered in the three proposed boreholes despite the maximum depth of 10 mbgl. <p>Site 3</p> <ul style="list-style-type: none"> – One soil bore (BY_MW32) was advanced to a maximum depth of 15 mbgl. No groundwater was observed in this bore after being left for a period of 72 hours and was not converted into a monitoring well. 	<p>Site 1</p> <p>Site 1 was identified as part of the buffer lands for the BPS but no soil and groundwater samples were collected in Site 1 as part of this investigation.</p> <p>Site 2</p> <ul style="list-style-type: none"> – Site 2 was identified as Area BK – Former Large Items Assembly Area. – No field indicators of contamination were noted within Site 2 during the investigation. – COPC concentrations of soil were below the adopted screening criteria in all soil samples within Site 2 with the majority of the measured concentrations below or close to the laboratory's limit of reporting (LOR). – It was noted that groundwater parameters collected at the one monitoring well installed in this location indicated water to be onsite as brackish. The measured concentrations of the COPCs in groundwater extracted from this well were reported to be below the LOR, however, it was noted that no analysis for heavy metal concentrations were completed due to the sample bottle being lost during the transport. – Based on the results of the investigation, the risk to the environment and/or human health groundwater is considered to be low. <p>Site 3</p> <ul style="list-style-type: none"> – Site 3 was identified as part of the buffer land. – COPC concentrations of soil in BY_MW32 located within 40m south of the M series conveyor were below the adopted screening criteria in all soil samples from this bore, with the majority of the measured concentrations below or close to the laboratory's limit of reporting (LOR).
1,2,3	<p>ERM October 2013, Bayswater Power Station Preliminary Environmental Site Assessment (This section only details information from the report that are relevant to the sites.)</p> <p>ERM was engaged by Macquarie Generation to provide advice in relation to potential soil and groundwater contamination issues which may be relevant to the transaction of Bayswater Power Station. This report summarises the findings of the Preliminary Environmental Site Assessment (ESA) for the Bayswater Power Station.</p> <p>The scope of works included:</p> <ul style="list-style-type: none"> – Desktop review of site history and relevant documents. 	<p>Site 1</p> <ul style="list-style-type: none"> – ERM did not specifically focus on the area known as Site 1, however they did review the Power Block Area to the south and Coal Storage Area to the north of Site 1. – Key contamination issues identified for the Power Block Area included contamination of soil and groundwater from spills and leaks from various chemicals. Analytes of concern included total recoverable hydrocarbons (TRH), benzene, toluene, ethyl benzene and total xylene (BTEX), heavy metals, polyaromatic hydrocarbons (PAHs), phenols, asbestos (shallow fill), volatile organic compounds (VOCs) polychlorinated biphenyls (PCBs). – Key contamination issues identified for the Coal Storage Area included potential leaching of contaminants from stockpiled coal and retention

Site	Details	Results
	<ul style="list-style-type: none"> – Desktop review of environment site conditions. – Inspection of the site. – Identification of actual or potential soil and groundwater Areas of Concern (AECs). – Identification of where Stage 2 intrusive investigations for each site. 	<p>ponds. Analytes of concern included TRH, BTEX, heavy metals, PAHS, phenols and asbestos (shallow fill). ERM noted that the impacts from the coal stockpile was considered to be a relatively low risk.</p> <p>Site 2</p> <ul style="list-style-type: none"> – Site 2 is located within the Former Large Items Assembly Area. This area was reviewed by ERM. – The Former Large Items Assembly Area was used during construction of the power station which were reported to have been unused since the power station was commissioned in 1986. – The area was previously used for assembly of large pieces of infrastructure such as boiler components, the electrical supply system and the fire water system for the site. – The area was cut out of the hillside with natural excavated material being used to fill the site to level. – It is unknown whether imported fill materials were used in this area. – The area is reported to have remained unsealed since it was levelled. – A sedimentation pond was constructed on the north eastern side of this area. – Key contamination issues identified for this area included contamination of soil and groundwater from spills and leaks of fuels and chemicals used during facility construction. – Key analytes of concern included TRH, BTEX, heavy metals, PAHs, phenols, asbestos (shallow fill) and VOCs. <p>Site 3</p> <ul style="list-style-type: none"> – No information was specifically provided for this area, however one groundwater sampling location was proposed within this area near the M Series Coal Loader.

3.3 Publicly available information

The data provided in this section were obtained from Lotsearch Reports LS057866 EP (26 June 2024) for Site 1 (Appendix B), LS057867 EP (26 June 2024) for Site 2 (Appendix C) and LS057868 (26 June 2024) for Site 3 (Appendix D) NSW EPA public registers accessed on 11 September 2024, other publicly available information sources and information from AGL.

3.3.1 NSW Environment Protection Authority

A search of the datasets maintained by NSW EPA including notices under the *Contaminated Land Management Act 1997* (CLM Act) and *Protection of the Environment Operations Act 1997* (POEO Act) Environment Protection License Register was carried out and summarised in the Lotsearch reports. The search results and information from AGL are summarised below.

Table 3.3 NSW EPA dataset

	Summary					
List of NSW contaminated sites notified to EPA	A search of the Contaminated Land: Record of Notices to the EPA for the sites and buffer zones revealed that the following sites are currently included in the EPA list:					
	Location	Activity	Site			
	Bayswater Power Station	Other Industry	Whole of BPS, including Site 1 and Site 2 and partially Site 3 ³ . Register states 'Regulation under CLM Act not required'.			
	Liddell Power Station	Other Industry	Whole of LPS. Register states 'Regulation under CLM Act not required'.			
Contaminated land record of notices	A search of the NSW contaminated sites notified to the EPA for all the sites and buffer zones did not reveal any notices issued under the CLM Act. This confirms that the sites have not been regulated to date by the EPA under the CLM Act.					
EPA Notices	The following Penalty Notices onsite and within the dataset buffer are summarised below. No Clean Up Notices or Prevention Notices were recorded):					
	Organisation	Notice	Site			
	AGL Macquarie Pty Limited	<ul style="list-style-type: none">– Pollute waters -other officer -Corporation (penalty notice issued 24/06/2021, 04/03/2016, 08/02/2023).– Contravene condition of licence – Corporation (penalty notice issued 04/08/2015, 16/12/2015,16/12/2015, 24/01/2019, 24/01/2019, 26/08/2019).	BPS (Whole of Site 1 and Site 2 and southern portion of Site 3 are within the premises of EPL 779 held by AGL in relation to BPD)			
	AGL Macquarie Pty Limited	<ul style="list-style-type: none">– Contravene condition of licence – Corporation (penalty notice issued 03/07/2020, 26/03/2021, 26/03/2021,13/10/2021).	LPS (adjacent of Site 3)			
	Maxwell Ventures (Management) Pty Ltd MAXWELL	<ul style="list-style-type: none">– Contravene condition of licence – Corporation (penalty notice issued 19/08/2024, 28/02/2019).	789 m West of Site 2			
	HV Operations Pty Ltd	<ul style="list-style-type: none">– Contravene condition of licence – Corporation (penalty notice issued 28/02/2017, 02/05/2018, 23/10/2018).– Pollute waters - other officer -Corporation (penalty notice issued 18/08/2017, 23/10/2018).	989 m east of Site 3			
POEO license register	A search of the register identified with a POEO Act licence within the sites and surrounding buffer zone are summarised below. It is noted however, that although the whole of Sites 1 and 2 and the southern portion of Site 3 are included in the existing BPS EPL 779 the activities authorised by these licences primarily relate to the main infrastructure and plant areas and are not specific to Sites 1 to 3 themselves.					
	Licence Number	Organisation	Location	Issued Date	Activity	Site
	Current licenced activities under POEO Act 1997					
	779	AGL Macquarie Pty Limited	Bayswater Power Station		Crushing, grinding or separating; General chemicals storage; Petroleum products storage; Coal works; Generation	BPS (Whole of Site 1 and Site 2 and southern portion of Site 3 are within the premises of EPL 779 held by AGL in relation to BPD).

³ Lotsearch Report LS057868 have identified Site 3 as part of the existing LPS EPL 2122, however, AGL confirmed that only a portion of Site 3 is included in the existing BPS EPL 779.

Summary					
				of electrical power from coal.	
	AGL Macquarie Pty Limited	Liddell Power Station		Coal works; General chemicals storage; Petroleum products storage; Crushing, grinding or separating; Generation of electrical power from coal.	LPS (adjacent of Site 3)
2652	Ravensworth Operations Pty Limited	Ravensworth Mining Complex		Coal works; Cement or lime handling; Mining for coal.	278 m southeast of Site 3.
1323	Maxwell Ventures (Management) Pty Ltd	Drayton Coal Mine		Coal Works; Mining for coal.	789 m west of Site 2.
640	Hv Operations Pty Ltd	Hunter Valley Operations		Land-based extractive activity; Crushing, grinding or separating; Mining for coal; Coal works.	989 m east of Site 3.
Former licenced activities under POEO Act 1997, now revoked or surrendered					
4653	Luhmann Environment Management Pty Ltd	Waterways throughout NSW	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	124 m north of Site 1, 17 m north of Site 2, Site 3
4838	Robert Orchard	Various waterways throughout New South Wales – Sydney, NSW 2000	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	124 m north of Site 1, 17 m north of Site 2, Site 3
6630	Sydney Weed & Pest Management	Waterways throughout NSW - Prospect, NSW, 2148	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	124 m north of Site 1, 17 m north of Site 2, Site 3
11677	Upper Hunter County Council	Waters within Upper Hunter County Council, New England	21/06/2002	Miscellaneous licensed discharge to waters (at any time)	124 m north of Site 1, 17 m north of Site 2, Site 3

	Summary					
			Highway, Muswellbrook			

3.3.2 Other information

Other information resulting from searches of publicly available databases conducted by Lotsearch (see Appendix B, Appendix C and Appendix D) are summarised in Table 3.4.

Table 3.4 Publicly available database search of land uses

Landuse	Details			
Former Gas Works	Nil records within 1 km search radius from the sites.			
Waste Management Facilities	Nil records within 1 km search radius from the sites.			
Liquid Fuel Facilities	Nil records within 1 km search radius from the sites.			
Investigation or Management for Per- and Poly-Fluoroalkyl Substances	Nil records within 1 km search radius from the sites.			
Defence Controlled Areas	Nil records within 1 km search radius from the sites.			
National Unexploded Ordnance (UXO)	Nil records within 1 km search radius from the sites.			
Mining titles	<p>A total of two exploration (Group 8 (minerals) and Groups 1 and 10 (minerals)) titles were identified for all three sites, which were granted in 2023 and 2024. An additional exploration title (coal) 602 m west of Site 1 and two exploration titles between 699 m to 789 m west of Site 2 were identified. An additional three mining titles (coal) and one exploration title (coal) were also identified between 278 m south-east to 989 m east of Site 3.</p> <p>A total of seven historical mining and exploration titles for petroleum and minerals were also identified on all sites. An additional historical title for minerals was also identified 831 m south-east of Site 3.</p>			
Mining Subsidence District	There are no mining subsidence districts identified within 1 km search radius from Sites 1 and 2, while Patrick Plains District was identified 278 m south-east of Site 3.			
State Forests, National Parks or Wildlife Reserves	Nil records within 1 km search radius from the sites.			
Major Easement	The major easements within 1 km search radius from the sites are summarised below.			
	Map ID	Easement Class	Easement Type	Location
	120114421	Primary	Undefined	6 m southeast of Site 1, 131 m east of Site 2
	120107846	Primary	Undefined	363 m north of Site 2
	120117113	Primary	Undefined	Onsite Site 3
	120114421	Primary	Undefined	967 m west of Site 3
	170717119	Primary	Right of way	989 m east of Site 3
	173854922	Primary	Electricity	993 m south of Site 3

4. Preliminary conceptual site model

A preliminary Conceptual Site Model (CSM) was developed to provide an understanding of the potential for exposure to contaminants and impacts to beneficial uses from contamination within the Site. The CSM draws together historical data, specific and regional geological, hydrogeological, hydro-geochemical and contamination information to identify potential contamination sources, migration and exposure pathways and sensitive receptors for the site. As a preliminary CSM, it is unknown if the identified pathways are actively present.

4.1 Sources

Based on the results of the desktop assessment and site inspection, the following potential contamination sources, and contaminants of potential concern (COPC) associated with each source were identified as summarised in Table 4.1.

Table 4.1 Potential Contamination Sources

Site	Source	Potential Contaminants of Concern
Site 1	Potential use of fill material from unknown sources.	Heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethyl benzene, total xylene (BTEX), polyaromatic hydrocarbons (PAHs), organochloride pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos.
	Potential spills of fuels and oils from machinery and vehicles due to current use as a parking lot.	Heavy metals (lead), TRH, BTEX, PAHs.
	Potential presence of asbestos and lead based paints on old structures identified onsite.	Asbestos, heavy metals (lead).
	Potential contamination due to the use of the southern area of Site 1 for laydown areas (e.g. scaffolding).	Heavy metals
	Use of herbicides and pesticides along the project for pest and weed control.	OCPs, OPPs, arsenic and lead.
	Potential contamination from long-term use of the coal supply conveyor in the northern corner of Site 1.	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs, Asbestos.
	Migration of contamination from long term use of the site including the coal conveyor at the northern corner of Site 1 and adjacent area for coal handling operations and from the Power Block Area.	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs, Asbestos.
Site 2	Potential use of fill material from unknown sources.	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs and asbestos.
	Historical use of Site 2 as a large Items Assembly Area.	Ammonia, heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs and Asbestos.
	Use of herbicides and pesticides along the project for pest and weed control.	OCPs, OPPs, arsenic and lead.
	Migration of contamination from long term use of the site and adjacent area for coal handling operations and power stations.	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs, Asbestos.
Site 3	Potential use of fill material from unknown sources.	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs and Asbestos.
	Potential presence of asbestos and lead based paints on old structures identified onsite.	Asbestos, heavy metals (lead).
	Use of herbicides and pesticides along the project for pest and weed control.	OCPs, OPPs, arsenic and lead.

Site	Source	Potential Contaminants of Concern
	Historical ash slurry and return water leaks	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs and asbestos.
	Migration of contamination from long term use of the site and adjacent areas for coal handling operations and power stations.	Heavy metals, TRH, BTEX, PAHs, OCPs, OPPs, PCBs, Asbestos.

4.2 Pathways

The primary pathways by which current and future receptors could be exposed to the potential sources of contamination for all sites are considered to include:

- Direct contact (including ingestion) with potentially contaminated soil.
- Inhalation of potential contaminants in soil, if disturbed (particularly asbestos if present).
- Lateral migration of potential contaminants via surface water run-off to impact surface water (Lake Liddell, Tinkers Creek, Chilcotts Gully and Pikes Creek).
- Vertical and horizontal migration of potential contaminants within the groundwater (if present).

4.3 Potential receptors

When evaluating potential adverse health/environmental effects from exposure to a contaminated site, all potentially exposed populations should be considered. For the sites, the key populations or receptors of interest are considered to include:

Human health receptors

- Current and future on-site workers including subcontractors.
- Intrusive maintenance workers during construction works.
- Visitors to the site (e.g., local residents, recreational users, trespassers).
- Local users of surface water or groundwater (domestic, irrigation, recreational, etc.).
- Current and future occupants of surrounding properties including colliery (e.g., workers and visitors).
- Recreational users of Lake Liddell.

Environmental receptors

- Flora and fauna within each site and surrounding land and waterway.
- Lake Liddell north-northeast of Site 3, Tinkers Creek is located north and east of Site 2 and west of Site 1, Chilcotts Gully is located west of Site 3, northeast of Site 1 and east of Site 2 and Pikes Creek located south of Site 3.
- Groundwater beneath each site.

5. Conclusions and recommendations

GHD was engaged by AGL to undertake a PSI for three sites located in the vicinity of the BPS and south of the LPS, being Part Lot 2 DP1095515 (Sites 1 and 2) and Part Lot 601 DP1019325, Part Lot 34 DP 752486 and Part Lot 145 DP 752486 (Site 3), which AGL are proposing for future redevelopment. The purpose of the PSI is to inform the preparation of a Planning Proposal with regard to the potential contamination issues within the three proposed sites and provide recommendations as to the suitability of each site for future industrial development.

A summary of the findings from the site inspection and desktop review is provided as follows:

- General:
 - A search of the contamination land record and list of notified sites maintained by the NSW EPA under the CLM Act confirms that:
 - The BPS and LPS sites were notified to the EPA under section 60 of the CLM Act with the EPA determining that regulation under the CLM Act was not required.
 - No part of BPS or the former LPS, including Sites 1 to 3, are listed on the contaminated land record as currently regulated by the EPA under the CLM Act.
 - All three sites (which include the whole of Site 1 and Site 2 and the southern portion of Site 3) are currently within the premises of environment protection licences EPL 779 held by AGL. The EPL authorises the scheduled activities of electricity generation, coal works and chemical storage as well as related activities. It is understood that these activities have been primarily conducted around the main infrastructure and plant areas at BPS and the former LPS, and not at Sites 1 to 3 which have been used as further detailed below.
- Site 1 was formerly used as a lay down area and is currently used for car parking for BPS contractors. A portion of the coal conveyor is also located at the northern corner of Site 1. The site history is as follows:
 - Prior to 1980, Site 1 and its surrounding areas were vacant and undeveloped with terracing visible as early as 1958.
 - Significant developments surrounding Site 1 were noted in 1980, with the coal handling and preparation area located to the north, the BPS Power Block Area is located to the south and a coal conveyor to the north constructed between 1980 to 1994.
 - The northern portion of Site 1 was used as an auxiliary coal stockpile.
 - Some structures at the southern boundary of the site. It is understood that Site 1 has been used as a laydown area for works associated with BPS on an ongoing basis since BPS was first constructed in the 1980s. This was first noted in aerial photos from 2008 but is understood to have been ongoing intermittently since BPS was constructed.
 - A portion of the site is currently used to provide a car parking for BPS contractors and can accommodate approximately 300 vehicles daily.
- Site 2 was formerly used as a lay down area and is not currently used for any operational purpose and its site history is as follows:
 - The area was previously used for assembly of large pieces of infrastructure such as boiler components, the electrical supply system and the fire water system for the site during construction of the power station.
 - A transformer was previously located in the southern portion of Site.
 - The area was cut out of the hillside with natural excavated material being used to fill the site to level.
 - No operational activities are currently conducted at Site 2.
 - A sedimentation pond is currently located adjacent to this site, on the northeastern side of the site.
- Site 3 is not currently used for any operational purpose except for the Ravensworth ash slurry line and return water line located in its southern portion. Its site history is as follows:
 - The M series conveyor located at the southern portion of the site was first noted in the 1970 aerial photograph. This was reported to be no longer in use at the time of inspection.

- The Ravensworth ash line and return water line located south of the M series conveyor was first noted in 2008 aerial photograph. As per AGL representative, this is still operational and is used to support the BPS. Historical ash and return water line leaks were also reported, however, no report detailing these leaks was available for review.
- Lake Liddell was first noted in the 1970 aerials having been constructed as part of the construction of the former LPS.
- No other significant changes within Site 3 are noted from the aerial photographs.

Based on the desktop review and the site inspection, the following potential contamination sources have been identified:

- Potential use of fill material in all sites.
- Potential use of herbicides and/or pesticides for weed spraying on all sites.
- Potential spills of fuel/oils from vehicles in the parking lot or equipment in the laydown area in Site 1.
- Potential presence of asbestos and lead based paints on surface soils in the vicinity of the conveyors in Site 3 and in previous locations of structures in Site 1.
- Potential contamination from long-term use of the coal supply conveyor in the northern corner of Site 1.
- Potential migration of contamination from long-term use of adjacent areas for coal handling operations and power stations on all sites.
- Historical use of Site 2 as a large Items Assembly Area during the BPS construction.
- Historical leaks along the Ravensworth ash slurry line and return water line

A number of contamination investigations have been completed to date for the BPS and former LPS site. While these did not generally focus on Sites 1 to 3 which are outside the main operational areas of the power stations, some of these reports included soil or groundwater sampling within the sites. The available data shows that:

- Site 1 – To date no soil or groundwater testing has been completed in Site 1. It is noted however, that based on data from the adjoining area, a GIS Mapping Tool developed by Kleinfelder in 2019 included approximately half of Site 1 in a broader area identified as exceeding applicable criteria for a Residential Land use scenario which requiring a very high remediation effort to achieve Residential criteria. Based on this, the indicative land capacity for this site was classified for commercial/industrial land use which is consistent with the uses proposed as part of the Planning Proposal which is limited to industrial uses.
- Site 2 – Coal fines and ash were noted within soils in this area which was considered to be anthropogenic in nature and distribution. An ammonia concentration in groundwater was also identified in one of the existing wells as exceeding the ANZECC (2000) 95% level of protection trigger value for slightly to moderately disturbed freshwater ecosystems. No other soil or groundwater exceedances of applicable health and ecological criteria were noted in this area. Based on the GIS Mapping Tool developed by Kleinfelder in 2019, the indicative land capacity for this site was classified for recreational/ nonsensitive agricultural land use. GHD notes that the indicative land capacity assigned using the GIS Mapping Tool is for a more sensitive use than are proposed under the Planning Proposal, meaning that the assigned indicative land capacity would also accommodate the industrial energy hub related uses proposed under the Planning Proposal.
- Site 3 – One soil sample taken from a soil bore in Site 3 in 2013 had concentrations of COPC in this area was considered to likely represent background levels for soils. Another soil bore was advanced in 2015 and none of the soil samples exceeded applicable criteria. Based on the GIS Mapping Tool developed by Kleinfelder in 2019, the indicative land capacity for this site was classified for recreational/ nonsensitive agricultural land use. GHD notes that the indicative land capacity assigned using the GIS Mapping Tool is for a more sensitive use than are proposed under the Planning Proposal, meaning that the assigned indicative land capacity would also accommodate the industrial energy hub related uses proposed under the Planning Proposal.

The overall likelihood for significant chemical contamination to be present within Sites 1, 2 and 3 is considered to be moderate based on the current use and past activities and the surrounding land uses. In addition, all sites are listed as having been notified under the CLM Act as part of the notification of the broader BPS site although it is noted that the EPA has determined that regulation under the CLM Act of the BPS site is not required.

Based on this, additional investigations will be required to assess the potential nature and extent of contamination on sites 1 to 3. Noting that the Planning Proposal does not propose to change the use of the land from a contamination perspective in that the sites are currently used for power station related purposes, being a

commercial/industrial use from a contamination perspective and the further uses proposed as part of the Planning Proposal are also commercial/industrial uses. It is expected that each of Sites 1 to 3 can be made suitable for the uses permitted by the Planning Proposal.

The contamination status of Sites 1 to 3 will be further investigated and assessed as part of future development applications under *State Environmental Planning Policy (Resilience and Hazards) 2021* for any new uses within Sites 1 to 3. It is expected that this would include the preparation of Detailed Site Investigation (DSI) Reports and that, should these identify that any remediation is required, any new development consents granted for any new uses would include conditions requiring the completion of remediation and validation prior to the new uses commencing.

It is recommended that the information from this PSI be considered in developing a detailed Sampling, Analysis and Quality Plan (SAQP) for the DSIs to accompany any future development applications for Sites 1, 2 and 3. The DSI should include chemical analysis of soil samples for COPC identified in this PSI and assess whether, having regard to the specifics of the development proposed, any remediation or management is required to make the land suitable for that purpose. It is recommended the SAQP include the following:

- Objectives of the site characterisation including specifics of the new development proposed.
- Proposed field works including sample numbers and proposed locations, sampling media, sampling depths.
- Sampling methodology and techniques (test pits, hand augers, boreholes, etc.).
- The proposed analytical suite based on the PSI and identified COPC.
- Field and laboratory quality assurance/quality control (QA/QC) requirements.

6. References

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- AECOM 2023, PFAS Long-term Environmental Management Plan 2022, Bayswater Power Station, 24 March 2023.
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- Lotsearch (2024). *Lotsearch Enviro Professional. LS057866 EP. Site 2 - New England Highway, Muswellbrook, NSW 2333*, 26 June 2024.
- Lotsearch (2024). *Lotsearch Enviro Professional. LS057866 EP. Site 3 - New England Highway, Muswellbrook, NSW 2333*, 26 June 2024.
- NEPC (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended by the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*, National Environment Protection Council, May 2013.
- NSW EPA (2020) *Contamination Guidelines - Consultants Reporting on Contaminated Land*. NSW EPA 2020.
- NSW EPA, *Public registers (nsw.gov.au)* (Accessed 11 September 2024).
- Six Maps <http://maps.six.nsw.gov.au/>

Appendices

Appendix A

Photolog

Plate No.	Date:
1	25 June 2024
Site	Site 1
Direction Photo Taken: East	
Description: This photo shows the existing bitumen road traversing the middle of the site from west to east. Vegetation is visible on both sides of the road, with the contractor's parking zone located south of the road. Portions of the BPS located to the east are also visible.	



Plate No.	Date:
2	25 June 2024
Site	Site 1
Direction Photo Taken: North	
Description: The northern portion of the site is vegetated with patches of grass observed in some areas. This portion has a downward slope towards the north, which was not accessible at the time of inspection. The coal handling and preparation area is located north of the site.	



Plate No.	Date:
3	25 June 2024

Site	Site 1
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Direction Photo Taken:
West

Description: The southern portion of Site 1 is currently used as a car park for BPS contractors. The car park is unsealed and stockpiles of gravel were observed at the western and southern boundary of the car park.
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Plate No.	Date:
4	25 June 2024

Site	Site 1
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Direction Photo Taken:
South

Description: A stockpile composed of a gravel, facing the southern lot adjacent of the car park, was observed.
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Plate No.	Date:
5	25 June 2024
Site	Site 1

Direction Photo Taken:
South

Description:
The photo shows the grassed areas surrounding the contractor's car park and the presence of trees and shrubs. The BPS is located further south.



Plate No.	Date:
6	25 June 2024
Site	Site 1

Direction Photo Taken:
East

Description:
This photo shows cleared patches of land within the grassed areas located adjacent east of the contractor's car park.



Plate No. 7	Date: 25 June 2024
Site	Site 1
Direction Photo Taken: South	
Description: This photo shows an area of excavation was also noted south of the car park adjacent to existing reticulatled water infrastructure located in the grassed areas south of the parking lot.	



Plate No. 8	Date: 25 June 2024
Site	Site 2
Direction Photo Taken: South-west	
Description: This area is currently covered with grass, with some visible disturbed patches. The site is surrounded by trees.	



Plate No. 9	Date: 25 June 2024
Site	Site 2
Direction Photo Taken: South	
Description: Tracks were observed across the site. The BPS located southeast of the site is also visible.	



Plate No. 10	Date: 15 May 2024
Site	Site 2
Direction Photo Taken: East	
Description: Fencing is currently observed in the northern boundary of Site 2 and a visible sedimentation pond was noted adjacent it.	



Plate No.	Date:
11	25 June 2024
Site	Site 3
Direction Photo Taken: North-east	
Description: The site is a grassed area with scattered trees. It is gently undulating and slopes downwards to the north towards Lake Liddell.	



Plate No.	Date:
12	25 June 2024
Site	Site 3
Direction Photo Taken: North	
Description: The photo shows a sloping terrain leading down to Lake Liddell with visible electrical power lines. LPS is also visible located further north across Lake Liddell.	



Plate No.	Date:
13	15 May 2024
Site	Site 3
Direction Photo Taken: South	
Description: An unsealed road surrounded by grass and trees was visible at the southern portion of the site with the M series conveyor running parallel and adjacent it.	



Plate No.	Date:
14	15 May 2024
Site	Site 3
Direction Photo Taken: North	
Description: Stake concretes were observed in line from the central portion towards the east, which could potentially mark the location of underground mains.	



Plate No.	Date:
15	25 June 2024

Site	Site 3
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Direction Photo Taken:
North-east

Description:
This photo shows the existing M series conveyor 2-5 and step over platform that provides access to the north side of the site.



Plate No.	Date:
16	25 June 2024

Site	Site 3
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Direction Photo Taken:
North- West

Description:
Taken from the M series conveyor 2-5, step over platform. Observed image bisected by a platform that provides access to the north side of the site.



Appendix B

Site 1 Lotsearch Report – LS057866 EP



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 26 Jun 2024 09:42:39

Reference: LS057866 EP

Address: Site 1 - New England Highway, Muswellbrook, NSW 2333

Disclaimer:

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

Dataset Listing

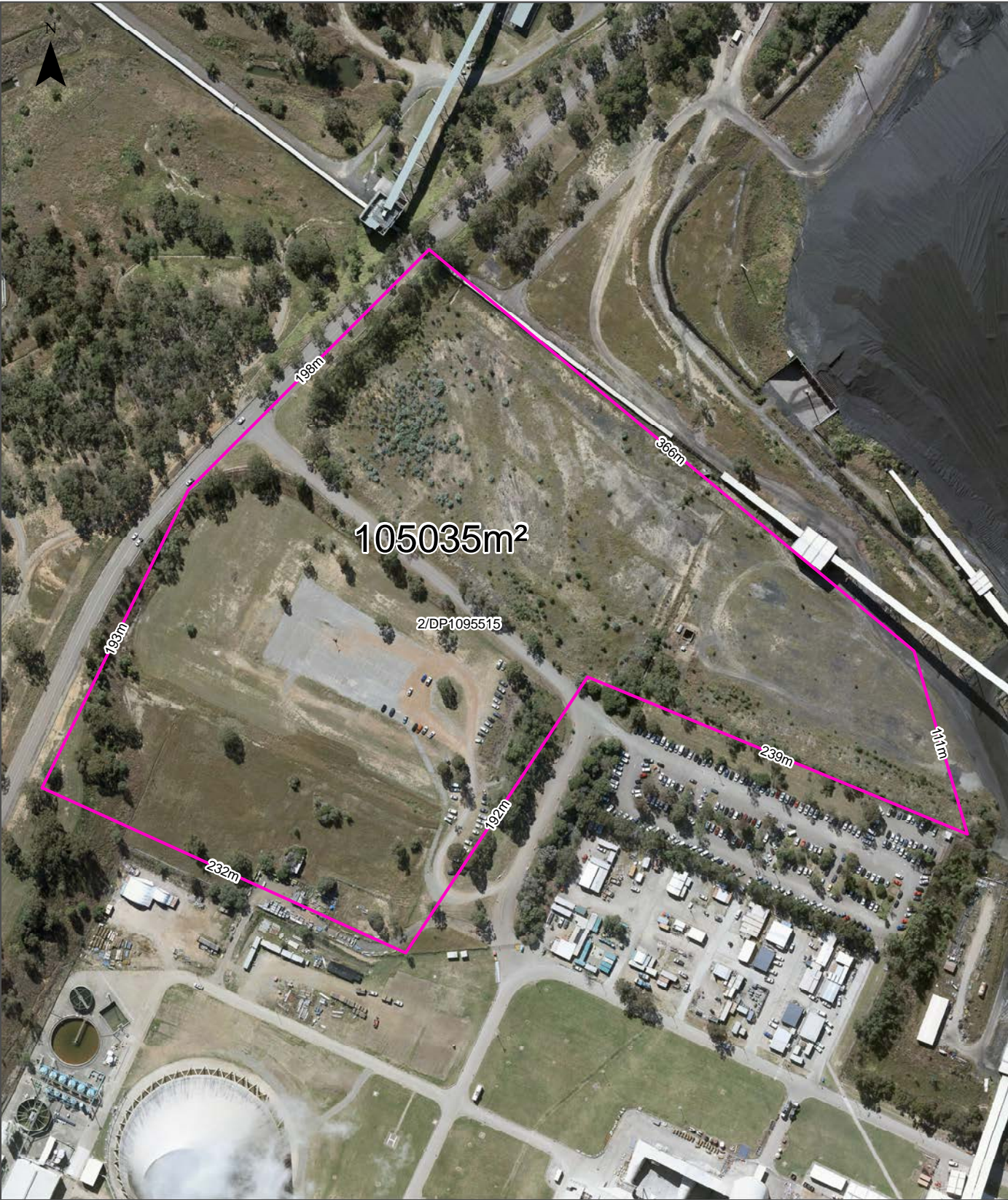
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	17/04/2024	17/04/2024	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	21/05/2024	21/05/2024	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	25/06/2024	12/06/2024	Monthly	1000m	1	1	1
Contaminated Land Records of Notice	Environment Protection Authority NSW	25/06/2024	25/06/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	28/04/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	15/05/2024	15/05/2024	Monthly	1000m	9	9	9
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	20/09/2023	07/09/2020	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority NSW	17/06/2024	14/06/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	17/06/2024	17/06/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	30/04/2024	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	13/11/2023	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	3	3	3
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	2
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	06/05/2024	06/05/2024	Quarterly	1000m	0	1	1
State Forest	Forestry Corporation of NSW	12/12/2023	11/12/2023	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	23/02/2018	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	13/07/2022	Annually	2000m	0	0	0
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	2	2	2
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	1
Naturally Occurring Asbestos Potential	NSW Department of Regional NSW	26/04/2024	14/03/2024	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Climate Change, Energy, the Environment and Water	12/12/2023	27/07/2020	Annually	1000m	1	1	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	04/06/2024	03/05/2024	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	2
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	1
Mining Subsidence Districts	NSW Department of Customer Service	03/05/2024	03/05/2024	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	2	2	3
Mining Title Applications	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	7	7	7
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	04/06/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	1	1	2
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	26/04/2024	08/03/2024	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	18/06/2024	12/03/2024	Monthly	1000m	2	2	4
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	30/11/2023	Quarterly	1000m	4	12	99
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	1	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	1	3
NSW BioNet Species Sightings	NSW Department of Climate Change, Energy, the Environment and Water	29/11/2023	29/11/2023	Weekly	10000m	-	-	-

Site Diagram

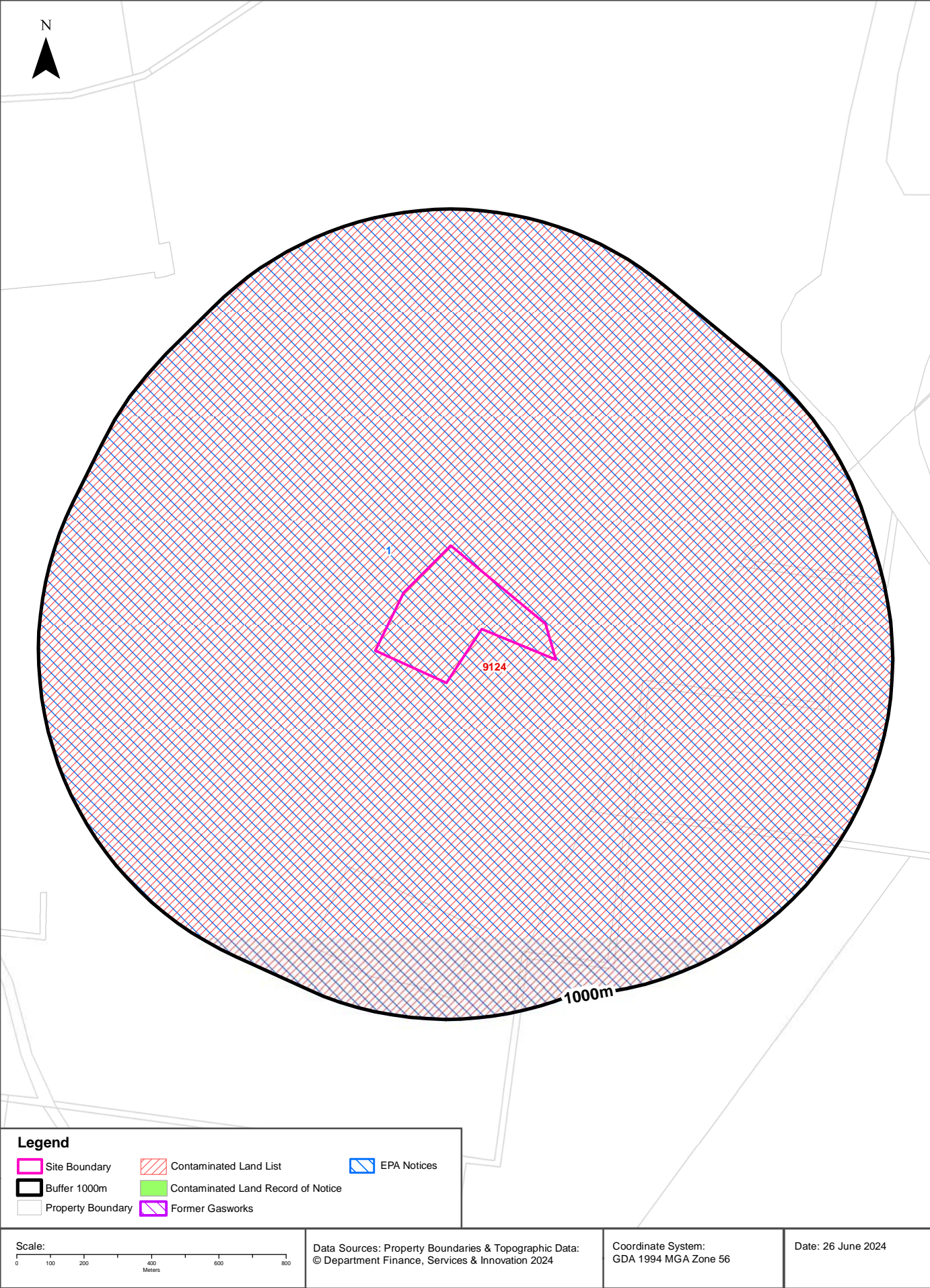
Site 1 - New England Highway, Muswellbrook, NSW 2333



Legend <div><div></div> Site Boundary</div> <div><div></div> Internal Parcel Boundaries</div>	Total Area: 105035m ² Total Perimeter: 1.53km	
	Scale: 0 25 50 100 150 Meters	
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.		Data Source Aerial Imagery: © Aerometrex Pty Ltd
Coordinate System: GDA 1994 MGA Zone 56		Date: 24 June 2024

Contaminated Land

Site 1 - New England Highway, Muswellbrook, NSW 2333



Contaminated Land

Site 1 - New England Highway, Muswellbrook, NSW 2333

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
9124	Bayswater Power Station	New England Highway	Muswellbrook	Other Industry	Regulation under CLM Act not required	Current EPA List	Area Match	0m	On-site

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

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

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

Contaminated Land

Site 1 - New England Highway, Muswellbrook, NSW 2333

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

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

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

Contaminated Land

Site 1 - New England Highway, Muswellbrook, NSW 2333

EPA Notices

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

Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
1	317353033	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/06/2021	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	05/04/2021	Area Match	0m	On-site
	3085777210	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	04/08/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	09/04/2015	Area Match	0m	On-site
	3085778145	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	16/12/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	24/11/2015	Area Match	0m	On-site
	3085778136	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	16/12/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	24/11/2015	Area Match	0m	On-site
	3085778796	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	04/03/2016	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	21/12/2015	Area Match	0m	On-site
	3173527143	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/01/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/05/2018	Area Match	0m	On-site
	3173527152	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/01/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/05/2018	Area Match	0m	On-site
	3173528216	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	26/08/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	28/02/2019	Area Match	0m	On-site
	3173531608	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	08/02/2023	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation		Area Match	0m	On-site

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

Waste Management & Liquid Fuel Facilities

Site 1 - New England Highway, Muswellbrook, NSW 2333

National Waste Management Facilities Database

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

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
N/A	No records in buffer								

Source: Waste Management Facilities Database
Creative Commons 4.0 © Commonwealth of Australia (Geoscience Australia) 2022

National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

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

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 4.0 © Commonwealth of Australia

PFAS Investigation & Management Programs

Site 1 - New England Highway, Muswellbrook, NSW 2333

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites and Unexploded Ordnance

Site 1 - New England Highway, Muswellbrook, NSW 2333

Defence Controlled Areas (DCA)

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

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

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

Defence 3 Year Regional Contamination Investigation Program (RCIP)

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

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

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

National Unexploded Ordnance (UXO)

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

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

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

EPA Other Sites with Contamination Issues

Site 1 - New England Highway, Muswellbrook, NSW 2333

EPA Other Sites with Contamination Issues

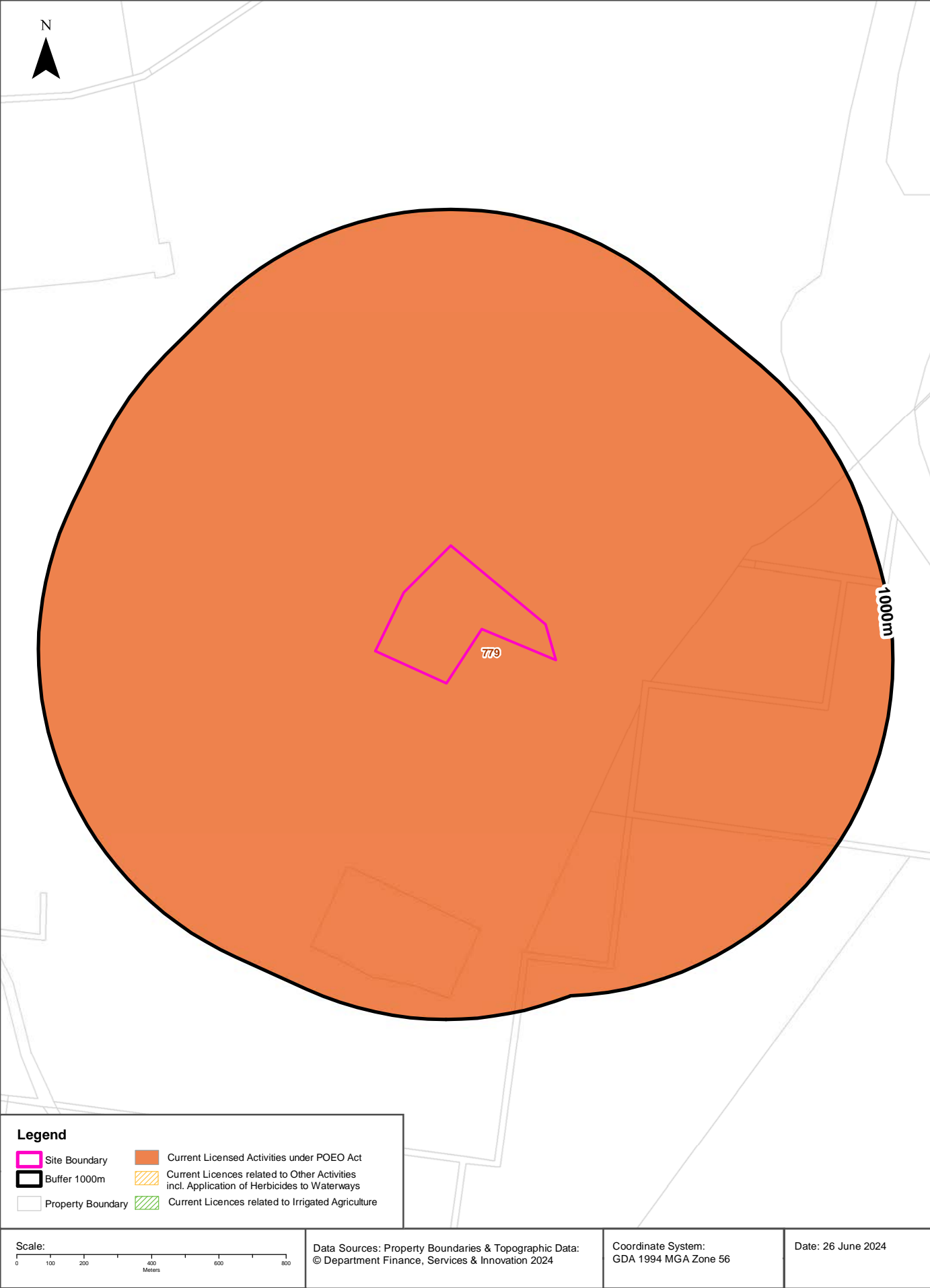
This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

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



EPA Activities

Site 1 - New England Highway, Muswellbrook, NSW 2333

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
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Generation of electrical power from coal	Area Match	0m	On-site
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Coal works	Area Match	0m	On-site
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Chemical storage waste generation	Area Match	0m	On-site

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority



EPA Activities

Site 1 - New England Highway, Muswellbrook, NSW 2333

Delicensed Activities still regulated by the EPA

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

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

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

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	124m	North
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	124m	North
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	124m	North
11677	UPPER HUNTER COUNTY COUNCIL	WATERS WITHIN UPPER HUNTER COUNTY COUNCIL, NEW ENGLAND HIGHWAY, MUSWELLBROOK	Surrendered	21/06/2002	Miscellaneous licensed discharge to waters (at any time)	Network of Features	124m	North

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

Historical Business Directories

Site 1 - New England Highway, Muswellbrook, NSW 2333

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

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

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Business Directory Records 1950-1991

Road or Area Matches

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

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

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Historical Business Directories

Site 1 - New England Highway, Muswellbrook, NSW 2333

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

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

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

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

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

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

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

Aerial Imagery 2023

Site 1 - New England Highway, Muswellbrook, NSW 2333



<p>Scale:</p> <p>0 50 100 150 200</p> <p>Meters</p>	<p>Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.</p>	<p>Coordinate System:</p> <p>GDA 1994 MGA Zone 56</p>	<p>Date: 24 June 2024</p>
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Aerial Imagery 2021

Site 1 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 2017

Site 1 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 2008

Site 1 - New England Highway, Muswellbrook, NSW 2333



<p>Scale:</p> <p>0 50 100 150 200</p> <p>Meters</p>	<p>Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.</p>	<p>Coordinate System:</p> <p>GDA 1994 MGA Zone 56</p>	<p>Date: 24 June 2024</p>
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Aerial Imagery 1994

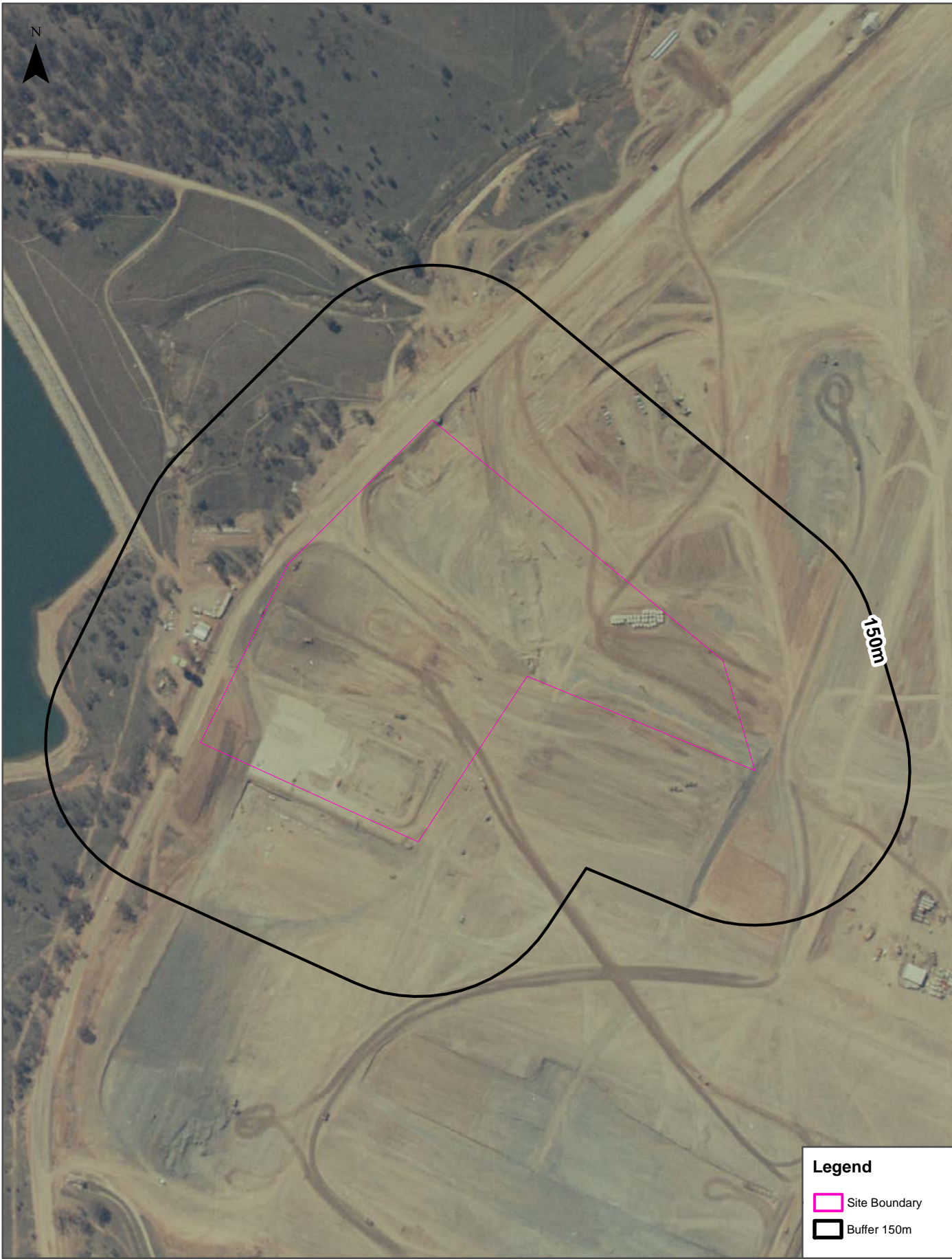
Site 1 - New England Highway, Muswellbrook, NSW 2333



<p>Scale:</p> <p>0 50 100 150 200</p> <p>Meters</p>	<p>Data Source Aerial Imagery:</p> <p>© 2024 Geoscience Australia</p>	<p>Coordinate System:</p> <p>GDA 1994 MGA Zone 56</p>	<p>Date: 24 June, 2024</p>
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Aerial Imagery 1980

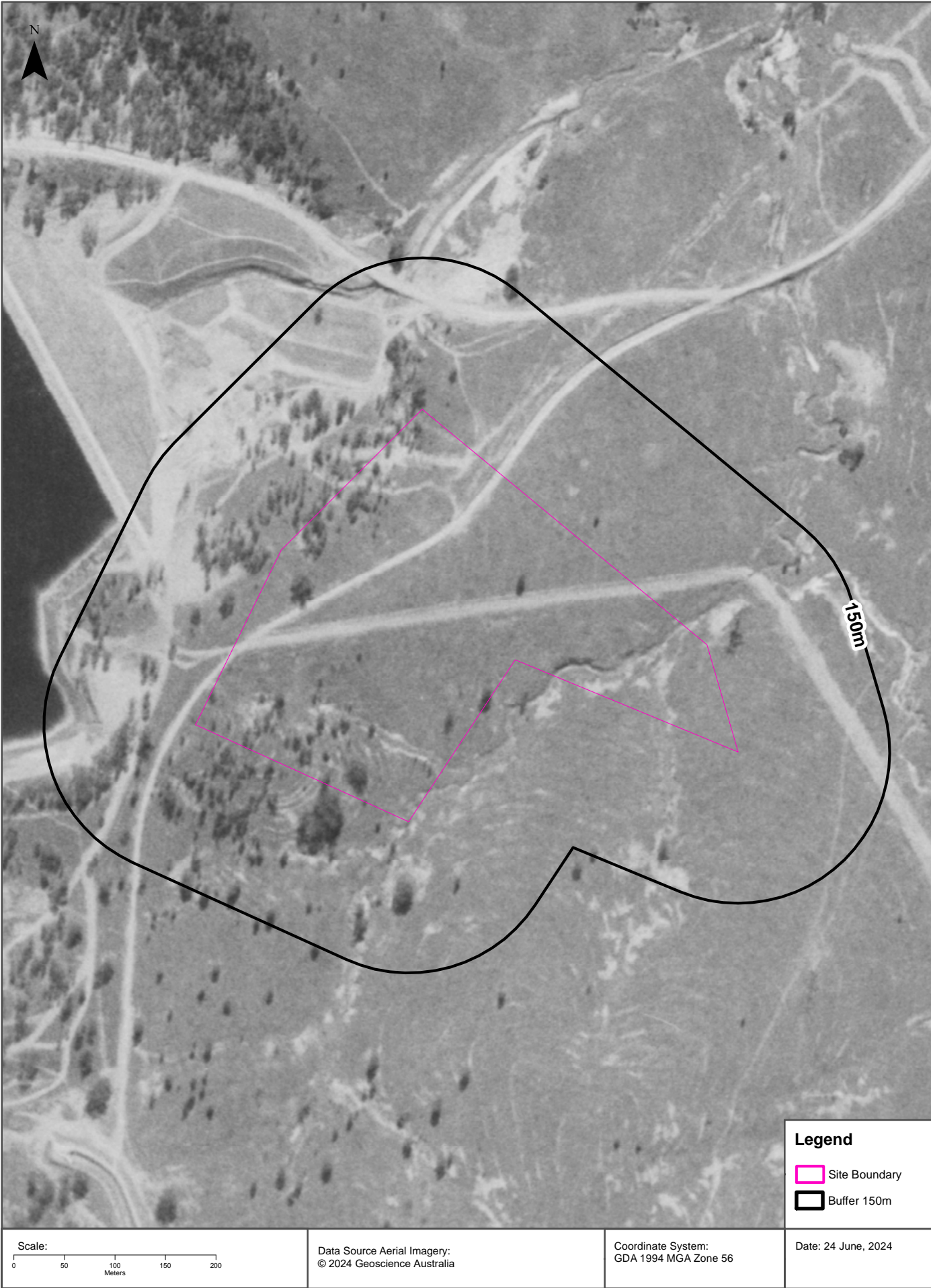
Site 1 - New England Highway, Muswellbrook, NSW 2333



<p>Scale:</p> <p>0 50 100 150 200</p> <p>Meters</p>	<p>Data Source Aerial Imagery:</p> <p>© 2024 Geoscience Australia</p>	<p>Coordinate System:</p> <p>GDA 1994 MGA Zone 56</p>	<p>Legend</p> <p> Site Boundary</p> <p> Buffer 150m</p> <p>Date: 24 June, 2024</p>
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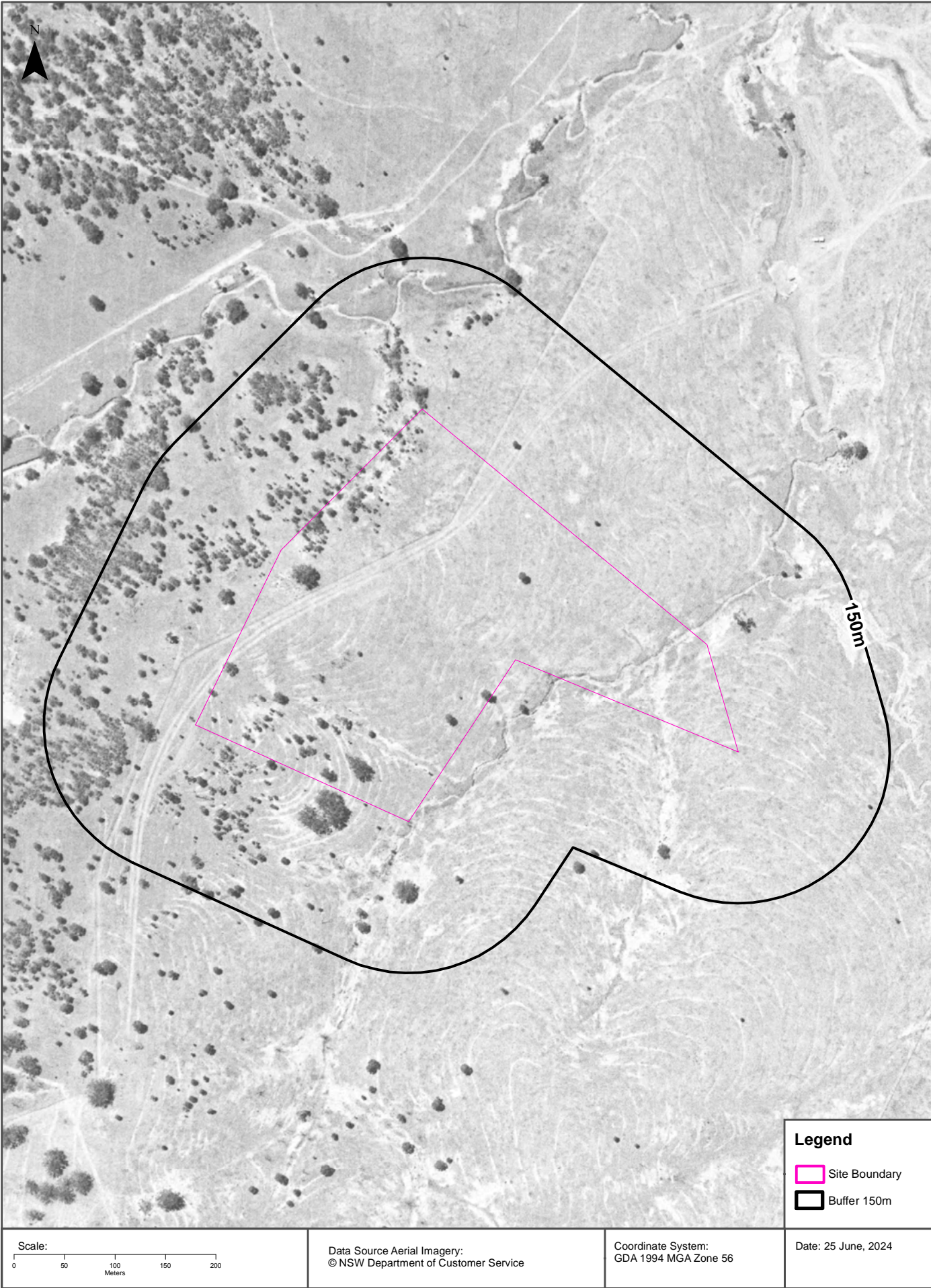
Aerial Imagery 1970

Site 1 - New England Highway, Muswellbrook, NSW 2333



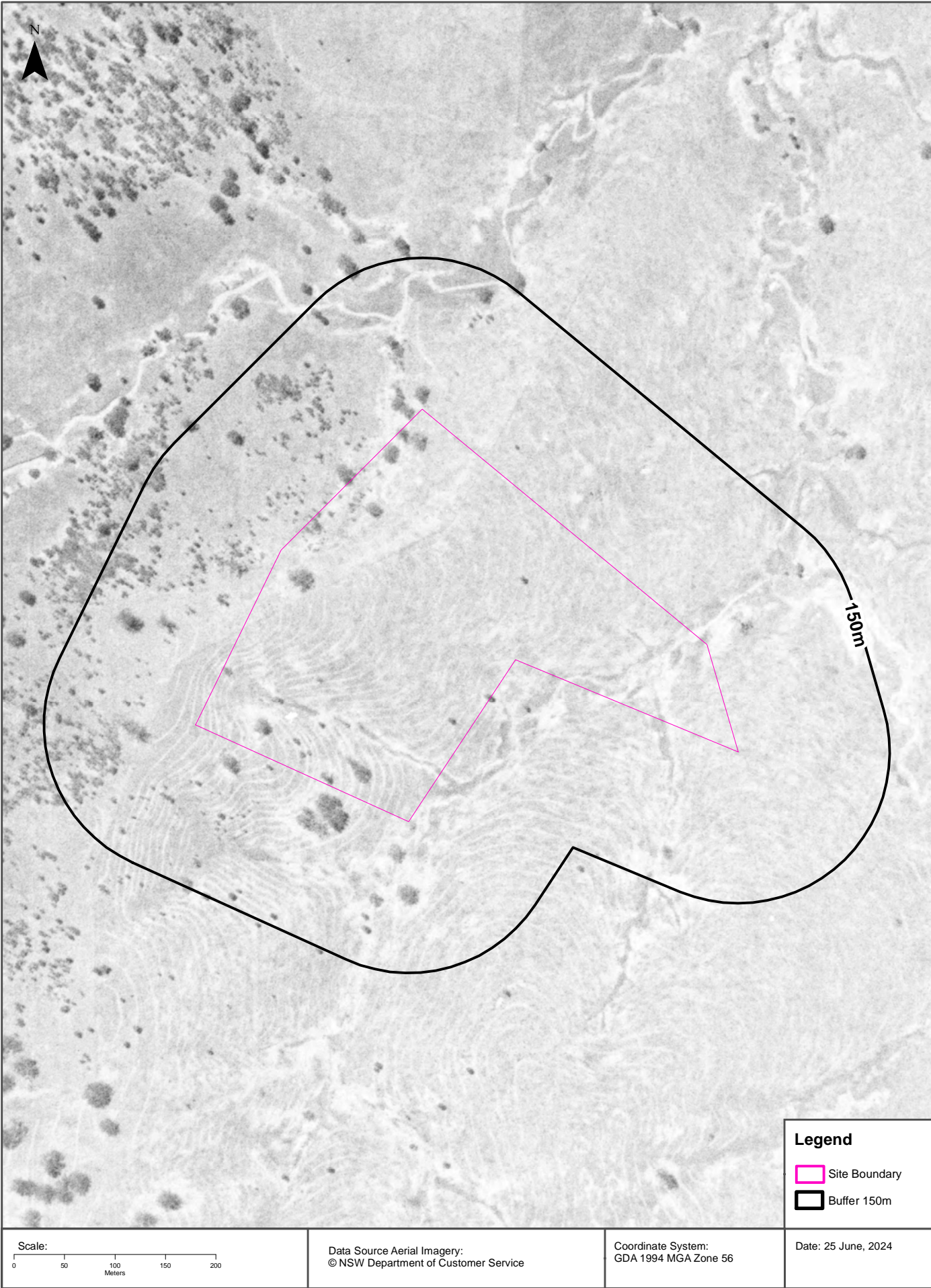
Aerial Imagery 1967

Site 1 - New England Highway, Muswellbrook, NSW 2333



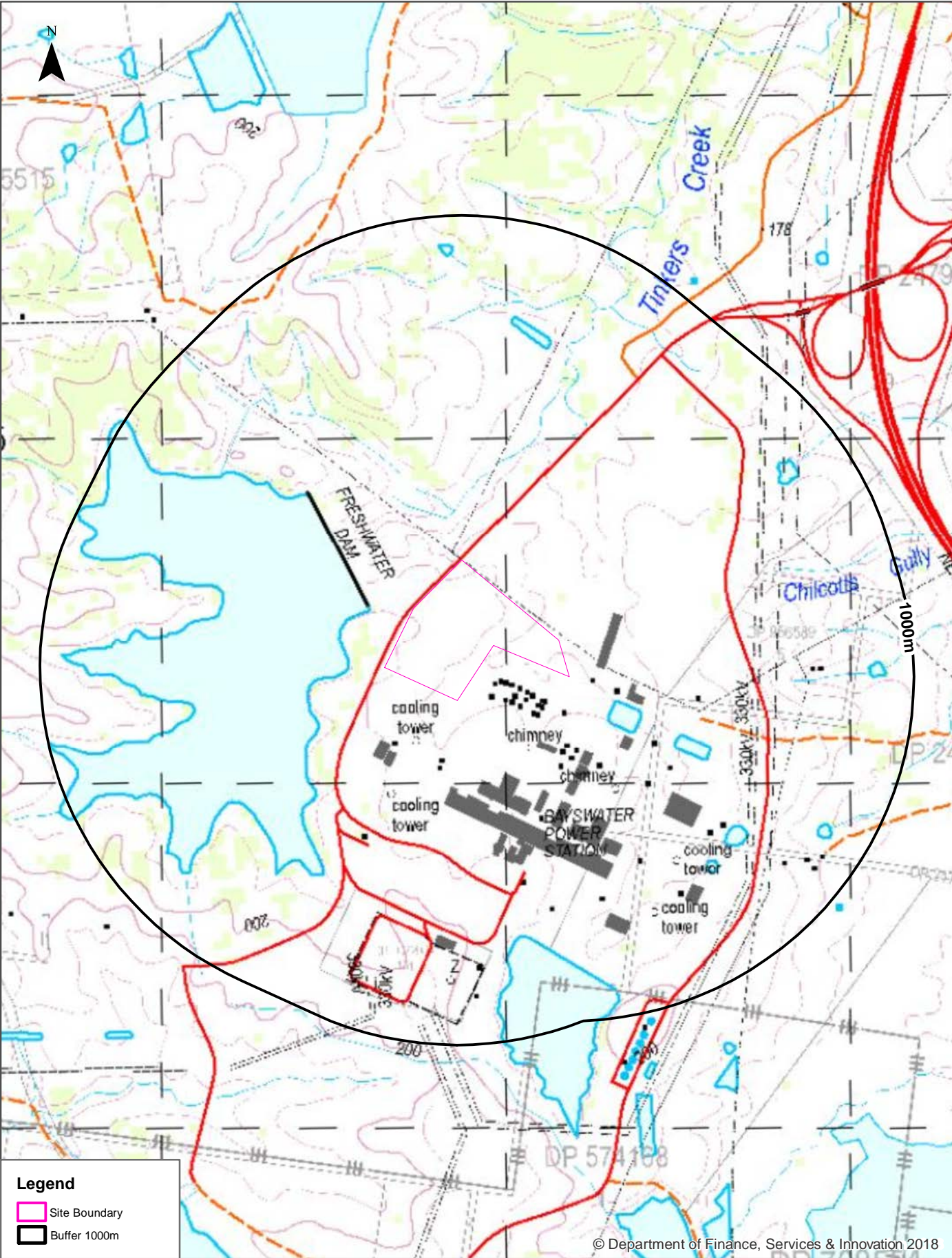
Aerial Imagery 1958

Site 1 - New England Highway, Muswellbrook, NSW 2333



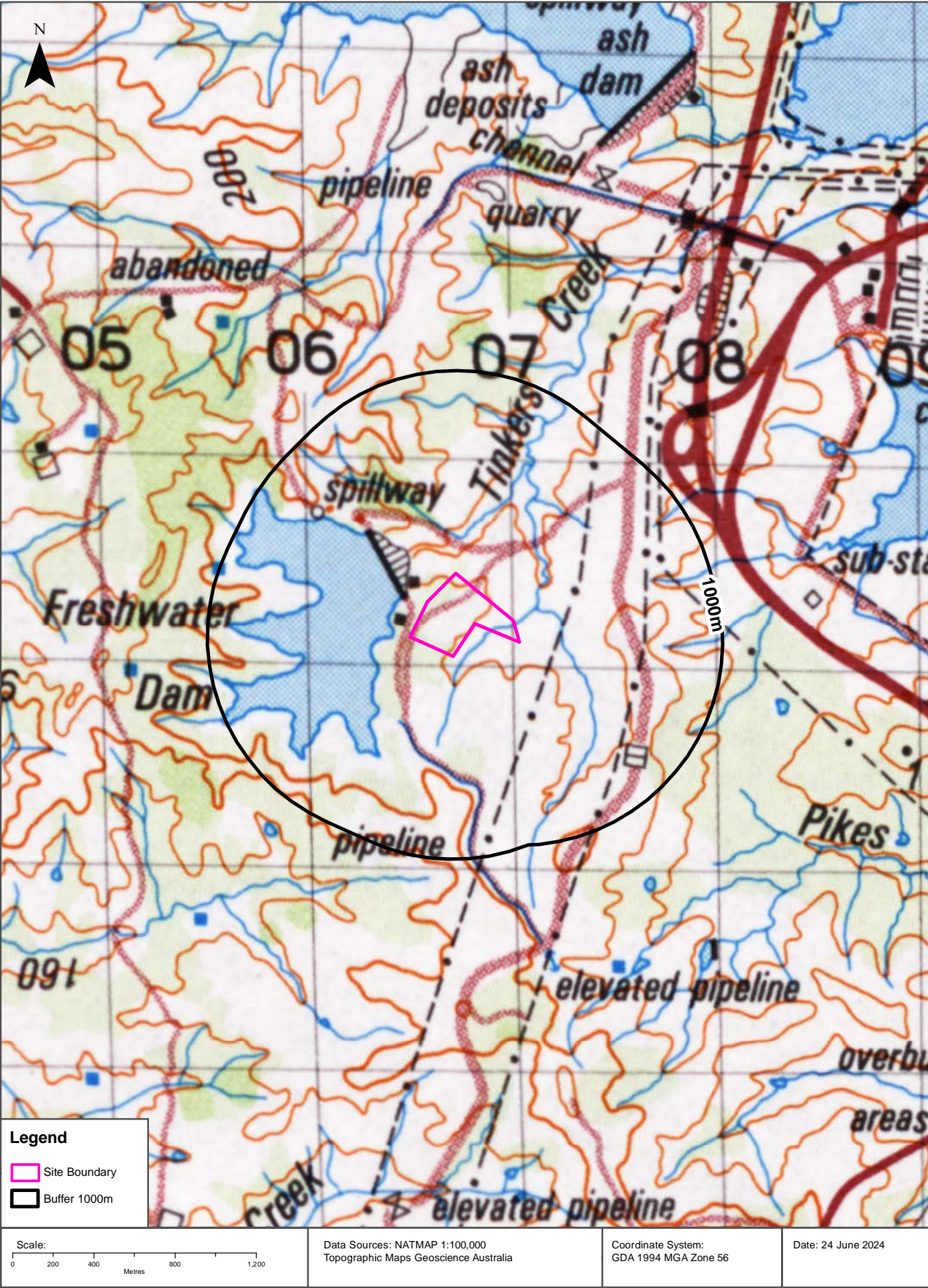
Topographic Map 2015

Site 1 - New England Highway, Muswellbrook, NSW 2333



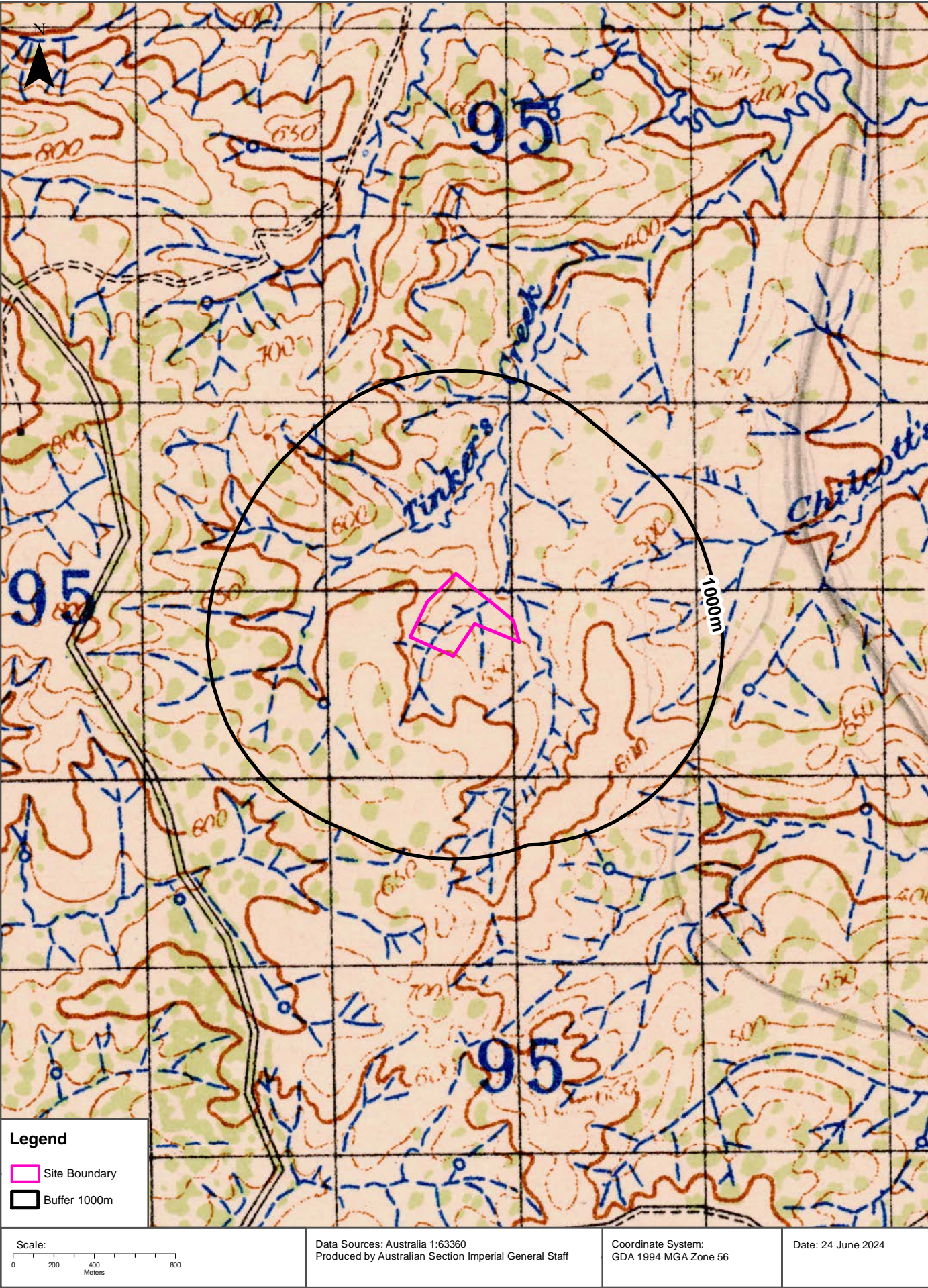
Historical Map 1978

Site 1 - New England Highway, Muswellbrook, NSW 2333



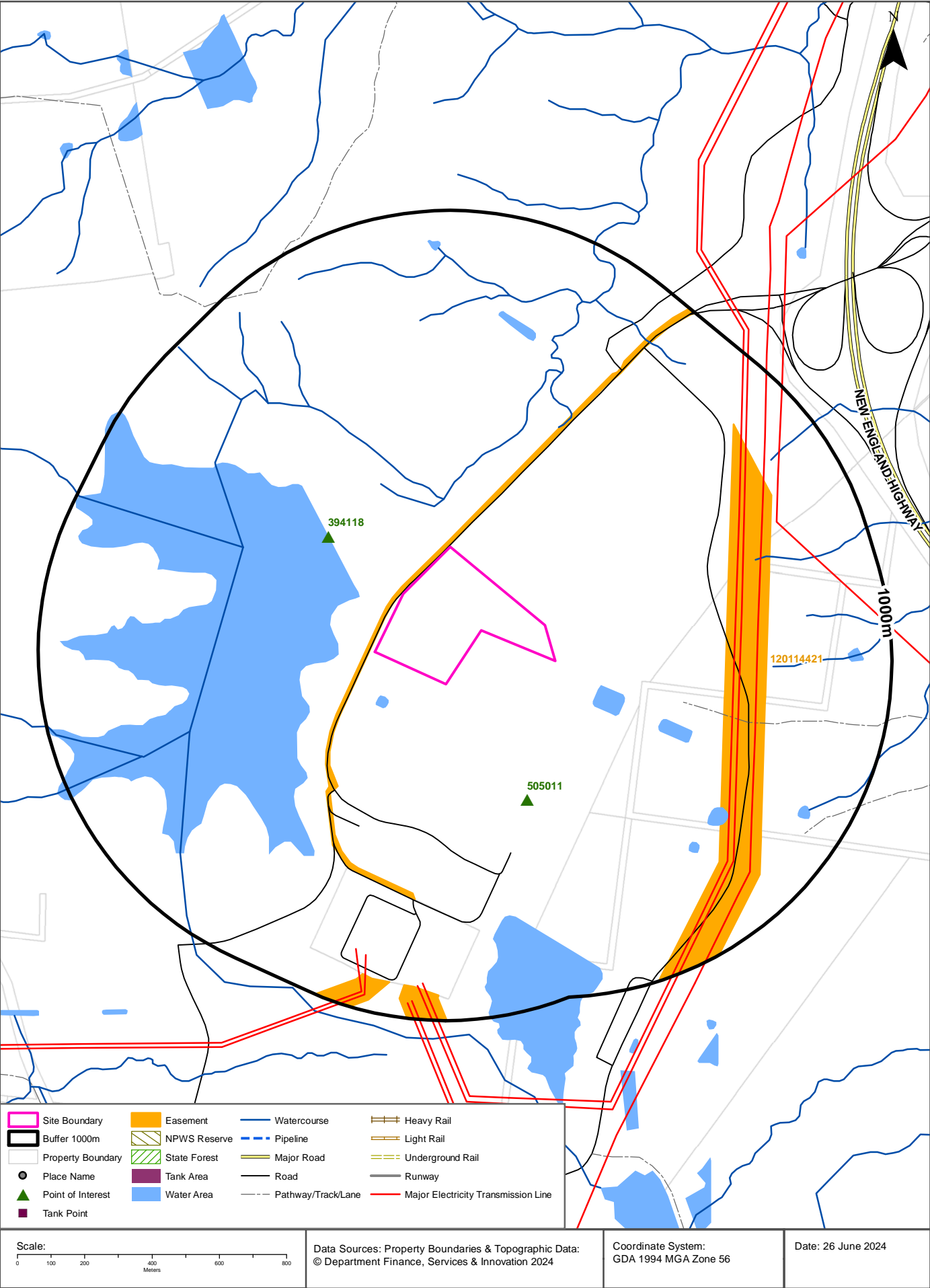
Historical Map c.1941

Site 1 - New England Highway, Muswellbrook, NSW 2333



Topographic Features

Site 1 - New England Highway, Muswellbrook, NSW 2333



Topographic Features

Site 1 - New England Highway, Muswellbrook, NSW 2333

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
394118	Dam Wall	FRESHWATER DAM	280m	North West
505011	Power Station - Fuel Driven	BAYSWATER POWER STATION	421m	South

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

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Topographic Features

Site 1 - New England Highway, Muswellbrook, NSW 2333

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

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

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Major Easements

What Major Easements exist within the dataset buffer?

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120114421	Primary	Undefined		6m	South East

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

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Topographic Features

Site 1 - New England Highway, Muswellbrook, NSW 2333

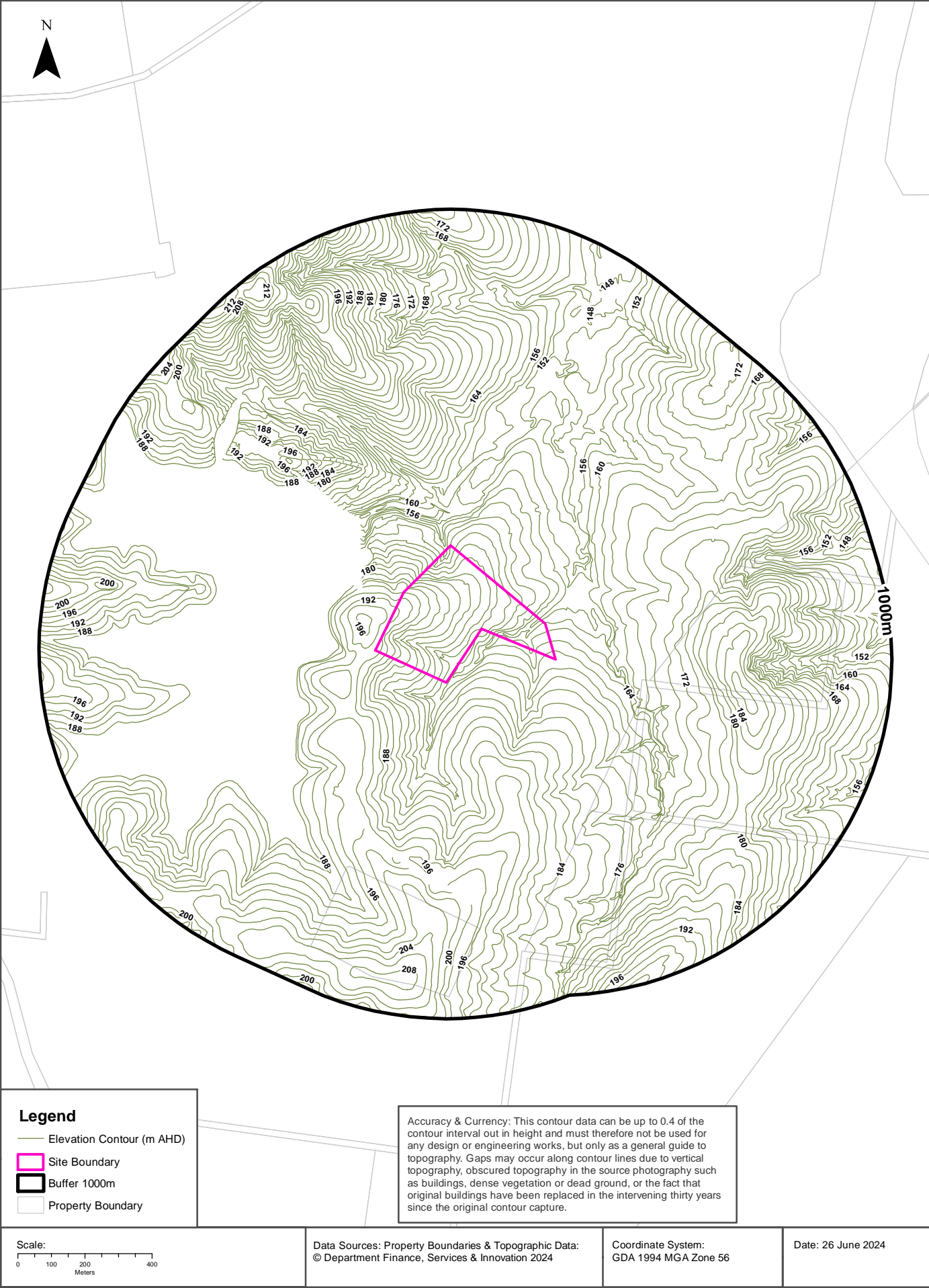
State Forest

What State Forest exist within the dataset buffer?

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

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

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Hydrogeology & Groundwater

Site 1 - New England Highway, Muswellbrook, NSW 2333

Hydrogeology

Description of aquifers within the dataset buffer:

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

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

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

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

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

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

Hydrogeology & Groundwater

Site 1 - New England Highway, Muswellbrook, NSW 2333

Groundwater Boreholes

Boreholes within the dataset buffer:

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

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

Hydrogeology & Groundwater

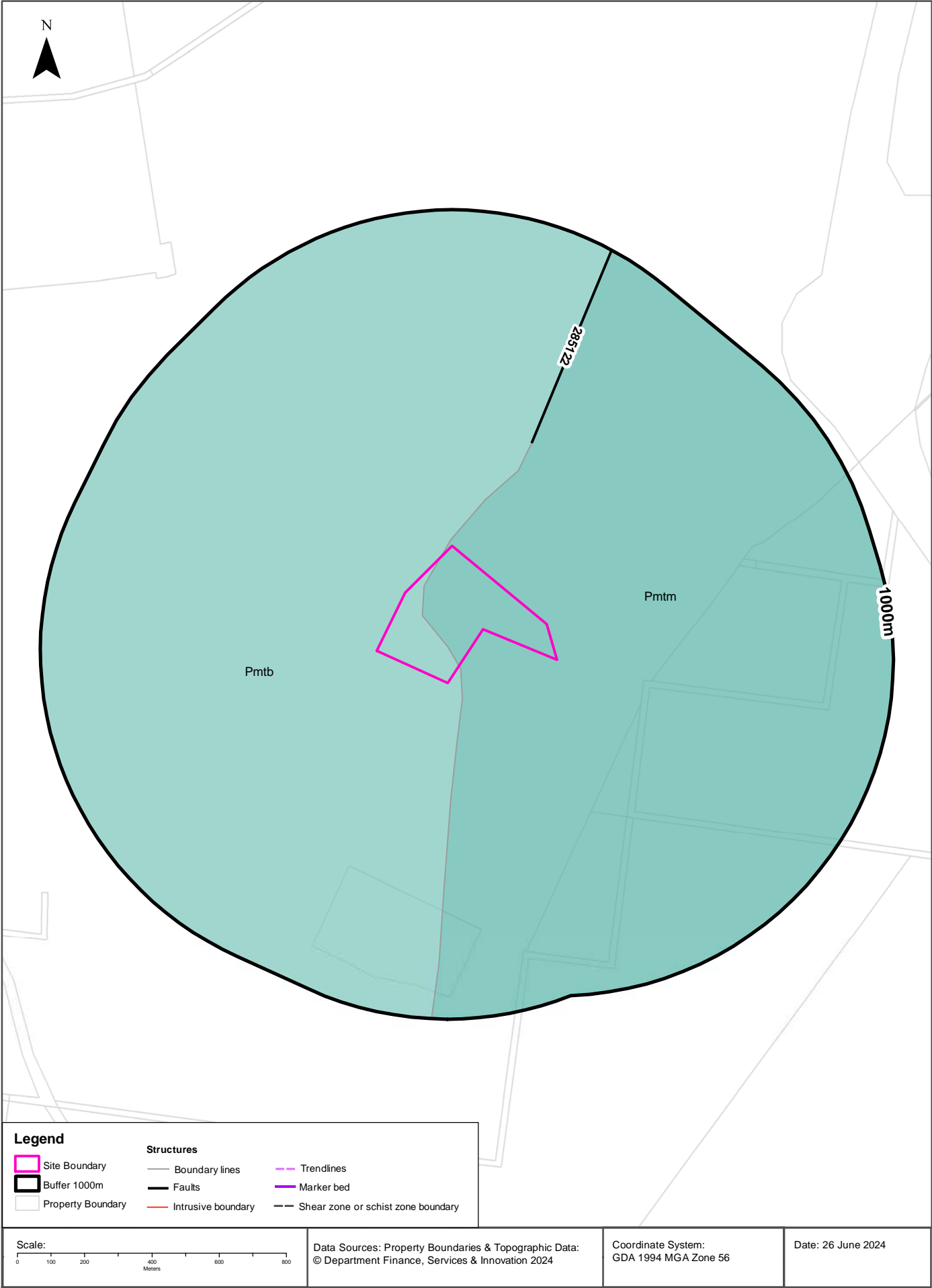
Site 1 - New England Highway, Muswellbrook, NSW 2333

Driller's Logs

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

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

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



Geology

Site 1 - New England Highway, Muswellbrook, NSW 2333

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pmtm	Mulbring Siltstone	Medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils.	\Maitland Group\ \Mulbring Siltstone\\	Guadalupian (base) to Guadalupian (top)	Siltstone	0m
Pmtb	Branxton Formation	Conglomerate, sandstone, siltstone.	\Maitland Group\ \Branxton Formation\\	Roadian (base) to Roadian (top)	Conglomerate	0m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
285122	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	387m

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

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Naturally Occurring Asbestos Potential

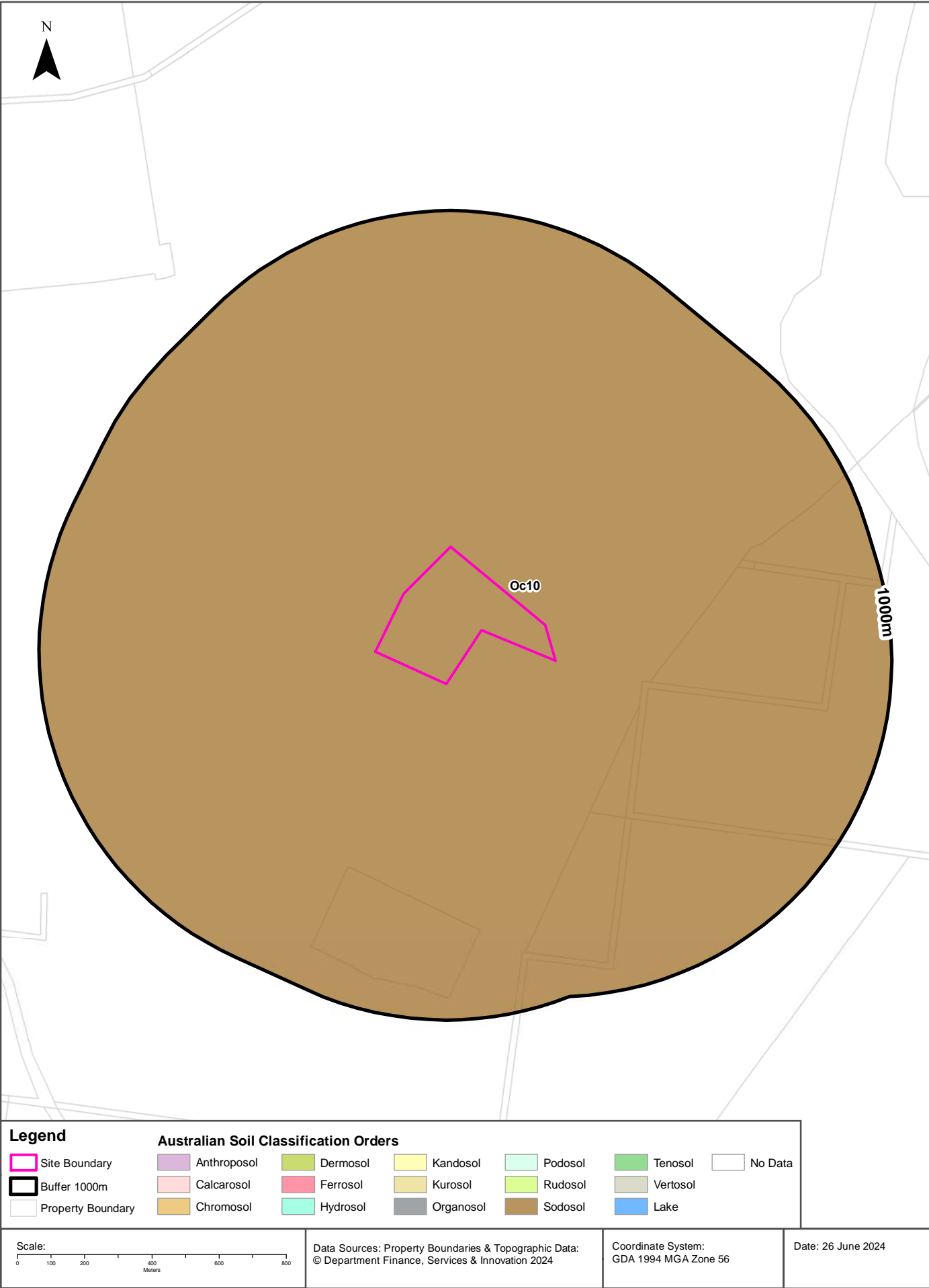
Site 1 - New England Highway, Muswellbrook, NSW 2333

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



Soils

Site 1 - New England Highway, Muswellbrook, NSW 2333

Atlas of Australian Soils

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

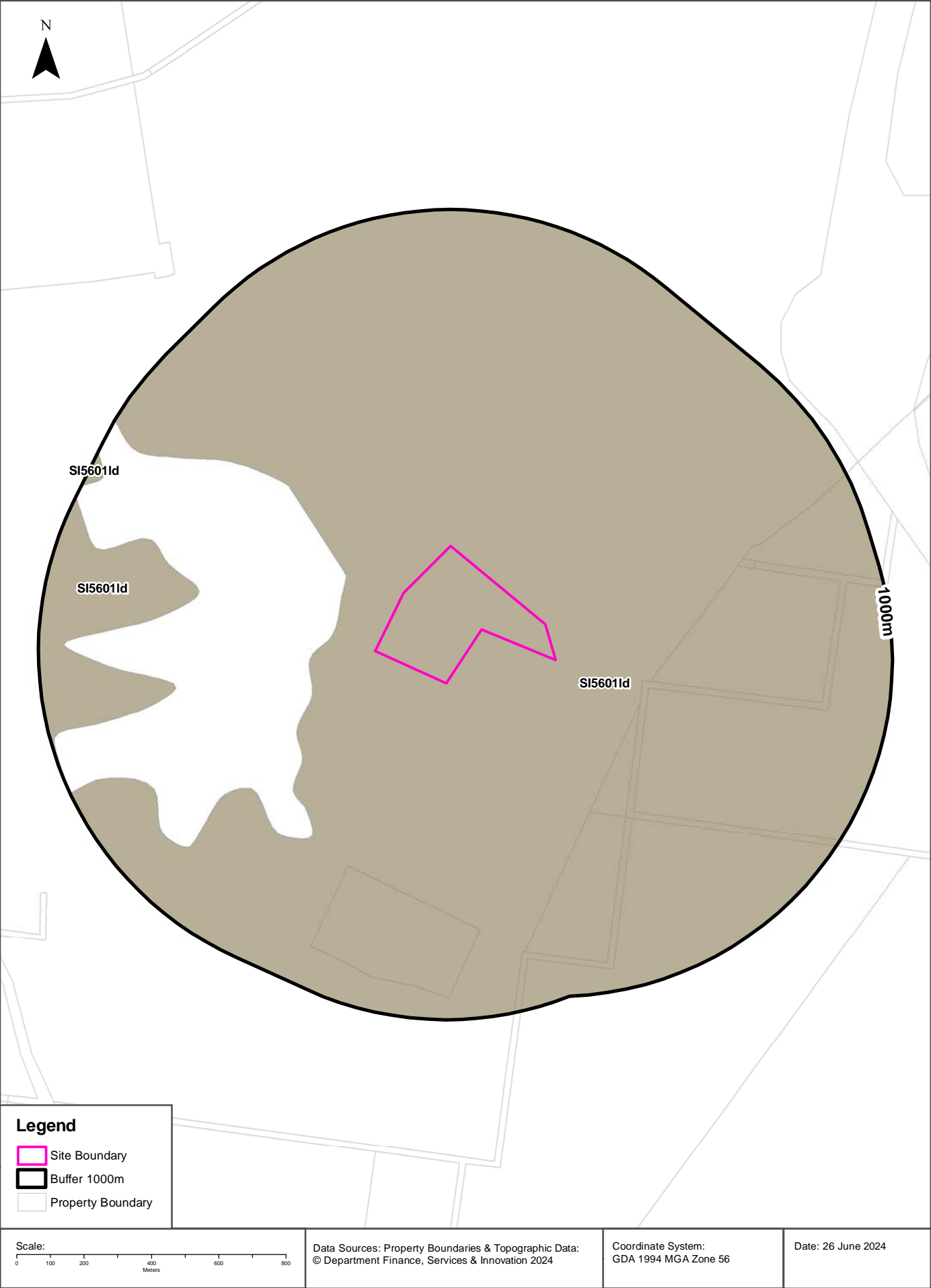
Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Oc10	Sodosol	Rolling to hilly country with some steep slopes, gently undulating hill-tops, low cliffs, and occasionally escarpments; traversed by flat to undulating valleys: chief soils are hard alkaline and neutral red brown, yellow, and dark soils: red (Dr2.33), (Dr2.23), (Dr2.43), (Dr2.32), (Dr2.22); brown (Db1.33) (Db1.43); yellow (Dy2.33), (Dy2.43), (Dy3.43), (Dy3.42); dark (Dd1.33), (Dd1.43), (Dd1.42) (Dr2.32) notably occurs on gravelly hill-tops. Associated are: the (Ug5) soils of unit Ke12, which forms soil complexes with the above (D) soils in some areas; some basaltic hills and knolls of (Ug5.1) (Ug5.3), (Db3.12), (Gn3.42), and (Um6) soils; some (Uf6.31) and/or (Gn3.13) soils; some (Um4.1 and/or (Um4.2) soils and possibly other shallow (Um) or (Uc) soils on steep slopes; (Dy3.41) (Dr3.41), and (Dr2.41) soils as for unit Tb41; and various (Um) and (Uc) soils along the streams where some salinity is evident. This unit is very broad and the soil pattern is complex. Northward it grades towards the soil conditions found in units Qb19 and Ob14, having similarities to unit Ob10 in the Murrurundi area. To the south-east it grades into unit Tb42, the boundary between the two units is indefinite.	0m	On-site

Atlas of Australian Soils Data Source: CSIRO

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Soil Landscapes of Central and Eastern NSW

Site 1 - New England Highway, Muswellbrook, NSW 2333



Soils

Site 1 - New England Highway, Muswellbrook, NSW 2333

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
SI5601ld	Liddell	0m	On-site

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

Site 1 - New England Highway, Muswellbrook, NSW 2333

Environmental Planning Instrument - Acid Sulfate Soils

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

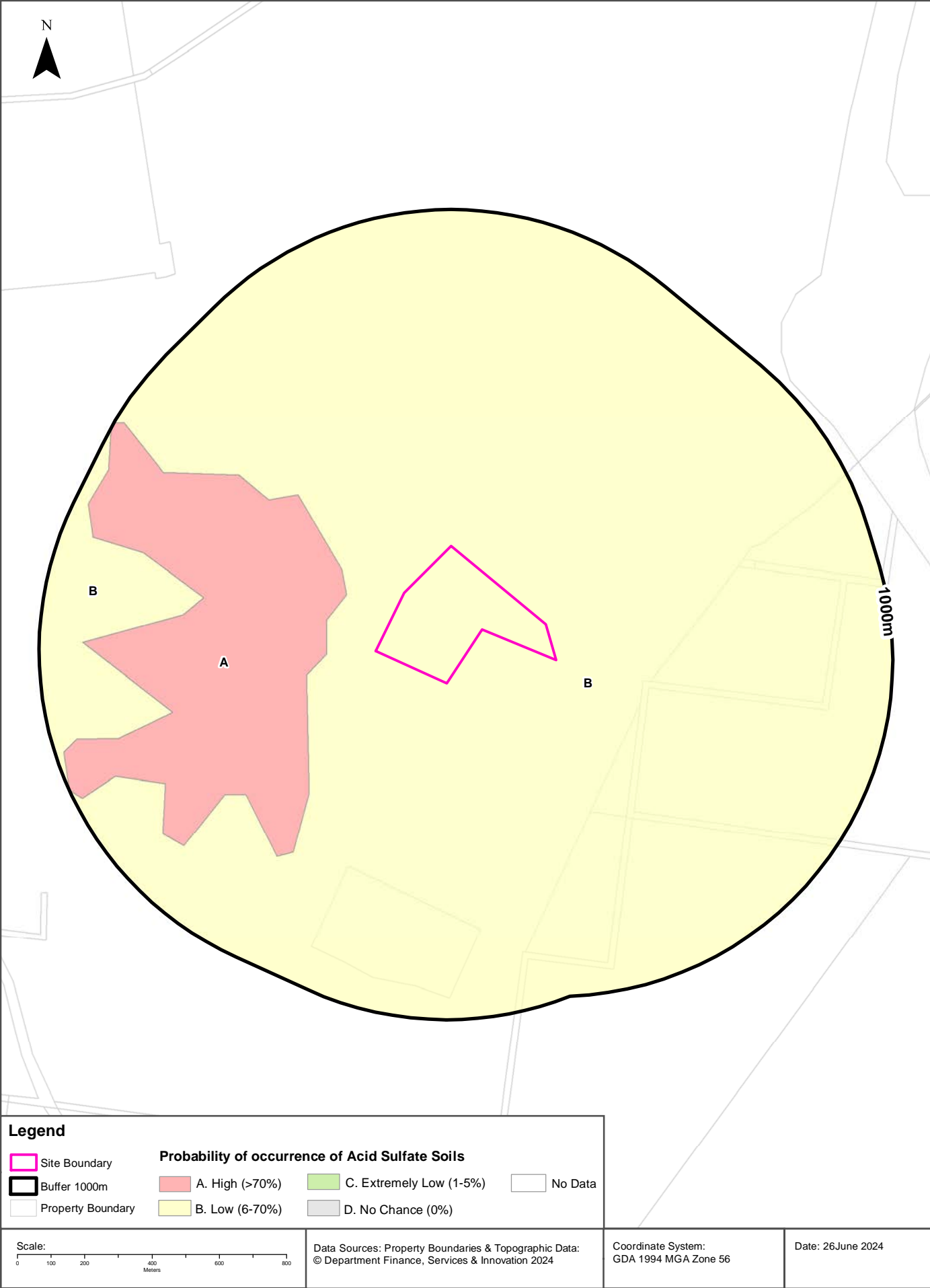
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Acid Sulfate Soils

Site 1 - New England Highway, Muswellbrook, NSW 2333

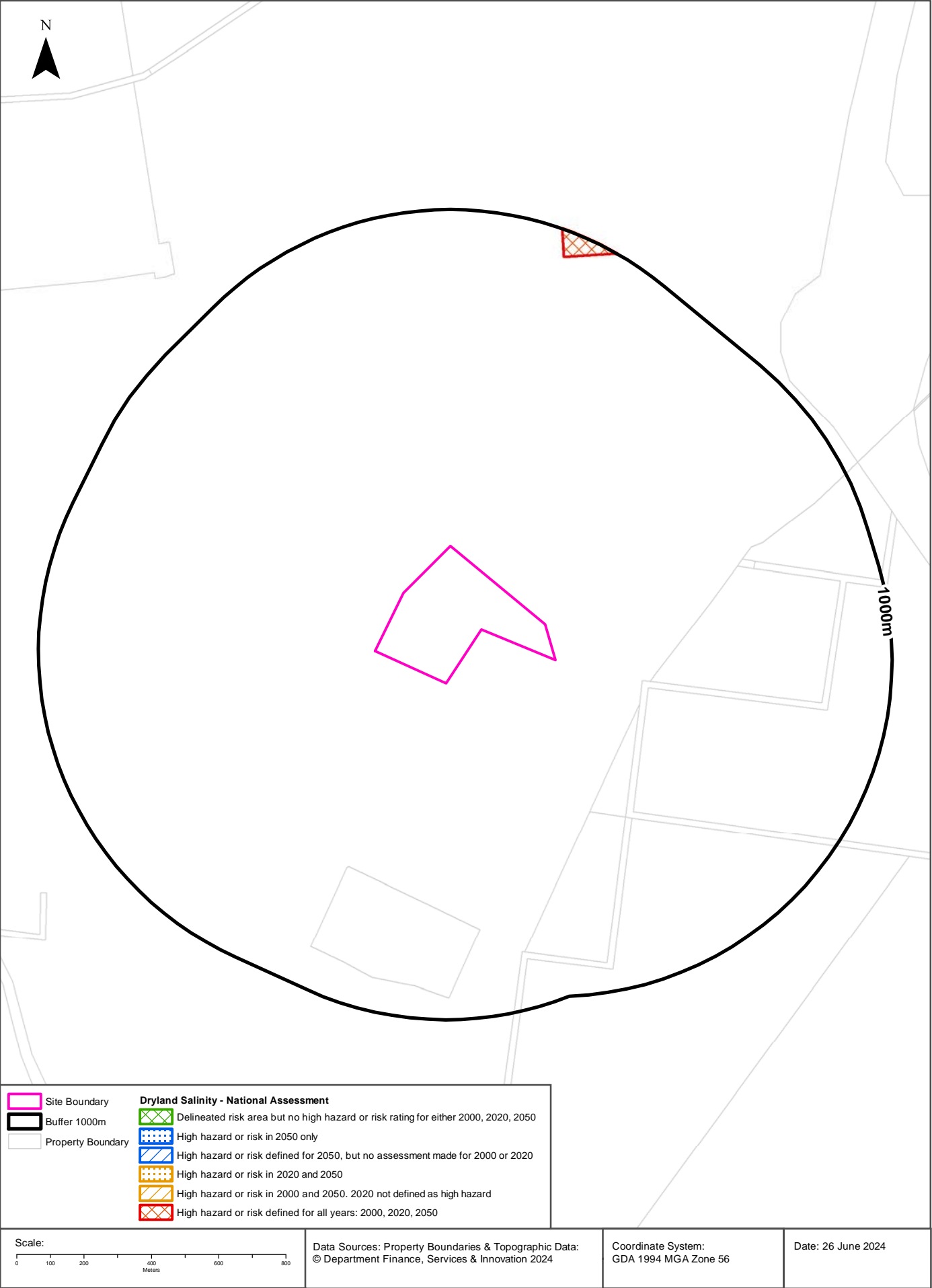
Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	145m	West

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

Site 1 - New England Highway, Muswellbrook, NSW 2333

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	923m	North

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

Site 1 - New England Highway, Muswellbrook, NSW 2333

Mining Subsidence Districts

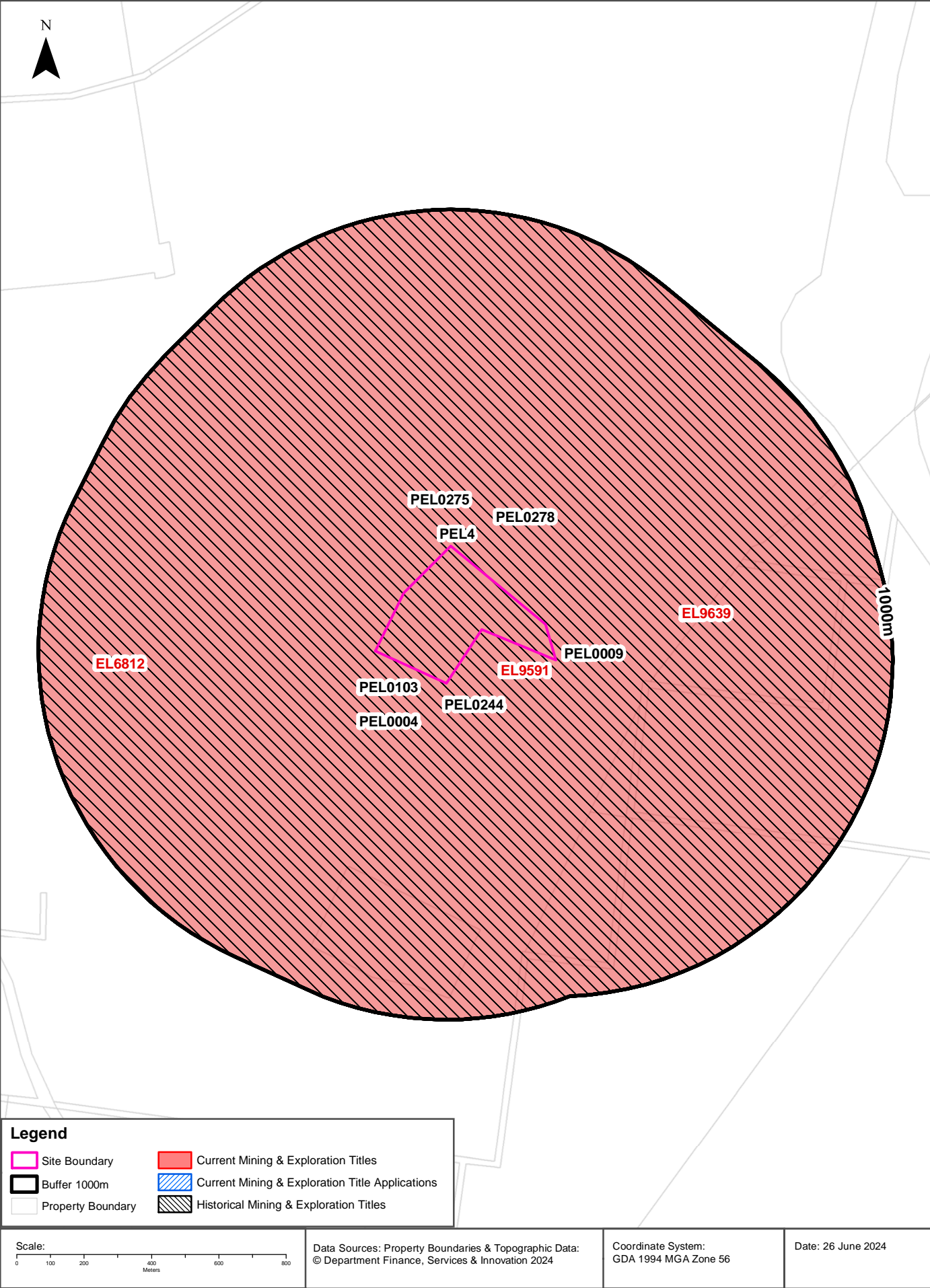
Mining Subsidence Districts within the dataset buffer:

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

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

Site 1 - New England Highway, Muswellbrook, NSW 2333



Mining

Site 1 - New England Highway, Muswellbrook, NSW 2333

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
EL9591	UPPER HUNTER GEOTHERMAL ENERGY PTY LTD	27/07/2023	27/07/2028	20230727	EXPLORING	MINERALS	Group 8	0m	On-site
EL9639	STRATEGIC RARE EARTHS PTY LTD	25/03/2024	25/03/2026	20240325	EXPLORING	MINERALS	Group 1, Group 10	0m	On-site
EL6812	DELLWORTH PTY LIMITED	20/06/2007	20/06/2028	20221018	EXPLORING	COAL	Group 9	602m	West

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

Site 1 - New England Highway, Muswellbrook, NSW 2333

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0278	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PEL0275	SYDNEY OIL COMPANY PTY LTD, MACQUARIE OIL (SYDNEY) PTY LTD, NORTH MICHIGAN EXPLORATION CO., BASE RESOURCES LTD, GOVERNME	19860502	19880402	PETROLEUM	Petroleum	0m	On-site
PEL0244	FRONTIER RESOURCES AUSTRALIA LTD, SION RESOURCES AUSTRALIA LTD, SYDNEY OIL COMPANY, PETROSEARCH PTY LTD	19810110	19841210	PETROLEUM	Petroleum	0m	On-site
PEL0103	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0004	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20150607	PETROLEUM	Petroleum	0m	On-site
PEL0009	AUSTRALIAN OIL AND GAS CORPORATION LTD, UNION OIL DEVELOPMENT CORP., KERN COUNTY LAND CO.			PETROLEUM	Petroleum	0m	On-site
PEL4	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20011129	MINERALS		0m	On-site

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

State Environmental Planning Policy

Site 1 - New England Highway, Muswellbrook, NSW 2333

State Significant Precincts

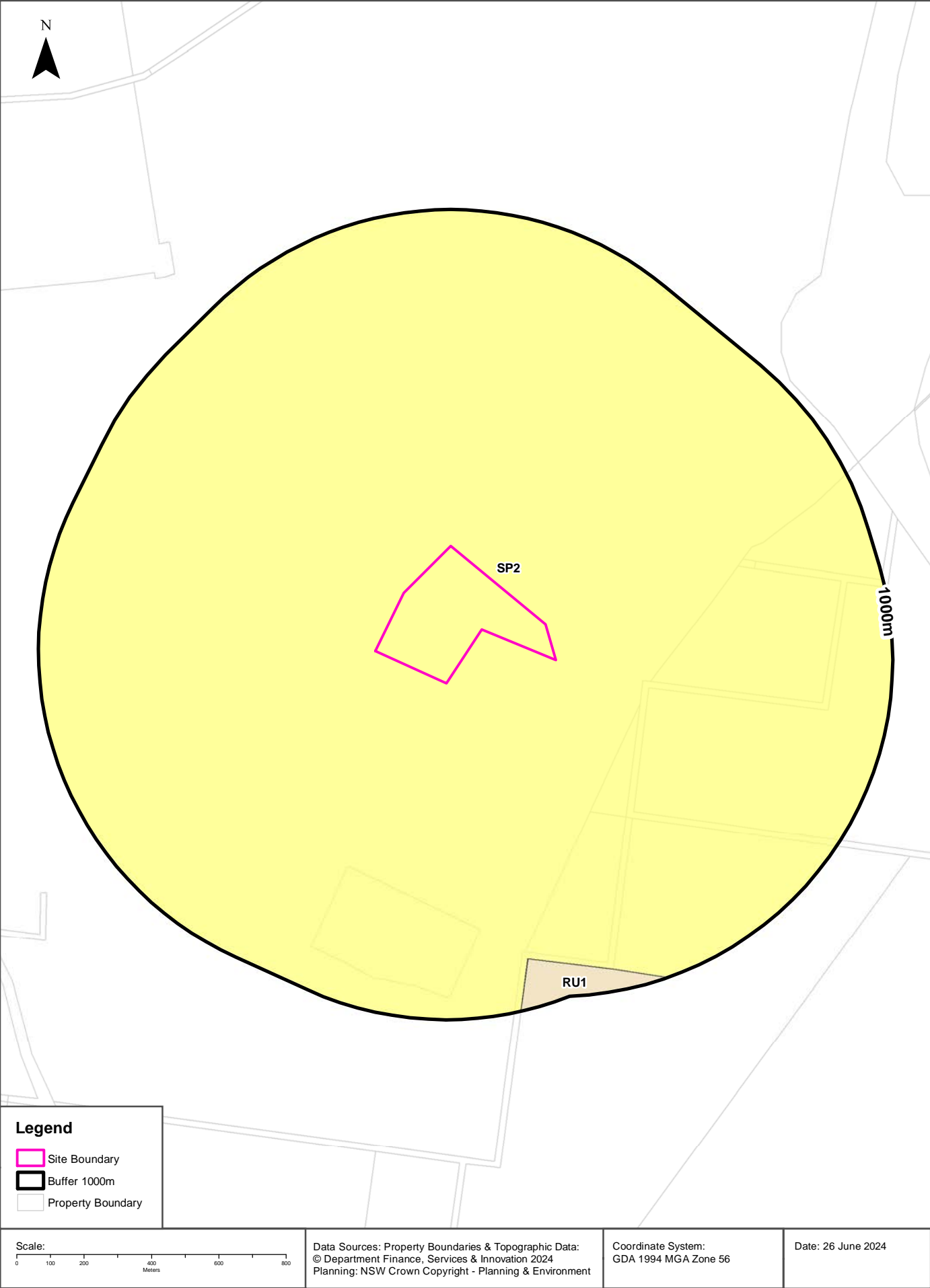
What SEPP State Significant Precincts exist within the dataset buffer?

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

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment
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EPI Planning Zones

Site 1 - New England Highway, Muswellbrook, NSW 2333



Environmental Planning Instrument

Site 1 - New England Highway, Muswellbrook, NSW 2333

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
SP2	Infrastructure	Power Station	Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	0m	On-site
RU1	Primary Production		Singleton Local Environmental Plan 2013	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 3	855m	South

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

Site 1 - New England Highway, Muswellbrook, NSW 2333

Commonwealth Heritage List

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

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

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

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

Note. Please click on Place Id to activate a hyperlink to online website.

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

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia <https://creativecommons.org/licenses/by/3.0/au/deed.en>

State Heritage Register - Curtilages

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

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

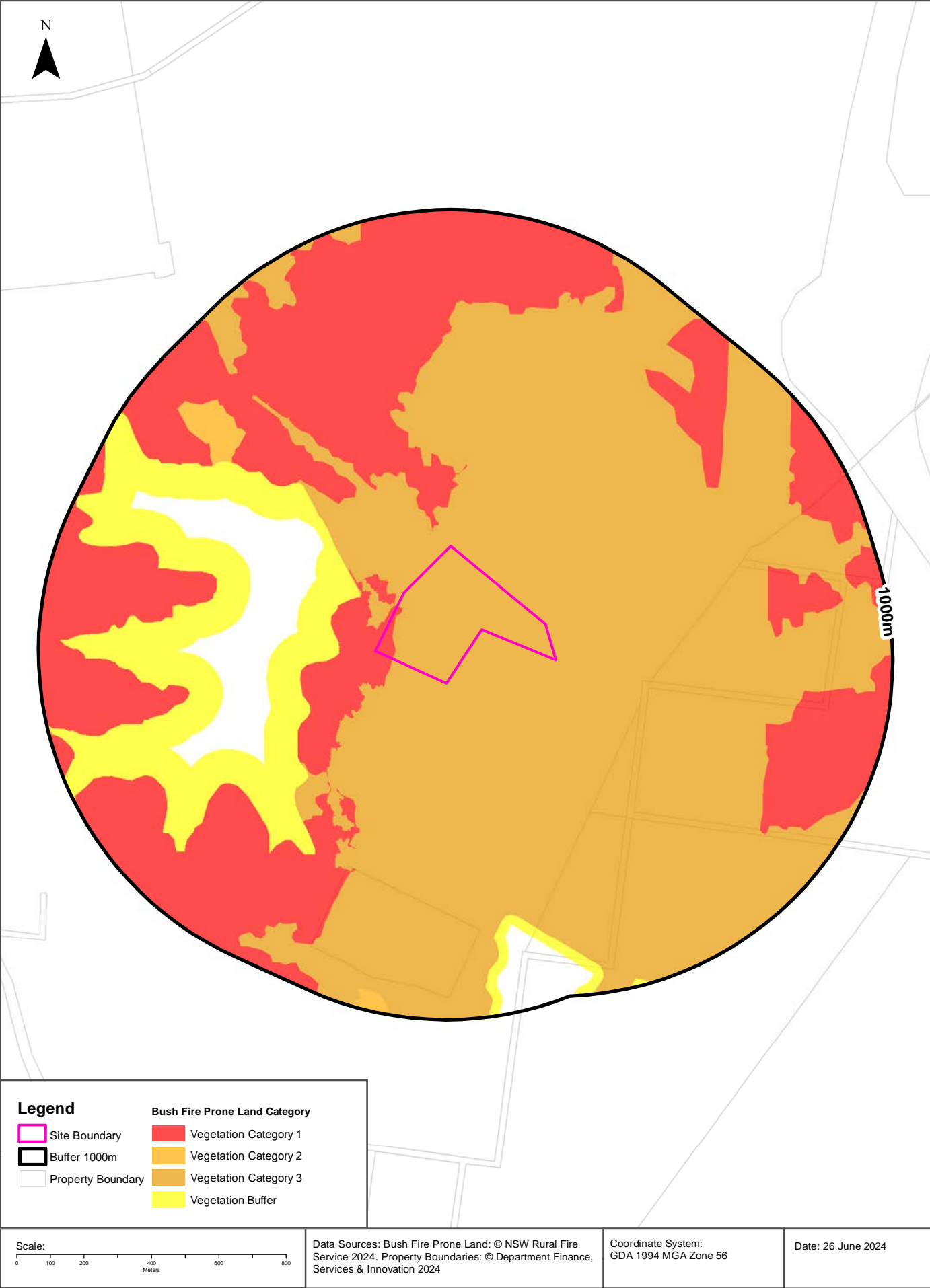
Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
Creative Commons 4.0 © Commonwealth of Australia <https://creativecommons.org/licenses/by/4.0/>

Environmental Planning Instrument - Heritage

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

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

Heritage Data Source: NSW Crown Copyright - Planning & Environment
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Natural Hazards

Site 1 - New England Highway, Muswellbrook, NSW 2333

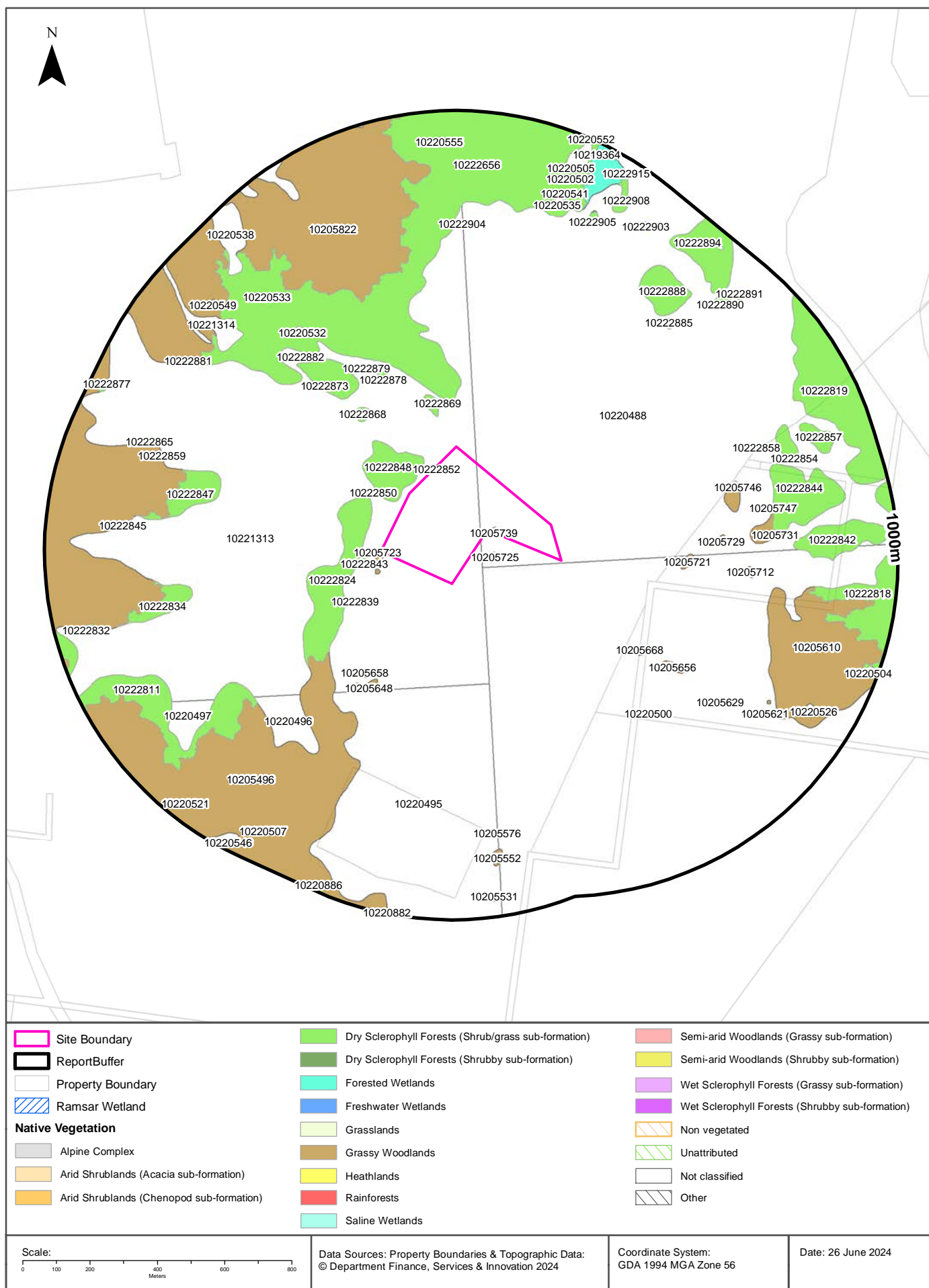
Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 1	0m	On-site
Vegetation Category 3	0m	On-site
Vegetation Buffer	106m	West
Vegetation Category 2	642m	North West

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

Site 1 - New England Highway, Muswellbrook, NSW 2333



Ecological Constraints

Site 1 - New England Highway, Muswellbrook, NSW 2333

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10205739	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	0m	On-site
10220488	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10221313	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10222852	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10205723	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	1m	South West
10220500	Not classified	(Not classified) Not classified	Not classified	8m	South East
10222848	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	15m	North West
10222843	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	47m	South West
10205725	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	48m	South East
10205722	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	52m	South West
10222824	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	57m	South West
10222850	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	94m	West
10222869	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	107m	North
10222656	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	137m	North
10205704	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	156m	South West
10222839	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	157m	South West
10222868	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	249m	North West
10222878	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	292m	North West
10220495	Not classified	(Not classified) Not classified	Not classified	303m	South
10222873	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	330m	North West
10205496	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	336m	West
10205658	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	342m	South West
10222879	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	344m	North West
10205668	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	349m	South East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10205648	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	353m	South West
10205721	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	355m	East
10205652	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	386m	South West
10205656	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	426m	South East
10205729	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	473m	East
10220496	Not classified	(Not classified) Not classified	Not classified	488m	South West
10222847	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	511m	West
10222882	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	511m	North West
10205822	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	514m	North West
10205746	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	515m	East
10220532	Not classified	(Not classified) Not classified	Not classified	542m	North West
10205712	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	551m	East
10205731	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	566m	East
10222811	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	570m	South West
10222834	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	573m	West
10205629	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	625m	South East
10205610	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	627m	East
10222844	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	634m	East
10205747	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	642m	East
10222858	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	651m	East
10222904	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	656m	North
10220497	Not classified	(Not classified) Not classified	Not classified	662m	South West
10222885	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	670m	North East
10221314	Not classified	(Not classified) Not classified	Not classified	683m	North West
10222888	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	685m	North East
10222842	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	691m	East
10220533	Not classified	(Not classified) Not classified	Not classified	702m	North West
10222859	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	708m	West
10222854	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	712m	East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222860	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	733m	West
10222818	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	738m	East
10222861	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	738m	West
10205633	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	741m	South East
10222846	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	741m	West
10205576	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	743m	South
10205621	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	745m	South East
10222862	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	746m	West
10222881	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	752m	North West
10222845	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	755m	West
10222865	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	757m	West
10220535	Not classified	(Not classified) Not classified	Not classified	763m	North
10222905	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	780m	North East
10222864	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	781m	West
10222857	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	792m	East
10222833	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	795m	West
10219364	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	798m	North
10219363	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	802m	North East
10205552	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	804m	South
10220541	Not classified	(Not classified) Not classified	Not classified	804m	North
10220549	Not classified	(Not classified) Not classified	Not classified	805m	North West
10222819	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	811m	East
10222890	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	820m	North East
10220538	Not classified	(Not classified) Not classified	Not classified	822m	North West
10222894	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	839m	North East
10222908	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	843m	North East
10220526	Not classified	(Not classified) Not classified	Not classified	845m	South East
10220502	Not classified	(Not classified) Not classified	Not classified	855m	North

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222903	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	859m	North East
10222832	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	861m	West
10222891	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	871m	North East
10220555	Not classified	(Not classified) Not classified	Not classified	890m	North
10220505	Not classified	(Not classified) Not classified	Not classified	893m	North
10220507	Not classified	(Not classified) Not classified	Not classified	900m	South West
10205531	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	933m	South
10220521	Not classified	(Not classified) Not classified	Not classified	940m	South West
10220546	Not classified	(Not classified) Not classified	Not classified	944m	South West
10222877	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	947m	West
10220551	Not classified	(Not classified) Not classified	Not classified	950m	North East
10222915	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	957m	North East
10220504	Not classified	(Not classified) Not classified	Not classified	960m	East
10220886	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	971m	South
10205655	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	974m	East
10220882	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	989m	South
10219365	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	995m	North East
10220552	Not classified	(Not classified) Not classified	Not classified	996m	North

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

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Ecological Constraints

Site 1 - New England Highway, Muswellbrook, NSW 2333

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints

Site 1 - New England Highway, Muswellbrook, NSW 2333

Collaborative Australian Protected Areas Database - Terrestrial

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

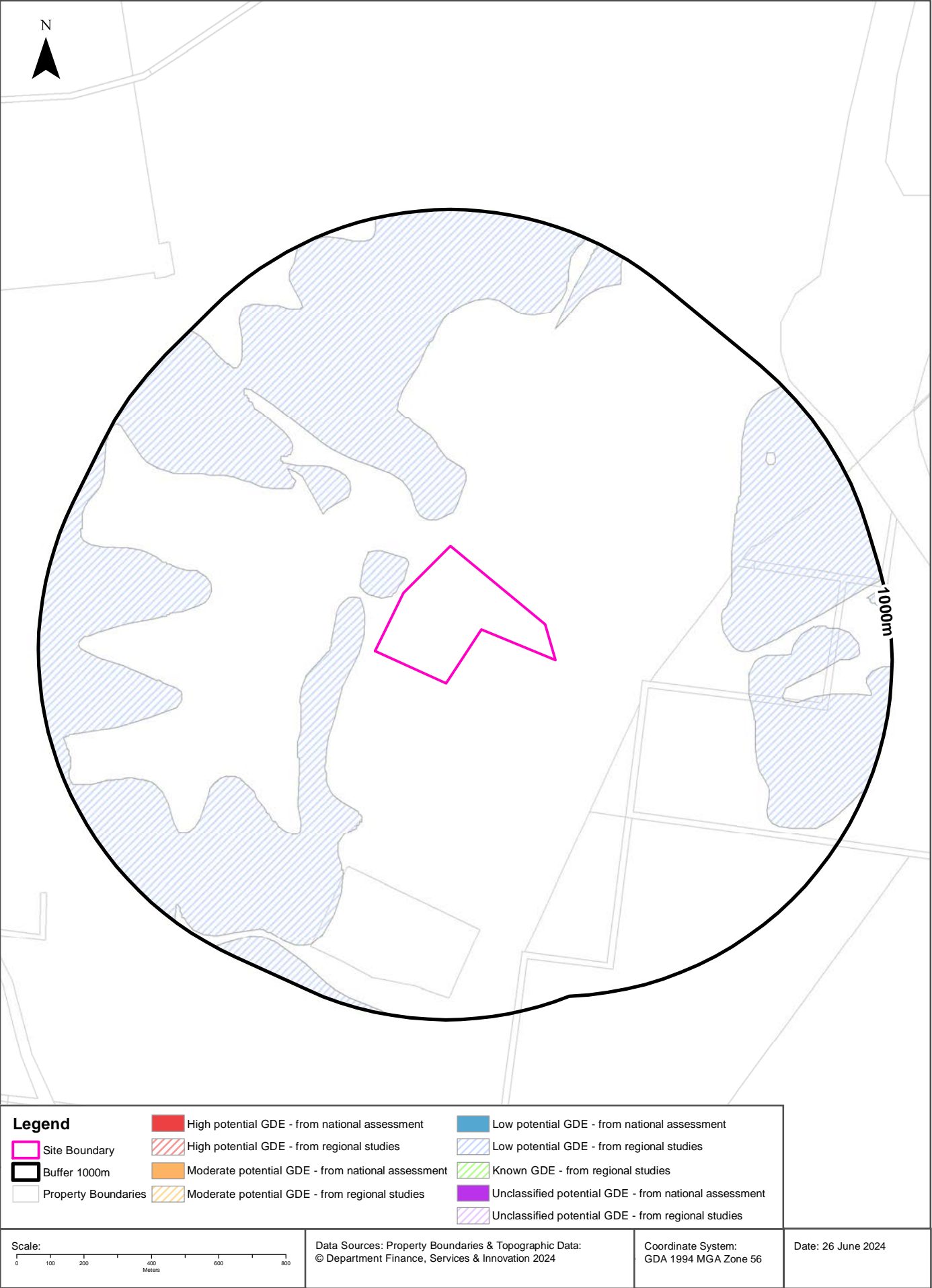
Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

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

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

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022
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Ecological Constraints

Site 1 - New England Highway, Muswellbrook, NSW 2333

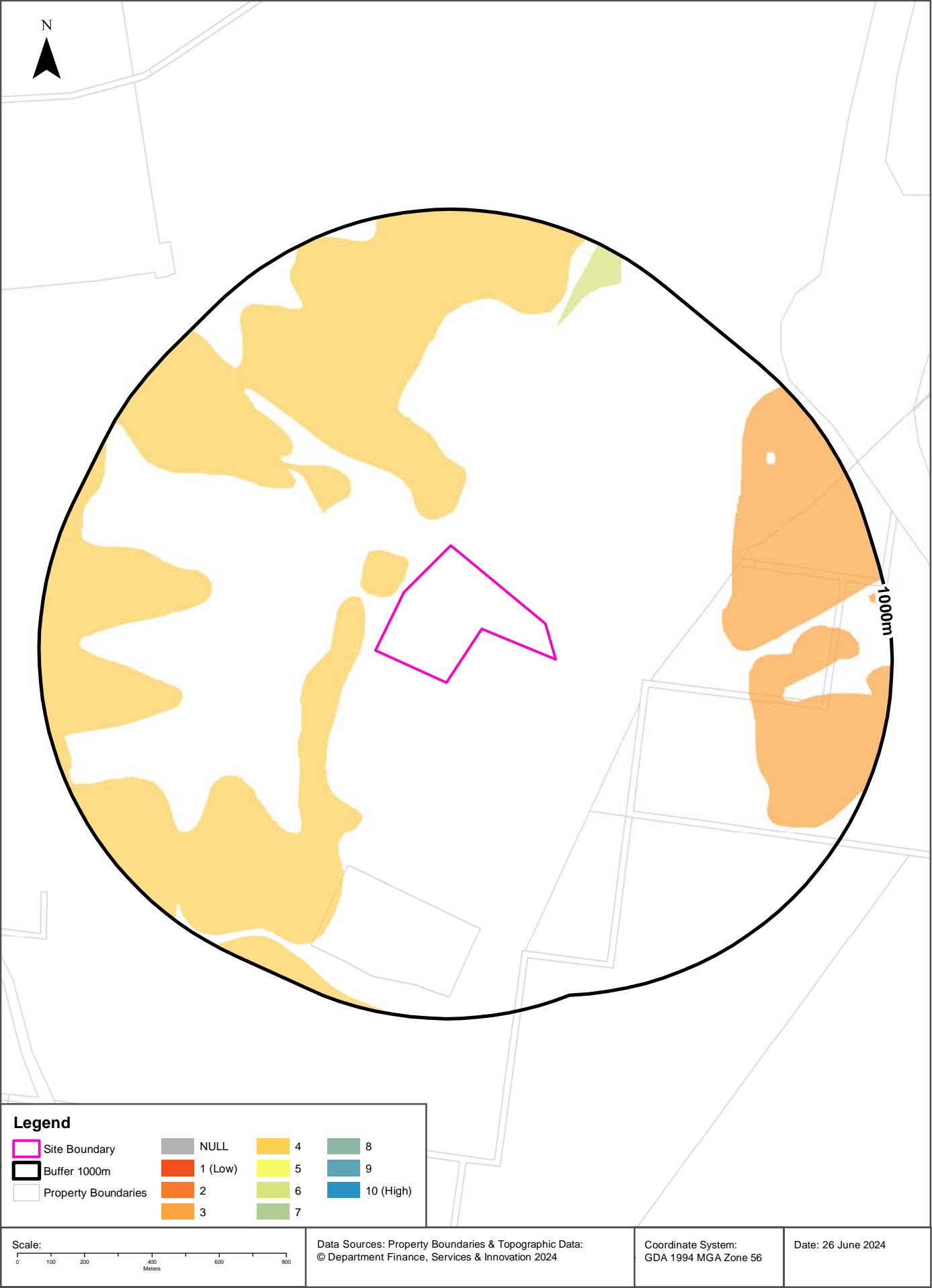
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		22m	North West

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

Site 1 - New England Highway, Muswellbrook, NSW 2333



Ecological Constraints

Site 1 - New England Highway, Muswellbrook, NSW 2333

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial		4 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		22m	North West
Terrestrial		3 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		505m	East
Terrestrial		6 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		716m	North

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

Site 1 - New England Highway, Muswellbrook, NSW 2333

NSW BioNet Species Sightings

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Aphelocephala leucopsis	Southern Whiteface	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
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	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Cecropis daurica	Red-rumped Swallow	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	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	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	South-eastern Hooded Robin	Endangered	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespudelus troungtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aprasia parapulchella	Pink-tailed Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Ctenotus brooksi	Wedgesnout Ctenotus	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Delma impar	Striped Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Acacia pendula	Weeping Myall, Boree	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Endangered Population, Vulnerable	Category 2	Not Listed	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Vulnerable	Category 2	Not Listed	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Galium australe	Tangled Bedstraw	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Category 3	Extinct	
Plantae	Flora	Ozothamnus tessellatus		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prasophyllum petilum	Tarengo Leek Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Thesium australe	Austral Toadflax	Vulnerable	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

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

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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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 - (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
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5. The End User acknowledges that any Third Party Supplier shall be entitled to plead the benefits conferred on it under clause 4, despite not being a party to these terms.
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 - (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,
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 12. These Terms are subject to New South Wales law.

Appendix C

Site 2 Lotsearch Report – LS057867 EP



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 26 Jun 2024 09:43:07

Reference: LS057867 EP

Address: Site 2 - New England Highway, Muswellbrook, NSW 2333

Disclaimer:

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

Dataset Listing

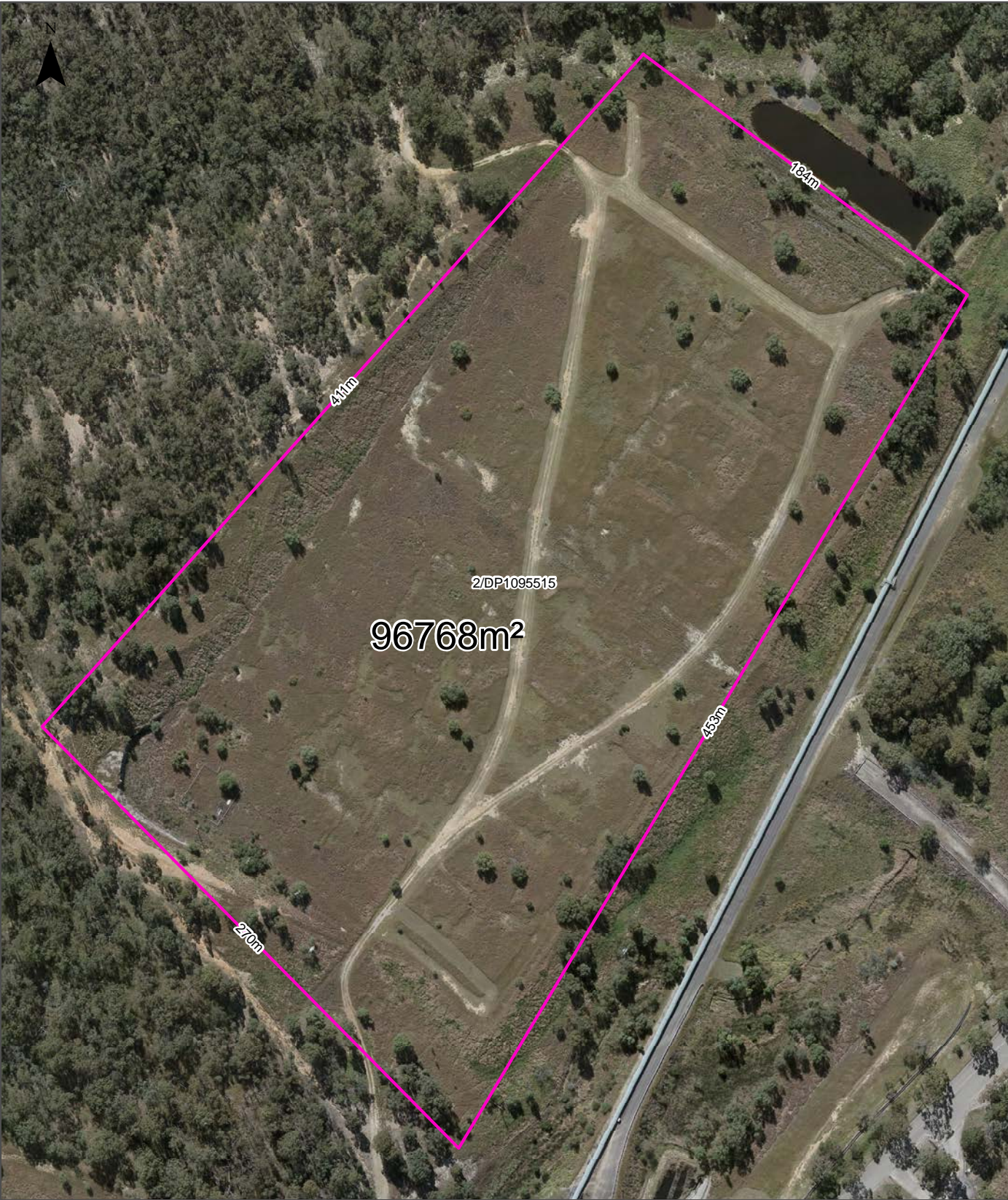
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	17/04/2024	17/04/2024	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	21/05/2024	21/05/2024	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	25/06/2024	12/06/2024	Monthly	1000m	1	1	1
Contaminated Land Records of Notice	Environment Protection Authority NSW	25/06/2024	25/06/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	28/04/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	15/05/2024	15/05/2024	Monthly	1000m	9	9	11
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	20/09/2023	07/09/2020	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority NSW	17/06/2024	14/06/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	17/06/2024	17/06/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	30/04/2024	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	13/11/2023	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	3	3	5
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	4	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	2
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	06/05/2024	06/05/2024	Quarterly	1000m	0	0	2
State Forest	Forestry Corporation of NSW	12/12/2023	11/12/2023	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	23/02/2018	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	13/07/2022	Annually	2000m	0	0	1
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	1	1	3
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	1
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	9
Naturally Occurring Asbestos Potential	NSW Department of Regional NSW	26/04/2024	14/03/2024	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Climate Change, Energy, the Environment and Water	12/12/2023	27/07/2020	Annually	1000m	1	1	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	04/06/2024	03/05/2024	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	2
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	1
Mining Subsidence Districts	NSW Department of Customer Service	03/05/2024	03/05/2024	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	2	2	4
Mining Title Applications	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	7	7	7
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	04/06/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	1	1	2
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	26/04/2024	08/03/2024	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	18/06/2024	12/03/2024	Monthly	1000m	2	2	4
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	30/11/2023	Quarterly	1000m	3	5	143
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	1	1	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	1	2	4
NSW BioNet Species Sightings	NSW Department of Climate Change, Energy, the Environment and Water	29/11/2023	29/11/2023	Weekly	10000m	-	-	-

Site Diagram

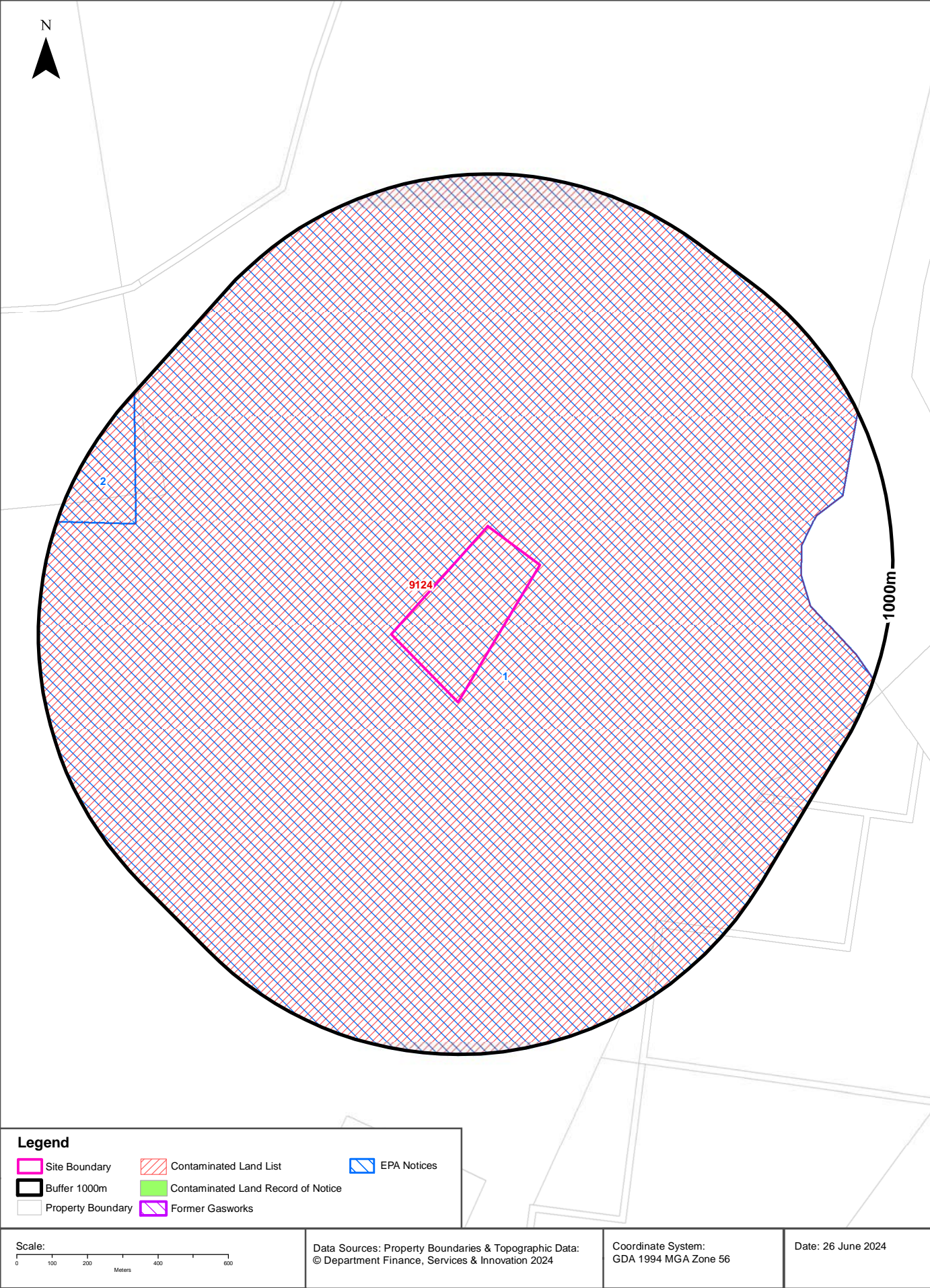
Site 2 - New England Highway, Muswellbrook, NSW 2333



Legend <div><div></div> Site Boundary</div> <div><div></div> Internal Parcel Boundaries</div>	Total Area: 96768m ² Total Perimeter: 1.32km	
	<small>Disclaimers:</small> 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.	
	<small>Scale:</small> 0 25 50 100 Meters	<small>Data Source Aerial Imagery:</small> © Aerometrex Pty Ltd
	<small>Coordinate System:</small> GDA 1994 MGA Zone 56	<small>Date:</small> 24 June 2024

Contaminated Land

Site 2 - New England Highway, Muswellbrook, NSW 2333



Contaminated Land

Site 2 - New England Highway, Muswellbrook, NSW 2333

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
9124	Bayswater Power Station	New England Highway	Muswellbrook	Other Industry	Regulation under CLM Act not required	Current EPA List	Area Match	0m	On-site

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

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

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

Contaminated Land

Site 2 - New England Highway, Muswellbrook, NSW 2333

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

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

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

Contaminated Land

Site 2 - New England Highway, Muswellbrook, NSW 2333

EPA Notices

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

Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
1	317353033	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/06/2021	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	05/04/2021	Area Match	0m	On-site
	3085777210	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	04/08/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	09/04/2015	Area Match	0m	On-site
	3085778145	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	16/12/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	24/11/2015	Area Match	0m	On-site
	3085778136	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	16/12/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	24/11/2015	Area Match	0m	On-site
	3085778796	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	04/03/2016	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	21/12/2015	Area Match	0m	On-site
	3173527143	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/01/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/05/2018	Area Match	0m	On-site
	3173527152	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/01/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/05/2018	Area Match	0m	On-site
	3173528216	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	26/08/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	28/02/2019	Area Match	0m	On-site
	3173531608	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	08/02/2023	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation		Area Match	0m	On-site
2	3085774854	Penalty Notice	MAXWELL VENTURES (MANAGEMENT) PTY LTD	THOMAS MITCHELL DRIVE, MUSWELLBROOK, NSW 2333	Issued	19/08/2014	Protection of the Environment Operations Act 1997 - 64(1)	Contravene any condition of licence - not noise - corporation	10/01/2014	Premise Match	789m	West
	3173527336	Penalty Notice	MAXWELL VENTURES (MANAGEMENT) PTY LTD	THOMAS MITCHELL DRIVE, MUSWELLBROOK, NSW 2333	Issued	28/02/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/10/2018	Premise Match	789m	West

NSW EPA Notice Data Source: Environment Protection Authority

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Waste Management & Liquid Fuel Facilities

Site 2 - New England Highway, Muswellbrook, NSW 2333

National Waste Management Facilities Database

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

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
N/A	No records in buffer								

Source: Waste Management Facilities Database
Creative Commons 4.0 © Commonwealth of Australia (Geoscience Australia) 2022

National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

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

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 4.0 © Commonwealth of Australia

PFAS Investigation & Management Programs

Site 2 - New England Highway, Muswellbrook, NSW 2333

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites and Unexploded Ordnance

Site 2 - New England Highway, Muswellbrook, NSW 2333

Defence Controlled Areas (DCA)

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

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

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

Defence 3 Year Regional Contamination Investigation Program (RCIP)

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

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

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

National Unexploded Ordnance (UXO)

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

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

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

EPA Other Sites with Contamination Issues

Site 2 - New England Highway, Muswellbrook, NSW 2333

EPA Other Sites with Contamination Issues

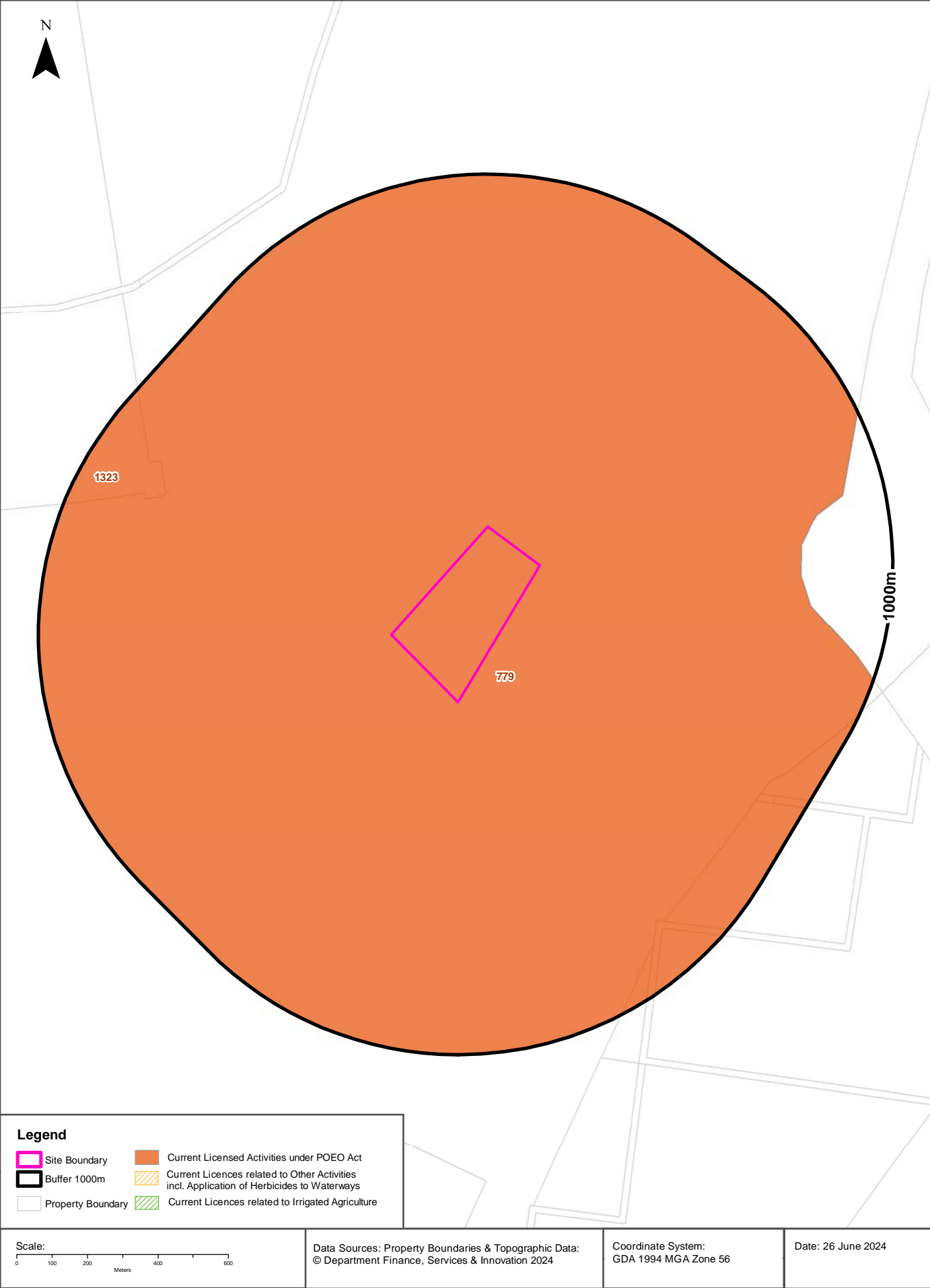
This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

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



EPA Activities

Site 2 - New England Highway, Muswellbrook, NSW 2333

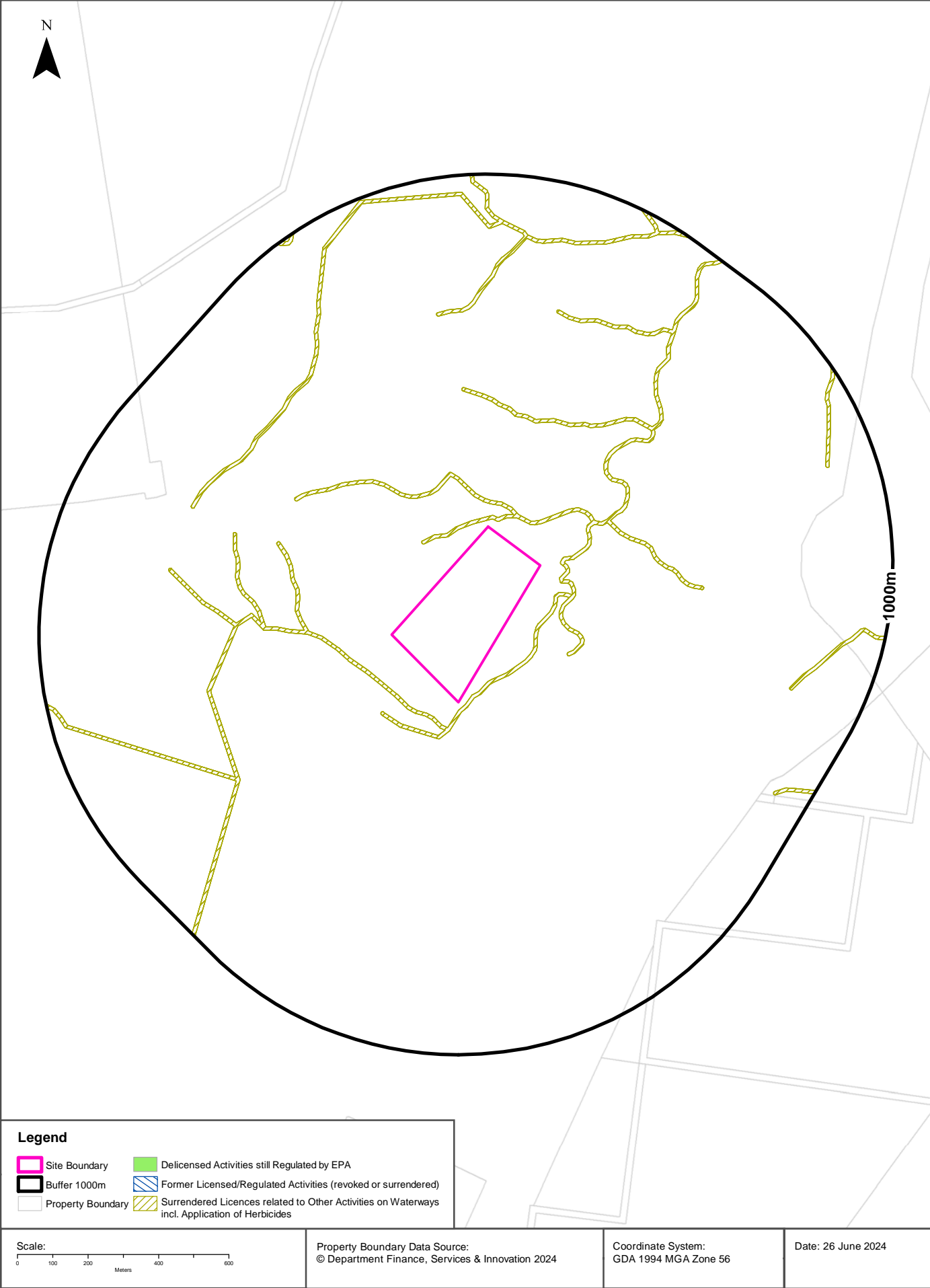
Licensed Activities under the POEO Act 1997

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
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Generation of electrical power from coal	Area Match	0m	On-site
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Coal works	Area Match	0m	On-site
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Chemical storage waste generation	Area Match	0m	On-site
1323	MAXWELL VENTURES (MANAGEMENT) PTY LTD	DRAYTON COAL MINE	THOMAS MITCHELL DRIVE	MUSWELLBROOK	Coal works	Premise Match	789m	West
1323	MAXWELL VENTURES (MANAGEMENT) PTY LTD	DRAYTON COAL MINE	THOMAS MITCHELL DRIVE	MUSWELLBROOK	Mining for coal	Area Match	789m	West

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority



EPA Activities

Site 2 - New England Highway, Muswellbrook, NSW 2333

Delicensed Activities still regulated by the EPA

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

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

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

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	17m	North
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	17m	North
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	17m	North
11677	UPPER HUNTER COUNTY COUNCIL	WATERS WITHIN UPPER HUNTER COUNTY COUNCIL, NEW ENGLAND HIGHWAY, MUSWELLBROOK	Surrendered	21/06/2002	Miscellaneous licensed discharge to waters (at any time)	Network of Features	17m	North

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

Historical Business Directories

Site 2 - New England Highway, Muswellbrook, NSW 2333

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

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

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Business Directory Records 1950-1991

Road or Area Matches

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

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

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Historical Business Directories

Site 2 - New England Highway, Muswellbrook, NSW 2333

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

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

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

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

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

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

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

Aerial Imagery 2023

Site 2 - New England Highway, Muswellbrook, NSW 2333



Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 June 2024
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Aerial Imagery 2021

Site 2 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 2017

Site 2 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 2008

Site 2 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1994

Site 2 - New England Highway, Muswellbrook, NSW 2333



Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © 2024 Geoscience Australia	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 June, 2024
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Aerial Imagery 1980

Site 2 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1970

Site 2 - New England Highway, Muswellbrook, NSW 2333



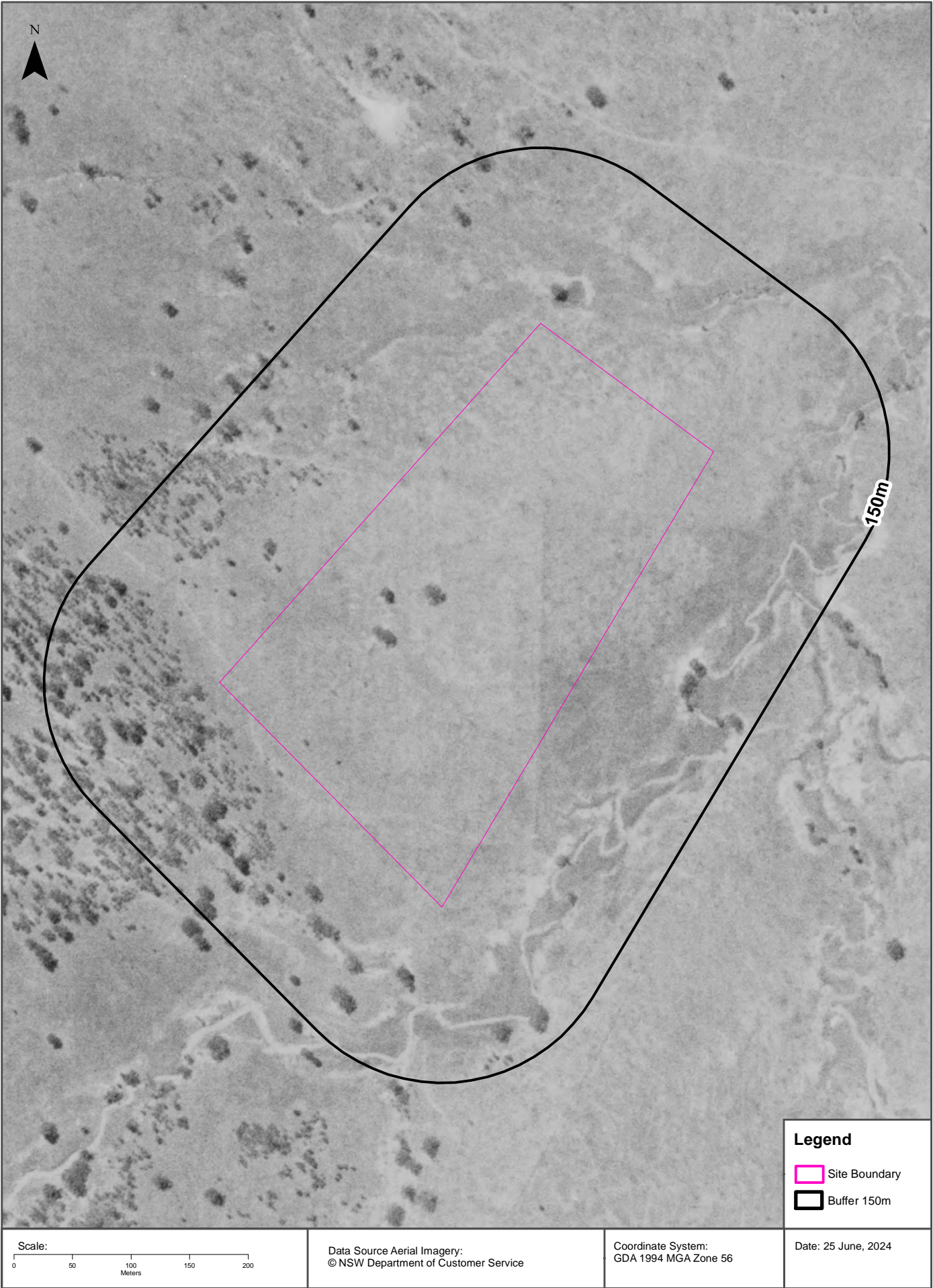
Aerial Imagery 1967

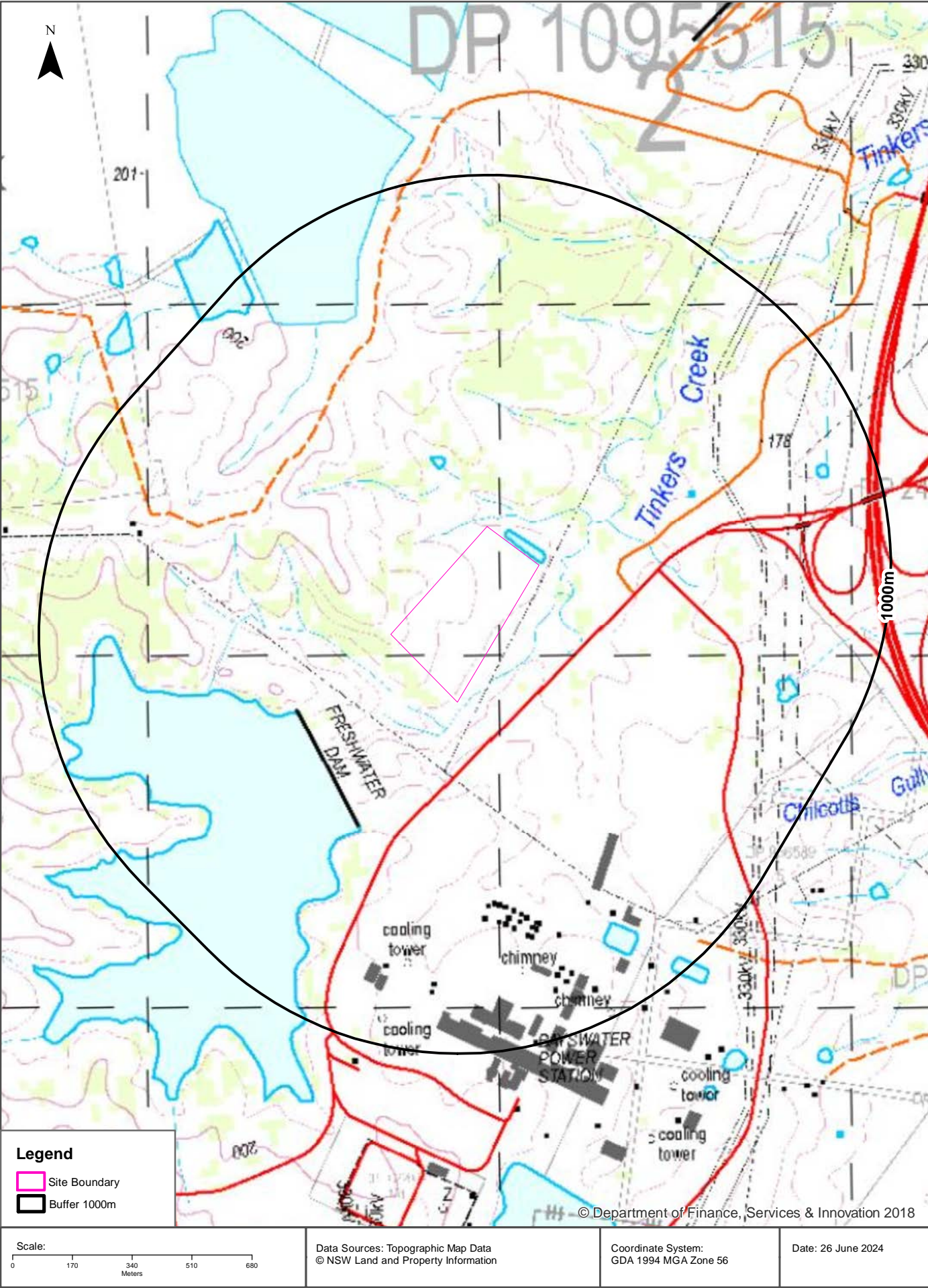
Site 2 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1958

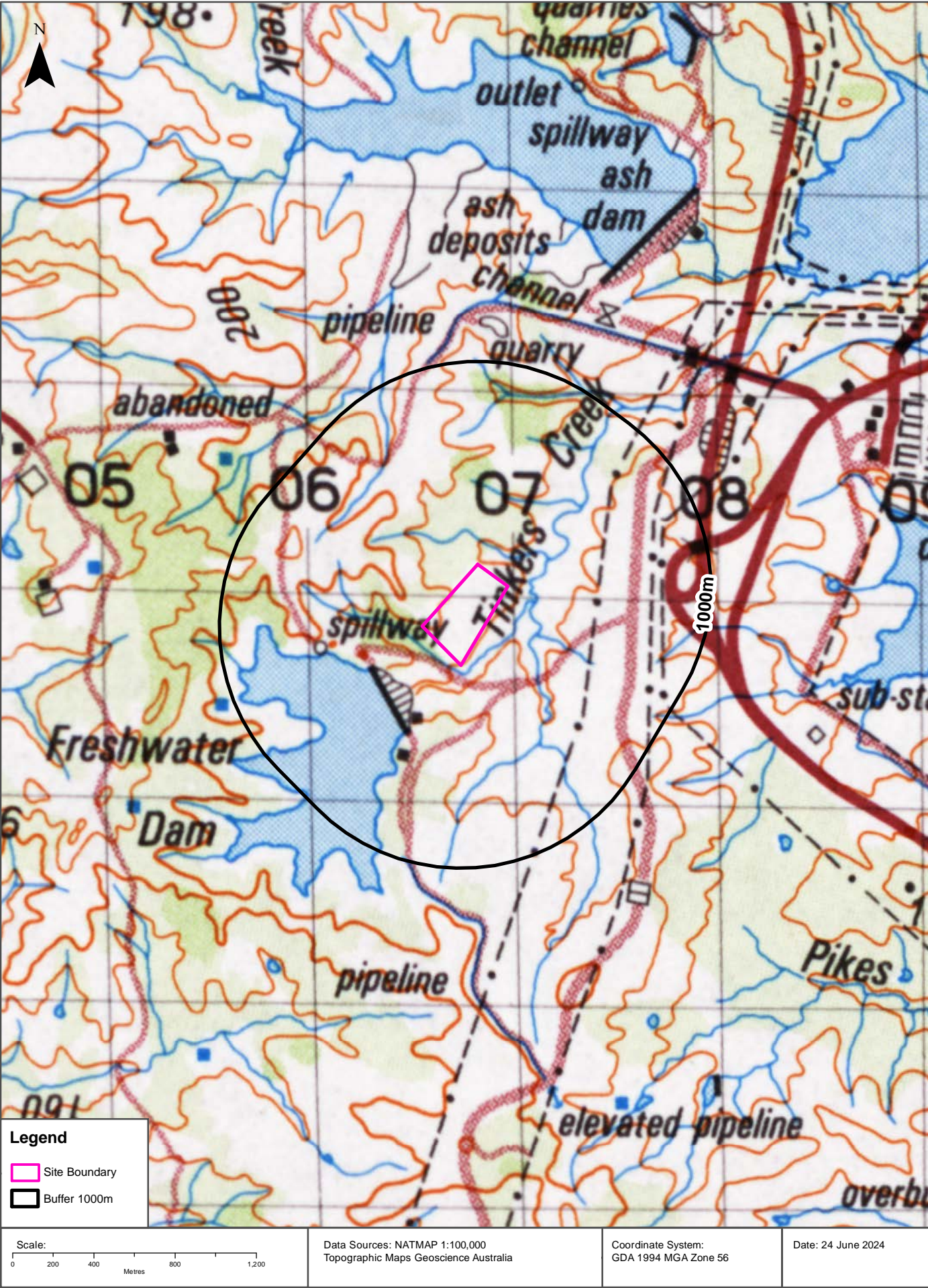
Site 2 - New England Highway, Muswellbrook, NSW 2333





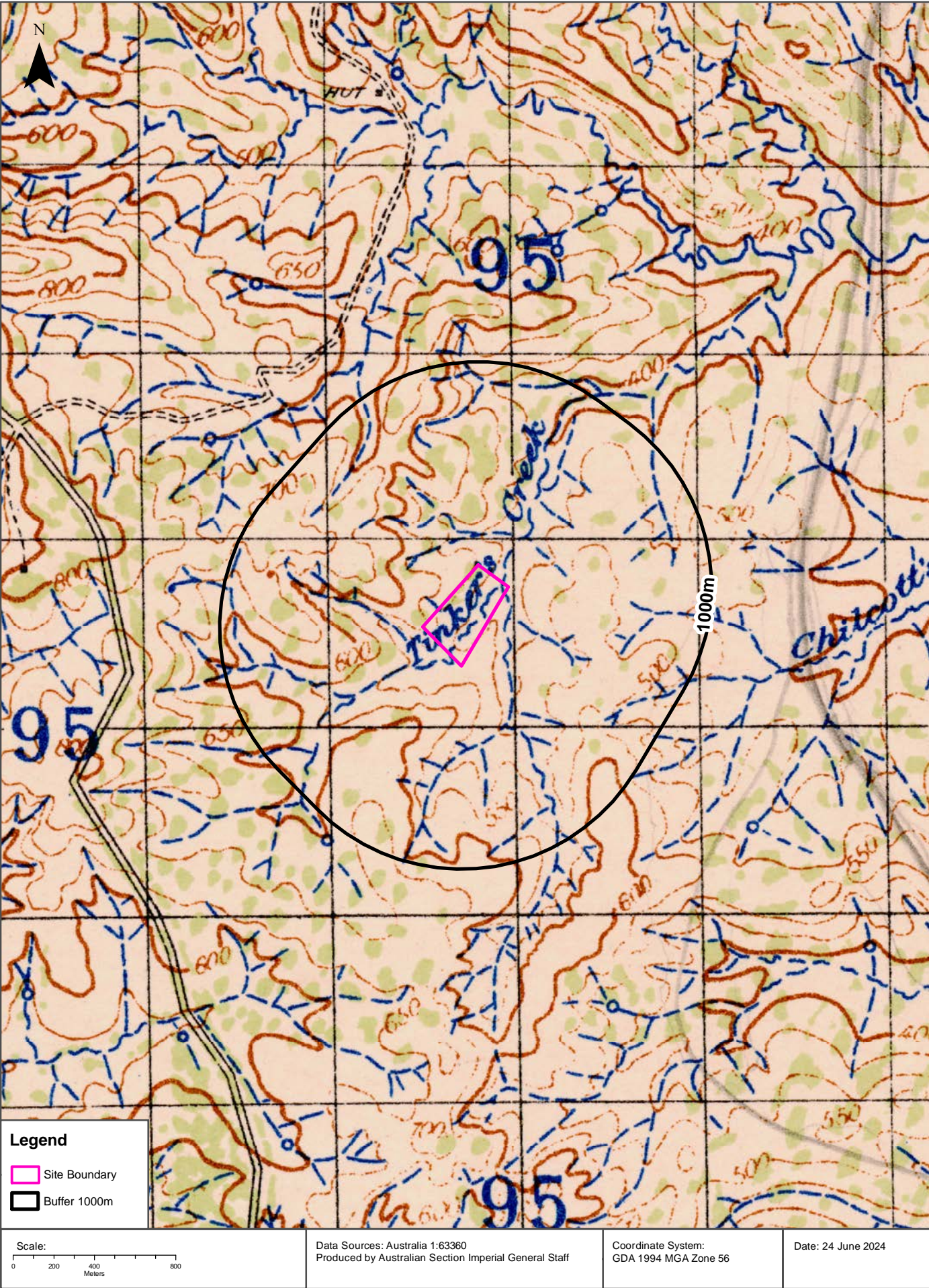
Historical Map 1978

Site 2 - New England Highway, Muswellbrook, NSW 2333



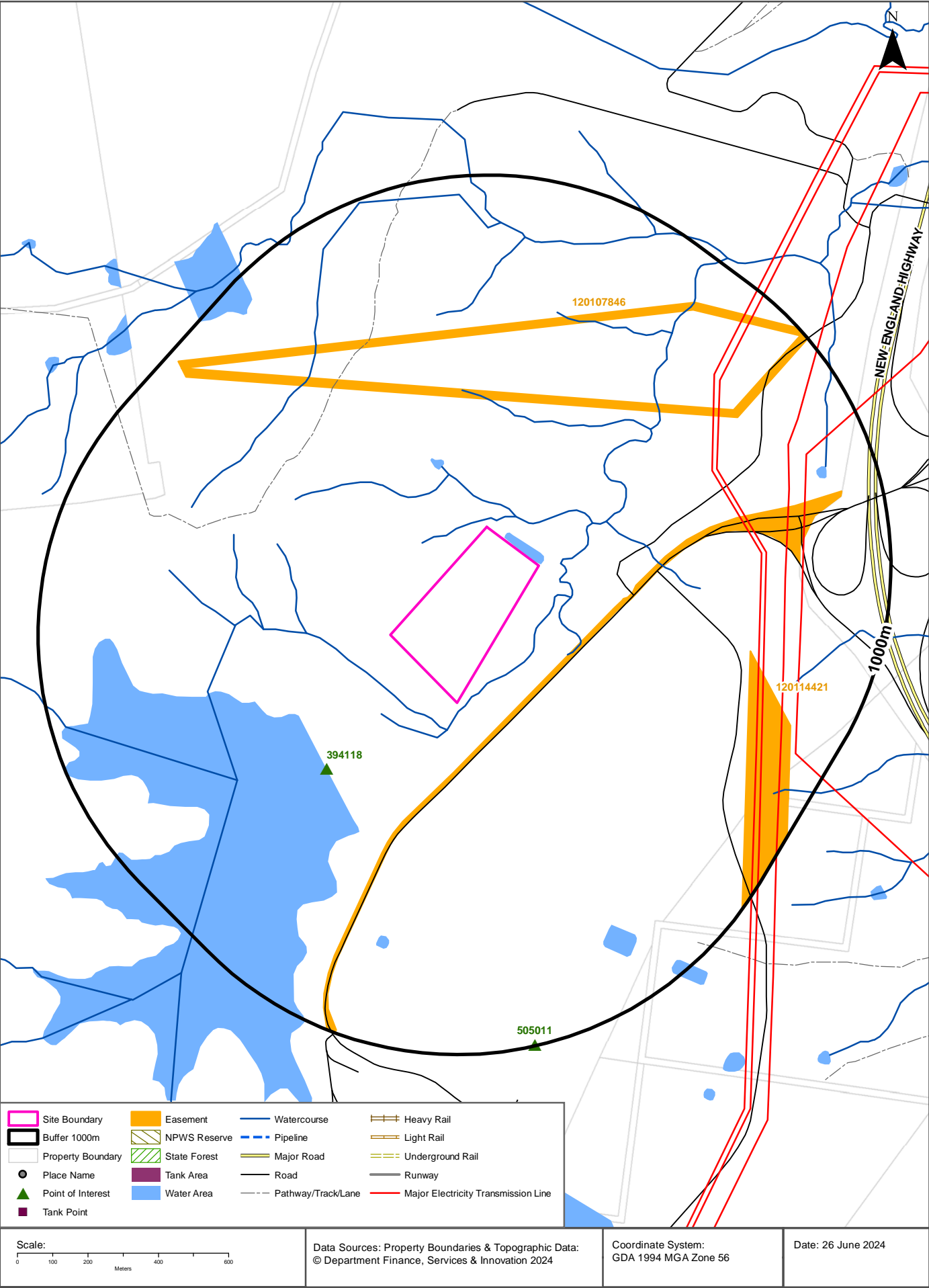
Historical Map c.1941

Site 2 - New England Highway, Muswellbrook, NSW 2333



Topographic Features

Site 2 - New England Highway, Muswellbrook, NSW 2333



Topographic Features

Site 2 - New England Highway, Muswellbrook, NSW 2333

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
394118	Dam Wall	FRESHWATER DAM	396m	South West
505011	Power Station - Fuel Driven	BAYSWATER POWER STATION	996m	South

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

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Topographic Features

Site 2 - New England Highway, Muswellbrook, NSW 2333

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

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

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Major Easements

What Major Easements exist within the dataset buffer?

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120114421	Primary	Undefined		131m	East
120107846	Primary	Undefined		363m	North

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

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Topographic Features

Site 2 - New England Highway, Muswellbrook, NSW 2333

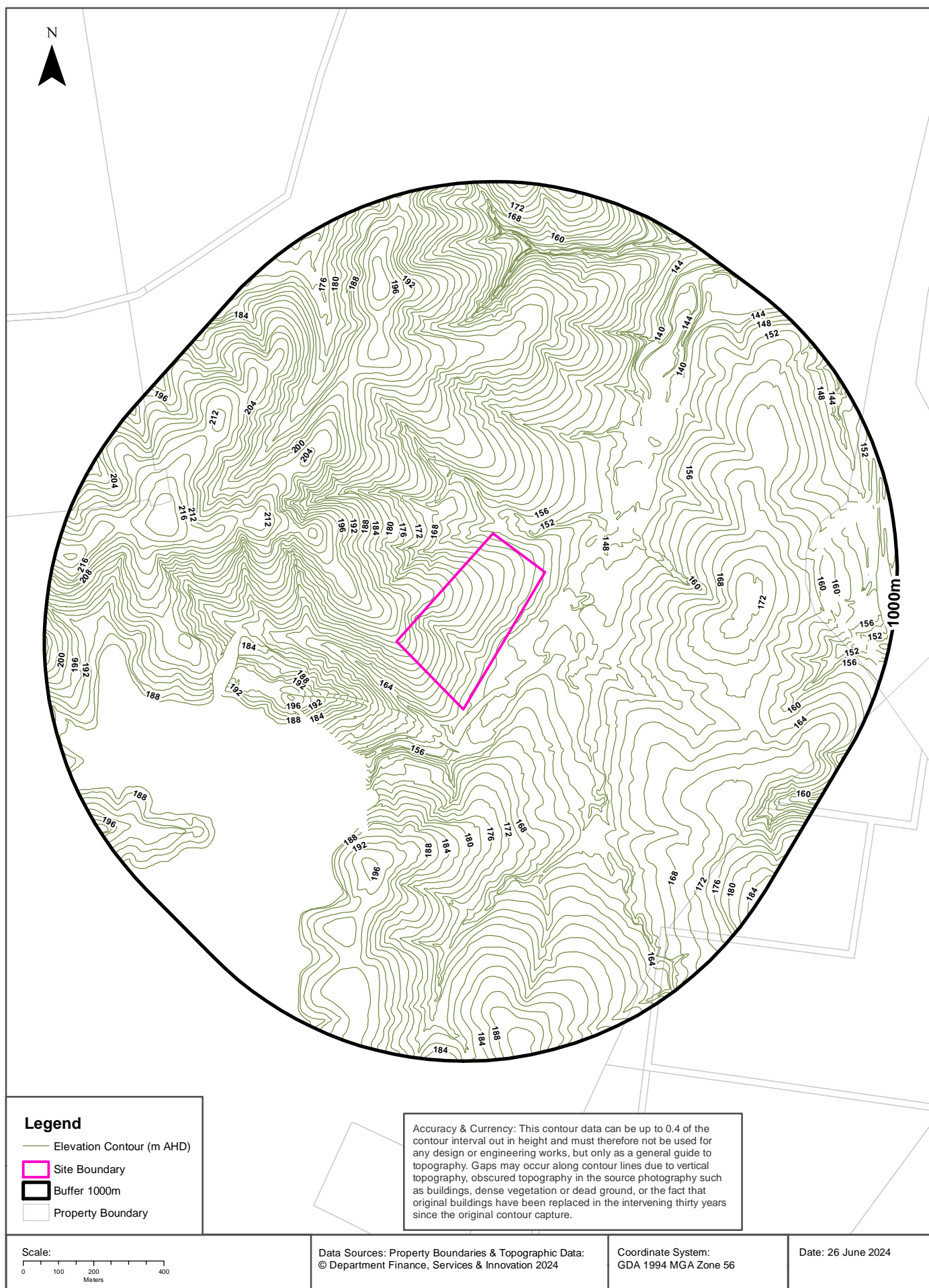
State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
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Site 2 - New England Highway, Muswellbrook, NSW 2333



Hydrogeology & Groundwater

Site 2 - New England Highway, Muswellbrook, NSW 2333

Hydrogeology

Description of aquifers within the dataset buffer:

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

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

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

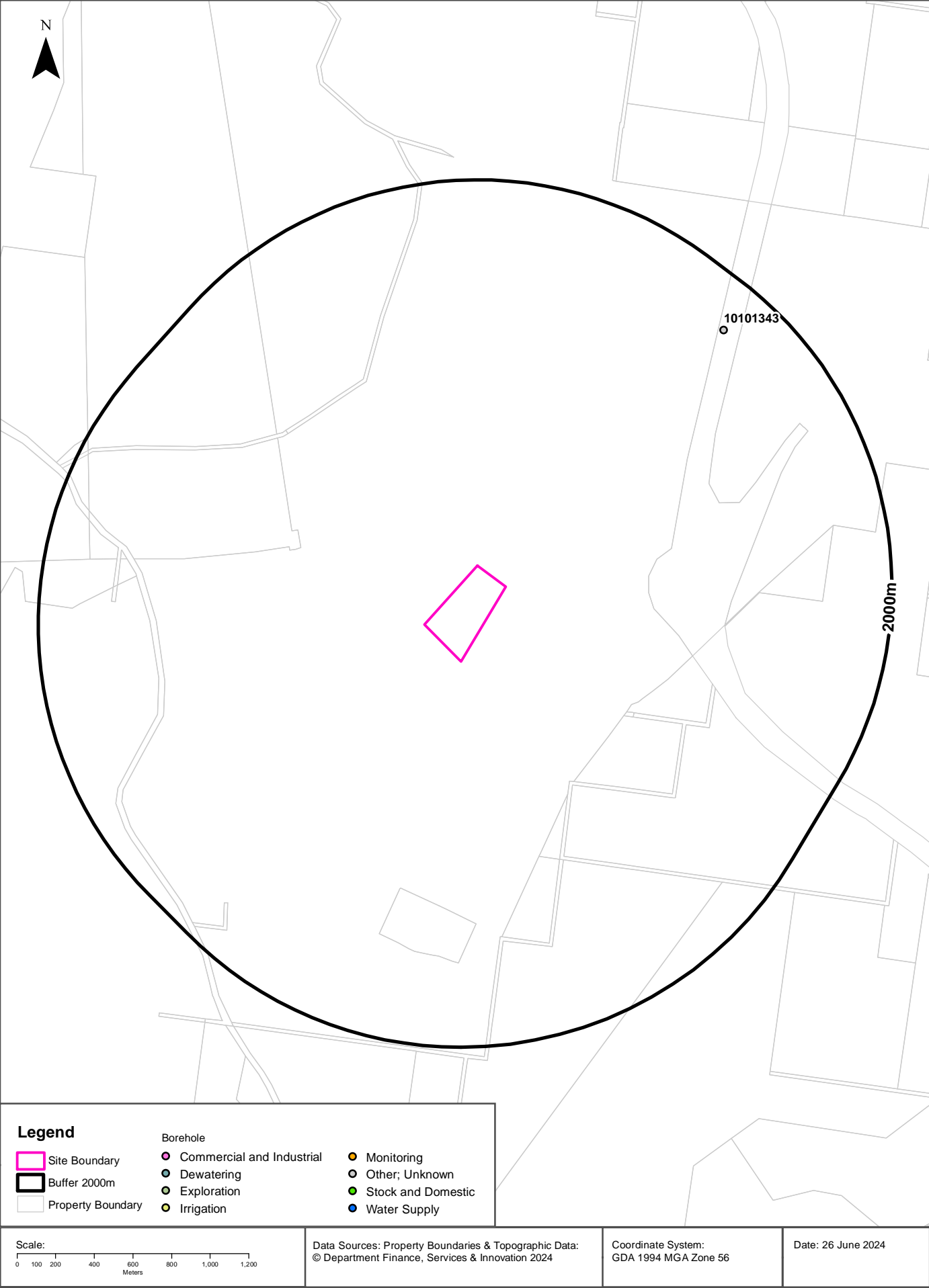
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

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

Groundwater Boreholes

Site 2 - New England Highway, Muswellbrook, NSW 2333



Hydrogeology & Groundwater

Site 2 - New England Highway, Muswellbrook, NSW 2333

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10101343	GW024022	Unknown	Removed	01/02/1966	3.00		AHD	Brackish			1746m	North East

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

Hydrogeology & Groundwater

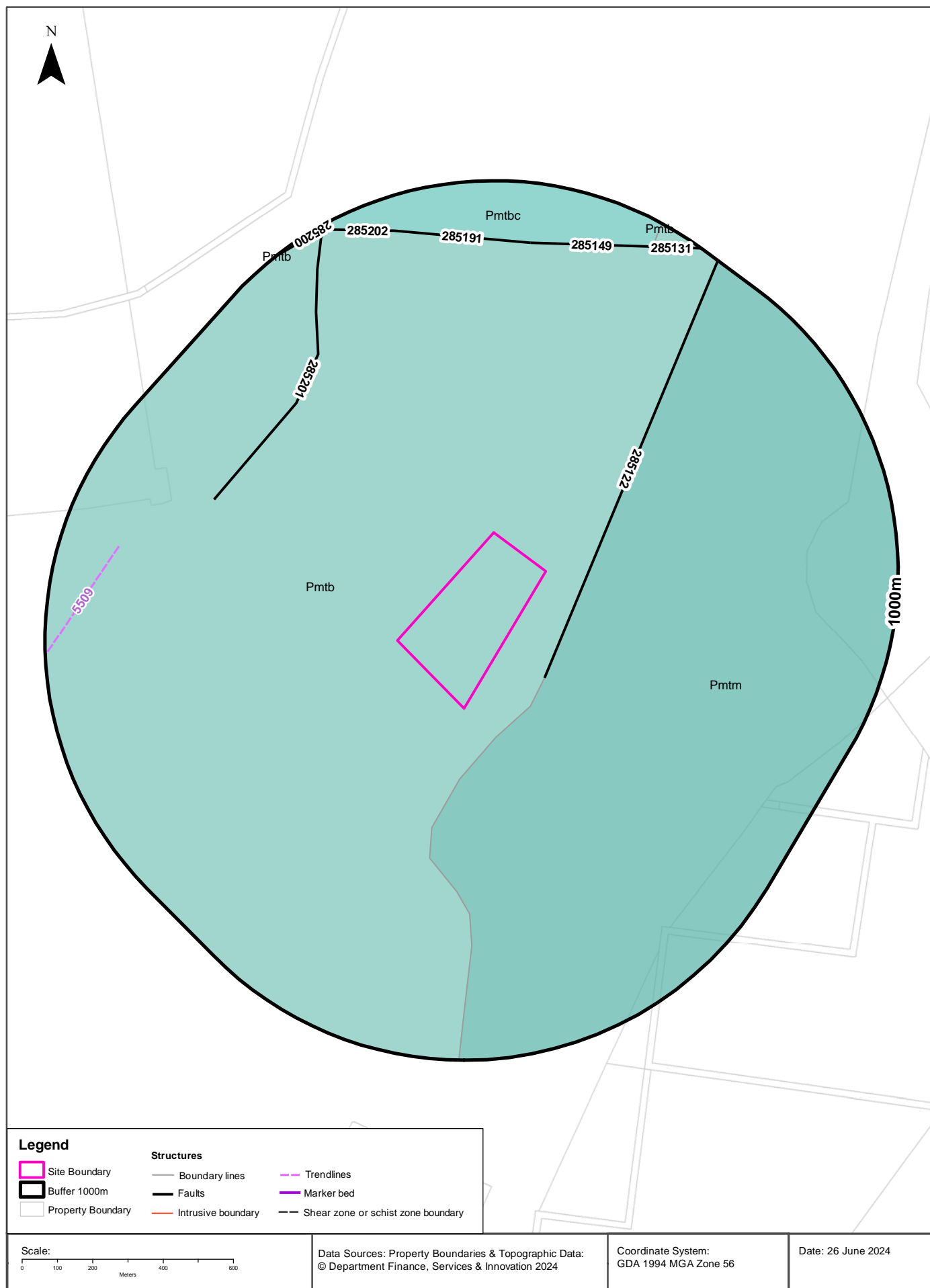
Site 2 - New England Highway, Muswellbrook, NSW 2333

Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10101343	0.00m-3.05m Clay Peaty Silt Water Supply	1746m	North East

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



Geology

Site 2 - New England Highway, Muswellbrook, NSW 2333

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pmtb	Branxton Formation	Conglomerate, sandstone, siltstone.	\Maitland Group\ \Branxton Formation\	Roadian (base) to Roadian (top)	Conglomerate	0m
Pmtm	Mulbring Siltstone	Medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils.	\Maitland Group\ \Mulbring Siltstone\	Guadalupian (base) to Guadalupian (top)	Siltstone	112m
Pmtbc	Cessnock Sandstone Member	Hard, massive- to planar-bedded quartz-lithic sandstone, sporadically conglomeratic, marine fossils in sandy phases.	\Maitland Group\ \Branxton Formation\ \Cessnock Sandstone Member\	Permian (base) to Permian (top)	Sandstone	830m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
5509	Dyke, accurate	Jerrys Plains 1:25,000 Geological Sheet	835m

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
285122	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	112m
285201	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	656m
285149	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	830m
285191	Faulted boundary	Fault showing relative displacement: up, down	Jerrys Plains 1:25,000 Geological Sheet	830m
285202	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	904m
285131	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	929m
285200	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	990m
285298	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	990m
285173	Faulted boundary	Fault, inferred	Jerrys Plains 1:25,000 Geological Sheet	991m

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

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Naturally Occurring Asbestos Potential

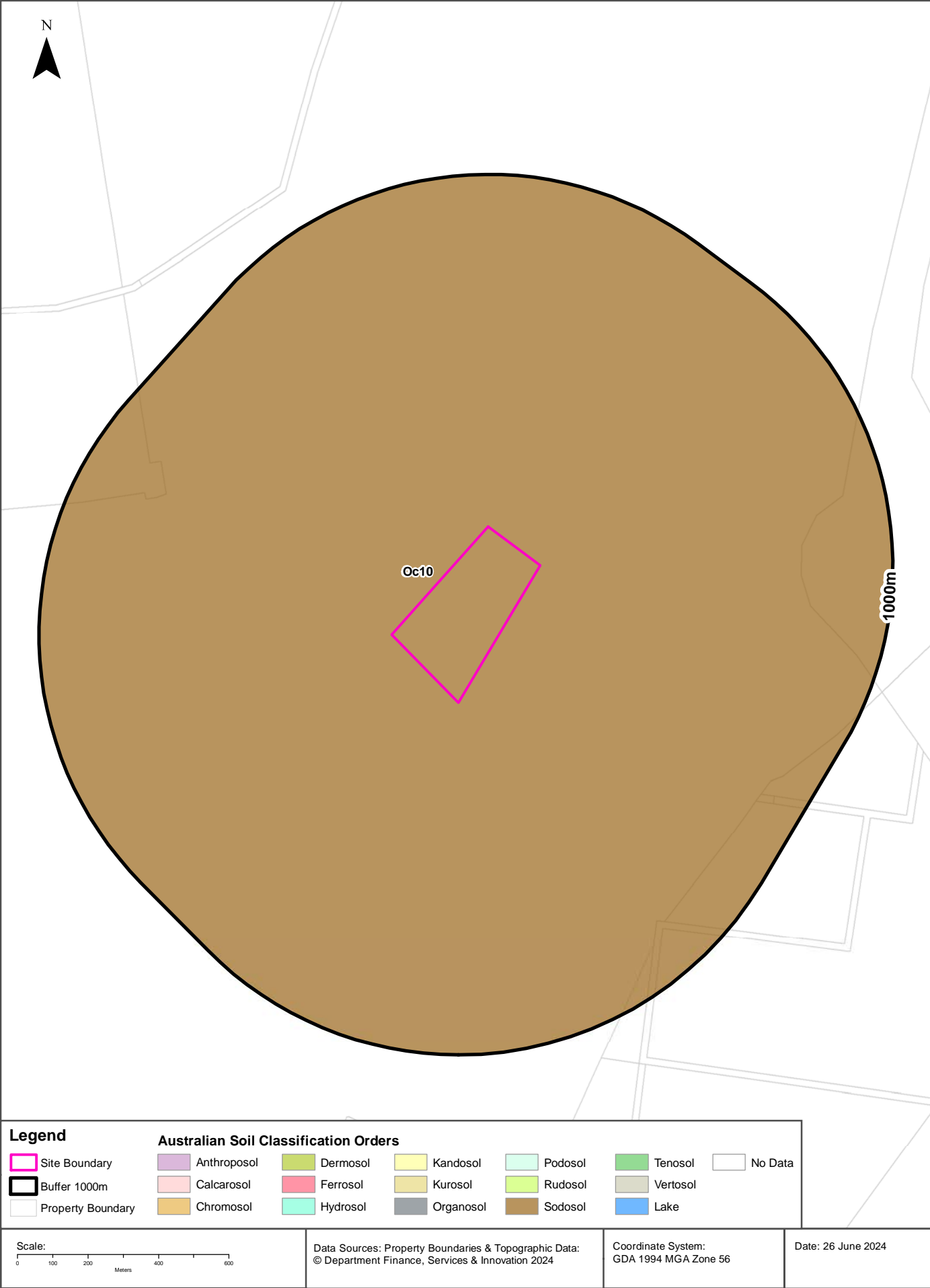
Site 2 - New England Highway, Muswellbrook, NSW 2333

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



Soils

Site 2 - New England Highway, Muswellbrook, NSW 2333

Atlas of Australian Soils

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

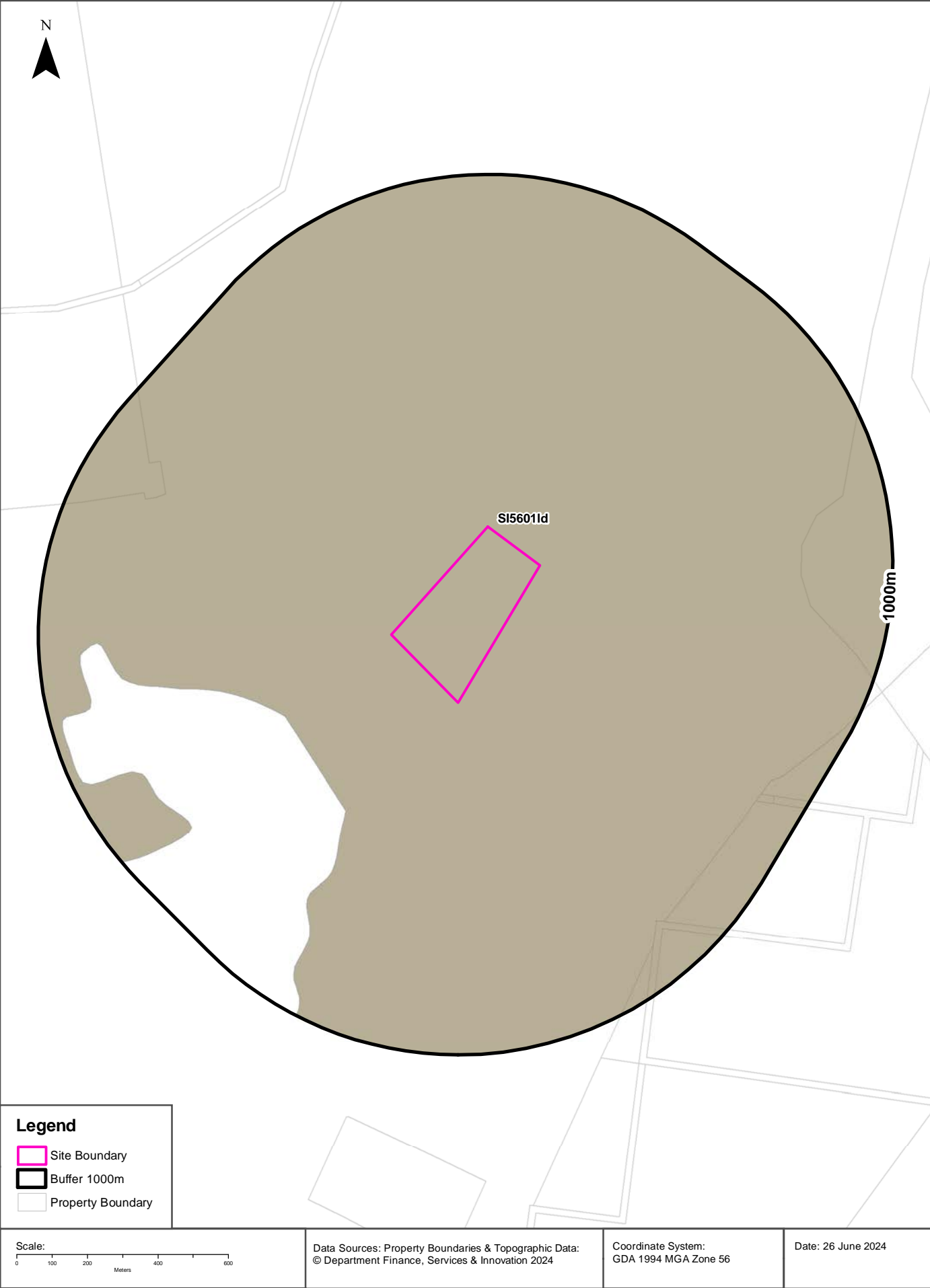
Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Oc10	Sodosol	Rolling to hilly country with some steep slopes, gently undulating hill-tops, low cliffs, and occasionally escarpments; traversed by flat to undulating valleys: chief soils are hard alkaline and neutral red brown, yellow, and dark soils: red (Dr2.33), (Dr2.23), (Dr2.43), (Dr2.32), (Dr2.22); brown (Db1.33) (Db1.43); yellow (Dy2.33), (Dy2.43), (Dy3.43), (Dy3.42); dark (Dd1.33), (Dd1.43), (Dd1.42) (Dr2.32) notably occurs on gravelly hill-tops. Associated are: the (Ug5) soils of unit Ke12, which forms soil complexes with the above (D) soils in some areas; some basaltic hills and knolls of (Ug5.1) (Ug5.3), (Db3.12), (Gn3.42), and (Um6) soils; some (Uf6.31) and/or (Gn3.13) soils; some (Um4.1 and/or (Um4.2) soils and possibly other shallow (Um) or (Uc) soils on steep slopes; (Dy3.41) (Dr3.41), and (Dr2.41) soils as for unit Tb41; and various (Um) and (Uc) soils along the streams where some salinity is evident. This unit is very broad and the soil pattern is complex. Northward it grades towards the soil conditions found in units Qb19 and Ob14, having similarities to unit Ob10 in the Murrurundi area. To the south-east it grades into unit Tb42, the boundary between the two units is indefinite.	0m	On-site

Atlas of Australian Soils Data Source: CSIRO

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Soil Landscapes of Central and Eastern NSW

Site 2 - New England Highway, Muswellbrook, NSW 2333



Soils

Site 2 - New England Highway, Muswellbrook, NSW 2333

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
SI5601ld	Liddell	0m	On-site

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

Site 2 - New England Highway, Muswellbrook, NSW 2333

Environmental Planning Instrument - Acid Sulfate Soils

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

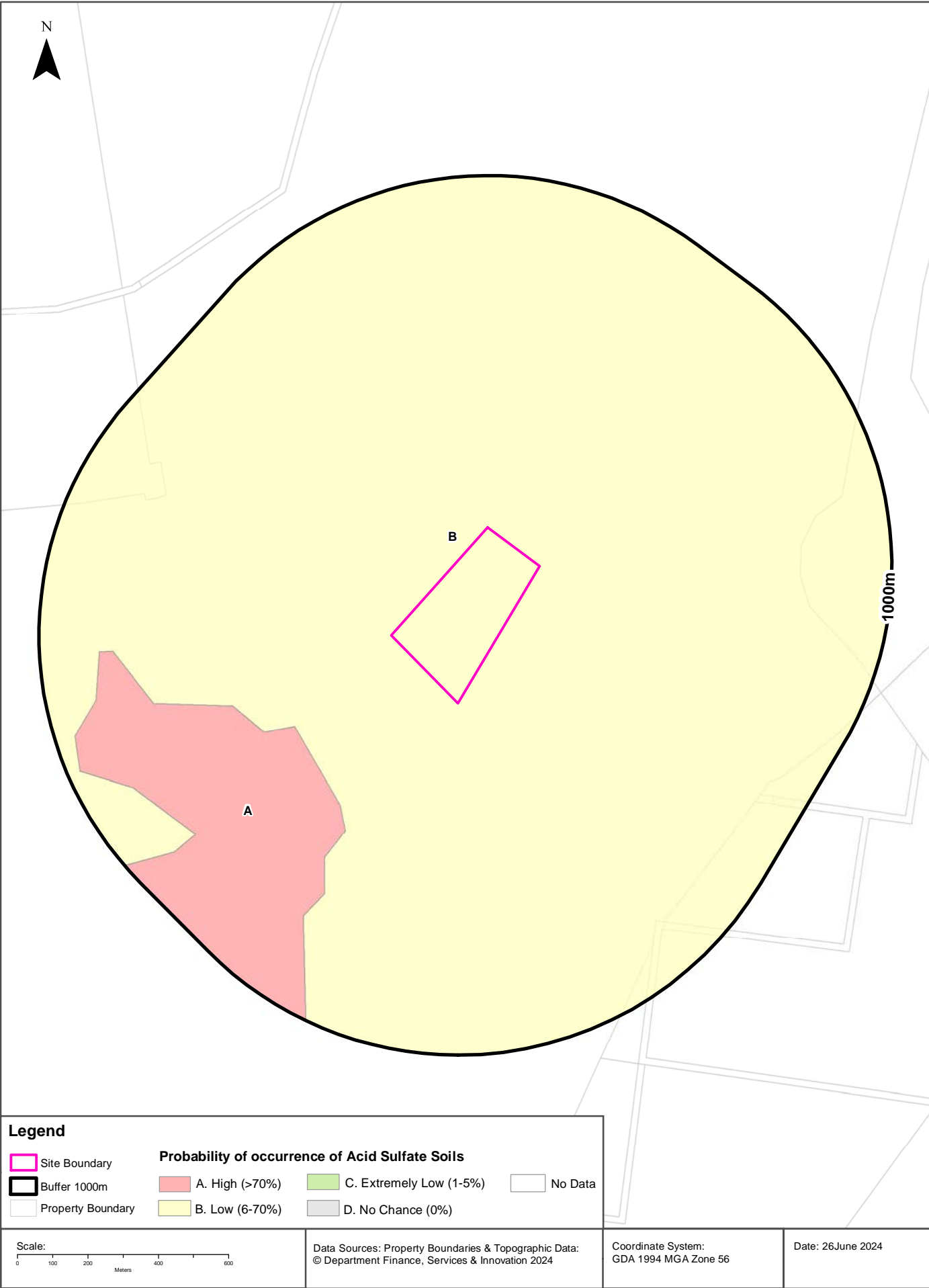
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Acid Sulfate Soils

Site 2 - New England Highway, Muswellbrook, NSW 2333

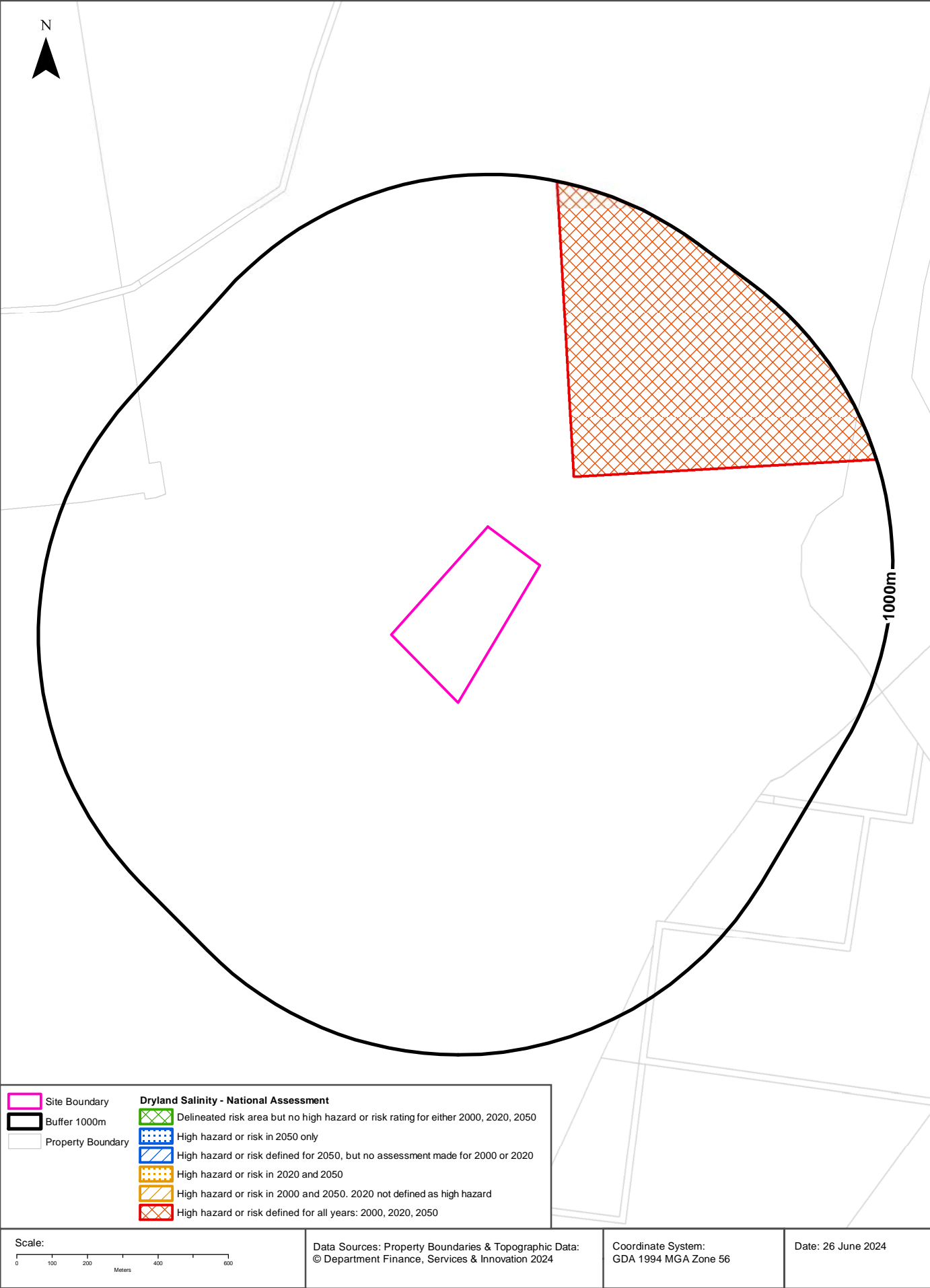
Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	377m	South West

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

Site 2 - New England Highway, Muswellbrook, NSW 2333

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	259m	North East

Dryland Salinity Data Source : National Land and Water Resources Audit

The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.

In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

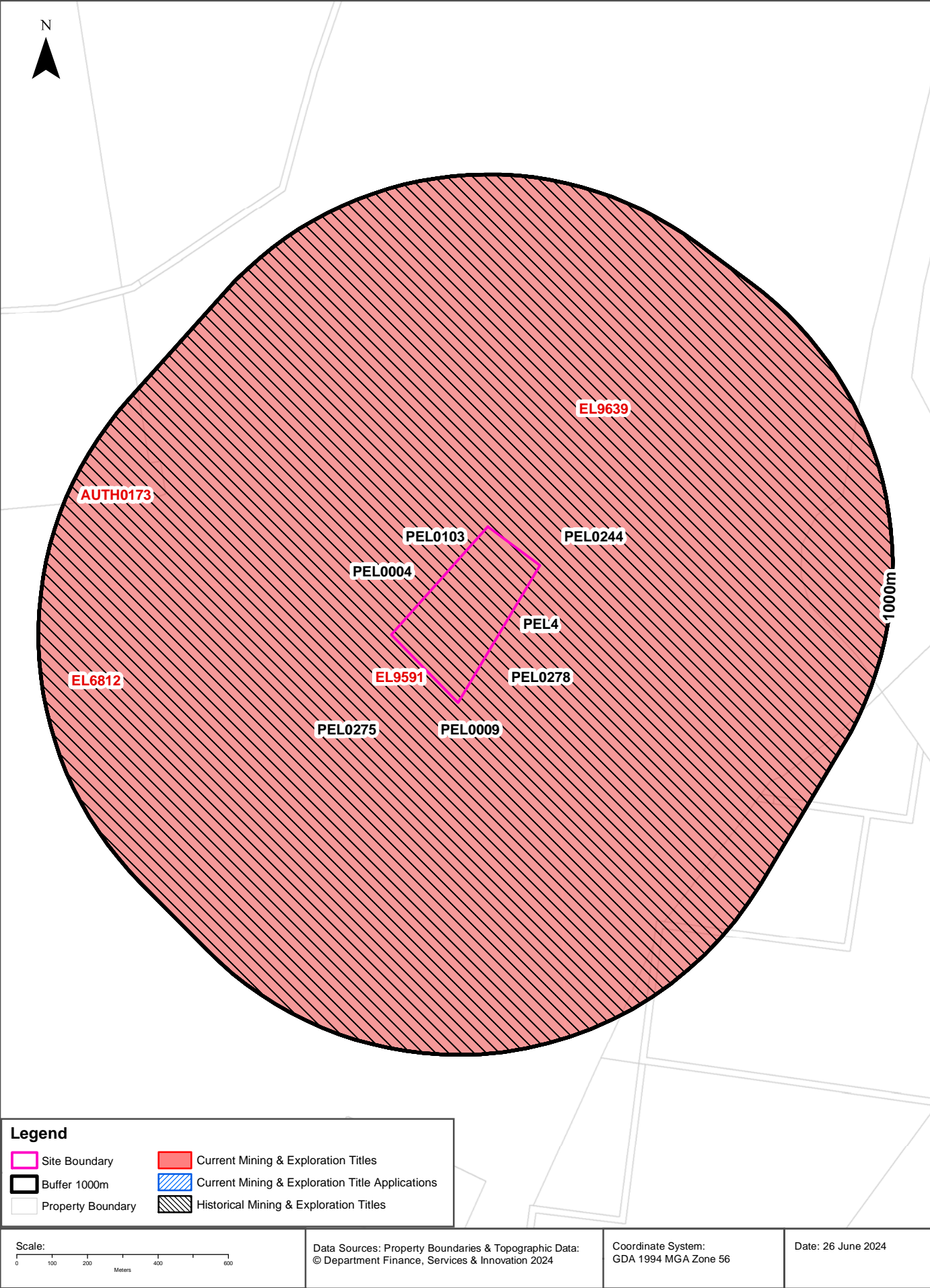
Site 2 - New England Highway, Muswellbrook, NSW 2333

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

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

Site 2 - New England Highway, Muswellbrook, NSW 2333

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
EL9591	UPPER HUNTER GEOTHERMAL ENERGY PTY LTD	27/07/2023	27/07/2028	20230727	EXPLORING	MINERALS	Group 8	0m	On-site
EL9639	STRATEGIC RARE EARTHS PTY LTD	25/03/2024	25/03/2026	20240325	EXPLORING	MINERALS	Group 1, Group 10	0m	On-site
EL6812	DELLWORTH PTY LIMITED	20/06/2007	20/06/2028	20221018	EXPLORING	COAL	Group 9	699m	West
AUTH0173	MAXWELL VENTURES (MANAGEMENT) PTY LTD	31/08/1979	31/08/2024	20221018	EXPLORING	COAL	Group 9	789m	West

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

Site 2 - New England Highway, Muswellbrook, NSW 2333

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0244	FRONTIER RESOURCES AUSTRALIA LTD, SION RESOURCES AUSTRALIA LTD, SYDNEY OIL COMPANY, PETROSEARCH PTY LTD	19810110	19841210	PETROLEUM	Petroleum	0m	On-site
PEL0278	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PEL0275	SYDNEY OIL COMPANY PTY LTD, MACQUARIE OIL (SYDNEY) PTY LTD, NORTH MICHIGAN EXPLORATION CO., BASE RESOURCES LTD, GOVERNME	19860502	19880402	PETROLEUM	Petroleum	0m	On-site
PEL0004	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20150607	PETROLEUM	Petroleum	0m	On-site
PEL0009	AUSTRALIAN OIL AND GAS CORPORATION LTD, UNION OIL DEVELOPMENT CORP., KERN COUNTY LAND CO.			PETROLEUM	Petroleum	0m	On-site
PEL4	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20011129	MINERALS		0m	On-site
PEL0103	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site

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

State Environmental Planning Policy

Site 2 - New England Highway, Muswellbrook, NSW 2333

State Significant Precincts

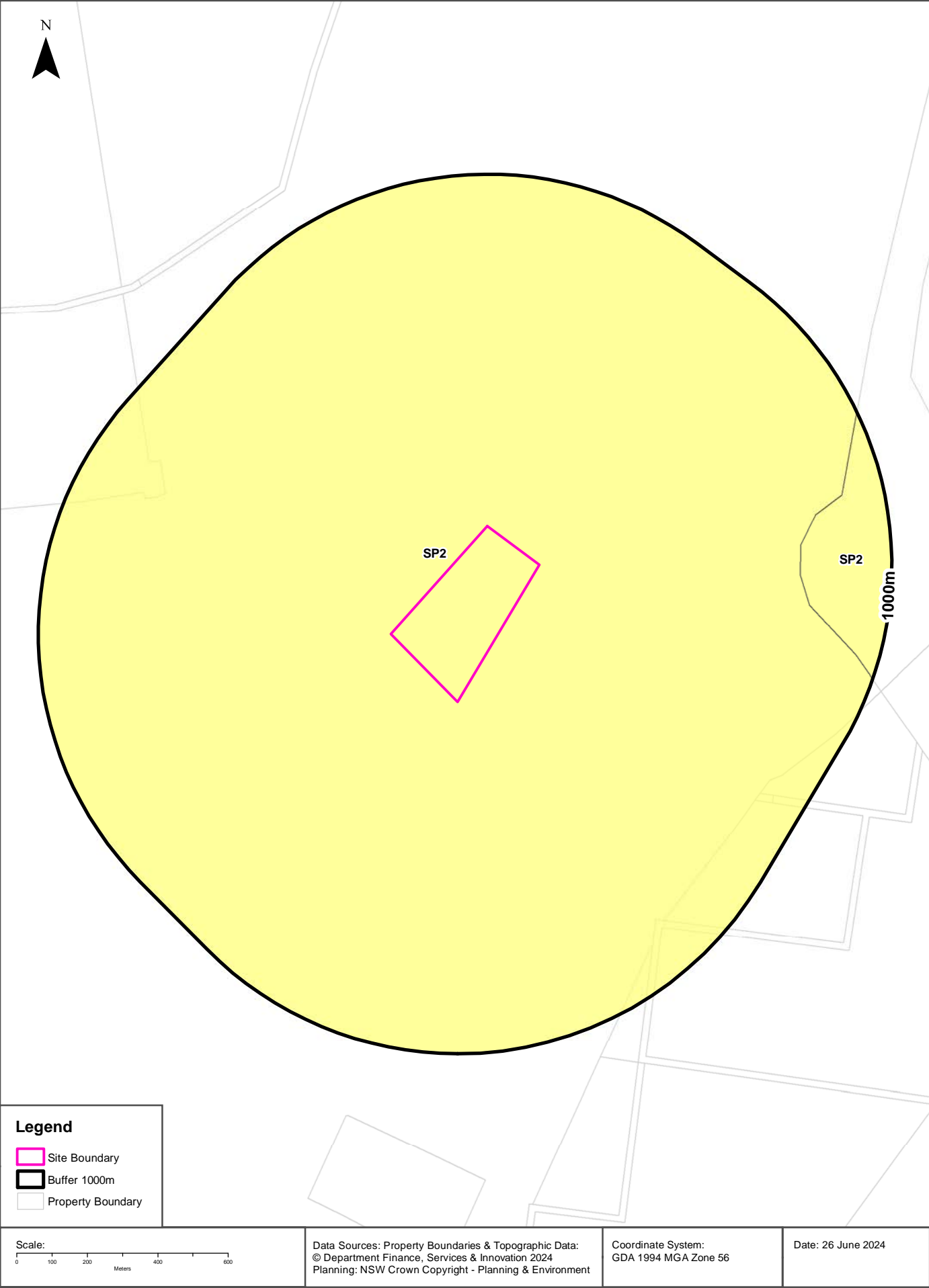
What SEPP State Significant Precincts exist within the dataset buffer?

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

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment
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EPI Planning Zones

Site 2 - New England Highway, Muswellbrook, NSW 2333



Environmental Planning Instrument

Site 2 - New England Highway, Muswellbrook, NSW 2333

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
SP2	Infrastructure	Power Station	Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	0m	On-site
SP2	Infrastructure	Classified Road	Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	740m	East

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

Site 2 - New England Highway, Muswellbrook, NSW 2333

Commonwealth Heritage List

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

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

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

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

Note. Please click on Place Id to activate a hyperlink to online website.

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

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia <https://creativecommons.org/licenses/by/3.0/au/deed.en>

State Heritage Register - Curtilages

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

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

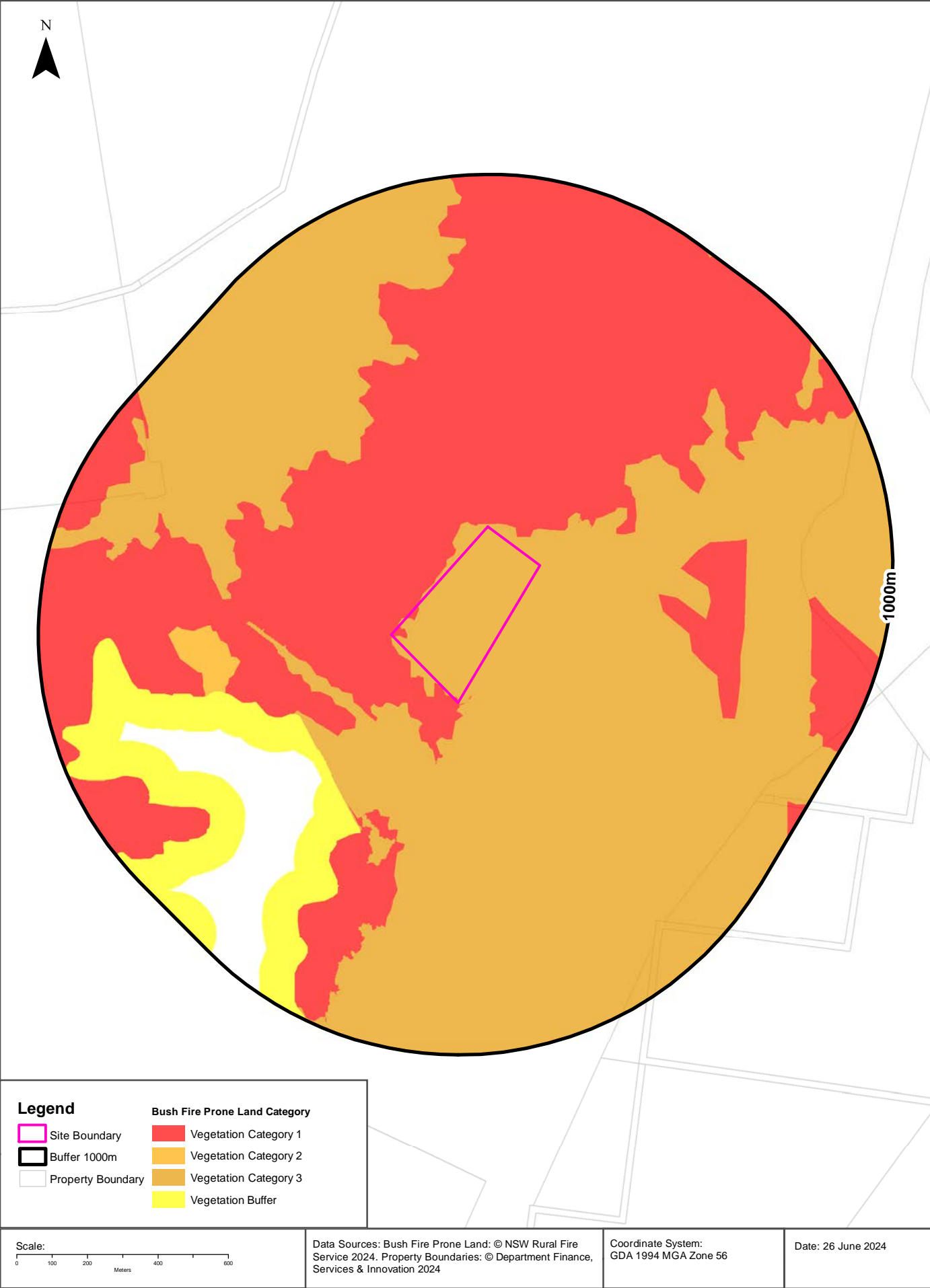
Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

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

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

Heritage Data Source: NSW Crown Copyright - Planning & Environment
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Natural Hazards

Site 2 - New England Highway, Muswellbrook, NSW 2333

Bush Fire Prone Land

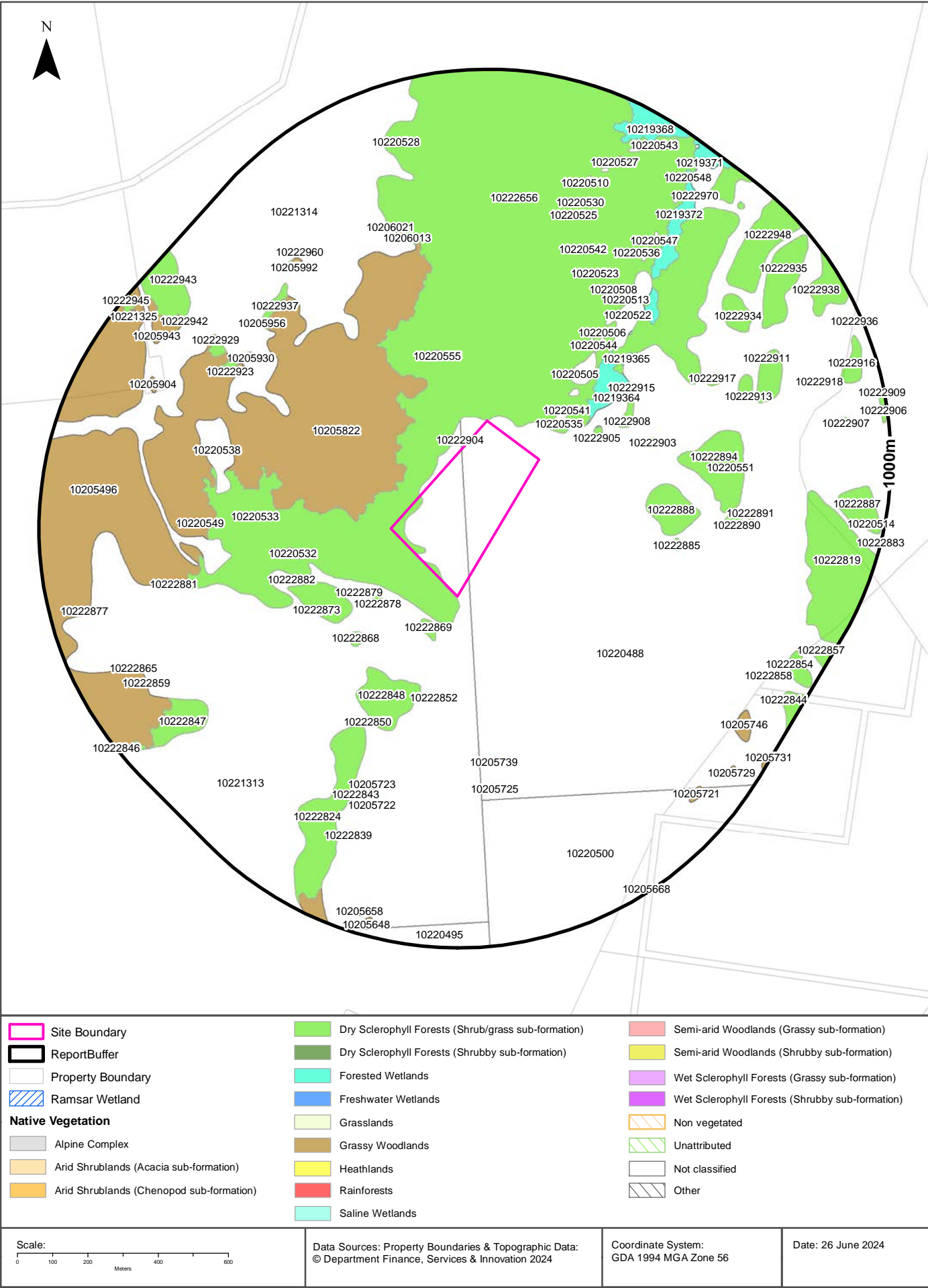
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 1	0m	On-site
Vegetation Category 3	0m	On-site
Vegetation Buffer	347m	South West
Vegetation Category 2	434m	West

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

Ecological Constraints - Vegetation & Ramsar Wetlands

Site 2 - New England Highway, Muswellbrook, NSW 2333



Ecological Constraints

Site 2 - New England Highway, Muswellbrook, NSW 2333

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10220488	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10221313	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10222656	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222904	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	14m	North
10205822	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	57m	North West
10222869	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	103m	South
10220535	Not classified	(Not classified) Not classified	Not classified	106m	North East
10222878	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	146m	South West
10220541	Not classified	(Not classified) Not classified	Not classified	150m	North East
10219364	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	165m	North East
10222905	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	169m	North East
10219363	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	182m	North East
10222879	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	183m	South West
10220502	Not classified	(Not classified) Not classified	Not classified	198m	North East
10220555	Not classified	(Not classified) Not classified	Not classified	218m	North
10222873	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	227m	South West
10220505	Not classified	(Not classified) Not classified	Not classified	234m	North East
10222908	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	243m	North East
10222868	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	267m	South West
10220532	Not classified	(Not classified) Not classified	Not classified	270m	West
10222848	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	274m	South
10222852	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	289m	South
10222882	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	311m	South West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222903	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	316m	East
10222888	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	327m	East
10222915	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	334m	North East
10220552	Not classified	(Not classified) Not classified	Not classified	339m	North East
10220544	Not classified	(Not classified) Not classified	Not classified	350m	North East
10219365	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	356m	North East
10220519	Not classified	(Not classified) Not classified	Not classified	369m	North East
10220533	Not classified	(Not classified) Not classified	Not classified	375m	West
10220522	Not classified	(Not classified) Not classified	Not classified	388m	North East
10220506	Not classified	(Not classified) Not classified	Not classified	391m	North East
10222894	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	393m	East
10219366	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	414m	North East
10219367	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	430m	North East
10221314	Not classified	(Not classified) Not classified	Not classified	432m	North West
10222850	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	433m	South West
10222885	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	447m	East
10222824	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	457m	South West
10220538	Not classified	(Not classified) Not classified	Not classified	471m	West
10205739	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	472m	South
10220529	Not classified	(Not classified) Not classified	Not classified	495m	North East
10219369	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	500m	North East
10220513	Not classified	(Not classified) Not classified	Not classified	506m	North East
10220508	Not classified	(Not classified) Not classified	Not classified	508m	North East
10220523	Not classified	(Not classified) Not classified	Not classified	515m	North East
10222917	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	524m	North East
10219359	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	528m	North East
10220549	Not classified	(Not classified) Not classified	Not classified	533m	West
10205496	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	539m	West
10220551	Not classified	(Not classified) Not classified	Not classified	541m	East
10205725	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	545m	South
10220542	Not classified	(Not classified) Not classified	Not classified	555m	North East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222890	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	555m	East
10206013	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	565m	North
10205723	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	579m	South
10220500	Not classified	(Not classified) Not classified	Not classified	584m	South
10222913	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	598m	North East
10219372	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	607m	North East
10206021	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	612m	North
10222843	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	612m	South
10222891	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	614m	East
10205930	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	620m	North West
10222881	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	623m	West
10220540	Not classified	(Not classified) Not classified	Not classified	628m	North East
10222928	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	630m	North West
10220536	Not classified	(Not classified) Not classified	Not classified	631m	North East
10205722	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	633m	South
10220525	Not classified	(Not classified) Not classified	Not classified	633m	North
10222923	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	634m	North West
10222937	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	635m	North West
10222911	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	644m	North East
10222934	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	657m	North East
10205956	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	659m	North West
10220530	Not classified	(Not classified) Not classified	Not classified	668m	North
10220547	Not classified	(Not classified) Not classified	Not classified	673m	North East
10222929	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	680m	North West
10205992	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	687m	North West
10220545	Not classified	(Not classified) Not classified	Not classified	699m	North East
10222960	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	708m	North West
10222955	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	714m	North West
10222847	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	724m	South West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10220510	Not classified	(Not classified) Not classified	Not classified	731m	North
10222948	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	735m	North East
10205704	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	737m	South
10222839	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	737m	South
10222935	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	737m	North East
10220518	Not classified	(Not classified) Not classified	Not classified	744m	North
10222819	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	770m	East
10205904	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	775m	West
10220520	Not classified	(Not classified) Not classified	Not classified	781m	North
10220527	Not classified	(Not classified) Not classified	Not classified	813m	North East
10220553	Not classified	(Not classified) Not classified	Not classified	816m	North East
10222859	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	816m	South West
10222860	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	817m	South West
10222861	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	818m	South West
10222918	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	820m	East
10222862	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	821m	South West
10205943	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	827m	North West
10220528	Not classified	(Not classified) Not classified	Not classified	828m	North
10222865	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	828m	South West
10220524	Not classified	(Not classified) Not classified	Not classified	830m	North East
10222942	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	832m	North West
10222943	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	834m	North West
10222970	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	851m	North East
10222864	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	852m	South West
10222887	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	853m	East
10205746	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	862m	South East
10220534	Not classified	(Not classified) Not classified	Not classified	865m	North East
10205721	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	869m	South East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222858	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	871m	South East
10222907	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	872m	East
10219368	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	879m	North East
10222877	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	883m	West
10222938	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	885m	North East
10222916	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	890m	East
10220511	Not classified	(Not classified) Not classified	Not classified	893m	North East
10220548	Not classified	(Not classified) Not classified	Not classified	895m	North East
10222854	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	901m	South East
10220543	Not classified	(Not classified) Not classified	Not classified	906m	North East
10222967	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	912m	North East
10205729	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	915m	South East
10220495	Not classified	(Not classified) Not classified	Not classified	928m	South
10205658	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	930m	South
10219371	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	931m	North East
10221325	Not classified	(Not classified) Not classified	Not classified	936m	North West
10222844	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	939m	South East
10205648	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	946m	South
10222857	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	948m	South East
10220514	Not classified	(Not classified) Not classified	Not classified	953m	East
10220550	Not classified	(Not classified) Not classified	Not classified	953m	North East
10222945	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	958m	North West
10222977	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	958m	North East
10222936	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	967m	North East
10205652	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	973m	South
10220516	Not classified	(Not classified) Not classified	Not classified	975m	North East
10205668	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	979m	South East
10222906	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	981m	East
10222909	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	981m	East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10205731	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	985m	South East
10222846	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	994m	South West
10222883	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	998m	East

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

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Ecological Constraints

Site 2 - New England Highway, Muswellbrook, NSW 2333

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints

Site 2 - New England Highway, Muswellbrook, NSW 2333

Collaborative Australian Protected Areas Database - Terrestrial

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

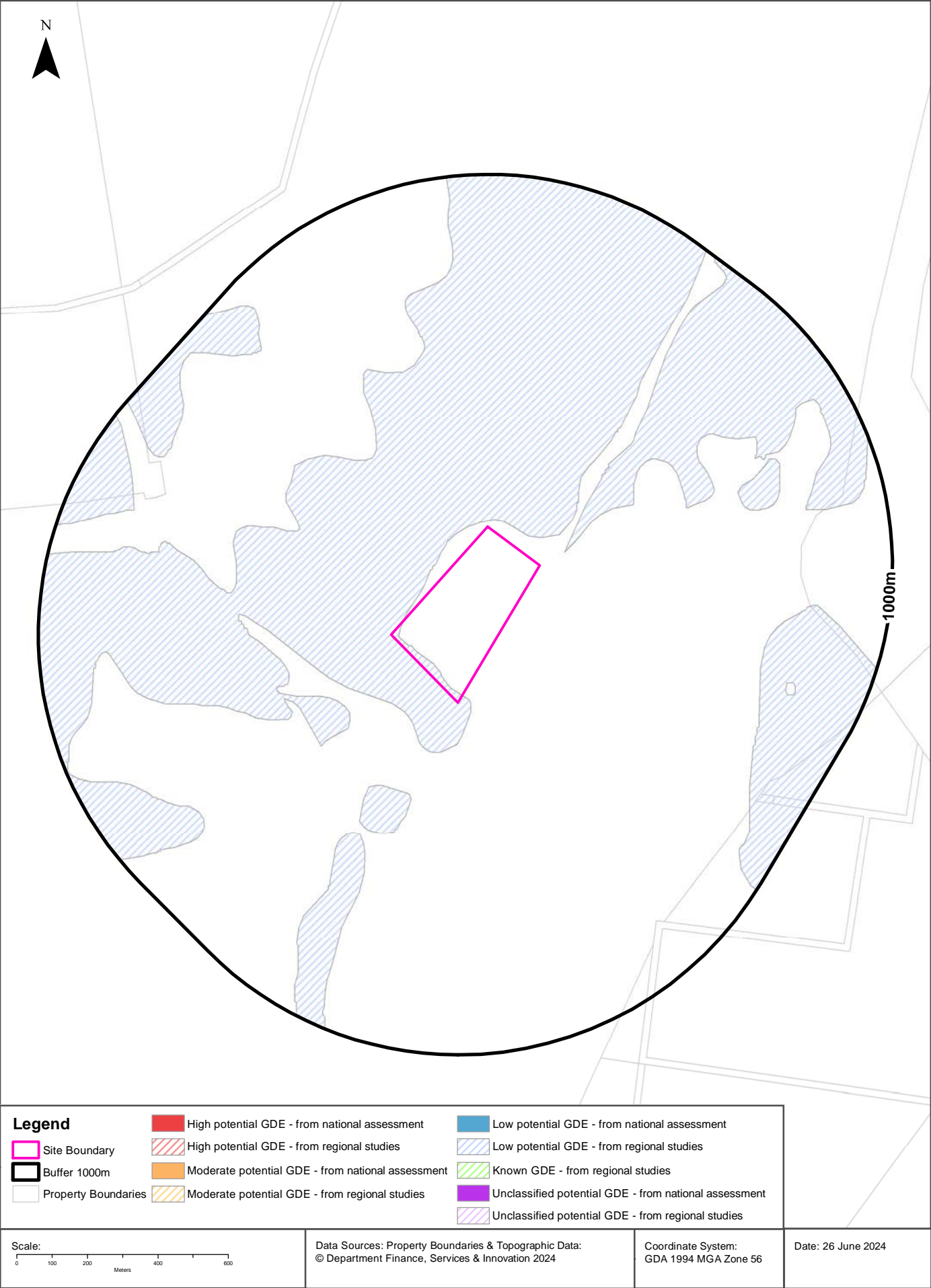
Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

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

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

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022
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Ecological Constraints

Site 2 - New England Highway, Muswellbrook, NSW 2333

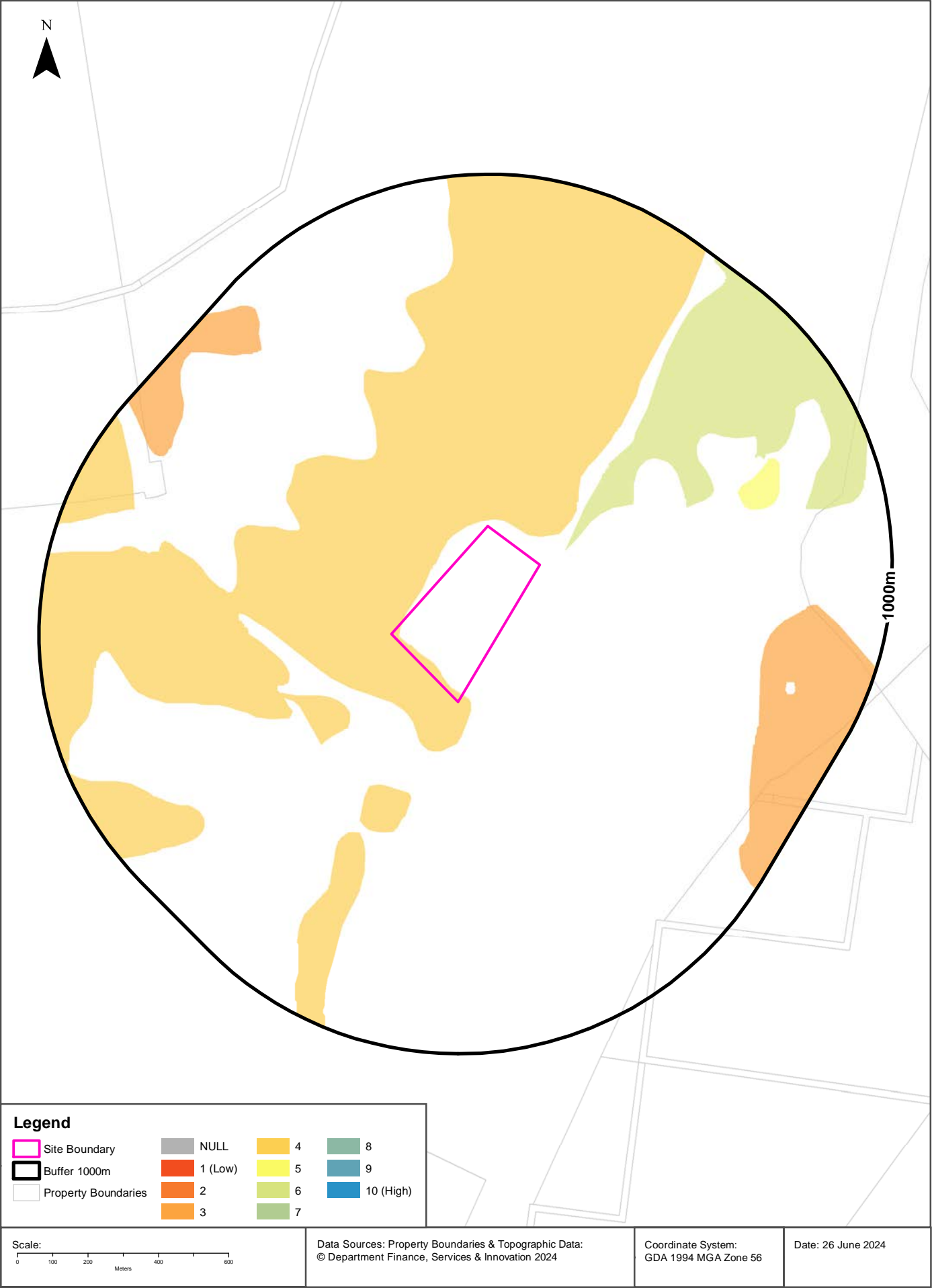
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site

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

Site 2 - New England Highway, Muswellbrook, NSW 2333



Ecological Constraints

Site 2 - New England Highway, Muswellbrook, NSW 2333

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial		4 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial		6 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		79m	North East
Terrestrial		5 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		597m	North East
Terrestrial		3 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		679m	East

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

Site 2 - New England Highway, Muswellbrook, NSW 2333

NSW BioNet Species Sightings

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Anseranas semipalmata	Maggie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Aphelocephala leucopsis	Southern Whiteface	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
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	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Cecropis daurica	Red-rumped Swallow	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	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	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	South-eastern Hooded Robin	Endangered	Not Sensitive	Endangered	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Dasyurus viverrinus	Eastern Quoll	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespertilio macrotis	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aprasia parapulchella	Pink-tailed Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Ctenotus brooksi	Wedgesnout Ctenotus	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Delma impar	Striped Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Acacia pendula	Weeping Myall, Boree	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Endangered Population, Vulnerable	Category 2	Not Listed	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Vulnerable	Category 2	Not Listed	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Galium australe	Tangled Bedstraw	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Category 3	Extinct	
Plantae	Flora	Ozothamnus tessellatus		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prasophyllum petilum	Tarengo Leek Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	
Plantae	Flora	Thesium australe	Austral Toadflax	Vulnerable	Not Sensitive	Vulnerable	

Data does not include NSW category 1 sensitive species.

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

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

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Appendix D

Site 3 Lotsearch Report – LS057868 EP



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 26 Jun 2024 09:43:42

Reference: LS057868 EP

Address: Site 3 - New England Highway, Muswellbrook, NSW 2333

Disclaimer:

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

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	17/04/2024	17/04/2024	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	21/05/2024	21/05/2024	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	25/06/2024	12/06/2024	Monthly	1000m	1	1	2
Contaminated Land Records of Notice	Environment Protection Authority NSW	25/06/2024	25/06/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	28/04/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	15/05/2024	15/05/2024	Monthly	1000m	4	4	18
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	20/09/2023	07/09/2020	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority NSW	17/06/2024	14/06/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	17/06/2024	29/02/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	17/06/2024	17/06/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	30/04/2024	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Australian Department of Defence	15/04/2024	15/04/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	13/11/2023	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	2	2	12
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	18/06/2024	18/06/2024	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	18/06/2024	18/06/2024	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	-	13	13
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	-	4	4
Points of Interest	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	1
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	16/04/2024	16/04/2024	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	06/05/2024	06/05/2024	Quarterly	1000m	0	1	4
State Forest	Forestry Corporation of NSW	12/12/2023	11/12/2023	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	23/02/2018	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	13/07/2022	Annually	2000m	0	0	2
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	2	3	4
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Regional NSW	06/12/2023	31/05/2023	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Department of Regional NSW	26/04/2024	14/03/2024	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Climate Change, Energy, the Environment and Water	12/12/2023	27/07/2020	Annually	1000m	1	1	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	04/06/2024	03/05/2024	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	2	2
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	1
Mining Subsidence Districts	NSW Department of Customer Service	03/05/2024	03/05/2024	Quarterly	1000m	0	0	1
Current Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	2	2	6
Mining Title Applications	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Regional NSW	20/06/2024	20/06/2024	Monthly	1000m	7	7	8
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	04/06/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	1	2	8
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	26/04/2024	08/03/2024	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	04/06/2024	10/05/2024	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	18/06/2024	12/03/2024	Monthly	1000m	1	3	4
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	30/11/2023	Quarterly	1000m	14	22	162
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	1	1	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	3	4	7
NSW BioNet Species Sightings	NSW Department of Climate Change, Energy, the Environment and Water	29/11/2023	29/11/2023	Weekly	10000m	-	-	-

Site Diagram

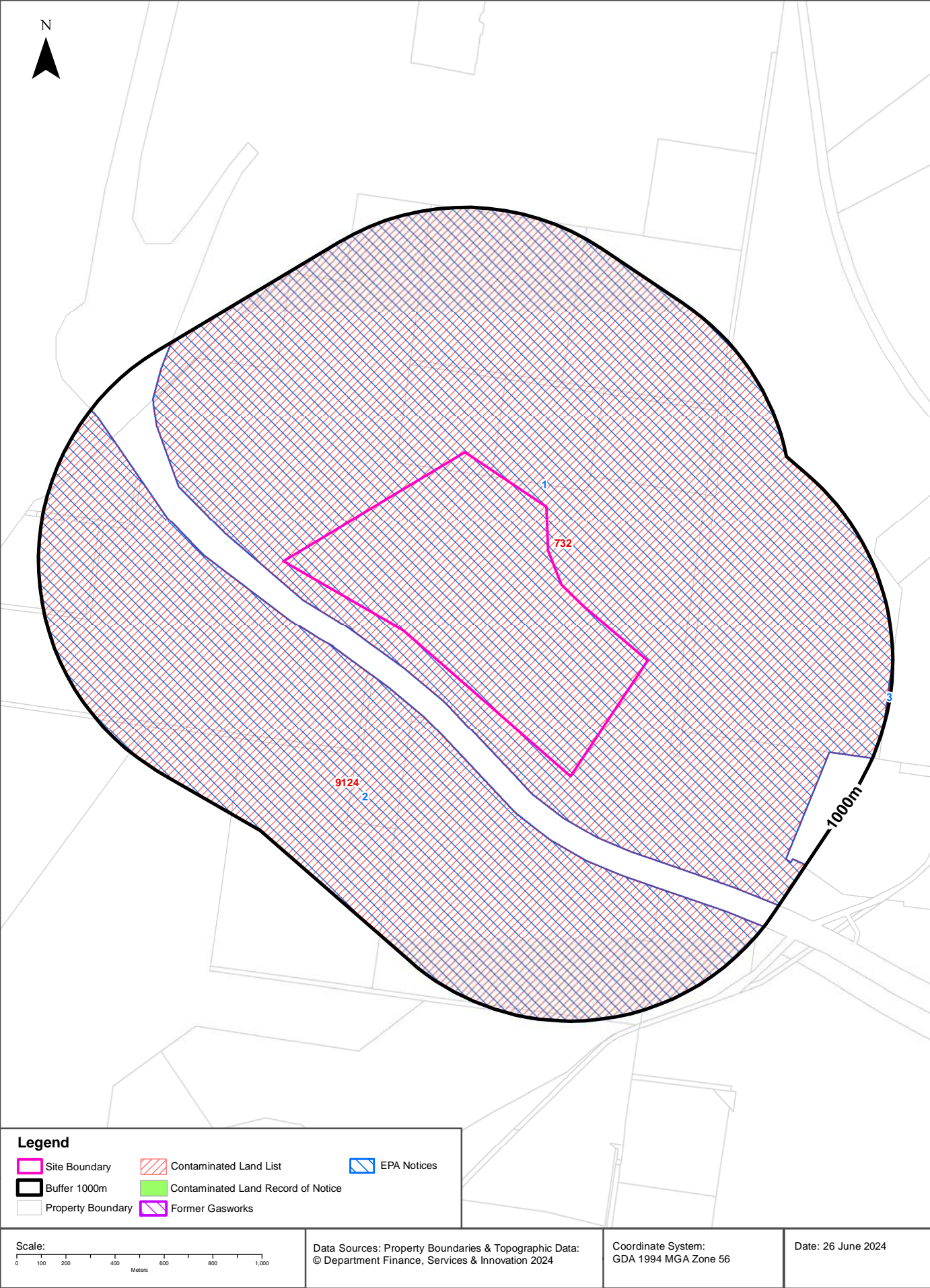
Site 3 - New England Highway, Muswellbrook, NSW 2333



Legend <div><div></div> Site Boundary</div> <div><div></div> Internal Parcel Boundaries</div>	Total Area: 850205m ² Total Perimeter: 4.09km	
	Scale: 0 25 50 100 150 200 250 Meters	
	Data Source Aerial Imagery: © Aerometrex Pty Ltd	
Disclaimers: Measurements are approximate only and may have been simplified or smaller lengths removed for readability. Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 June 2024

Contaminated Land

Site 3 - New England Highway, Muswellbrook, NSW 2333



Contaminated Land

Site 3 - New England Highway, Muswellbrook, NSW 2333

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
732	Liddell Power Station	New England Highway	Liddell	Other Industry	Regulation under CLM Act not required	Current EPA List	Area Match	0m	On-site
9124	Bayswater Power Station	New England Highway	Muswellbrook	Other Industry	Regulation under CLM Act not required	Current EPA List	Area Match	178m	South West

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

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

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

Contaminated Land

Site 3 - New England Highway, Muswellbrook, NSW 2333

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the dataset buffer:

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

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

Contaminated Land

Site 3 - New England Highway, Muswellbrook, NSW 2333

EPA Notices

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

Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
1	3173529141	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, LIDDELL, NSW 2333	Issued	03/07/2020	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	19/02/2020	Area Match	0m	On-site
	3173530178	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, LIDDELL, NSW 2333	Issued	26/03/2021	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	31/08/2020	Area Match	0m	On-site
	3173525520	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, LIDDELL, NSW 2333	Issued	14/05/2018	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	01/03/2018	Area Match	0m	On-site
	3173530663	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, LIDDELL, NSW 2333	Issued	13/10/2021	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	10/03/2021	Area Match	0m	On-site
2	3173530333	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/06/2021	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	05/04/2021	Area Match	178m	South West
	3085777210	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	04/08/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	09/04/2015	Area Match	178m	South West
	3085778145	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	16/12/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	24/11/2015	Area Match	178m	South West
	3085778136	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	16/12/2015	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	24/11/2015	Area Match	178m	South West
	3085778796	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	04/03/2016	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	21/12/2015	Area Match	178m	South West

Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
2	3173527143	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/01/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/05/2018	Area Match	178m	South West
	3173527152	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	24/01/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	29/05/2018	Area Match	178m	South West
	3173528216	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	26/08/2019	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	28/02/2019	Area Match	178m	South West
	3173531608	Penalty Notice	AGL MACQUARIE PTY LIMITED	NEW ENGLAND HIGHWAY, MUSWELLBROOK, NSW 2333	Issued	08/02/2023	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation		Area Match	178m	South West
3	3085781490	Penalty Notice	HV OPERATIONS PTY LTD	LEMINGTON RD , SINGLETON, NSW 2330	Issued	28/02/2017	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	04/11/2016	Premise Match	989m	East
	3173523091	Penalty Notice	HV OPERATIONS PTY LTD	LEMINGTON RD , SINGLETON, NSW 2330	Issued	18/08/2017	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	30/03/2017	Premise Match	989m	East
	3173525448	Penalty Notice	HV OPERATIONS PTY LTD	LEMINGTON RD , SINGLETON, NSW 2330	Issued	02/05/2018	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	17/01/2018	Premise Match	989m	East
	3173526483	Penalty Notice	HV OPERATIONS PTY LTD	LEMINGTON RD , SINGLETON, NSW 2330	Issued	23/10/2018	Protection of the Environment Operations Act 1997 - 120(1)	Pollute waters - other officer - Corporation	10/05/2018	Premise Match	989m	East
	3173526492	Penalty Notice	HV OPERATIONS PTY LTD	LEMINGTON RD , SINGLETON, NSW 2330	Issued	23/10/2018	Protection of the Environment Operations Act 1997 - 64(1)	Contravene condition of licence - Corporation	10/05/2018	Premise Match	989m	East

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

Waste Management & Liquid Fuel Facilities

Site 3 - New England Highway, Muswellbrook, NSW 2333

National Waste Management Facilities Database

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

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
N/A	No records in buffer								

Source: Waste Management Facilities Database
Creative Commons 4.0 © Commonwealth of Australia (Geoscience Australia) 2022

National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

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

National Liquid Fuel Facilities Data Source: Geoscience Australia
Creative Commons 4.0 © Commonwealth of Australia

PFAS Investigation & Management Programs

Site 3 - New England Highway, Muswellbrook, NSW 2333

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites and Unexploded Ordnance

Site 3 - New England Highway, Muswellbrook, NSW 2333

Defence Controlled Areas (DCA)

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

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

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

Defence 3 Year Regional Contamination Investigation Program (RCIP)

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

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

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

National Unexploded Ordnance (UXO)

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

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

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

EPA Other Sites with Contamination Issues

Site 3 - New England Highway, Muswellbrook, NSW 2333

EPA Other Sites with Contamination Issues

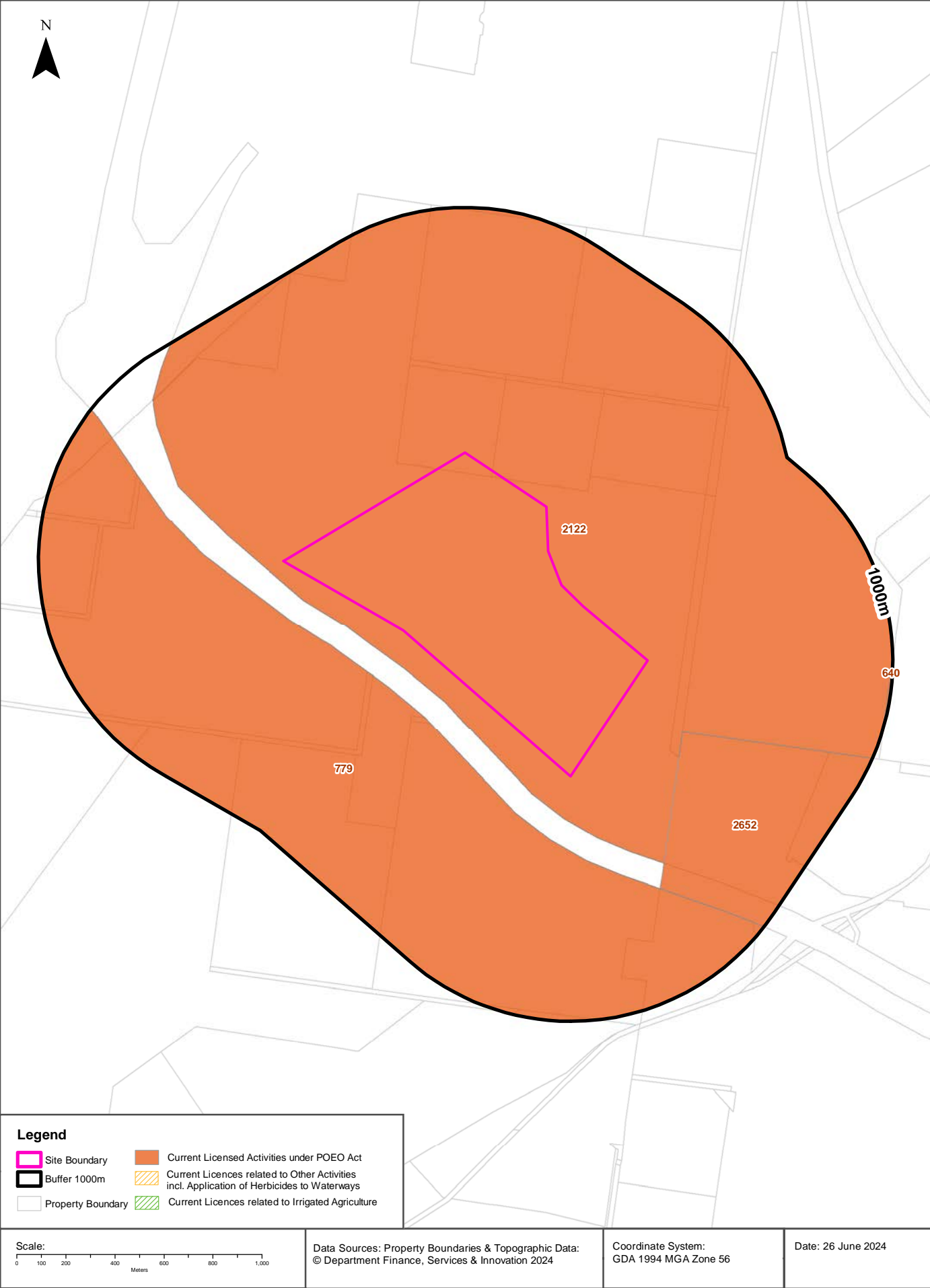
This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

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



EPA Activities

Site 3 - New England Highway, Muswellbrook, NSW 2333

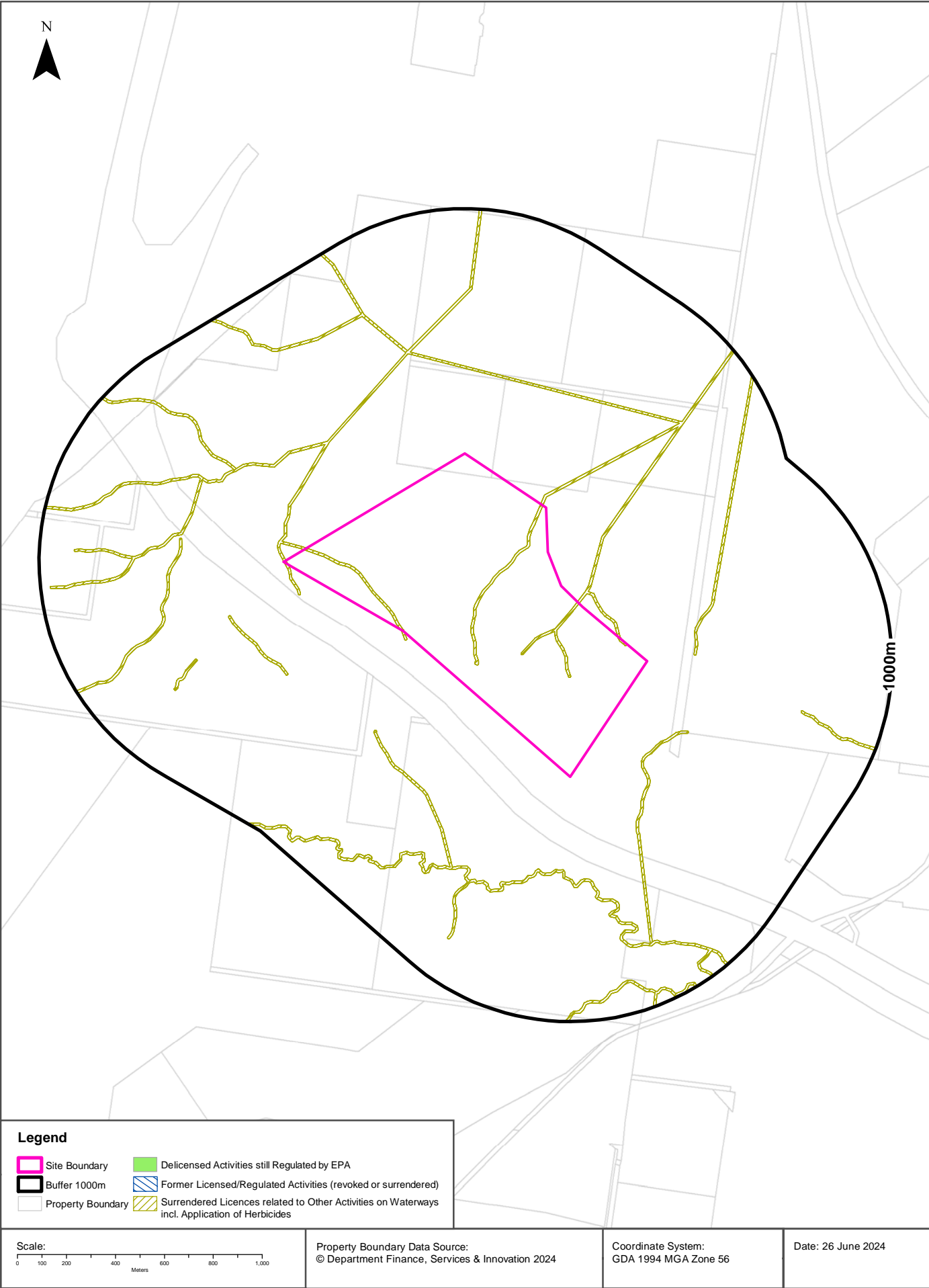
Licensed Activities under the POEO Act 1997

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
2122	AGL Macquarie Pty Limited	LIDDELL POWER STATION	NEW ENGLAND HIGHWAY	LIDDELL	Coal works	Area Match	0m	On-site
2122	AGL Macquarie Pty Limited	LIDDELL POWER STATION	NEW ENGLAND HIGHWAY	LIDDELL	Generation of electrical power from coal	Area Match	0m	On-site
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Chemical storage waste generation	Area Match	178m	South West
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Generation of electrical power from coal	Area Match	178m	South West
779	AGL Macquarie Pty Limited	BAYSWATER POWER STATION	NEW ENGLAND HIGHWAY	MUSWELLBROOK	Coal works	Area Match	178m	South West
2652	RAVENSWORTH OPERATIONS PTY LIMITED	RAVENSWORTH MINING COMPLEX	OFF LEMINGTON ROAD	RAVENSWORTH	Coal works	Premise Match	278m	South East
2652	RAVENSWORTH OPERATIONS PTY LIMITED	RAVENSWORTH MINING COMPLEX	OFF LEMINGTON ROAD	RAVENSWORTH	Cement or lime handling	Premise Match	278m	South East
2652	RAVENSWORTH OPERATIONS PTY LIMITED	RAVENSWORTH MINING COMPLEX	OFF LEMINGTON ROAD	RAVENSWORTH	Mining for coal	Premise Match	278m	South East
640	HV OPERATIONS PTY LTD	HUNTER VALLEY OPERATIONS	Lemington Rd	SINGLETON	Land-based extractive activity	Premise Match	989m	East
640	HV OPERATIONS PTY LTD	HUNTER VALLEY OPERATIONS	Lemington Rd	SINGLETON	Crushing, grinding or separating	Premise Match	989m	East
640	HV OPERATIONS PTY LTD	HUNTER VALLEY OPERATIONS	Lemington Rd	SINGLETON	Mining for coal	Premise Match	989m	East
640	HV OPERATIONS PTY LTD	HUNTER VALLEY OPERATIONS	Lemington Rd	SINGLETON	Coal works	Premise Match	989m	East

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority



EPA Activities

Site 3 - New England Highway, Muswellbrook, NSW 2333

Delicensed Activities still regulated by the EPA

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

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

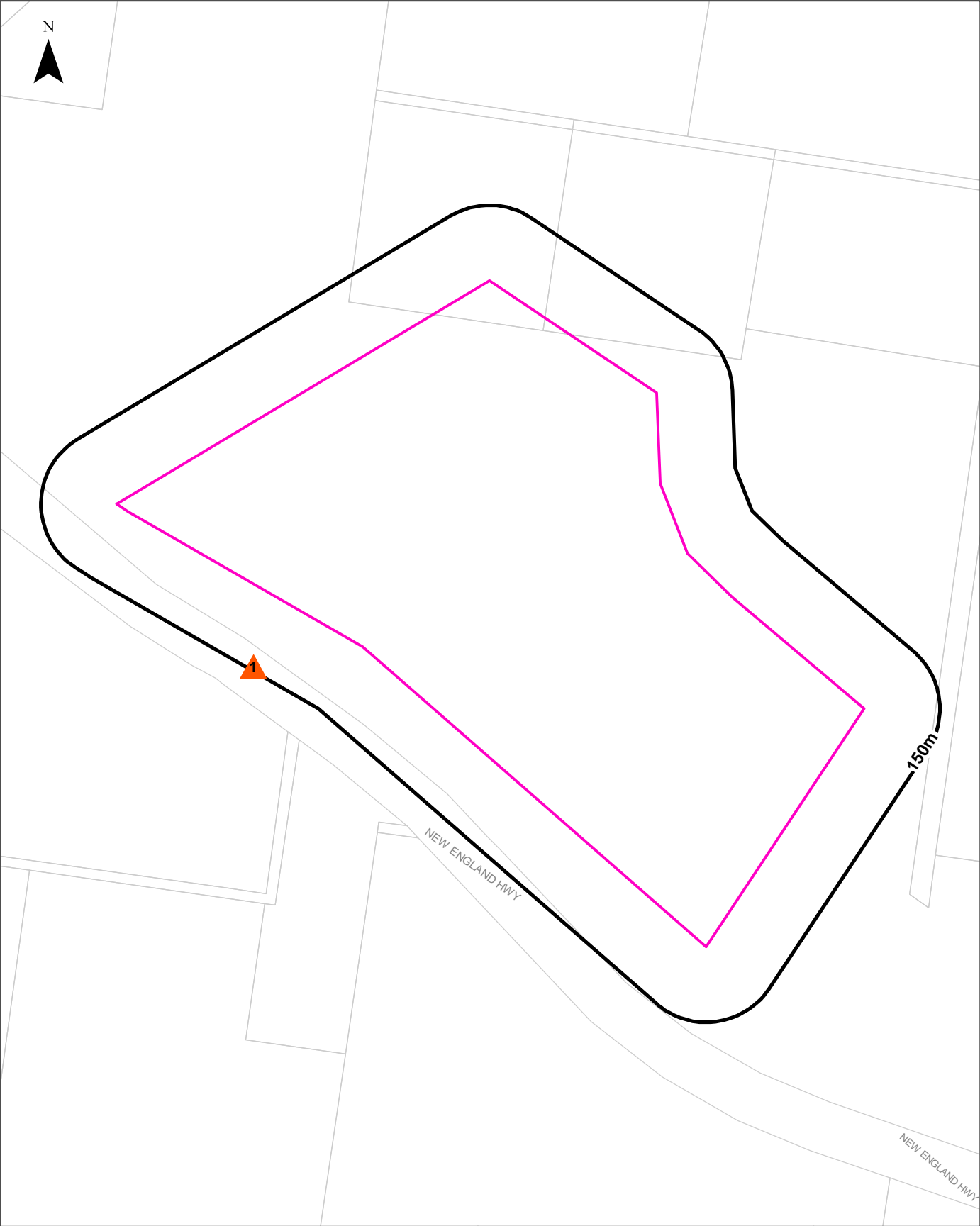
Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	On-site
11677	UPPER HUNTER COUNTY COUNCIL	WATERS WITHIN UPPER HUNTER COUNTY COUNCIL, NEW ENGLAND HIGHWAY, MUSWELLBROOK	Surrendered	21/06/2002	Miscellaneous licensed discharge to waters (at any time)	Network of Features	0m	On-site

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



Legend

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

Scale:

0 140 280 420 560 Meters

Coordinate System:
GDA 1994 MGA Zone 56

Date: 26 June 2024

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Property Boundaries © NSW Department Finance, Services & Innovation 2024

Historical Business Directories

Site 3 - New England Highway, Muswellbrook, NSW 2333

Business Directory Records 1950-1991 Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

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

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

Business Directory Records 1950-1991

Road or Area Matches

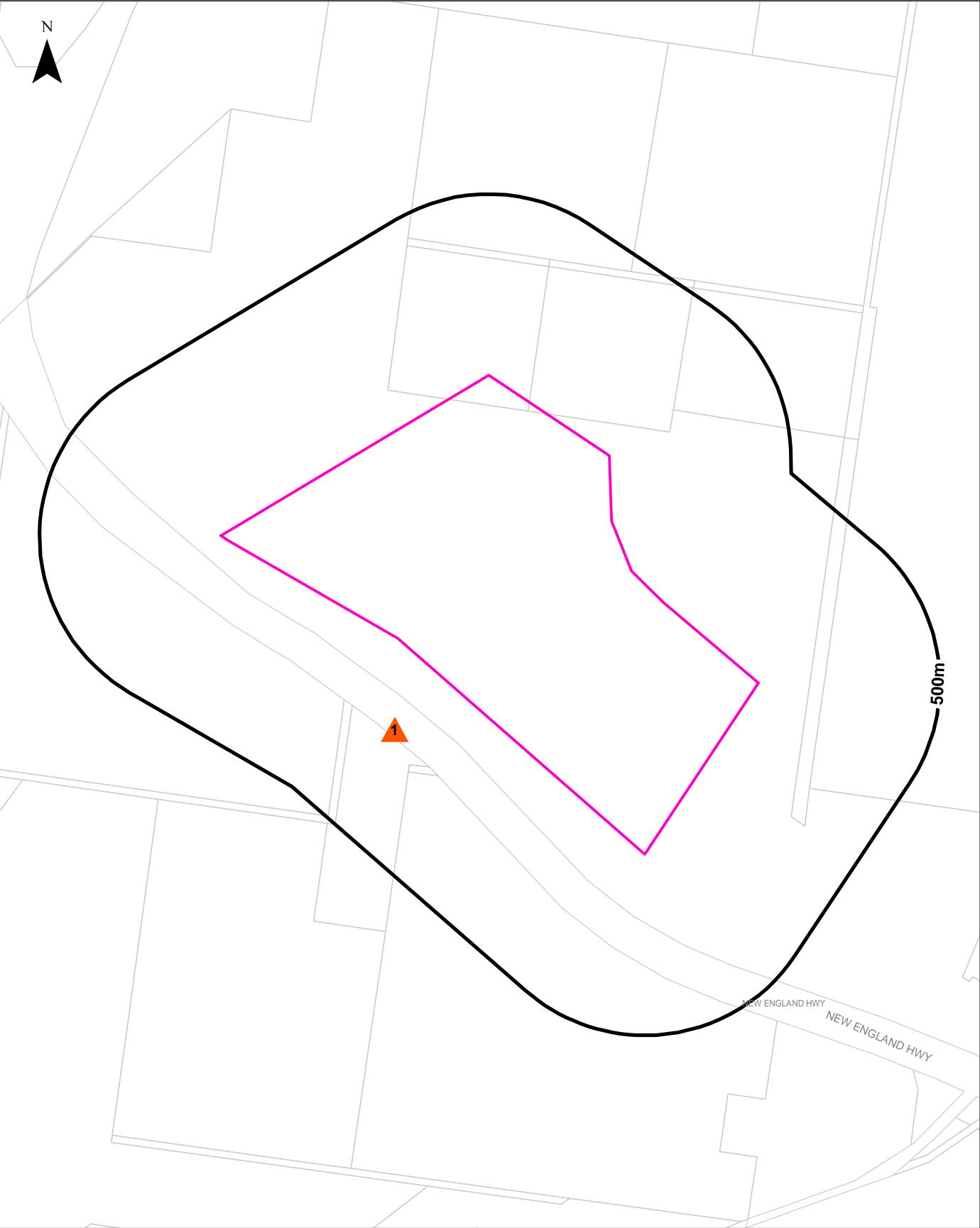
Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	LIQUOR STORES-RETAIL.	Black Hill Cellars., New England H'way, Muswellbrook 2333	80127	1991	Road Match	70m
	WINE &/OR SPIRIT MERCHANTS WHOLESALE	Black Hill Cellars., New England H'way, Muswellbrook 2333	80535	1991	Road Match	70m
	MOTOR GARAGES & SERVICE STATIONS.	Solo Service Station., New England H'way, Muswellbrook 2333	80222	1991	Road Match	70m
	WINE &/OR SPIRIT MERCHANTS - RETAIL	Beautiful Black Hill Restaurant, New England Highway, Muswellbrook 2333	169775	1982	Road Match	70m
	WINE &/OR SPIRIT MERCHANTS - RETAIL	Black Hill Cellars, New England Highway, Muswellbrook 2333	169776	1982	Road Match	70m
	WINE &/OR SPIRIT MERCHANTS - WHOLESALE.	Black Hill Cellars, New England Highway, Muswellbrook 2333	169781	1982	Road Match	70m
	VINEYARDS	dinburg Wines, New England Highway, Muswellbrook 2333	169759	1982	Road Match	70m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Golden Fleece Service Station & Restaurant, New England Highway, Muswellbrook 2333	169584	1982	Road Match	70m
	WINE &/OR SPIRIT MERCHANTS - RETAIL	Sobel's Queldinburg Wines, New England Highway, Muswellbrook 2333	169779	1982	Road Match	70m
	MOTOR SERVICE STATIONS- PETROL, OILS, ETC.	Golden Fleece Service Station & Restaurant, New England Hghwy., Muswellbrook 2333	641420	1970	Road Match	70m
	CAMPING GROUNDS & CARAVAN PARKS	Golden Fleece Service Station & Cafe, New England Highway., Muswellbrook	165299	1961	Road Match	70m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Golden Fleece Service Station & Café, New England Highway., Muswellbrook	165508	1961	Road Match	70m
	MOTOR SERVICE STATIONS- PETROL, OILS, ETC.	Golden Fleece Service Station & Café, New England Highway., Muswellbrook	165562	1961	Road Match	70m

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Dry Cleaners, Motor Garages & Service Stations

Site 3 - New England Highway, Muswellbrook, NSW 2333



Legend		Scale: 0 200 400 600 800 Metres	Coordinate System: GDA 1994 MGA Zone 56
Site Boundary	Business directory records mapped to a specific premise		Date: 26 June 2024
Buffer 500m	Business directory records mapped to a road intersection	Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018 Property Boundaries © NSW Department Finance, Services & Innovation 2024	
Property Boundary	Business directory records mapped to a road corridor		
Business directory records mapped to a general area			

Historical Business Directories

Site 3 - New England Highway, Muswellbrook, NSW 2333

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

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

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

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	MOTOR GARAGES & SERVICE STATIONS.	Solo Service Station., New England H'way, Muswellbrook 2333	80222	1991	Road Match	70m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Golden Fleece Service Station & Restaurant, New England Highway, Muswellbrook 2333	169584	1982	Road Match	70m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Golden Fleece Service Station & Restaurant, New England Hghwy., Muswellbrook 2333	641420	1970	Road Match	70m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Golden Fleece Service Station & Café, New England Highway., Muswellbrook	165562	1961	Road Match	70m

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Aerial Imagery 2023

Site 3 - New England Highway, Muswellbrook, NSW 2333




<p>Scale:</p> <p>0 125 250 375 500</p> <p>Meters</p>	<p>Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 24 June 2024</p>
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Aerial Imagery 2021

Site 3 - New England Highway, Muswellbrook, NSW 2333



Legend

 Site Boundary

 Buffer 150m

<div>Scale:</div> <div><div>0</div><div>125</div><div>250</div><div>375</div><div>500</div></div> <div>Meters</div>	<div>Data Source Aerial Imagery:</div> <div>© Aerometrex Pty Ltd</div>	<div>Coordinate System:</div> <div>GDA 1994 MGA Zone 56</div>	<div>Date: 24 June 2024</div>
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Aerial Imagery 2017

Site 3 - New England Highway, Muswellbrook, NSW 2333



Scale: 0 125 250 375 500 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 24 June 2024
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Aerial Imagery 2008

Site 3 - New England Highway, Muswellbrook, NSW 2333



<p>Scale:</p> <p>0 125 250 375 500</p> <p>Meters</p>	<p>Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 24 June 2024</p>
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Aerial Imagery 1994

Site 3 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1989

Site 3 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1980

Site 3 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1970

Site 3 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1967

Site 3 - New England Highway, Muswellbrook, NSW 2333



Aerial Imagery 1958

Site 3 - New England Highway, Muswellbrook, NSW 2333



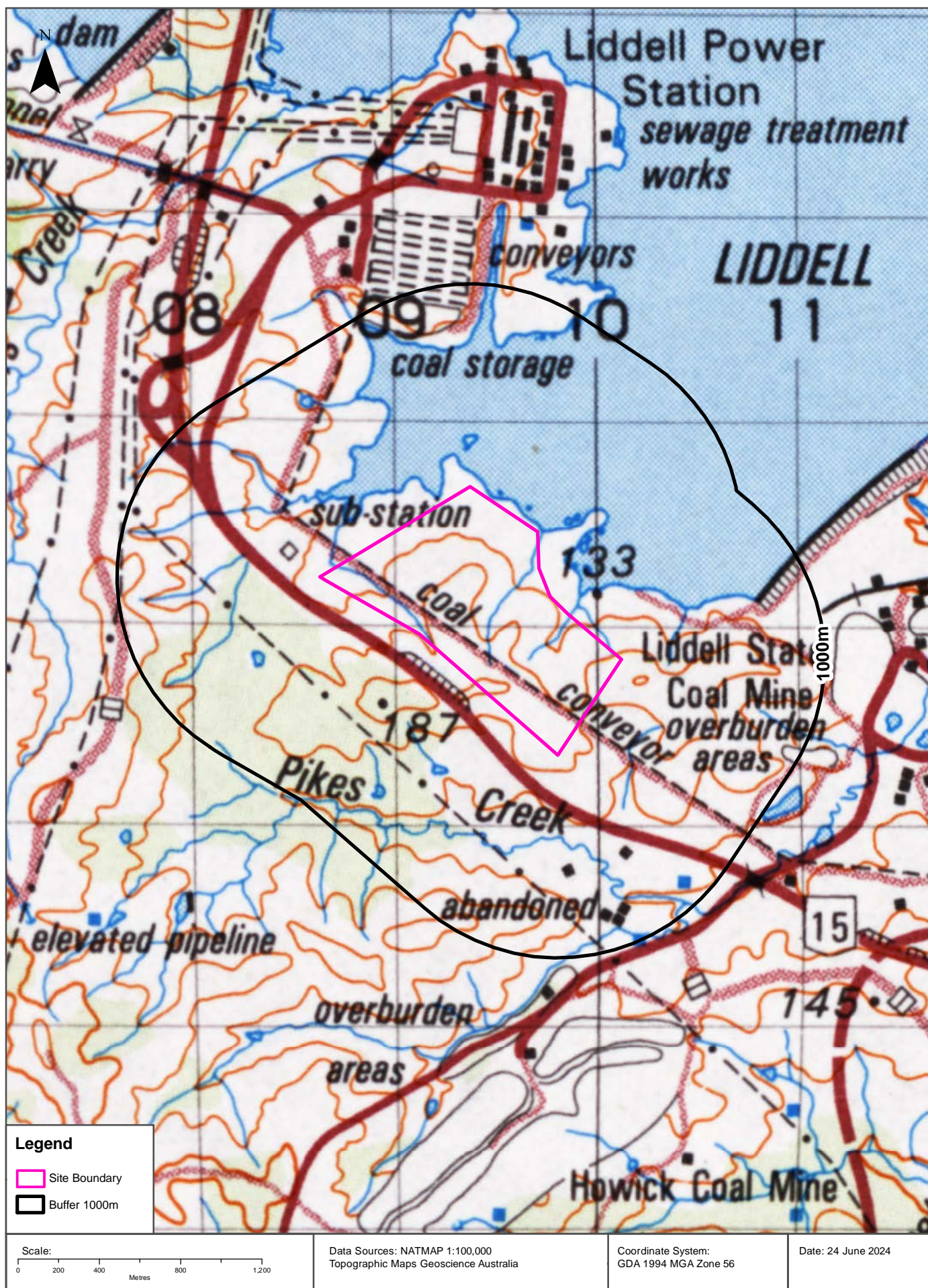
Topographic Map 2015

Site 3 - New England Highway, Muswellbrook, NSW 2333



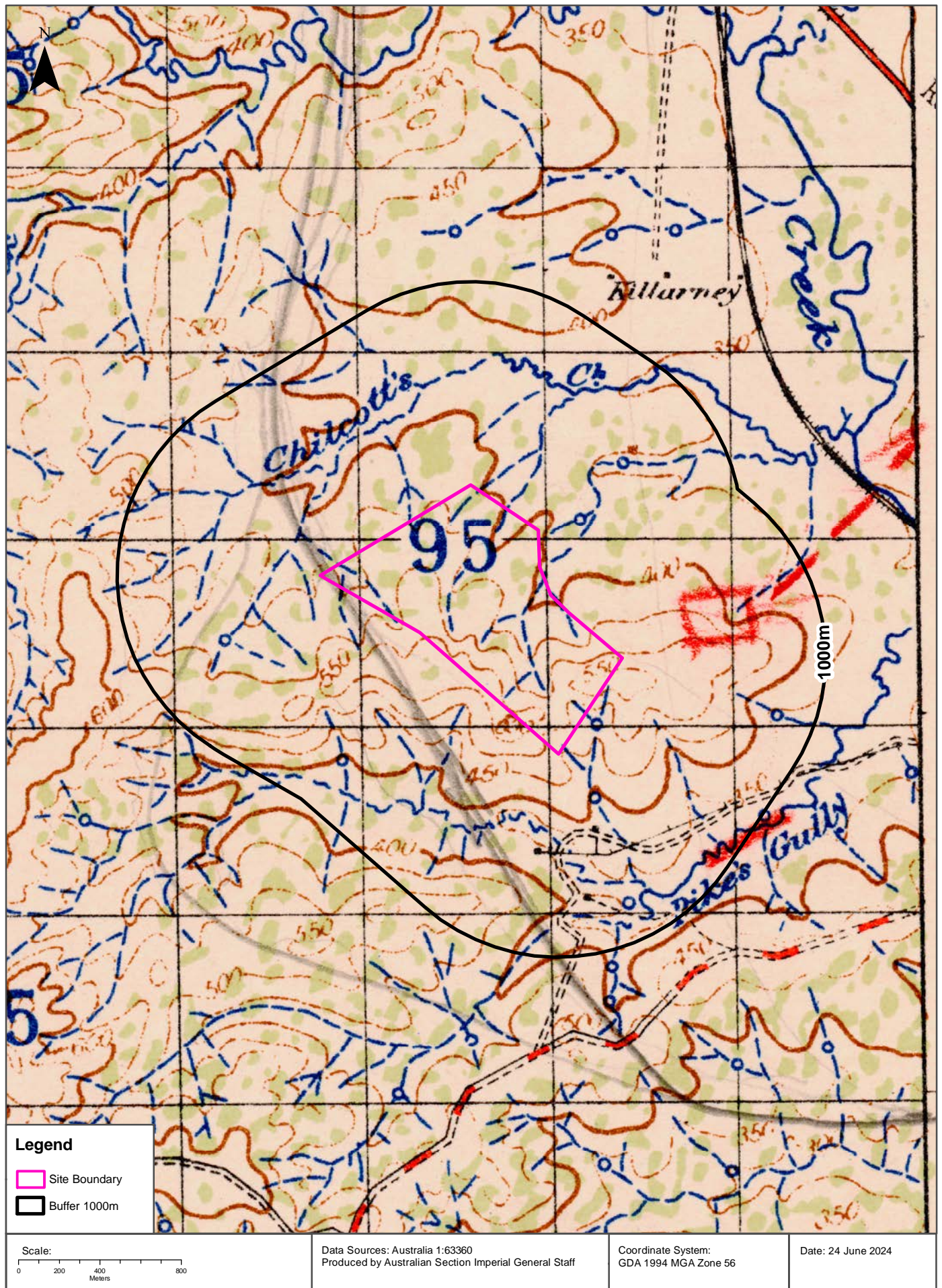
Historical Map 1978

Site 3 - New England Highway, Muswellbrook, NSW 2333



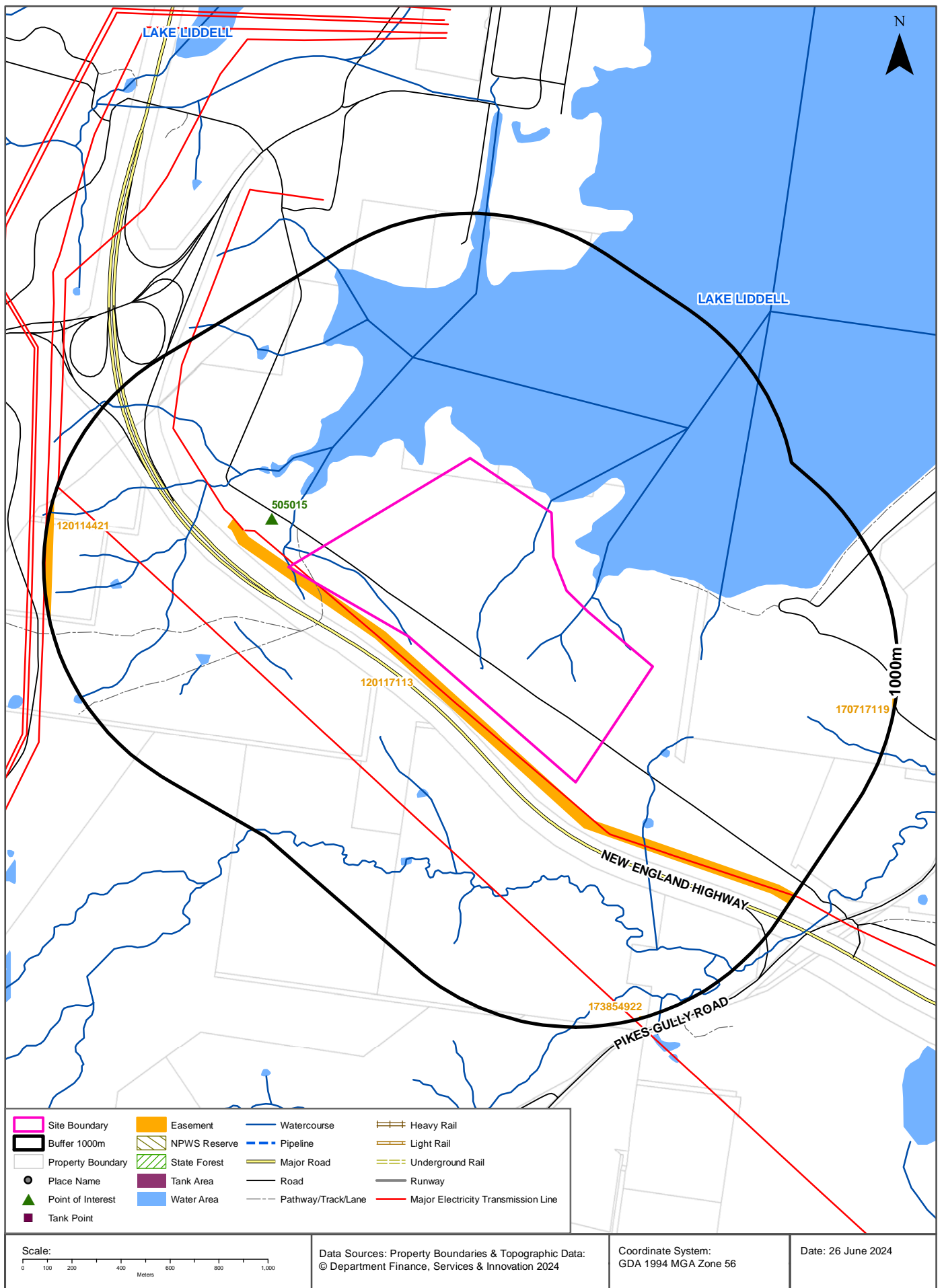
Historical Map c.1941

Site 3 - New England Highway, Muswellbrook, NSW 2333



Topographic Features

Site 3 - New England Highway, Muswellbrook, NSW 2333



Topographic Features

Site 3 - New England Highway, Muswellbrook, NSW 2333

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
505015	Power Station - Fuel Driven	HUNTER VALLEY GT POWER STATION	205m	West

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

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Topographic Features

Site 3 - New England Highway, Muswellbrook, NSW 2333

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

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

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Major Easements

What Major Easements exist within the dataset buffer?

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120117113	Primary	Undefined		0m	South
120114421	Primary	Undefined		967m	West
170717119	Primary	Right of way		989m	East
173854922	Primary	Electricity	60m and VAR	993m	South

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

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Topographic Features

Site 3 - New England Highway, Muswellbrook, NSW 2333

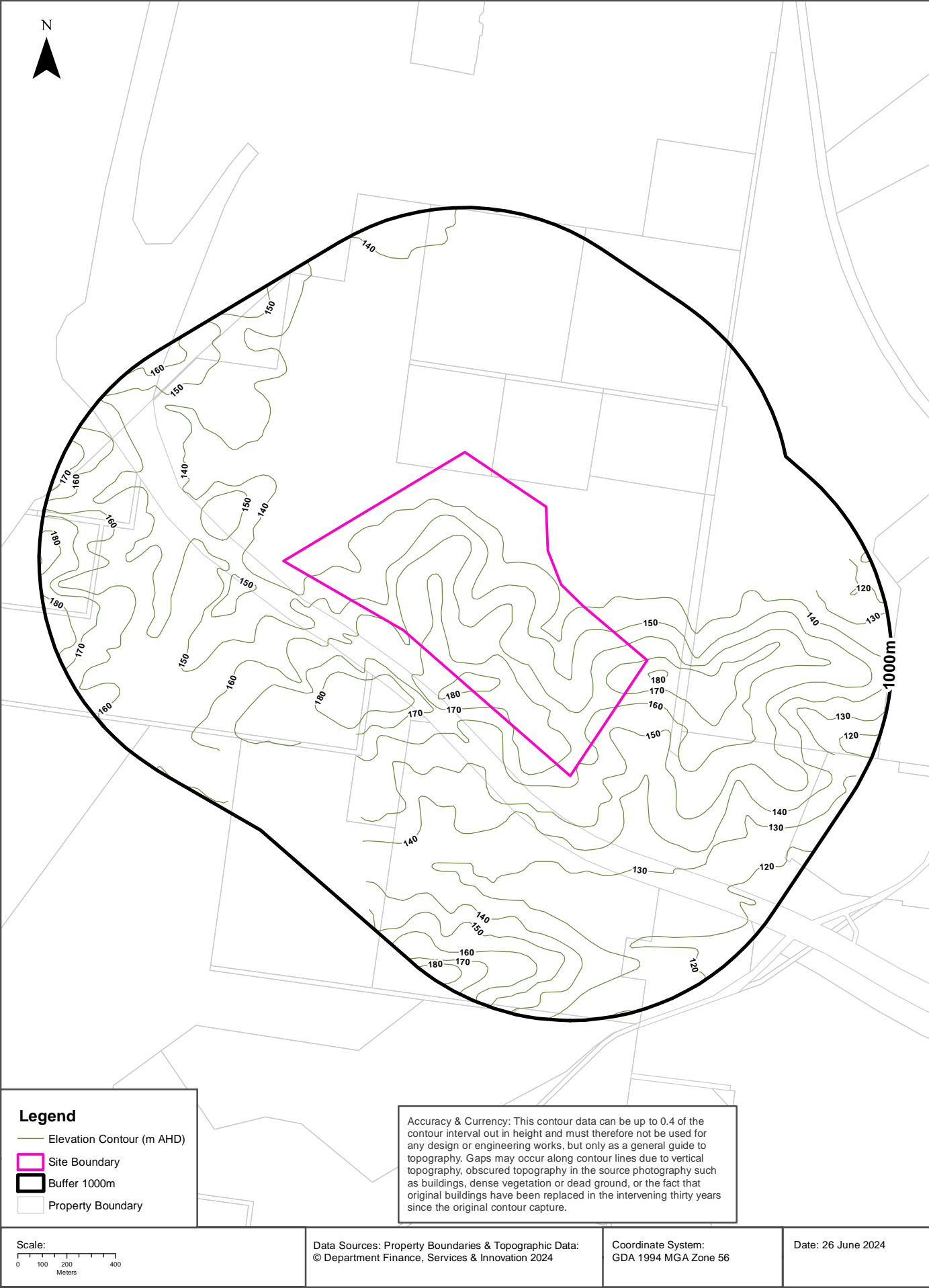
State Forest

What State Forest exist within the dataset buffer?

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

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

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Hydrogeology & Groundwater

Site 3 - New England Highway, Muswellbrook, NSW 2333

Hydrogeology

Description of aquifers within the dataset buffer:

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

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

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Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

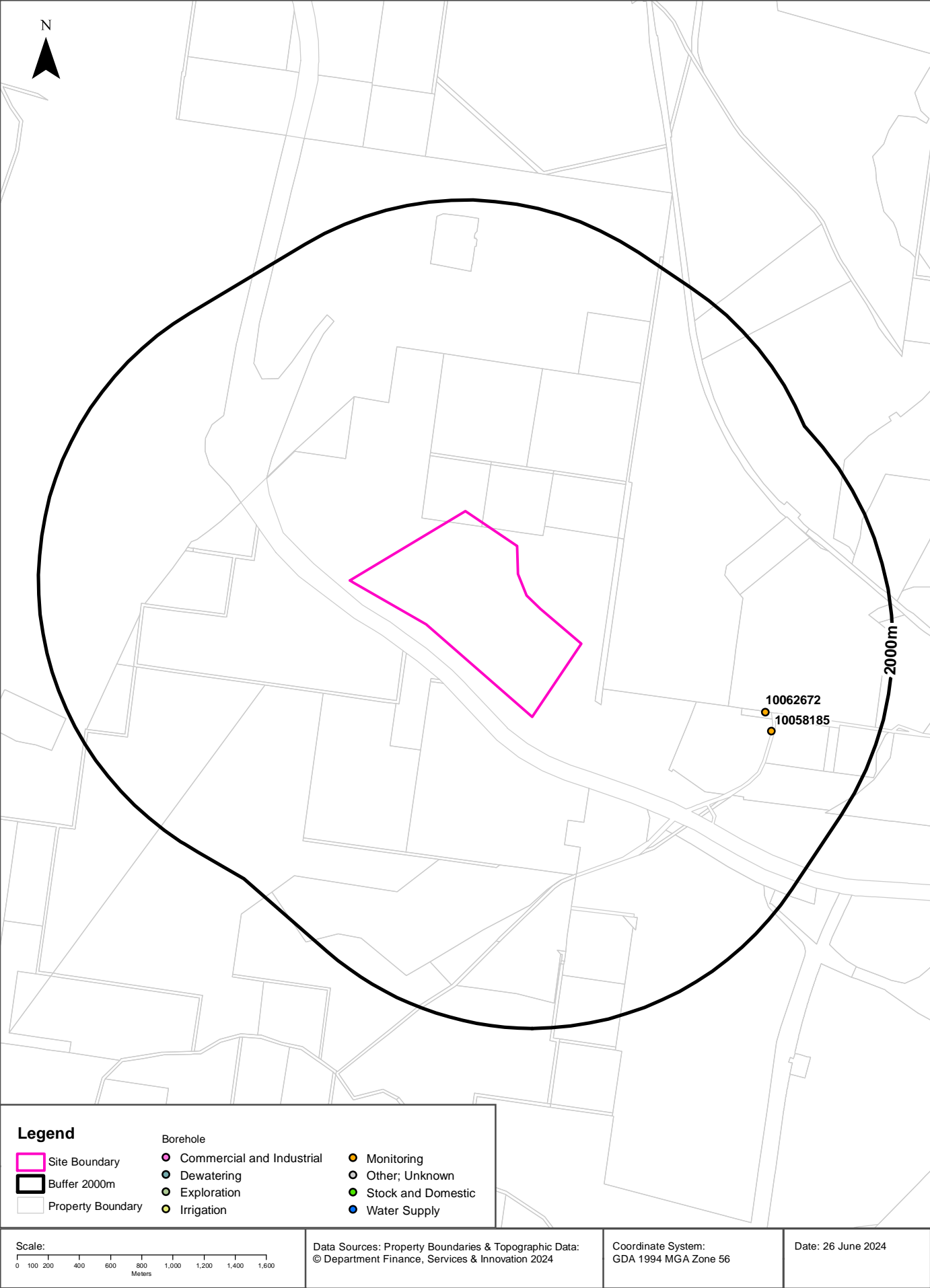
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

Site 3 - New England Highway, Muswellbrook, NSW 2333



Hydrogeology & Groundwater

Site 3 - New England Highway, Muswellbrook, NSW 2333

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10062672	GW201062	Monitoring	Abandoned	17/12/2009	17.40		AHD				1266m	East
10058185	GW201061	Monitoring	Abandoned	16/12/2009	15.10		AHD				1348m	South East

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

Hydrogeology & Groundwater

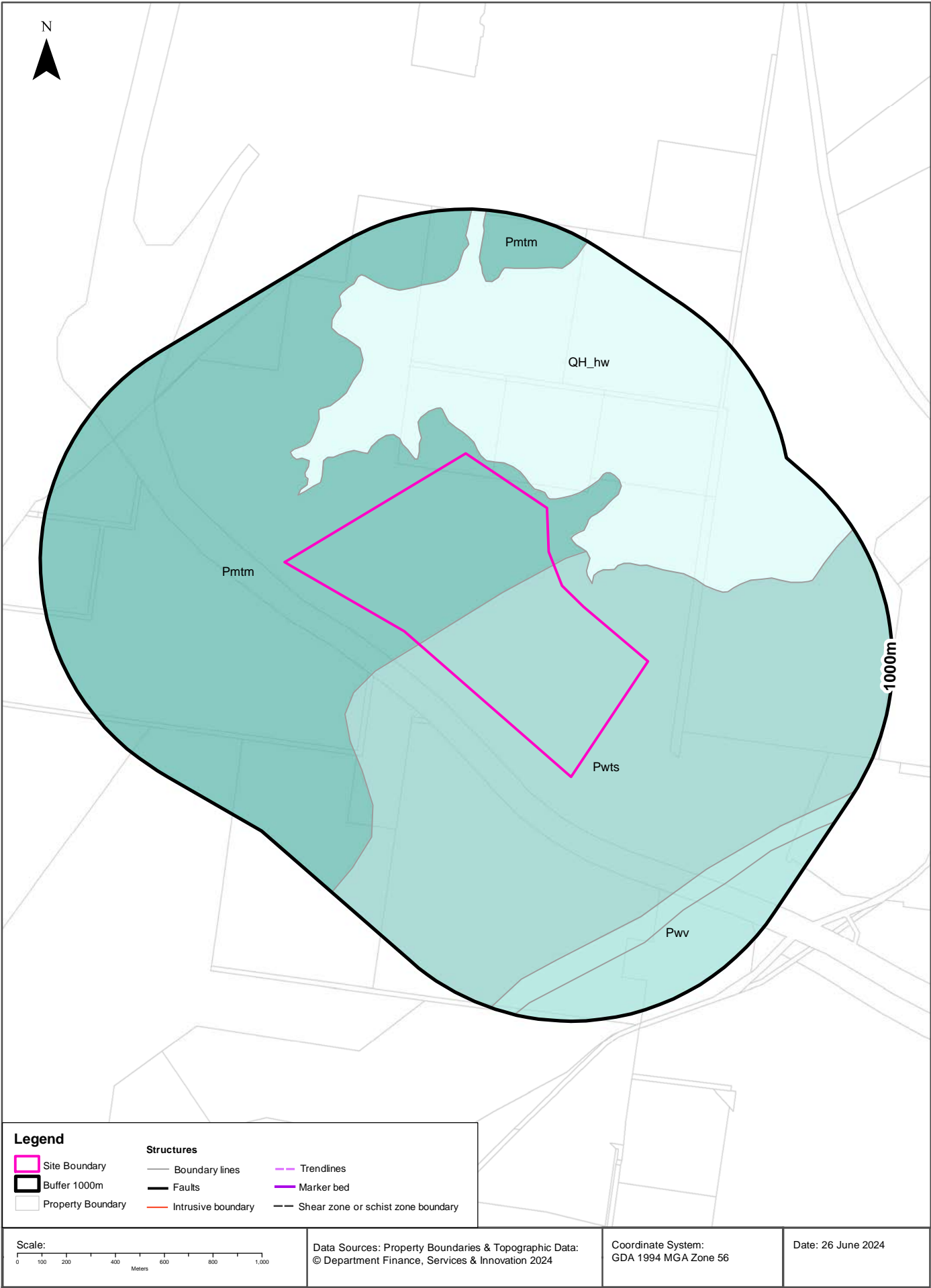
Site 3 - New England Highway, Muswellbrook, NSW 2333

Driller's Logs

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

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

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



Geology

Site 3 - New England Highway, Muswellbrook, NSW 2333

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Pmtm	Mulbring Siltstone	Medium- to dark-grey siltstone, minor claystone, sporadic thin cherty beds (resistant), rare thin sandstone and limestone beds, sporadic marine fossils.	\Maitland Group\ \Mulbring Siltstone\\	Guadalupian (base) to Guadalupian (top)	Siltstone	0m
Pwts	Saltwater Creek Formation	Quartz-lithic sandstone with rare shaly partings and laminae, siltstone, tuffaceous claystone beds and sporadic thin coal plies.	Singleton Supergroup \Wittingham Coal Measures\ \Saltwater Creek Formation\\	Lopingian (base) to Lopingian (top)	Sandstone	0m
QH_hw	Anthropogenic stored water, pondage, reservoirs, canals	Thinly laminated muds and silts with humic to biogenic debris (as bottom sediment to the overlying stored waters).	\Anthropogenic deposits\ \Anthropogenic stored water, pondage, reservoirs, canals\\	Quaternary (base) to Now (top)	Anthropogenic material	22m
Pwv	Vane Subgroup	Light-grey, fine- to medium-grained quartz-lithic sandstone, laminated siltstone, siltstone with fossil plant fragments, carbonaceous claystone, tuffaceous claystone and mudstone, sporadic pebble paraconglomerate, coal seams with bright and dull bands.	Singleton Supergroup \Wittingham Coal Measures\ \Vane Subgroup\\	Lopingian (base) to Lopingian (top)	Sandstone	631m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

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

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Naturally Occurring Asbestos Potential

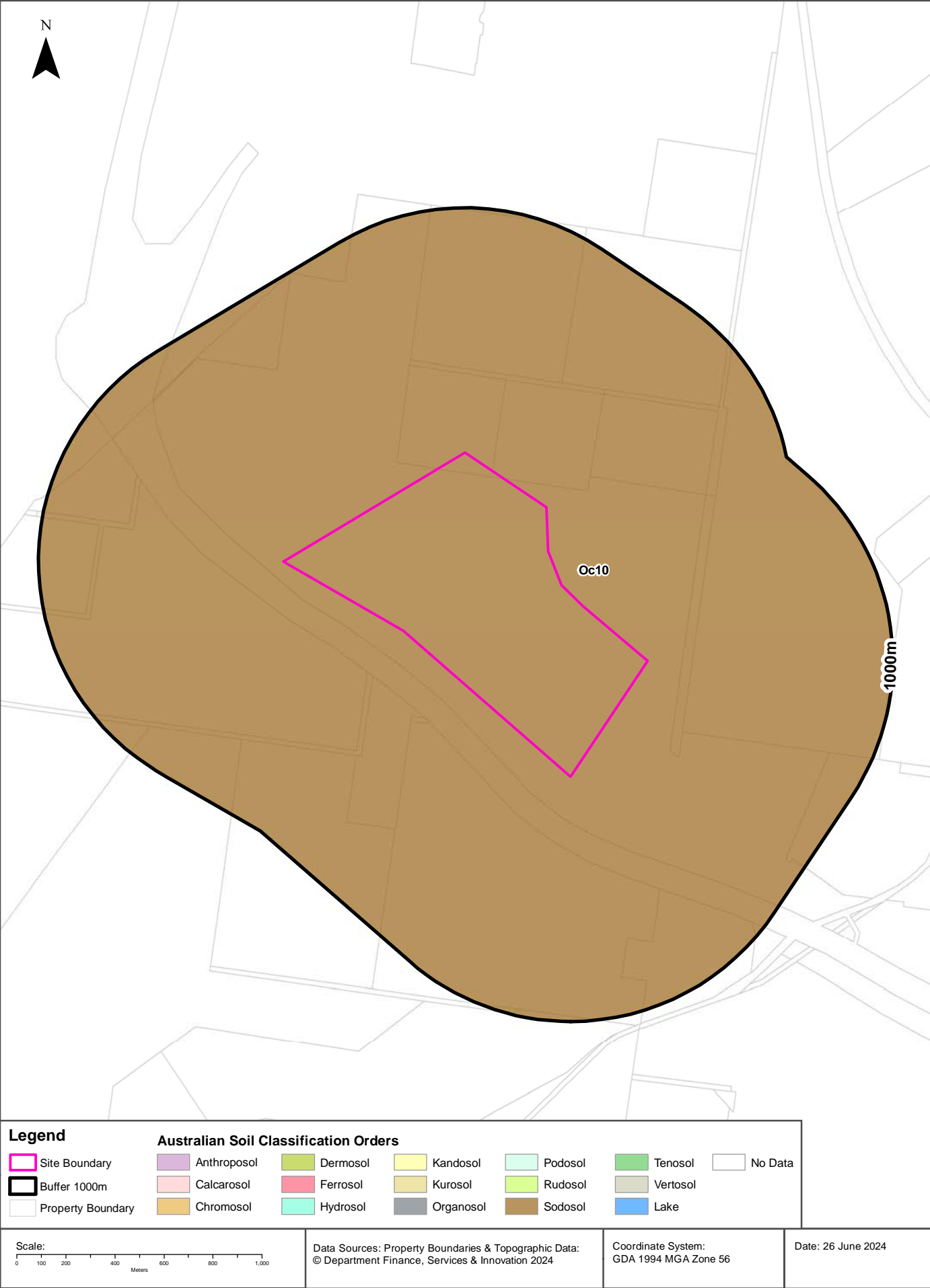
Site 3 - New England Highway, Muswellbrook, NSW 2333

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



Soils

Site 3 - New England Highway, Muswellbrook, NSW 2333

Atlas of Australian Soils

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

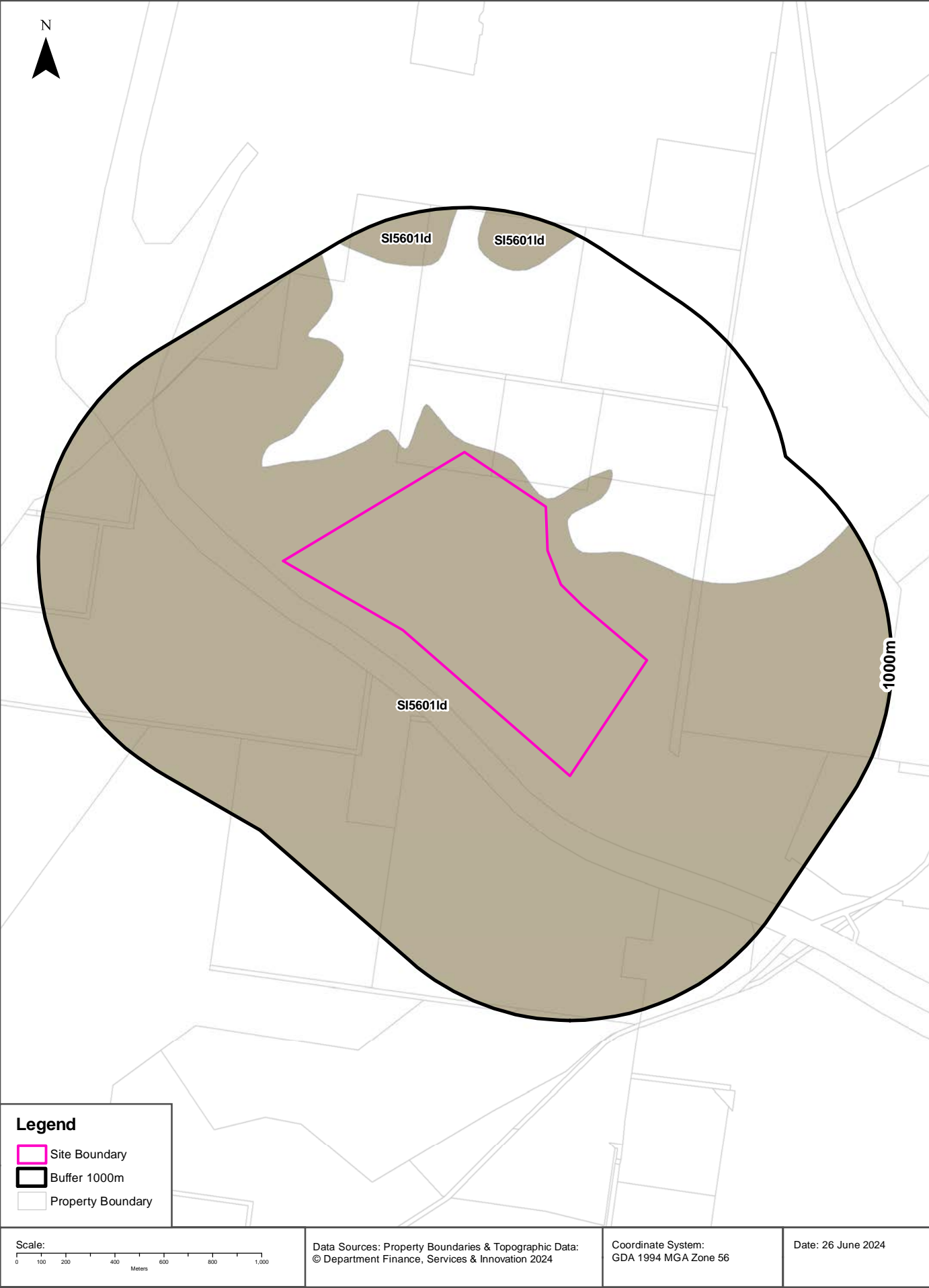
Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Oc10	Sodosol	Rolling to hilly country with some steep slopes, gently undulating hill-tops, low cliffs, and occasionally escarpments; traversed by flat to undulating valleys: chief soils are hard alkaline and neutral red brown, yellow, and dark soils: red (Dr2.33), (Dr2.23), (Dr2.43), (Dr2.32), (Dr2.22); brown (Db1.33) (Db1.43); yellow (Dy2.33), (Dy2.43), (Dy3.43), (Dy3.42); dark (Dd1.33), (Dd1.43), (Dd1.42) (Dr2.32) notably occurs on gravelly hill-tops. Associated are: the (Ug5) soils of unit Ke12, which forms soil complexes with the above (D) soils in some areas; some basaltic hills and knolls of (Ug5.1) (Ug5.3), (Db3.12), (Gn3.42), and (Um6) soils; some (Uf6.31) and/or (Gn3.13) soils; some (Um4.1 and/or (Um4.2) soils and possibly other shallow (Um) or (Uc) soils on steep slopes; (Dy3.41) (Dr3.41), and (Dr2.41) soils as for unit Tb41; and various (Um) and (Uc) soils along the streams where some salinity is evident. This unit is very broad and the soil pattern is complex. Northward it grades towards the soil conditions found in units Qb19 and Ob14, having similarities to unit Ob10 in the Murrurundi area. To the south-east it grades into unit Tb42, the boundary between the two units is indefinite.	0m	On-site

Atlas of Australian Soils Data Source: CSIRO

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Soil Landscapes of Central and Eastern NSW

Site 3 - New England Highway, Muswellbrook, NSW 2333



Soils

Site 3 - New England Highway, Muswellbrook, NSW 2333

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
SI5601ld	Liddell	0m	On-site

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

Site 3 - New England Highway, Muswellbrook, NSW 2333

Environmental Planning Instrument - Acid Sulfate Soils

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

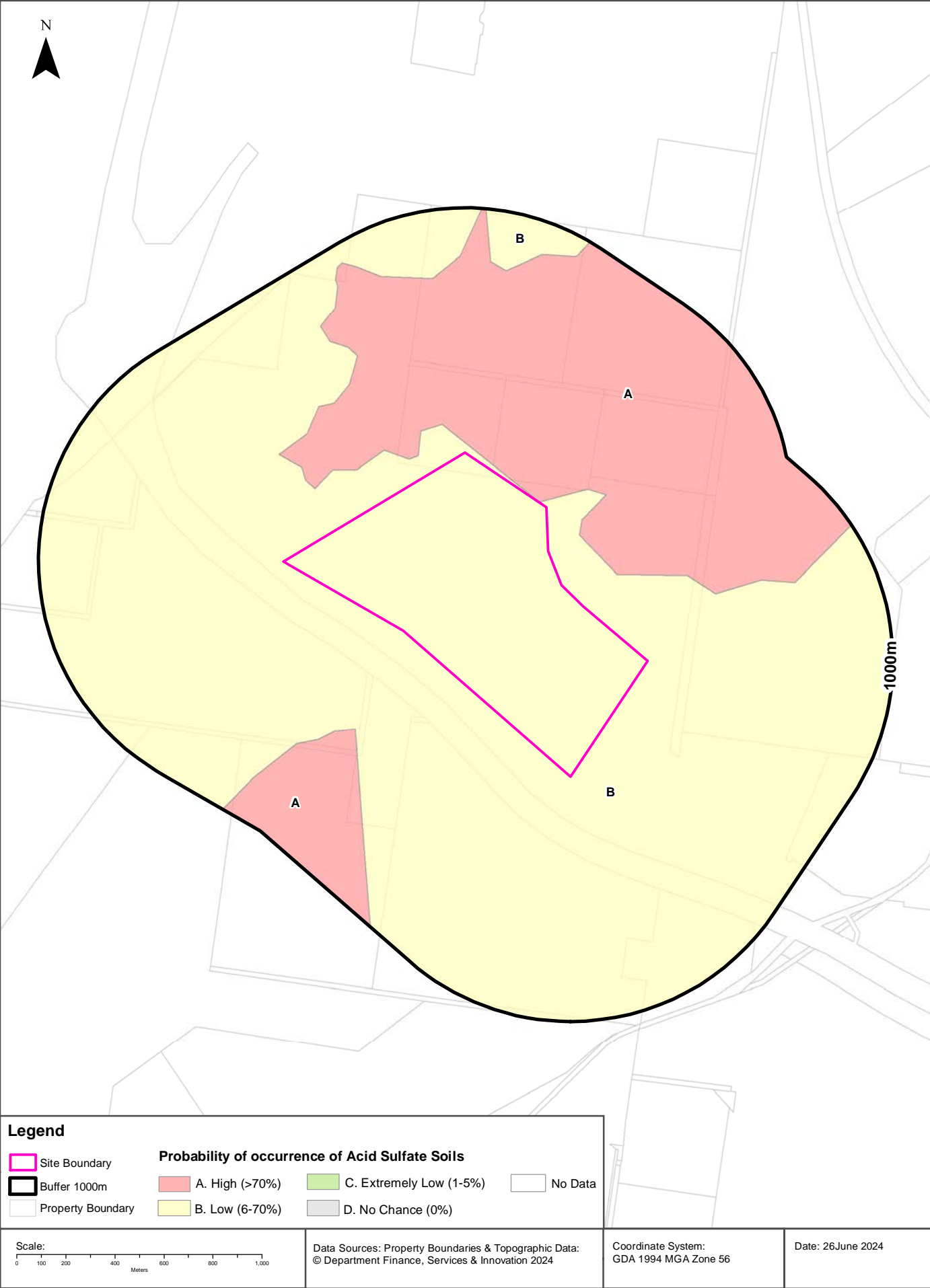
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Acid Sulfate Soils

Site 3 - New England Highway, Muswellbrook, NSW 2333

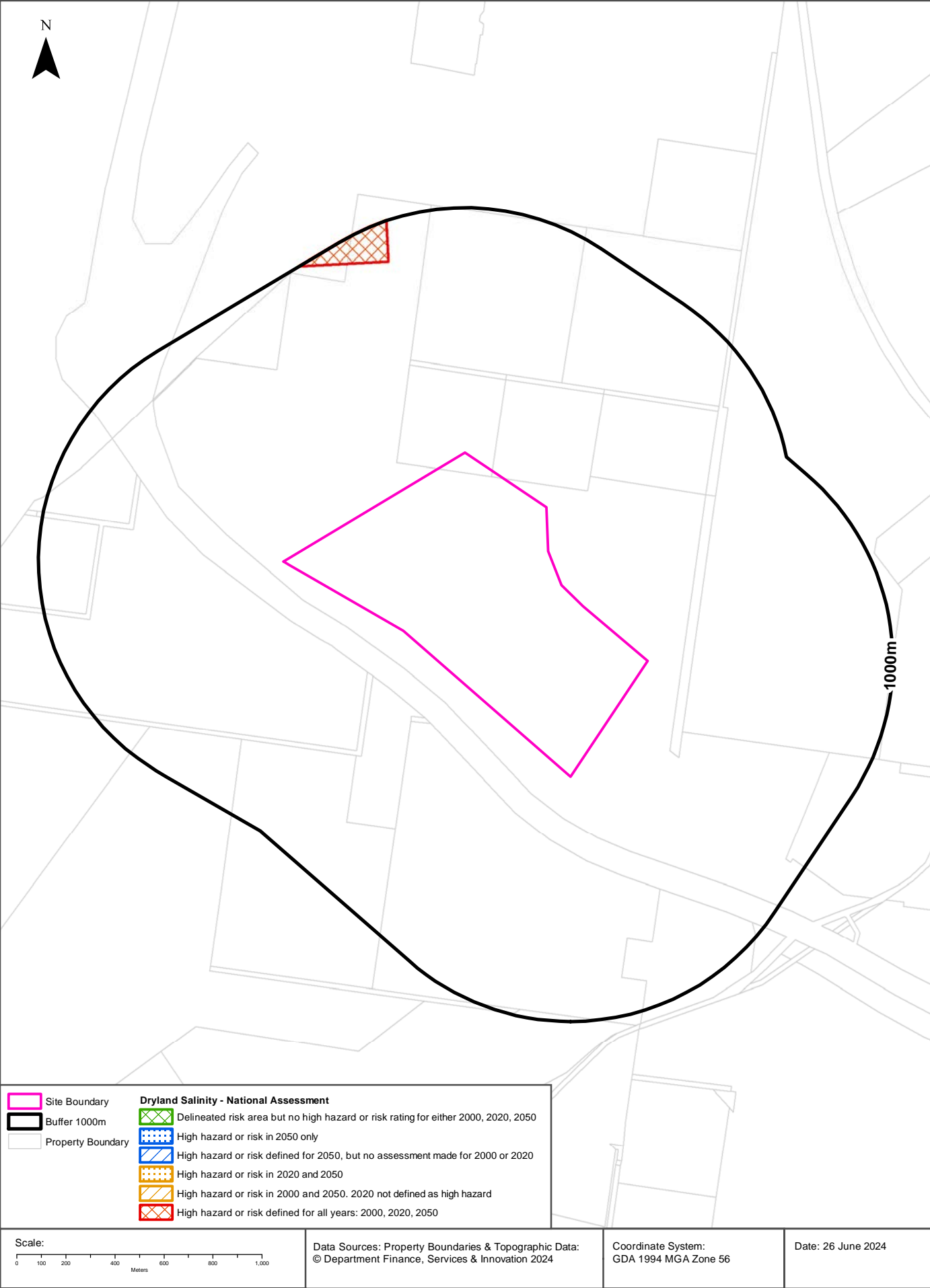
Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site
A	High Probability of occurrence. >70% chance of occurrence.	1m	North East

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Dryland Salinity

Site 3 - New England Highway, Muswellbrook, NSW 2333

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

Yes

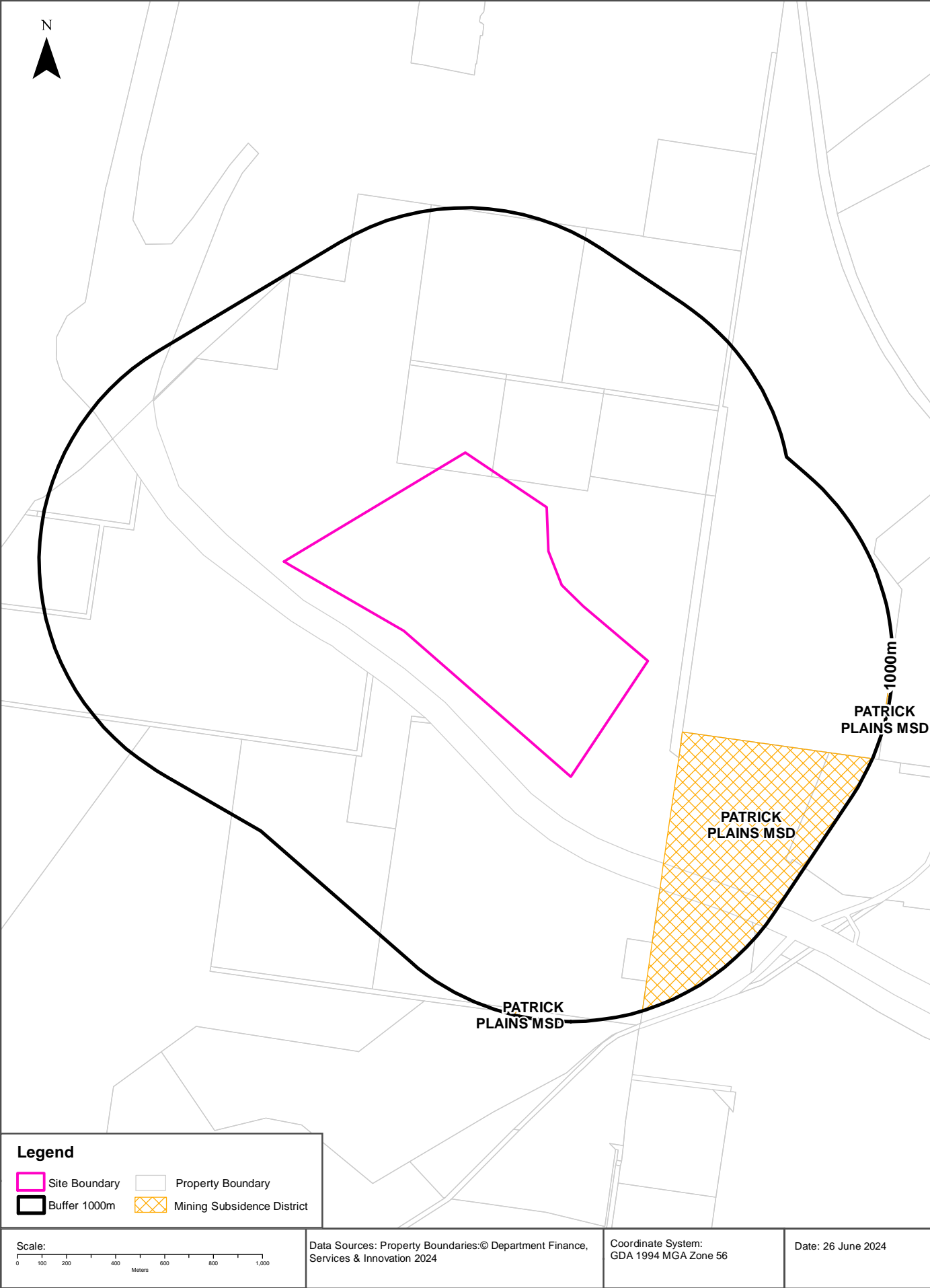
What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	842m	North

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

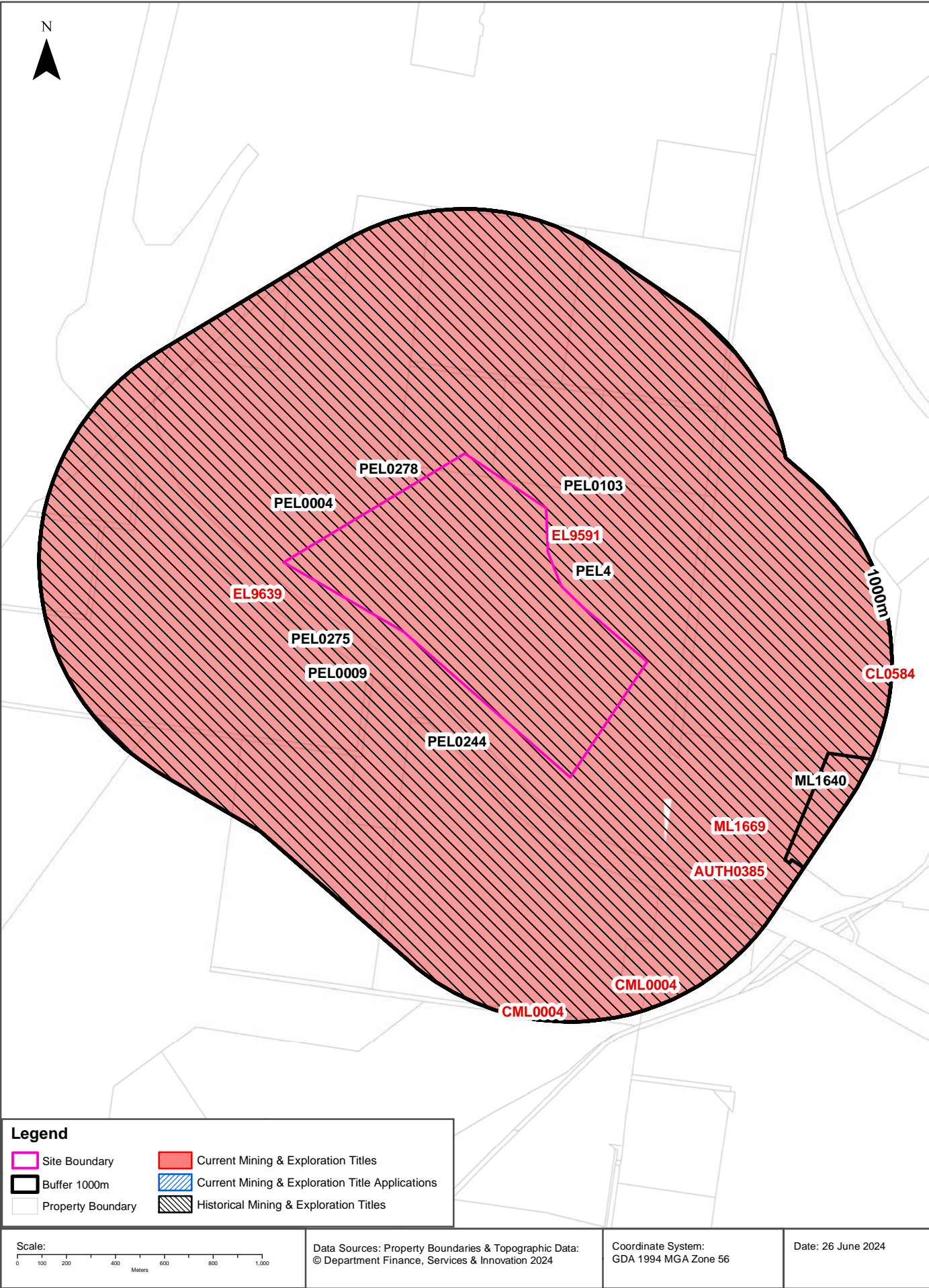
Site 3 - New England Highway, Muswellbrook, NSW 2333

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
PATRICK PLAINS	278m	South East

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

Site 3 - New England Highway, Muswellbrook, NSW 2333

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
EL9591	UPPER HUNTER GEOTHERMAL ENERGY PTY LTD	27/07/2023	27/07/2028	20230727	EXPLORING	MINERALS	Group 8	0m	On-site
EL9639	STRATEGIC RARE EARTHS PTY LTD	25/03/2024	25/03/2026	20240325	EXPLORING	MINERALS	Group 1, Group 10	0m	On-site
ML1669	CUMNOCK MANAGEMENT PTY LIMITED	08/02/2012	08/02/2033	20120208	MINING	COAL	Coal	278m	South East
AUTH0385	CUMNOCK MANAGEMENT PTY LIMITED	02/06/1986	02/06/2025	20220906	EXPLORING	COAL	Group 9	278m	South East
CML0004	COAL & ALLIED OPERATIONS PTY LTD; ANOTERO PTY LIMITED	02/03/1993	03/06/2033	20120507	MINING	COAL	Coal, Petroleum	874m	South
CL0584	COAL & ALLIED OPERATIONS PTY LTD; ANOTERO PTY LIMITED	01/01/1982	31/12/2044	20240101	MINING	COAL	Coal, Petroleum - Coal Seam Methane Only	989m	East

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

Site 3 - New England Highway, Muswellbrook, NSW 2333

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL0278	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PEL0275	SYDNEY OIL COMPANY PTY LTD, MACQUARIE OIL (SYDNEY) PTY LTD, NORTH MICHIGAN EXPLORATION CO., BASE RESOURCES LTD, GOVERNME	19860502	19880402	PETROLEUM	Petroleum	0m	On-site
PEL0244	FRONTIER RESOURCES AUSTRALIA LTD, SION RESOURCES AUSTRALIA LTD, SYDNEY OIL COMPANY, PETROSEARCH PTY LTD	19810110	19841210	PETROLEUM	Petroleum	0m	On-site
PEL0103	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL0004	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20150607	PETROLEUM	Petroleum	0m	On-site
PEL0009	AUSTRALIAN OIL AND GAS CORPORATION LTD, UNION OIL DEVELOPMENT CORP., KERN COUNTY LAND CO.			PETROLEUM	Petroleum	0m	On-site
PEL4	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20011129	MINERALS		0m	On-site
ML1640	CUMNOCK NO.1 COLLIERY PTY LIMITED, ICRA CUMNOCK PTY LTD	20091211	30000101	MINERALS		831m	South East

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

State Environmental Planning Policy

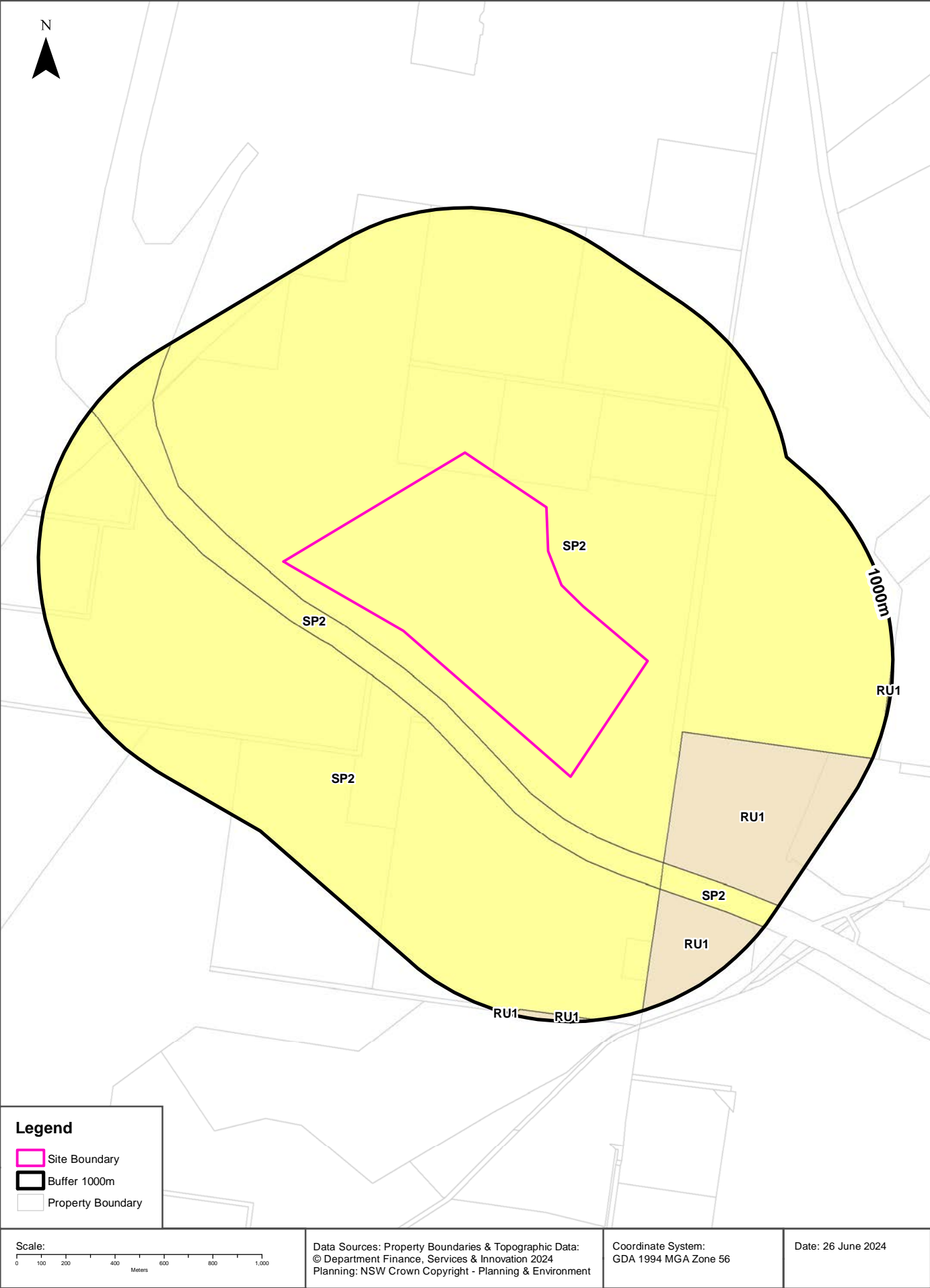
Site 3 - New England Highway, Muswellbrook, NSW 2333

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							

State Environment Planning Policy Data Source: NSW Crown Copyright - Planning & Environment
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Environmental Planning Instrument

Site 3 - New England Highway, Muswellbrook, NSW 2333

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
SP2	Infrastructure	Power Station	Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	0m	On-site
SP2	Infrastructure	Classified Road	Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	70m	West
SP2	Infrastructure	Power Station	Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	178m	South West
RU1	Primary Production		Singleton Local Environmental Plan 2013	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 3	278m	South East
SP2	Infrastructure	Classified Road	Singleton Local Environmental Plan 2013	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 3	518m	South East
RU1	Primary Production		Singleton Local Environmental Plan 2013	21/04/2023	26/04/2023	15/12/2023	Map Amendment No 3	586m	South East
RU1	Primary Production		Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	969m	South
RU1	Primary Production		Muswellbrook Local Environmental Plan 2009	21/04/2023	26/04/2023	09/06/2023	Map Amendment No 3	989m	East

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

Site 3 - New England Highway, Muswellbrook, NSW 2333

Commonwealth Heritage List

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

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

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

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

Note. Please click on Place Id to activate a hyperlink to online website.

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

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch
Creative Commons 3.0 © Commonwealth of Australia <https://creativecommons.org/licenses/by/3.0/au/deed.en>

State Heritage Register - Curtilages

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

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

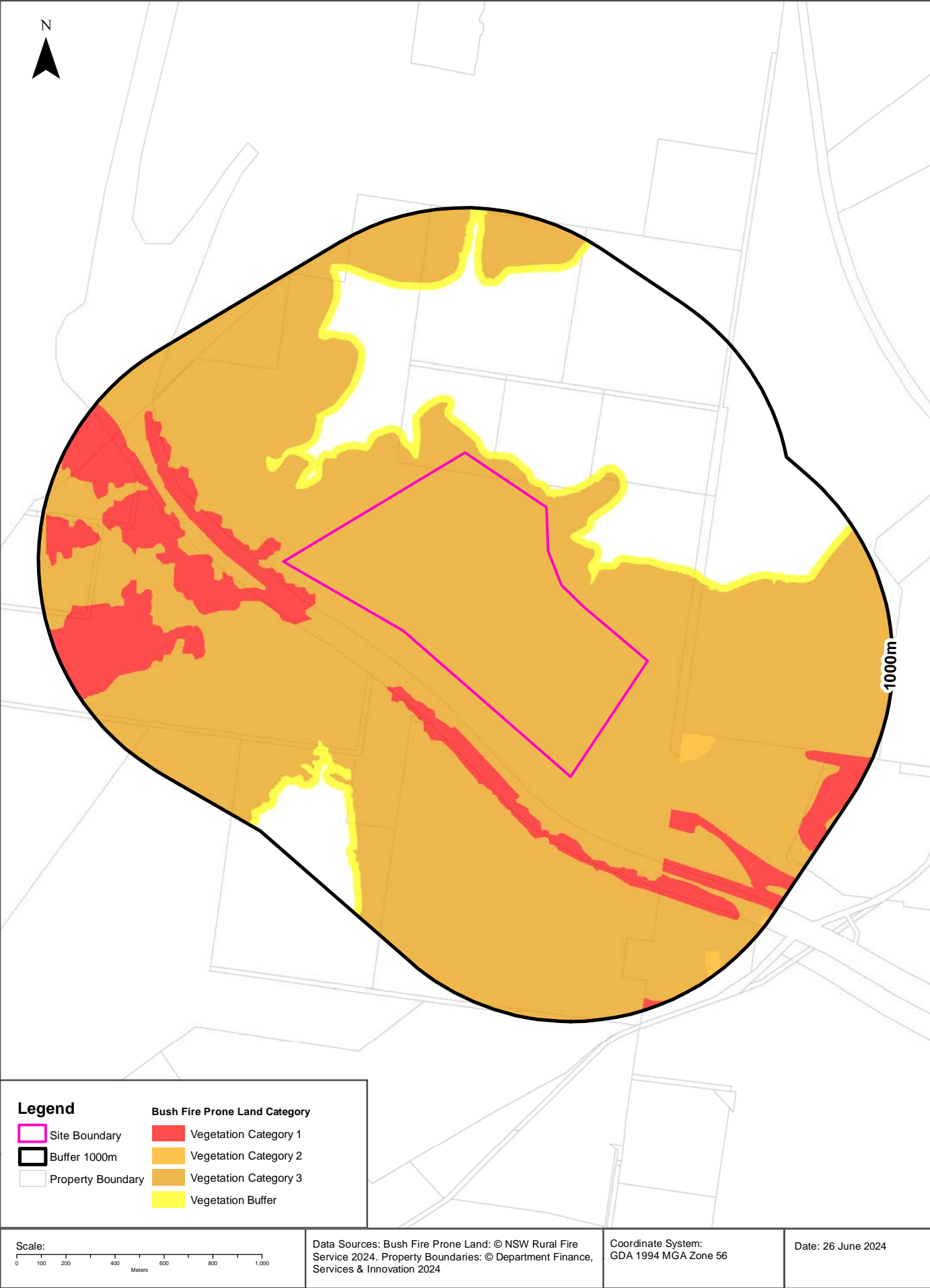
Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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Environmental Planning Instrument - Heritage

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

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

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Natural Hazards

Site 3 - New England Highway, Muswellbrook, NSW 2333

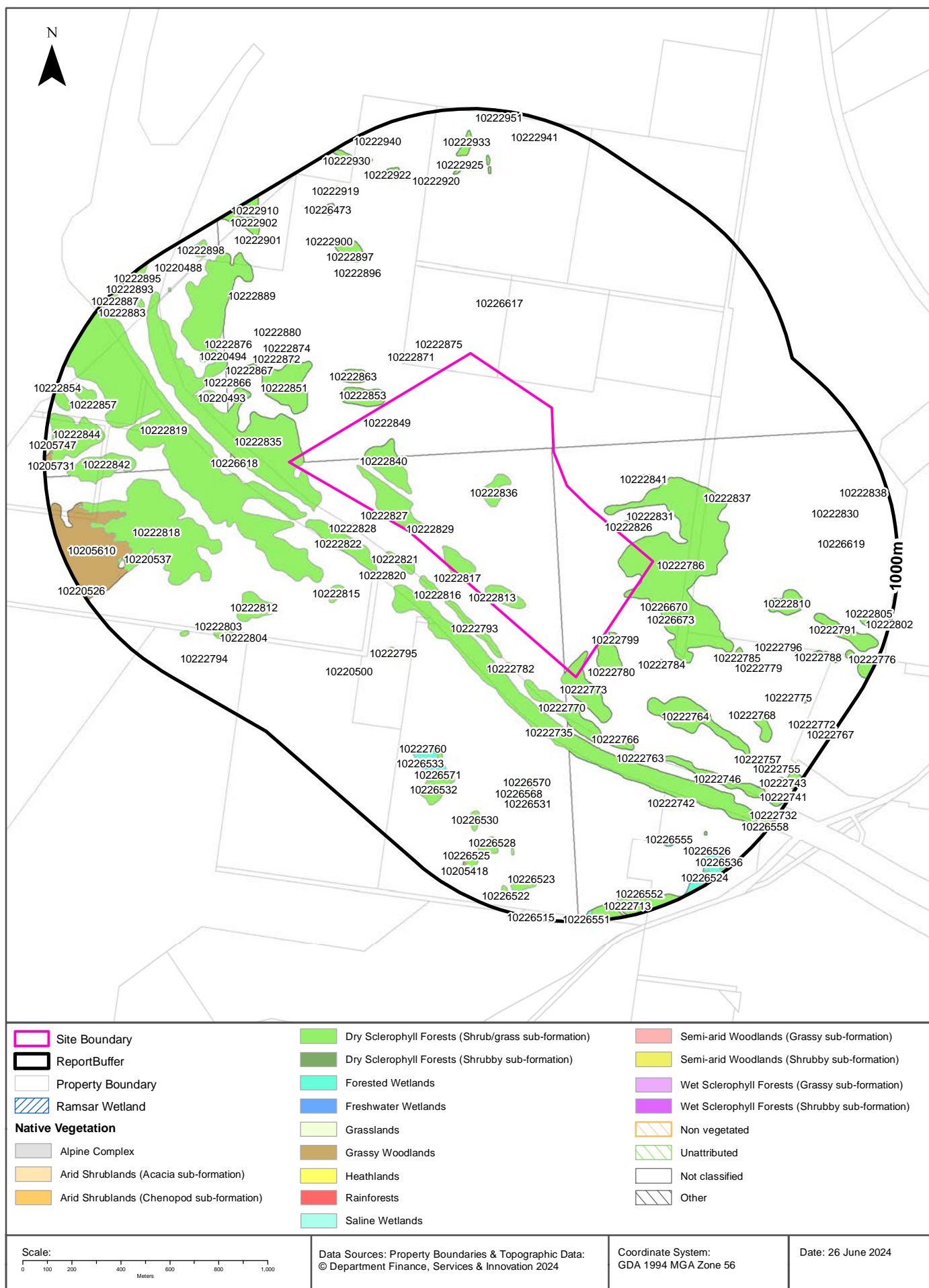
Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 3	0m	On-site
Vegetation Buffer	27m	North
Vegetation Category 1	46m	West
Vegetation Category 2	278m	South East

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

Site 3 - New England Highway, Muswellbrook, NSW 2333



Ecological Constraints

Site 3 - New England Highway, Muswellbrook, NSW 2333

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10220500	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10222773	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222780	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222786	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222813	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222817	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222827	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222829	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222835	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222836	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222840	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10222849	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	0m	On-site
10226617	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10226619	Not classified	(Not classified) Not classified	Not classified	0m	On-site
10222853	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	11m	North West
10222799	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	12m	South East
10222826	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	40m	East
10222821	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	74m	South West
10222828	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	86m	West
10222875	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	93m	North
10222816	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	96m	South West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222793	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	98m	South
10222871	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	110m	North West
10222770	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	115m	South
10222831	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	127m	East
10222863	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	127m	North West
10222782	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	136m	South
10226670	Not classified	(Not classified) Not classified	Not classified	136m	South East
10222819	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	137m	West
10222822	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	140m	West
10222851	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	151m	North West
10222735	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	156m	South
10226673	Not classified	(Not classified) Not classified	Not classified	185m	South East
10226618	Not classified	(Not classified) Not classified	Not classified	186m	West
10222820	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	187m	South West
10222841	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	203m	East
10220488	Not classified	(Not classified) Not classified	Not classified	239m	North West
10222784	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	248m	South East
10222766	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	278m	South East
10222764	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	299m	South East
10220493	Not classified	(Not classified) Not classified	Not classified	325m	West
10222815	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	332m	South West
10222872	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	380m	North West
10222874	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	386m	North West
10222870	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	389m	North West
10222867	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	393m	North West
10222837	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	395m	East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10222795	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	399m	South West
10222866	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	407m	North West
10222763	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	411m	South East
10222818	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	429m	West
10222880	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	469m	North West
10226570	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	472m	South
10226531	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	473m	South
10222785	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	485m	South East
10222746	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	486m	South East
10226569	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	486m	South
10220494	Not classified	(Not classified) Not classified	Not classified	498m	North West
10222810	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	501m	East
10226568	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	507m	South
10222896	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	510m	North West
10222876	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	523m	North West
10222812	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	534m	South West
10222897	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	557m	North West
10222779	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	567m	South East
10222797	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	583m	South East
10222760	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	591m	South
10226571	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	607m	South
10222796	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	611m	South East
10222842	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	626m	West
10226532	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	633m	South
10222742	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	634m	South East
10222889	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	649m	North West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10220517	Not classified	(Not classified) Not classified	Not classified	660m	West
10226533	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	671m	South
10222768	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	672m	South East
10226530	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	680m	South
10222790	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	683m	South East
10222900	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	683m	North West
10220537	Not classified	(Not classified) Not classified	Not classified	690m	West
10222791	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	696m	East
10205610	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	699m	West
10222804	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	699m	South West
10222803	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	709m	South West
10222920	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	716m	North
10222925	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	735m	North
10226528	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	736m	South
10222924	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	738m	North
10226527	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	748m	South
10222788	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	750m	South East
10226555	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	754m	South East
10222775	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	758m	South East
10222844	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	760m	West
10222830	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	767m	East
10222927	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	773m	North
10222922	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	778m	North
10226473	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	779m	North West
10226529	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	779m	South East
10205655	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	782m	West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10220504	Not classified	(Not classified) Not classified	Not classified	787m	West
10222789	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	792m	South East
10222757	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	799m	South East
10222806	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	805m	South West
10222933	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	807m	North
10222912	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	809m	North West
10222729	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	821m	South East
10222774	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	826m	South East
10222783	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	831m	South East
10222857	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	831m	West
10226523	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	835m	South
10226525	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	835m	South
10222901	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	839m	North West
10222919	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	846m	North West
10222758	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	848m	South East
10222892	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	849m	North West
10222902	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	852m	North West
10222794	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	859m	South West
10222884	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	866m	North West
10222805	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	870m	East
10222886	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	870m	North West
10222787	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	872m	South East
10205418	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	874m	South
10222755	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	880m	South East
10222931	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	882m	North

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10226526	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	885m	South East
10226536	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	885m	South East
10222838	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	886m	East
10222898	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	897m	North West
10226522	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	904m	South
10222772	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	906m	South East
10226552	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	911m	South
10222883	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	912m	North West
10222713	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	913m	South
10222743	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	918m	South East
10222941	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	918m	North
10222854	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	922m	West
10222930	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	922m	North West
10222741	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	931m	South East
10226506	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	933m	South East
10205731	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	939m	West
10222708	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	939m	South
10222776	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	940m	South East
10226561	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	941m	South East
10222940	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	943m	North
10222732	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	949m	South East
10226524	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	949m	South East
10222910	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	951m	North West
10226551	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	952m	South
10222893	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	954m	North West
10222887	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	956m	North West

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
10226559	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	957m	South East
10222951	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	963m	North
10222932	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	966m	North West
10205747	Grassy Woodlands	(Grassy Woodlands) Central Hunter Slopes Grey Box Forest	Coastal Valley Grassy Woodlands	967m	West
10222895	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	970m	North West
10222767	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	977m	South East
10226558	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	982m	South East
10226550	Forested Wetlands	(Forested Wetlands) Central Hunter Riparian Forest	Coastal Floodplain Wetlands	983m	South
10220514	Not classified	(Not classified) Not classified	Not classified	986m	North West
10220526	Not classified	(Not classified) Not classified	Not classified	996m	West
10226515	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	996m	South
10222802	Dry Sclerophyll Forests (Shrub/grass sub-formation)	(Dry Sclerophyll Forests (Shrub/grass sub-formation)) Central Hunter Ironbark Grassy Woodland	Hunter-Macleay Dry Sclerophyll Forests	998m	East

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

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Ecological Constraints

Site 3 - New England Highway, Muswellbrook, NSW 2333

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints

Site 3 - New England Highway, Muswellbrook, NSW 2333

Collaborative Australian Protected Areas Database - Terrestrial

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

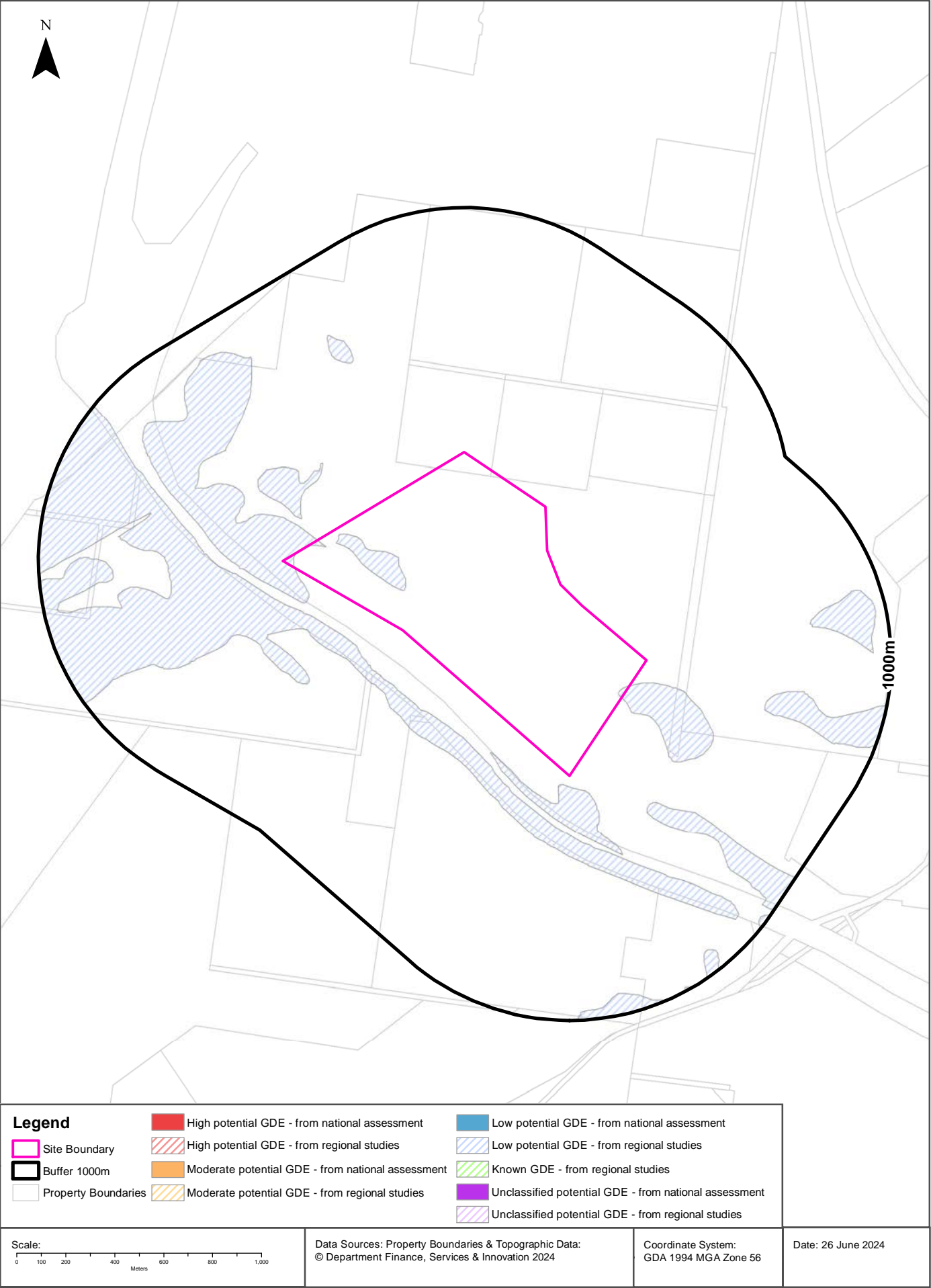
Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

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

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

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022
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Ecological Constraints

Site 3 - New England Highway, Muswellbrook, NSW 2333

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site

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

Site 3 - New England Highway, Muswellbrook, NSW 2333



Ecological Constraints

Site 3 - New England Highway, Muswellbrook, NSW 2333

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial		2 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial		7 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial		5 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		0m	On-site
Terrestrial		6 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		41m	South
Terrestrial		3 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		137m	West
Terrestrial		8 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		518m	East
Terrestrial		10 Undulating to low hilly country on weak rocks, with alluvial and sandy littoral plains.	Vegetation		551m	North West

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

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Ecological Constraints

Site 3 - New England Highway, Muswellbrook, NSW 2333

NSW BioNet Species Sightings

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria aurea	Green and Golden Bell Frog	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Aphelocephala leucopsis	Southern Whiteface	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
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	Calidris ruficollis	Red-necked Stint	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathamii lathamii	South-eastern Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	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	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	South-eastern Hooded Robin	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Tyto longimembris	Eastern Grass Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Petrogale penicillata	Brush-tailed Rock-wallaby	Endangered	Not Sensitive	Vulnerable	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Aprasia parapulchella	Pink-tailed Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Delma impar	Striped Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Uvidicolus sphyrurus	Border Thick-tailed Gecko	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia pendula	Weeping Myall, Boree	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Dichanthium setosum	Bluegrass	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Endangered Population, Vulnerable	Category 2	Not Listed	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Vulnerable	Category 2	Not Listed	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Plantae	Flora	Galium australe	Tangled Bedstraw	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Ozothamnus tessellatus		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Prasophyllum petilum	Tarengo Leek Orchid	Endangered	Category 2	Endangered	
Plantae	Flora	Rhodamnia rubescens	Scrub Turpentine	Critically Endangered	Not Sensitive	Critically Endangered	

Data does not include NSW category 1 sensitive species.

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

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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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