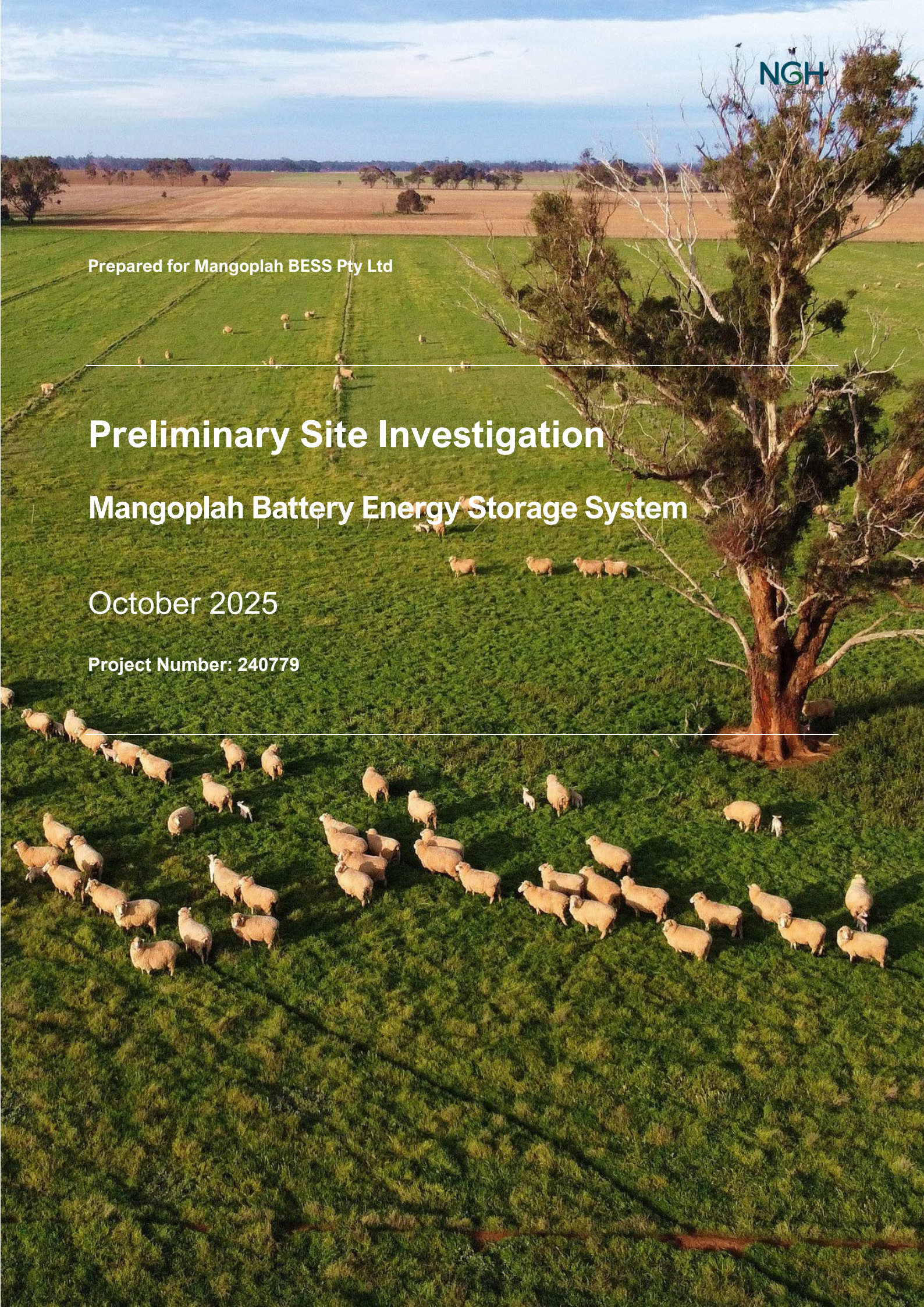


Prepared for Mangoplah BESS Pty Ltd

Preliminary Site Investigation

Mangoplah Battery Energy Storage System

October 2025

Project Number: 240779

Document verification

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We acknowledge the Traditional Owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original custodians of the Australian environment.

Table of contents

1. Introduction 1

1.1. Background 1

1.2. Objectives and scope 1

1.3. Applicable guidelines and standards 1

2. Site information 3

2.1. Site identification 3

2.2. Contaminated land registers 3

2.3. Site history 3

2.3.1. Land zoning and use 3

2.3.2. Aerial imagery review 6

2.3.3. Historic land title search 9

2.3.4. Database searches 9

2.3.5. Planning instruments 10

2.4. Site environmental settings 11

2.4.1. Climate 11

2.4.2. Topography 14

2.4.3. Surface water and hydrology 14

2.4.4. Vegetation 14

2.4.5. Hydrogeology 14

2.4.6. Geology 18

2.4.7. Soils 18

3. Preliminary conceptual site model 19

4. Potential Areas of Environmental Concern 20

5. Sampling strategy and plan 21

5.1. Sampling strategy and justification 21

6. Applicable Tier 1 soil screening levels 23

6.1. Introduction 23

6.2. Protection of human health 23

7. Data quality objectives and QA/QC 25

7.1. Data quality objectives 25

7.2. Data Quality Indicators and QA/QC assessment 29
7.3. Field QA/QC assessment 30
7.3.1. Field QA/QC program 30
7.3.2. Field QA/QC assessment 32
7.4. Laboratory QA/QC program 32
7.4.1. Laboratory QA/QC assessment 33
7.5. Review of DQIs 34
7.6. Data completeness evaluation 37
8. Site investigation 38
8.1. Site walkover 38
8.2. Soil sampling program 40
8.3. Laboratory analysis program 40
9. Soil investigation results 41
9.1. Field observations 41
9.2. Soil analysis results 41
9.2.1. Analysis program 41
9.2.2. Comparison against HILs/HSLs (protection of human health) 41
10. Revised conceptual site model 43
11. Discussion 45
11.1. Data gaps 45
12. Conclusion 46
12.1. Recommendations 46
13. References 47
14. Limitations ..... A-I
E.1 Certificate of analysis ..... E-I
E.2 Chain of custody forms ..... E-I
E.3 Laboratory QA / QC certificates ..... E-I
G.1 Intra-laboratory duplicate ..... G-I
G.2 Inter-laboratory duplicate ..... G-I

Figures

Figure 1-1 Site location 2

Figure 2-1 Land zoning 4

Figure 2-2 Land use 5

Figure 2-3 Site topography and hydrology 16

Figure 2-4 Groundwater Dependent Ecosystems 17

Figure 5-1 Sampling locations 22

Figure 8-1 Onsite observations 39

Figure 14-1 Groundcover vegetation within the site ..... H-I

Figure 14-2 Transmission line infrastructure ..... H-I

Figure 14-3 Waste stockpile ..... H-II

Figure 14-4 Access roads ..... H-III

Figure 14-5 Herbicide storage area ..... H-III

Figure 14-6 TP01 soil profile ..... H-III

Figure 14-7 TP01 soil samples ..... H-III

Figure 14-8 TP01 post-sampling ..... H-IV

Figure 14-9 TP02 soil profile ..... H-IV

Figure 14-10 TP02 soil samples ..... H-IV

Figure 14-11 TP02 post sampling ..... H-IV

Figure 14-12 TP03 soil profile ..... H-V

Figure 14-13 TP03 soil samples ..... H-V

Figure 14-14 TP03 post-sampling ..... H-V

Figure 14-15 TP04 soil profile ..... H-V

Figure 14-16 TP04 soil samples ..... H-VI

Figure 14-17 TP04 post-sampling ..... H-VI

Tables

Table 2-1 Site identification details 3

Table 2-2 Aerial photography review 6

Table 2-3 Climate and weather statistics for Wagga Wagga AMO AWS (station number 072150) 12

Table 2-4 Groundwater bores occurring within 1 km of the site 15

Table 3-1 Preliminary CSM 19

Table 5-1 Justification for the sampling strategy 21

Table 6-1 Assessment criteria rationale 23

Table 6-2 Site assessment criteria for protection of human health 24

Table 7-1 Project DQIs 29

Table 7-2 Post fieldwork review of DQIs 34

Table 8-1 Laboratory analysis program 40

Table 9-1 Summary of metal concentrations (mg/kg) in primary soil samples 42

Table 10-1 Revised CSM 43

Appendices

Appendix A Lotsearch ..... A-II

Appendix B Title Search ..... B-I

Appendix C Planning Certificates ..... C-I

Appendix D Soil logs ..... D-I

Appendix E Laboratory results ..... E-I

Appendix F Chemical summary tables ..... F-I

Appendix G RPD tables ..... G-I

Appendix H Site photos ..... H-I

Acronyms and abbreviations

ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ASC	Australian Soil Classification
AWS	Automatic weather station
BESS	Battery energy storage system
CLM Act	*Contaminated Land Management Act 1997*
CoPC	Chemicals of potential concern
CSM	Conceptual Site Model
DCP	Development Control Plan
DP	Deposited Plan
DPHI	Department of Planning, Housing and Infrastructure
DQIs	Data Quality Indicators
DQOs	Data Quality Objectives
EPA	Environmental Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
GDE	Groundwater dependent ecosystem
GSG	Greater Soil Group
ha	hectares
km	kilometres
LEP	Local Environment Plan
LGA	Local government area
LOR	Limit of Reporting

m	metres
mbgl	metres below ground level
NATA	National Association of Testing Authorities
NEPM	*National Environment Protection (Assessment of Site Contamination) Measure*
NGH	NGH Pty Ltd
NSW	New South Wales
OCP	Organochlorine Pesticides
OPP	Organophosphate Pesticides
PCT	Plant Community Type
PFAS	Per- and Polyfluoroalkyl Substances
POEO Act 1997	*Protection of the Environment Operations Act 1997*
PQLs	Practical Quantification Limits
PSI	Preliminary Site Investigation
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policy
SVTM	State Vegetation Type Mapping
UXO	Unexploded Ordnance

1. Introduction

1.1. Background

NGH Pty Ltd (NGH) was engaged by Mangoplah BESS Pty Ltd (the Client) to prepare a Preliminary Site Investigation (PSI) report to support the development of a Battery Energy Storage System (BESS, the Project). The BESS would require excavation and land forming works. These activities may result in the mobilisation of potential contaminants, which may present a risk to human health or the environment.

The Project is located on part of Lot 222 Deposited Plan (DP) 754557, Lot 225 DP 754557 and Lot 228 DP 754557 (the site), also known as 4178 Holbrook Road, Mangoplah NSW 2652, refer to Figure 1-1. It is noted that the proposed development footprint of the Project only comprises a relatively small part of the site.

The site and surrounding land have been historically utilised for agricultural activities, specifically cropping. In addition to this, a 132kV transmission line is located within parts of the site but only within a small portion of the proposed development footprint. Agricultural activities are listed as potentially contaminating land use activities within Table 1 of the Managing Land Contamination Planning Guidelines (EPA, 1998). Therefore, a PSI including preliminary soil sampling is required to determine if there is potential for soil contamination within the site.

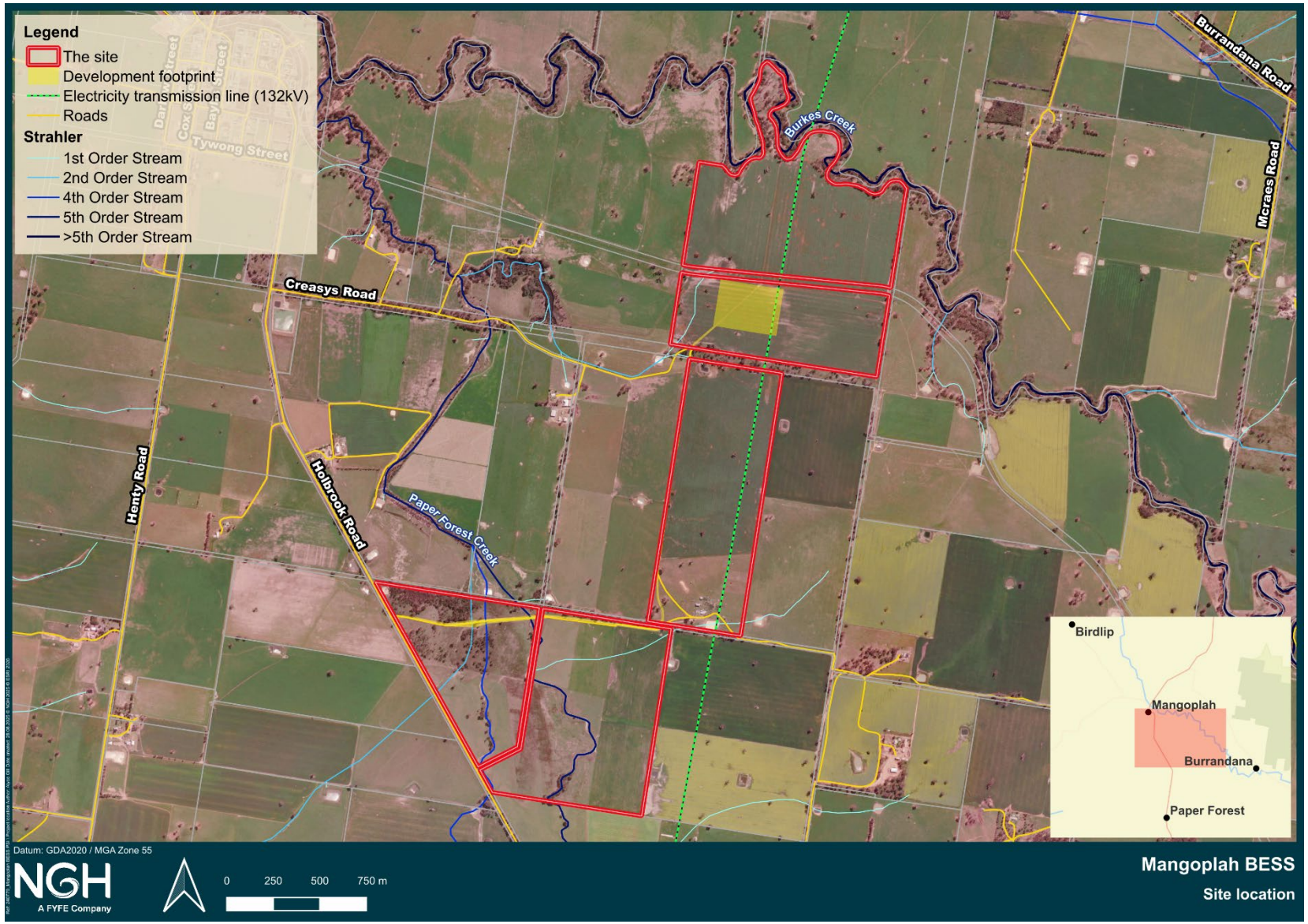


Figure 1-1 Site location

1.2. Objectives and scope

The objectives of the PSI were to:

- Provide a report specific to the site, in general accordance with the *National Environment Protection (Assessment of Site Contamination) Measure,* as amended in 2013 (ASC NEPM) (NEPC, 1999)
- Identify and assess the nature of existing or potential soil contamination at the identified sample locations, in general accordance with the *Contaminated Land Management Act 1997* (CLM Act) and relevant guidelines (refer to Section 1.3) made or endorsed by the NSW Environment Protection Authority (EPA)
- Assess whether, based on the preliminary soil analysis results, identified soil contamination poses unacceptable risks to human health or the environment within the development footprint
- Evaluate the adequacy and completeness of all information available for use in the assessment of risk and for making decisions on management requirements, including an assessment of uncertainty
- Determine whether the site is suitable for its current approved or the proposed land use and, if warranted, provide recommendations for further action.

The scope of work included:

- A review of the site history and environmental settings
- A site inspection
- Field investigations including:
  - A site walkover
  - A soil sampling program, including:
    - Four (4) test pits to a maximum depth of 0.5 metres below ground level (mbgl)
- Collection of soil samples at 0.5 metre (m) intervals, and:
  - After a change in soil profile
  - If fill is encountered
  - If staining / odours are observed
- Sample analysis (refer to Section 8.3)
- Reporting including:
  - Completion of a Quality Assurance/Quality Control (QA/QC) program
  - Reviewing analytical data and comparing against the site assessment criteria
  - Providing a conclusion and recommendations for further work if required.

1.3. Applicable guidelines and standards

This PSI has been prepared in general accordance with the following reference documents:

- National Environment Protection (Assessment of Site Contamination) Measure, 1999 [ASC NEPM] (as amended May 2013) (NEPM, 2013)
- Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 2013a)
- Schedule B2 - Guideline on Data Collection, Sample Design and Reporting of the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC, 2013b)
- Contaminated Land Guidelines. Sampling Design Part 1 - Application (NSW EPA, 2022)
- Contaminated Land Guidelines. Sampling Design part 2 - Interpretation (NSW EPA, 2022)

- AS4482.1-2005 Guide to the investigation and sampling of sites with potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds. (Australian Standards, 2005) (currently withdrawn but referenced in the ASC NEPM)
- Managing Land Contamination Planning Guidelines (EPA, 1998).

2. Site information

2.1. Site identification

Relevant details for the site are provided in Table 2-1.

Table 2-1 Site identification details

Aspect	Description		
Lot / DP	Lot 222 DP 754557	Lot 225 DP 754557	Lot 228 DP 754557
Street address	4178 Holbrook Road, Mangoplah NSW 2652		
Site area (hectares (ha))	120.3	72.2	121.3
Local government area (LGA)	Wagga Wagga LGA		
Planning scheme	Wagga Wagga Local Environment Plan (LEP) 2010		
Site zoning	RU1 Primary Production		

2.2. Contaminated land registers

Lotsearch (Appendix A) conducted a search of the following contaminated land databases on 21 May 2025:

- NSW Contaminated Land List
- Contaminated land – Records of Notice
- Former Gasworks
- EPA notices.

The searches identified no record of contamination within the site.

2.3. Site history

2.3.1. Land zoning and use

The site is located within the Wagga Wagga LGA. The site is zoned RU1 Primary Production under the Wagga Wagga LEP 2010. The Holbrook Road easement is zoned SP2 Infrastructure, refer to Figure 2-1.

The site is currently used for the purposes of cropping, electricity distribution and as a homestead. Patches of native vegetation, used for the purposes of grazing are also mapped as occurring within the site, refer to Figure 2-2.

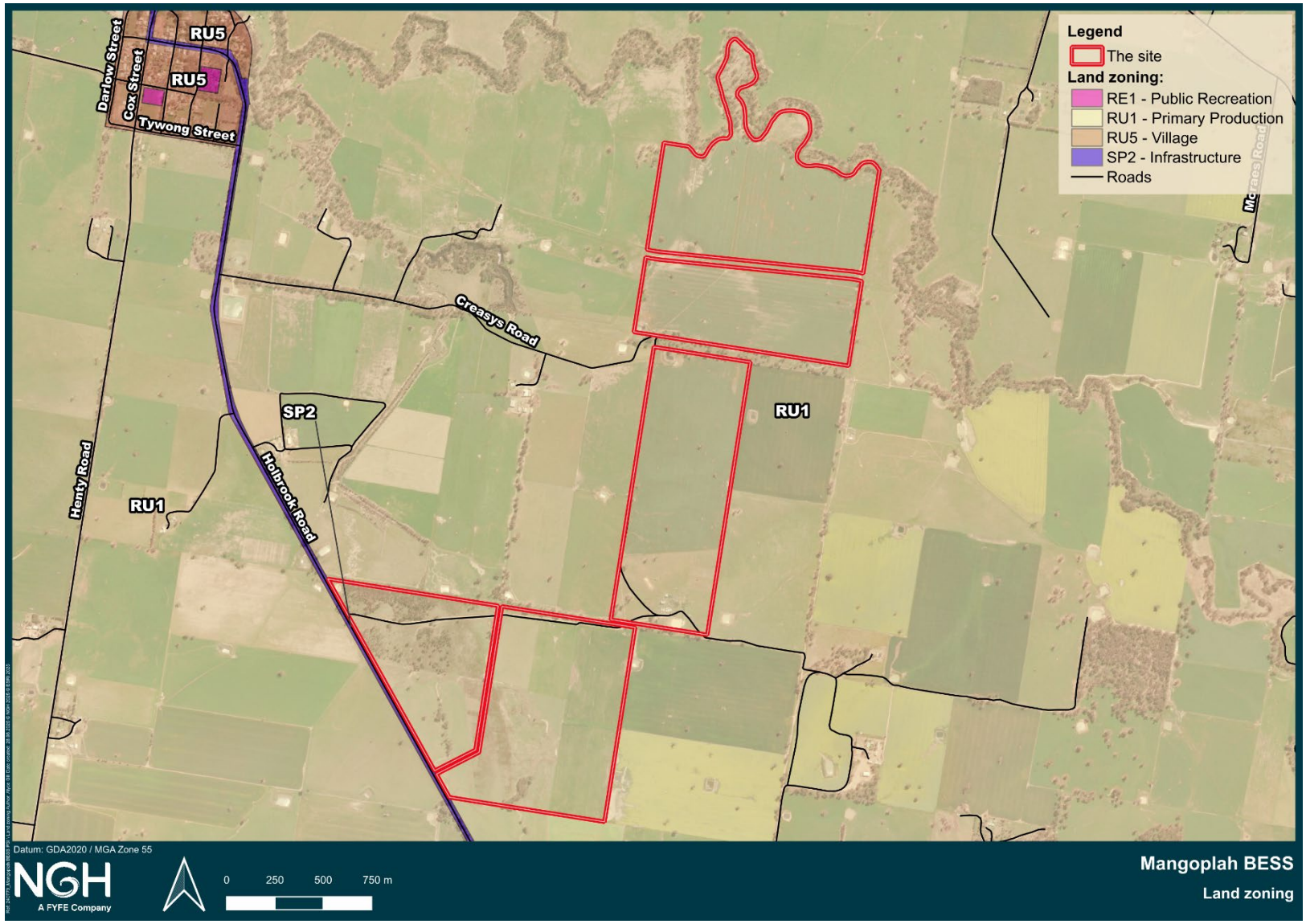


Figure 2-1 Land zoning

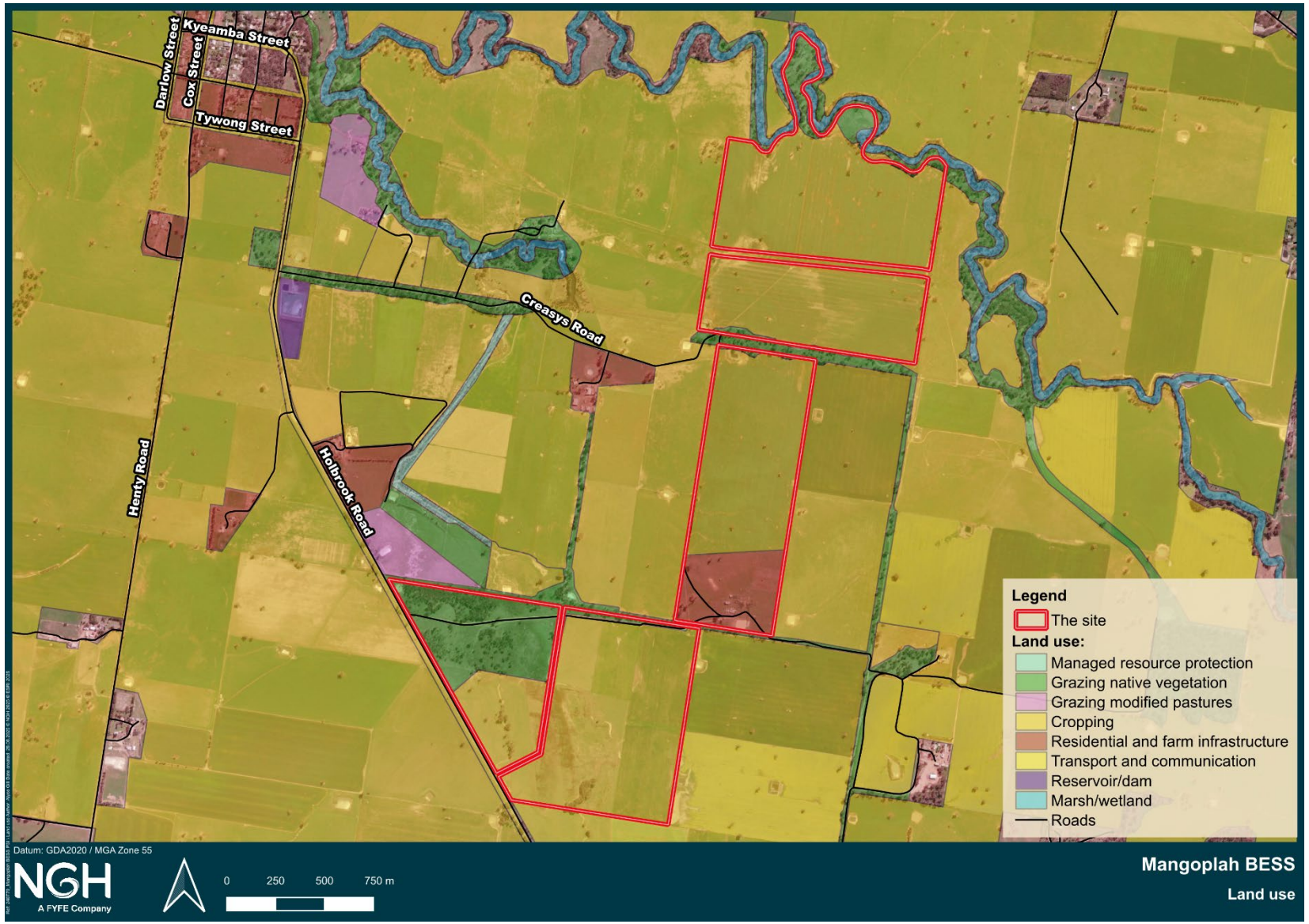


Figure 2-2 Land use

2.3.2. Aerial imagery review

Aerial images are compared to identify changes to the site over time with particular interest in the addition or removal of built infrastructure and use of the land. Changes in built infrastructure and land uses on a rural property of importance to note include but not limited to cropping, other agricultural activities such as livestock dips, infrastructure addition and removal, compounds and waste disposal on-site.

Aerial imagery for the site commences in 1945. The aerial imagery is reviewed in sequence to note changes, which are detailed in Table 2-2. The aerial imagery is provided in the Lotsearch Enviro Pro Report, which is provided as Appendix A.

Table 2-2 Aerial photography review

Year	Source	The site	Land surrounding the site
1945	Geoscience Australia[1]	The site has been largely cleared for agricultural purposes. Isolated paddock trees are evident throughout the site. Within the northern portion of the site, a dwelling has been constructed, and two farm dams are evident. An informal road intersects the northern portion of the site, traversing an east-westerly direction.	Agricultural activities are evident to the west of the site. Holbrook Road is evident to the southwest of the site. An informal road is evident, travelling in an east-west direction either side of the site. Two dwellings, and associated structures, are evident to the west of the site.
1969	NSW Department of Customer Service	Internal access tracks, a dwelling and a farm dam are evident within the central portion of the site. Agricultural activities are evident throughout the site.	Agricultural activities are evident to the north, east, south and west of the site. An additional dwelling is evident along Holbrook Road. Numerous farm dams are evident around the site.

[1] All images were provided within the Lotsearch Report (Appendix A)

Year	Source	The site	Land surrounding the site
		An additional farm dam is evident within the southern portion of the site.	
1971	NSW Department of Customer Service	No notable changes.	A dwelling and associated structures have been constructed to the southeast of the site.
1980	NSW Department of Customer Service	Potential cropping activities are evident throughout the site. An access road has been constructed within the southern portion of the site.	No notable changes.
1991	NSW Department of Customer Service	Additional structures are evident within the central portion of the site.	An additional structure is evident to the southeast of the site.
1997	NSW Department of Customer Service	No notable changes.	No notable changes.
2007	Google Inc	Additional structures and land contouring is evident within the central portion of the site.	A structure is evident to the southeast of the site.
2016	Google Inc	No notable changes.	Evidence of land preparation for cropping practices are evident.

Year	Source	The site	Land surrounding the site
2023	Google Inc	Cropping activities are evident throughout much of the site.	A dwelling is evident to the east of the site.

2.3.3. Historic land title search

A historic land title search for the site was undertaken by InfoTrack Pty Ltd on 5 August 2025. The report is attached in Appendix B.

2.3.4. Database searches

NGH engaged Lotsearch to prepare an Enviro Pro database search report. The dataset listing for this Lotsearch is included on page two of the report, refer to Appendix A. The search was undertaken on 21 May 2025 and identified the following items within a 1000 – 2000 m buffer of the site.

Contaminated Land

- List of NSW contaminated sites notified to the EPA returned no records within the buffer
- The Contaminated Land Record of Notices search returned no records within the buffer
- The Former Gasworks returned no records within the buffer
- The EPA Notices search returned no records within the buffer.

Waste Management and Liquid Fuel Facilities

- National Waste Management Site Database search returned no records within the buffer
- National Liquid Fuel Facilities search returned no records within the buffer.

Per- and Polyfluoroalkyl Substances (PFAS) Investigation and Management Programs

- The EPA PFAS Investigation Program search returned no records within the buffer
- The Defence PFAS Investigation Program search returned no records within the buffer
- The Defence PFAS Management Program search returned no records within the buffer
- The Airservices Australia National PFAS Management Program search returned no records within the buffer
- The Defence Controlled Areas search returned no records within the buffer
- The Defence 3 Year Regional Contamination Investigation Program search returned no records within the buffer
- The National Unexploded Ordnance (UXO) search returned no results within the buffer.

EPA Activities

- The EPA Other Sites with Contamination Issues search returned no records within the buffer
- Licensed activities under the *Protection of the Environment Operations Act 1997* (POEO Act 1997) returned no records within the buffer
- Delicensed activities still regulated by the EPA returned no records within the buffer
- Former licensed activities under the POEO Act 1997 now revoked or surrendered returned with three records within the buffer that are listed as *other activities / non scheduled activity – application of herbicides*, all located within the site and include:
  - Luhrmann Environment Management Pty Ltd
  - Robert Orchard
  - Sydney Weed and Pest Management Pty Ltd.

Historic Business Directories

- Business Directory Records 1950-1991 Premise or Road Intersection Matches returned no records within the buffer
- Business Directory Records 1950-1991 Road or Area Matches returned no records within the buffer
- Dry Cleaners, motor garages and service stations premise or road intersection matches, returned no records within the buffer
- Dry cleaners, motor garages and service station road or area matches returned no records within the buffer.

2.3.5. Planning instruments

Planning Certificates for the site were provided on 30 July 2025, refer to Appendix C and below:

Environmental Planning Instruments

The Wagga Wagga LEP (2010) applies to the site.

State Environmental Planning Policies (SEPPs)

A list of relevant SEPPs can be found in Appendix C.

Proposed Environmental Planning Instruments

There are no draft local environmental plans applying to the site.

Development Control Plans

The Wagga Wagga Development Control Plan applies to the site.

Matters Prescribed by Section 59(2) of the Contaminated Land Management Act 1997 No 140 to be specified in a Planning Certificate

In accordance with section 59(2) of the *Contaminated Land Management Act 1997*:

- The land to which the certificate relates is not declared to be significantly contaminated land within the meaning of that act as at the date when the certificate is issued
- The land to which the certificate relates is not subject to a management order within the meaning of that act as at the date when the certificate is issued
- The land to which the certificate relates **is not** the subject of an **approved voluntary management proposal** within the meaning of that act at the date the certificate is issued
- The land to which the certificate relates **is not** the subject of an **ongoing maintenance order** within the meaning of that act as at the date when the certificate is issued
- As at the date when the certificate is issued, Council **has not** identified that a **site audit statement** within the meaning of that act has been received in respect of the land the subject of the certificate.

Bushfire Prone Land

The site is identified as bushfire prone land.

2.4. Site environmental settings

2.4.1. Climate

Understanding the climate in the context of the site can help to characterise the persistence, mobility and in some cases toxicity of potential contaminants. Mangoplah, NSW, experiences hot summers with average highs around 32.4°C in January and cool winters with average highs around 11.8°C in July. Rainfall is fairly evenly distributed throughout the year, with slightly higher precipitation in spring and summer.

Climate and weather statistics for the Wagga Wagga AMO Automatic Weather Station (AWS) (station number 072150) are provided in Table 2-3.

Table 2-3 Climate and weather statistics for Wagga Wagga AMO AWS (station number 072150)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual average
Temperature													
Mean maximum temperature (°C)	31.9	31.0	27.8	22.6	17.4	13.9	12.8	14.6	17.8	21.8	25.9	29.6	**22.3**
Mean minimum temperature (°C)	16.5	16.4	13.6	9.2	5.9	3.7	2.8	3.5	5.1	7.9	11.0	14.0	**9.1**
Rainfall													
Mean rainfall (mm)	42.6	39.6	46.1	39.9	50.0	50.3	53.1	50.3	48.5	56.7	49.6	46.4	**573.2**
Decile 5 (median) rainfall (mm)	34.8	25.8	33.6	29.5	39.4	44.5	51.5	49.4	45.7	47.2	44.2	38.6	
Mean number of days of rain ≥ 1 mm	4.2	3.9	4.1	4.8	6.2	7.4	8.9	8.7	7.0	6.9	5.6	4.6	**72.3**
9AM Conditions													
Mean 9am relative humidity (%)	22.5	21.7	19.0	14.6	10.0	7.0	5.9	7.8	10.9	14.8	17.9	21.0	**14.4**
Mean 9am wind speed (km/h)	13.1	12.2	10.5	8.7	7.2	6.5	6.8	8.7	10.2	11.4	12.7	13.0	**10.1**

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual average
3PM Conditions													
Mean 3pm relative humidity (%)	30.1	29.3	26.5	21.6	16.6	13.2	12.0	13.7	16.7	20.2	24.3	27.8	**21.0**
Mean 3pm wind speed (km/h)	16.3	13.8	13.2	12.4	11.6	10.7	11.8	14.3	15.2	15.9	17.3	17.7	**14.2**

Note: Red represents the highest value in the range, blue represents the lowest value in the range.

2.4.2. Topography

The topography of the site is used to identify the way in which potential contaminants will move across the landscape within the site and from upgradient surrounding sites. It can provide the probable direction of groundwater flow.

The site occurs at an elevation of approximately 270 metres Australian Height Datum (mAHD) to almost 300 mAHD along its eastern boundary, refer to Figure 2-3. The topography of the southern and northern part of site is generally flat, sloping gently downgradient to the west. The central part of the site is steeper and also slopes to the west.

2.4.3. Surface water and hydrology

Paper Forest Creek, a fifth order waterway, intersects the southern portion of the site. Three additional waterways (one fourth order, one second order and one first order) also intersect the site, before feeding into Paper Forest Creek, refer to Figure 2-3. Five farm dams occur within the site.

Surface water runoff is guided by existing land contouring, roads and landscape micro-relief.

2.4.4. Vegetation

The Project site is dominated by non-native vegetation, consistent with an agricultural land use.

In accordance with the Biodiversity Development Assessment Report (BDAR) (NGH, 2025), the following plant community types (PCTs) occur within proximity to the development footprint:

- PCT 79 - River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion
- PCT 266 - White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
- PCT 277 - Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion.

2.4.5. Hydrogeology

Registered groundwater bores

No groundwater bores occur within the site. Five groundwater bores occur within 1 km of the site, refer to Figure 2-3 and Table 2-4. Bore depths range from 36 metres (m) to 91.4 m below ground level, indicating relatively deep groundwater flows in this part of the landscape. Information obtained from the Murray Alluvium Water Resource Plan (DoI, 2019) indicates that groundwater flows in a north-westerly direction through the site.

Table 2-4 Groundwater bores occurring within 1 km of the site

State Bore ID	Bore depth (m)	Status	Drilled date	Distance (m)	Direction
GW048258	67.1	Unknown	01/05/1977	336	West
GW405411	62.0	Functioning	07/05/2009	648	West
GW029176	91.4	Unknown	01/12/1967	784	Northwest
GW404536	36.0	Functioning	18/09/2002	913	North
GW401693	80.0	Unknown	02/04/2001	935	Southeast

Groundwater dependent ecosystems

The site is mapped as containing fractured or fissured, extensive aquifers of low to moderate productivity. High potential aquatic groundwater dependent ecosystems (GDEs) and low potential terrestrial GDEs occur within the site, refer to Figure 2-4. This indicates that there is potential for connections between aquatic systems, terrestrial vegetation and groundwater aquifers.



Figure 2-3 Site topography and hydrology

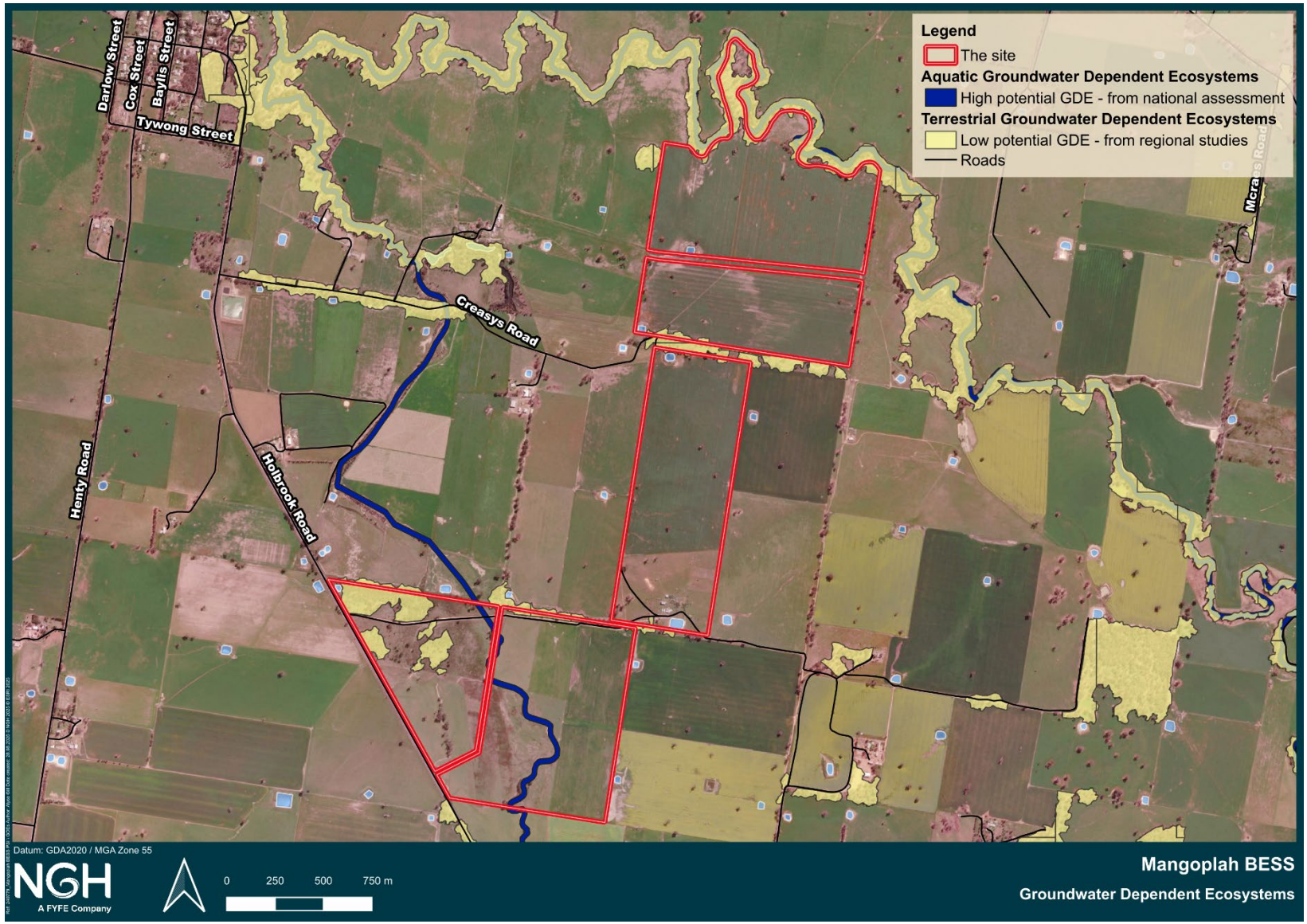


Figure 2-4 Groundwater Dependent Ecosystems

2.4.6. Geology

The underlying geology of the site consists of the Willandra Sandstone geological unit (grey, thick-bedded, fine- to coarse grained, moderately to poorly sorted lithic quartz arenite, typically with distinctive dark glassy quartz grains) and alluvium (unconsolidated grey to brown to beige humic micaceous silty clay, quartz lithic silt, fine to medium-grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravels).

There were no records of naturally occurring asbestos identified within the dataset buffer applied by Lotsearch, refer to Appendix A.

2.4.7. Soils

Soil characteristics are important in understanding rates of movement of potential contaminants through the soil profile and how they may interact with parameters such as pH (Potential of Hydrogen).

In accordance with the Soil Technical Report (NGH, 2024), the following soil types occur within the site:

- **Kandosols,** which lack a strong texture contrast, have a massive or only weakly structured B horizon and are not calcareous throughout and have the following features (Isbell, 2021). BH04 was located within this soil type and conforms to this Australian Soil Classification (ASC) soil description for Kandosols, refer to Figure 5-1
- **Kurosols** have a strong texture contrast between A horizons and strongly acid B horizons. Many of these soils have some unusual subsoil chemical features (high magnesium, sodium and aluminium). These soils have a clear or abrupt textural B horizon in which is strongly acid (Isbell, 2021). BH03 is located within this ASC soil description, but the laboratory results and site observations indicate that the soils tested for BH03 do not conform to this ASC definition.
- **Chromosols** have a strong texture contrast between A and B horizons. Strong texture contrast is referred to as a 'clear or abrupt textural B horizon' in the ASC (for a definition, see Isbell (1996) in Appendix 1):
    - Their B2 horizons are not strongly acid, and are not sodic (ESP < 6) in their upper 0.2 m (or the major part of the B2 horizon if it is less than 0.2 m thick)
    - Strongly acid soil, as defined in the ASC, has a pH less than 5.5 (1:5 soil : H_2O) in the fine earth soil material (< 2 mm), or less than 4.6 (1:5 soil : 0.01M CaCl2) (DPI, 2024).

  The laboratory results and site observations are consistent with this description of Chromosols with all BH02 samples being non-sodic in topsoil and subsoil and recorded pH above 5.5 (H_2O).

- **Sodosols** are soils with a strong texture contrast between A horizons and sodic B horizons that are not strongly acid (Isbell, 2021). BH01 is located in this soil type and conforms with this description, with a sodic B horizon (16%). Subsoils within this location are highly dispersive.

Soil mapping from the Sharing and Enabling Environmental Data (SEED) portal identifies the Greater Soil Group (GSG) associated with the site as Red Podzolic soils, Red Podzolic soils – less fertile, non-calcic Brown soils and Sodolic Soils (NSW Government, 2023). All topsoils recorded electrical conductivity values of < 6 pH units, indicating that they are not saline.

No records of Acid Sulphate Soils (ASS) occur within 1 km of the site (refer to Appendix A).

3. Preliminary conceptual site model

A preliminary conceptual site model (CSM) has been prepared to develop an understanding of the potential Areas of Environmental Concern (AEC) and potential contaminating pathways, refer to Table 3-1.

Table 3-1 Preliminary CSM

Potential Source of Contamination	Potential Chemicals of Concern	Transport Mechanisms	Potential Exposure Pathways	Potential Receptors
AEC1 Agricultural practices (cropping)	• Heavy metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury) • Organochlorine Pesticides (OCPs) • Organophosphate Pesticides (OPPs)	• Disturbance – airborne release • Surface water runoff • Leachability into surficial, sub soils and underlying groundwater and transport via groundwater flows	• Inhalation of dust • Ingestion • Dermal contact	**Human receptors:** Construction workers and intrusive maintenance workers Farm workers
			• Inhalation of dust • Dermal contact	**Off-site human receptors:** Adjacent land users
			• Inhalation of dust • Ingestion • Dermal contact	**Environmentally sensitive receptors:** Paper Forest Creek, a fifth order waterway, intersects the southern portion of the site. Three additional waterways (one fourth order, one second order and one first order) also intersect the site, before feeding into Paper Forest Creek. Five farm dams occur within the site.

4. Potential Areas of Environmental Concern

The site history review, site inspection and review of anecdotal information identified the following potential Areas of Environmental Concern (AECs) and Chemicals of Potential Concern (CoPC):

AEC1 – Agricultural practices (cropping)

Agricultural practices are associated with heavy metals, OCPs and OPPs. Organochlorine compounds are known for their high toxicity, slow degradation and bioaccumulation. OCP/OPPs can leach through the soil profile and into groundwater, contaminating terrestrial and aquatic systems.

5. Sampling strategy and plan

5.1. Sampling strategy and justification

Justification for the adopted sampling strategy has been provided in Table 5-1.

Table 5-1 Justification for the sampling strategy

AEC	Investigation methodology	Justification
AEC1 Agricultural practices	Test pits	Results of the PSI indicate that agricultural activities have occurred onsite. Agricultural activities are associated with heavy metals, OCPs, and OPPs. A preliminary soil sampling program is required to determine the presence of soil contamination within the development footprint.

This PSI was designed to target surface and subsurface soils using a judgemental sampling pattern for site characterisation, refer to Figure 5-1. The location for TP04 was selected as it falls within the proposed access road location and cropping activities are known to have been undertaken within proximity to this area. NGH engaged a local bobcat operator to undertake the intrusive investigation (under the direction of a NGH Environmental Consultant).

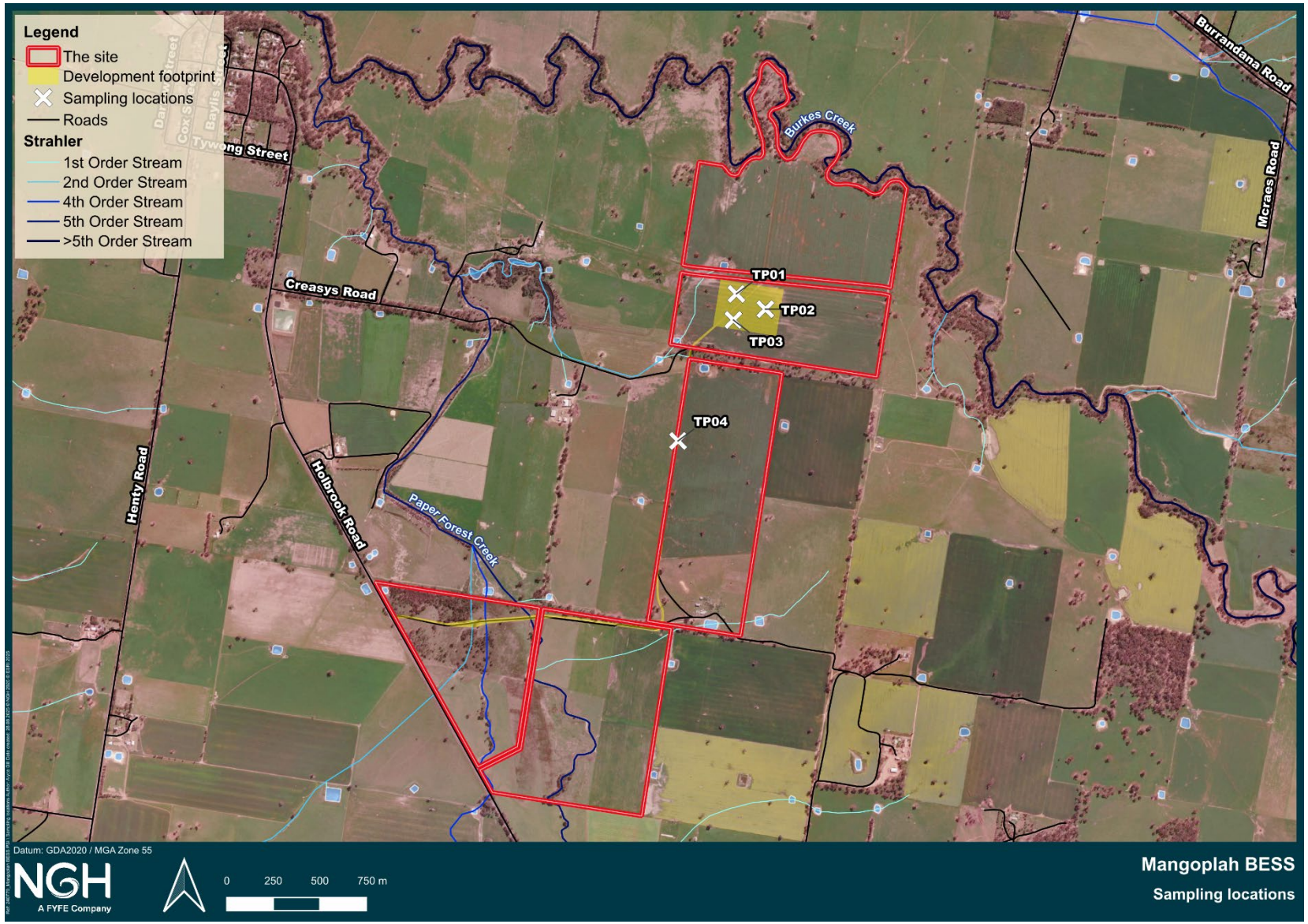


Figure 5-1 Sampling locations

6. Applicable Tier 1 soil screening levels

6.1. Introduction

As per Schedule B1 of the ASC NEPM (NEPM, 2013):

"*Investigation and screening levels can be used to evaluate potential risks to human health and ecosystems from site contamination.*

Investigation levels and screening levels are applicable to the first stage of site assessment. The selection and use of investigation and screening levels should be considered in the context of the iterative development of a conceptual site model to ensure appropriate evaluation of human health and ecosystem risks.

Site assessment should include consideration of all relevant human exposure pathways, ecological risks and risk to groundwater resources."

The ASC NEPM also states that:

"*Investigation and screening levels are not clean-up or response levels nor are they desirable soil quality criteria. Investigation and screening levels are intended for assessing existing contamination and to trigger consideration of an appropriate site-specific risk-based approach or appropriate risk management options when they are exceeded.*"

As the proposed land use within the development footprint is for commercial / industrial purposes, the site has been assessed against land use 'D' under the ASC NEPM.

6.2. Protection of human health

Health-based Investigation Levels (HIL), Health Screening Levels (HSL) and other criteria derived from the NEPM Schedule B1 (NEPM 2013) will be adopted to assess site contamination. The Tier 1 Soil Screening Levels (SSLs) for this site include:

- HIL/HSL D - Commercial/industrial such as shops, offices, factories and industrial sites.

The assessment criteria are discussed in Table 6-1 and Table 6-2.

Table 6-1 Assessment criteria rationale

Media	Criteria	Rationale	Reference
Soil	NEPM HIL/HSL D	Soil health-based investigation levels and other soil criteria derived from the NEPM Schedule B1 (NEPM 2013) will be adopted to assess site soil contamination.	NEPM Schedule B1 Table 1A(1) and Table 1A(3)

Table 6-2 Site assessment criteria for protection of human health

Analyte	Units	HIL/HSL 'D'
Metals		
Arsenic	mg/kg	3,000
Cadmium	mg/kg	900
Chromium	mg/kg	3,600
Copper	mg/kg	240,000
Lead	mg/kg	1,500
Mercury	mg/kg	730
Nickel	mg/kg	6,000
Zinc	mg/kg	400,000
OCPs		
DDT+DDE+DDE	mg/kg	3,600
Aldrin and dieldrin	mg/kg	45
Chlordane	mg/kg	530
Endosulfan	mg/kg	2,000
Endrin	mg/kg	100
Heptachlor	mg/kg	50
HCB	mg/kg	80
Methoxychlor	mg/kg	2,500
Mirex	mg/kg	100
Toxphene	mg/kg	160
Other pesticides		
Atrazine	mg/kg	2,500

7. Data quality objectives and QA/QC

7.1. Data quality objectives

The ASC NEPM (NEPM, 2013) specifies that the nature and quality of the data produced in an investigation will be determined by the data quality objectives (DQOs). As referenced by the ASC NEPM, the DQO process is described in detail in the United States Environmental Protection Agency (US EPA) *Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4: EPA/240/B-06/001),* February 2006 (US EPA, 2006).

The Data Quality Objectives (DQOs) processes are used to define the type, quantity and quality of data needed to support decisions relating to the Project objectives. It provides a systematic approach for defining the criteria a data collection design should satisfy, including when, where and how to collect samples or measurements; determination of tolerable decision error rates; and the number of samples or measurements that should be collected.

In determining the type, quantity and quality of data needed to support decisions relating to the environmental condition of the site, NGH has undertaken the seven-step process to develop the DQOs in accordance with the National Environment Protection Measure (ASC NEPM, Schedule B2) Guideline on Site Characterisation (2013). This document specifies that the nature and quality of the data produced in an investigation will be determined by the Data Quality Objectives (DQOs).

The DQO process used for the investigation can be found in Steps 1 to 7 below.

Step 1

The purpose of step 1 is to summarise the contamination problem that requires new environmental data, identify the resources available to resolve the problem, and develop a CSM.

Step 1 – State the problem	
Objective:	Determine the presence, concentration, and potential risks to human health resulting from cropping activities.
Contamination Issue:	This PSI is required to determine the presence of contamination onsite, prior to the potential development of the site. Contaminants of concern include those listed in Table 6-2.
Project Driver:	Development of the site.
Project team and technical support:	• Client Name / Project Manager: Stephan Mitchell • NGH Project Manager: Maddy Shaw • NGH Environmental Consultants: Willy Van Vaerenbergh, Nicola Smith, Alyce Gill and Martin Wyburn.

Step 1 – State the problem	
Community Concerns:	The scope of works planned for this investigation is unlikely to draw attention from the local community.

Step 2

The purpose of step 2 is to identify the decisions that need to be made about the contamination problem and the new environmental data required to make them.

Step 2 – Identify the decisions	
Contamination sources	• What is the lateral and vertical extent of fill at the site? • What are the historical operations and infrastructure that may have caused soil contamination?
Chemicals of Concern:	• What are the major CoPCs?
Media and Receptors:	• Does a contaminant pose a human health risk to the receptors of concern? • Is there any evidence of or potential for migration of contaminants from the site which may impact offsite receptors?
Guidelines:	• Does the concentration of contaminants exceed assessment criteria?
End Use:	• Does the contamination affect the suitability of site for the proposed use?

Step 3

The purpose of step 3 is to identify the information needed to support any decision and whether new environmental measurements will be needed.

Step 3 – Identify inputs to the decision	
Environmental data:	• Sample analysis data • Field observations
The media that is to be collected:	Soil
Assessment Criteria:	See Section 6.2 of this report
Laboratory Analytical Methods:	Laboratory analytical methods will be undertaken in accordance with the NEPM Schedule B3 *Guideline on Laboratory Analysis of Potentially Contaminated Soils* and the National Association of Testing Authorities

Step 3 – Identify inputs to the decision	
	(NATA) certification requirements.

Step 4

The purpose of step 4 is to specify the spatial and temporal aspects of the environmental media that the data must represent to support decision(s).

Step 4 – Define the study boundaries	
Geographical Limit:	The spatial boundary of the investigation is indicated in Figure 5-1. The vertical boundary is limited to the maximum depth of the sampling program (i.e. 0.5 m).
Temporal limit	The temporal limit for the investigation is confined to the time frame over which the investigation was conducted (sampling occurred on 7 July 2025).
Investigation Limit:	The on-site investigation will target onsite AECs based on historic land uses. Potential onsite sources of contamination within the site are associated with agricultural activities.
Constraints:	Existing infrastructure (dwellings / structures).

Step 5

The purpose of step 5 is to define the parameter of interest, specifying the action level, and integrating information from Steps 1–4 into a single statement that gives a logical basis for choosing from alternative actions.

Step 5 – Develop a decision rule	
Assessment Criteria:	Refer to Section 6.2 of this report.
Decision Rule (tests of hypothesis):	Has the analytical data collected as part of the assessment met the Data Quality Indicators (DQIs) (see below)? • If **yes,** then the data can be used to answer the decision rule below and the decision statements developed in Step 2. • If **no,** then an assessment of the need to collect additional data will be required.

Step 6

The purpose of step 6 is to specify the decision-maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. This process uses systematic planning and statistical hypothesis testing to differentiate between two or more clearly defined alternatives.

Step 6 – Specify limits on decision errors	
Documentation and data completeness:	• Site conditions properly described • Sampling locations properly described and located • Completion of field records, chain of custody documentation, laboratory test certificates from NATA-registered laboratories • Samples are collected from identified areas of potential environmental concern • Samples are tested for all potential contaminants of concern • Sampling events encounter samples most likely to be contaminated on more than one occasion.
Data Comparability:	• Use of appropriate techniques for the sampling, storage, and transportation of samples • Use of laboratories with NATA certification for the analyses conducted and undertaken using NEPM procedures • Use of secondary laboratories with NATA certification for the analyses conducted.
Data representativeness:	• Collection of representative samples from each sampling location • Collection of representative samples across the lateral and vertical extent • Use of appropriate techniques for the sampling, storage, and transportation of samples.
Precision for sampling and analysis:	• Achieve laboratory QC criteria • Blanks returned with no contamination • All matrix and surrogates returned acceptable results • All laboratory duplicates within acceptable ranges • All split duplicates within acceptable ranges • All control results within acceptable ranges • All practical quantification limits (PQLs) within acceptable ranges.
Accuracy for sampling and analysis:	• Use of properly trained and qualified field personnel • Use of blind field duplicate samples to be collected at a minimum rate of 1 in 20 • Relative Percentage Differences (RPDs) to be less than 30% for inorganic and 50% for organic analyses • Acceptable quality of split duplicates.
Sampling Design:	The investigation methodology and sample design are summarised in Section 5.
Investigation null hypothesis	The site is not impacted by contaminated soil.

Step 7

The purpose of step 7 is to identify the most resource-effective sampling and analysis design for generating the data that are required to satisfy the DQOs.

Step 7 – Optimise the design for obtaining data	
Review of DQO outputs:	With consideration to NSW EPA, review of existing data and the evaluation of operational decision rules, a resource-effective sampling and analysis plan has been prepared with details provided in the following Sections.

7.2. Data Quality Indicators and QA/QC assessment

The project DQIs are presented in Table 7-1.

Table 7-1 Project DQIs

DQI	Frequency	Acceptance Criteria
Completeness		
All critical locations sampled and analysed in accordance with the sampling strategy	-	All critical locations sampled
Appropriate methods and limits of reporting (LORs)	All samples	Samples were analysed using NATA approved methods
All samples collected (from grid and at depth)	All samples	Samples collected in accordance with the sampling strategy
Standard operating practices appropriate and complied with	All samples	Work complies with NGH standard operating practices
Appropriate documentation for testing and COCs, all completed	All samples	This work was documented in accordance with NGH standard operating practices
Sampling holding times complied with	All samples	The samples were submitted for extraction within holding times specified by NATA laboratory
Suitability qualified and experienced sampler	All samples	Person deemed competent by NGH collecting and logging samples
Data considered 95% valid	-	Data complies with DQIs
Comparability		
Suitability qualified and experienced sampler	All samples	Person deemed competent by NGH collecting and logging samples

DQI	Frequency	Acceptance Criteria
Consistent analytical methods, laboratories, and units of measure	All samples	All analysis undertaken by NATA accredited laboratory
Climatic conditions recorded and influences (quantify or physical) on samples (if required)	All samples	Climatic conditions documented on field sheets
Representativeness		
Appropriate media sampled according to the sampling strategy	All samples	Sample analysis to be in accordance with NATA approved methods
Appropriate sample transport and handling	All samples	Samples arrive at the laboratory in an acceptable condition
Samples extracted and analysed within the correct holding times	All samples	Samples extracted and analysed in accordance with the nominated NATA accredited laboratory recommended holding times.
Precision		
Standard operating practices complied with	All samples	All samples
Intra-laboratory field duplicates	5% frequency or greater of the primary samples	<50% RPD for organic <30% RPD for inorganic Or <5 x LOR
Inter-laboratory field duplicates (triplicates)	5% frequency or greater of the primary samples	<50% RPD for organic <30% RPD for inorganic Or <5 x LOR
Laboratory duplicates	1 per batch of 20 samples	>10 x LOR
Accuracy (bias)		
Matrix spikes, Laboratory control samples and Surrogate recoveries	1 per batch of 20 samples	70-130% for inorganics/metals 60-140% for organics

7.3. Field QA/QC assessment

7.3.1. Field QA/QC program

A field QA/QC program was undertaken, and includes the following:

Sampling Team: All field work was conducted by appropriately trained environmental consultants.

Field Notes: For each sample location, logging was taken and includes (where relevant) the data, time, location (with coordinates if possible), sampler name, duplicate samples, site observation and meteorological conditions, photos, diagrams, and maps. Soil logs are provided in Appendix D.

Chain of Custody: All samples were logged and transferred under appropriately completed Chain of Custody forms, refer to Appendix E.

Sample Labelling: The sample labels include sample identification numbers, date of collection, sampler initials and project number. Each sample was labelled with a unique sample identification number to facilitate tracking and cross referencing of sample information. QA/QC samples are also to be numbered with a unique sample number, consistent with the numbering system required for the project.

Preservation: All samples were collected in appropriate containers (supplied by the laboratory) and transported on ice bricks in eskies.

Decontamination: Sampling was undertaken using a mini excavator. Loose soil was brushed off in between sampling locations.

Rinsate: A rinsate sample was not required for this sampling program (see comments on decontamination above).

Intra-Laboratory Duplicate: An intra-laboratory duplicate is a QC sample used to determine the precision associated with all or part of the sample collection. Field duplicates are two independent samples that are collected from the same point at the same time and used to assess the homogeneity and reproducibility of the sampling technique. The precision or reproducibility is measured from the differences observed in the analysis of duplicate samples. The precision or reproducibility is measured from the differences observed in the analysis of duplicate samples.

Where samples are analysed in duplicate, the quality of the results is assessed by calculating the relative percent difference (RPD) between the reported and repeated results.

The RPD is calculated as follows: RPD = 200 * (IX1 - X2 I) / (X1 + X2)

Where X1 and X2 are the results obtained for the samples and its duplicate, and IX1 - X2I is the absolute difference between the duplicate samples.

A relative level of difference up to 50% is considered acceptable. Where the results are below the detection limits a calculation was not possible.

Inter-Laboratory Duplicate: An inter laboratory duplicate is a sample taken from the same point and the same time as the other samples and analysed by a separate and independent laboratory. This provides some degree of confidence that the analyses conducted by the main laboratory has been undertaken according to acceptable reproducible standards. Where samples are analysed in duplicate, the quality of the results is assessed by calculating the relative percent difference (RPD) between the primary, and duplicate laboratory results.

The RPD is calculated as follows: RPD = 200 * IX1 - X2 I / X1 + X2

Where X1 and X2 are the results obtained for the samples and its duplicate, and IX1 - X2I is the absolute difference between the duplicate samples.

A relative level of difference up to 50% is considered acceptable. Where the results are below the detection limits a calculation was not possible.

Trip Spike: A laboratory prepared clean glass jar is filled clean soil and then 'spiked' with a pre-determined quantity of volatile compounds. The purpose of the trip blank is to test the loss of volatile compounds during the sampling program. The trip spike is taken out into the field and returned (unopened) for analysis. Noting the small scope of the sampling program, a trip spike was not considered necessary. The results of the inter-laboratory and intra-laboratory duplicate were considered sufficient to inform the QA/QC program.

Trip Blank: A laboratory prepared clean glass jar is filled with clean soil (sand) supplied by the analysing laboratory and is stored within the sample 'esky' and transported to the laboratory with the other samples. The purpose of the trip blank is to detect any sample contamination due to transport activities. Trip blanks are analysed at a rate of one per day. Noting the small scope of the sampling program, a trip blank was not considered necessary. The results of the inter-laboratory and intra-laboratory duplicate were considered sufficient to inform the QA/QC program.

7.3.2. Field QA/QC assessment

The results of the laboratory analysis for field QA/QC samples are shown in the chemical analysis summary tables provided in Appendix F and summarised as follows:

- One (1) intra-laboratory duplicate sample was collected as part of this investigation. This sample was analysed by ALS Environmental (Sydney). The calculated RPD values for the duplicate sample were compared against the acceptable range of 30% for inorganic analytes and 40% for organic analytes. RPDs with sample DUP01 were below or at the acceptable ranges for all analytes, refer to Appendix G
- One (1) inter-laboratory sample was collected as part of the investigation. This sample was analysed by ALS Environmental (Melbourne). The calculated RPD values for the duplicate sample were compared against the acceptable range of 30% for inorganic analytes and 40% for organic analytes. RPDs with sample DUP02 were below or at the acceptable ranges for all analytes, refer to Appendix G
- One trip blank / spike is required for each sampling program. Noting the small scope of the sampling program, a trip blank / spike was not considered necessary. The results of the inter-laboratory and intra-laboratory duplicate were considered sufficient to inform the QA/QC program
- Sampling was undertaken using a mini excavator. Loose soil was brushed off in between sampling locations. As such, a rinsate sample was not required.

7.4. Laboratory QA/QC program

NATA accredited laboratories undertake specific registered tests. A data validation process assesses the effectiveness and reliability of the analytical process undertaken for the use of the data. This includes but not limited to the following:

Holding Times: Holding times are the maximum time in days from the collection of the sample to its extraction and/or analysis. All extraction and analyses are completed within the standard guidelines.

Reagent Blanks: The reagent (chemical) blank sample is a laboratory prepared sample containing the reagents used to prepare the sample for final analysis. The purpose of this procedure is to identify contamination in the reagent materials and assess potential bias in the sample analysis due to contaminated reagents. The QC criterion is no detectable contamination in the reagents.

Control Standard: Prepared from a source independent of the calibration standards. At least one control standard is included in each run to confirm calibration validity.

Internal Standard: Added to all samples requiring analysis for organics (where relevant). After the extraction process; the compounds serve to give a standard of retention time and response, which is invariant from run to run with the instruments.

Laboratory Duplicates: Laboratory duplicates are field samples that are split in the laboratory and subsequently analysed several times in the same batch. These sub-samples are selected by the laboratory to assess accuracy / precision of the analytical method. ALS Environmental undertake QA/QC procedures such as calibration standards, laboratory control samples, surrogates, reference materials, sample duplicates and matrix spikes. Intra-laboratory duplicates are performed at a frequency of 1 per 20.

Matrix Spike: A portion of the sample is spiked with a known concentration of a targeted analyte. The spiking occurs during the sample preparation and prior to the extraction / digestion procedure. They are used to document the precision and bias of a method in a given sample matrix. Where there is not enough sample available to prepare a spiked sample, another known soil/sand or water may be used. (It is usual for a duplicate spiked sample to be prepared at least every 20 samples).

Laboratory Control Sample: A laboratory control sample (LCS) is a standard reference material used in preparing primary samples. The concentration should be equivalent to a mid-range standard to confirm the primary calibration. LCS are performed at a frequency of 1 per 20 samples or at least one per analytical run.

Surrogate Spike: Surrogates are additions to each sample, blank, matrix spike and LCS in a batch of compounds that are like the analyte of interest. They are used to determine the extraction efficiency. However, are not expected to be found in real samples.

Laboratory Reporting: For laboratories with appropriate QA, the reagent blank, duplicates, matrix spikes and surrogate spikes are reported along with the results. The targeted recovery range for the laboratory spikes, controls and surrogates shall be 70% to 130% of the known addition.

The laboratory QA/QC indicators should all comply with the required standards or have no significant variations that would affect the quality of the data.

7.4.1. Laboratory QA/QC assessment

The primary laboratory used for chemical analysis of the validation samples was ALS Environmental (Sydney). A summary of the laboratory report comments indicated that:

- No method blank value outliers were identified
- No duplicate outliers were identified
- No laboratory control outliers were identified
- No matrix spike outliers were identified
- No surrogate outliers were identified
- No analysis holding time outliers were identified
- No quality control sample frequency outliers were identified.

The laboratory QA/QC data as supplied for each analysis confirm acceptable precision and accuracy of the analytical result for ALS Environmental.

A comprehensive review of the Project DQIs has been provided in Table 7-2.

7.5. Review of DQIs

Table 7-2 Post fieldwork review of DQIs

DQI	Frequency	Acceptance Criteria	Post field work review comments
Completeness			
All critical locations sampled and analysed in accordance with the sampling strategy	-	All critical locations sampled	Yes
Appropriate methods and LORs	All samples	Samples were analysed using NATA approved methods	Yes
All samples collected (from grid and at depth)	All samples	Samples collected in accordance with sampling strategy	Yes
Standard operating practices appropriate and complied with	All samples	Work complies with NGH standard operating practices	Yes
Appropriate documentation for testing and COC's, all completed	All samples	This work was documented in accordance with NGH standard operating practices	Yes
Sampling holding times complied with	All samples	The samples were submitted for extraction within holding times specified by NATA laboratory	Yes
Suitability qualified and experienced sampler	All samples	Person deemed competent by NGH collecting and logging samples	Yes
Data considered 95% valid	-	Data complies with DQIs.	Yes

DQI	Frequency	Acceptance Criteria	Post field work review comments
Comparability			
Suitability qualified and experienced sampler	All samples	Person deemed competent by NGH collecting and logging samples	Yes
Consistent analytical methods, laboratories and units of measure	All samples	All analysis undertaken by NATA accredited laboratory	Yes
Climatic conditions recorded and influences (quantify or physical) on samples (if required)	All samples	Climatic conditions documented on field sheets	Yes
Representativeness			
Appropriate media sampled according to the sampling strategy	All samples	Sample analysis to be in accordance with NATA approved methods	Yes
Appropriate sample transport and handling	All samples	Samples arrive at laboratory in acceptable condition	Yes
Samples extracted and analysed within the correct holding times	All samples	In accordance with the nominated NATA accredited laboratory recommended holding times.	Yes
Precision			
Standard operating practices complied with	All samples	All samples	Yes

DQI	Frequency	Acceptance Criteria	Post field work review comments
Intra-laboratory field duplicates	5% frequency or greater of the primary samples	<50% RPD for organic <30% RPD for inorganic Or <5 x LOR	Yes
Inter-laboratory field duplicates (triplicates)	5% frequency or greater of the primary samples	<50% RPD for organic <30% RPD for inorganic Or <5 x LOR	Yes
Laboratory duplicates	1 per batch of 20 samples	>10 x LOR	Yes
Accuracy (bias)			
Matrix spikes, Laboratory control samples and Surrogate recoveries	1 per batch of 20 samples	70-130% for inorganics/metals 60-140% for organics	Laboratory control samples, matrix spikes and surrogate recoveries were within the acceptable ranges
Rinsate	1 per day where reusable equipment is used	<LOR	Sampling was undertaken using a mini excavator. Loose soil was brushed off in between sampling locations. As such, a rinsate sample was not collected.

7.6. Data completeness evaluation

Completeness is a quality assurance/quality control term and is defined as the measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under normal conditions.

The goals for this project shall be 95% completeness. Completeness is assessed or calculated with respect to the following equation:

$$C = 100 \times (V/N)$$

where: C = percent completeness

V = number of measurements judged valid

N = total number of measurements.

- **Sample Collection**: Eight (8) primary soil samples and two (2) QA/QC samples were collected. All samples were delivered to the laboratory using appropriate Chain of Custody procedures
- **Sample Analysis**: All primary and QA/QC samples were successfully analysed and results received from ALS (Sydney) (inter-lab duplicate results were received from ALS Melbourne)
- **Duplicate/Triplicate/Primary Sample Assessment**: One (1) duplicate and one (1) triplicate sample was collected. The intra-laboratory sample was delivered to the laboratory using appropriate Chain of Custody procedures. Results for the intra-laboratory and inter-laboratory field duplicates were compliant with the acceptance criteria, refer to Appendix G.

With respect to the above comments, all the valid data expected to be obtained, was able to be used to assess the 'completeness of data'.

In summary, data completeness was 100% and it was concluded that data generated for the report is of an acceptable quality to achieve the objectives of the report.

8. Site investigation

8.1. Site walkover

An NGH Environmental Consultant completed a site walkover on 7 July 2025.

The site walkover included a targeted inspection of the development footprint, as well as general observations of the adjacent surroundings. No attempt was made to access the adjoining properties.

Observations made during the site walkover included the following:

- The development footprint is very flat. Groundcover vegetation is dominant, with no areas of bare soil observed
- Electricity transmission lines transect the eastern section of the development footprint (in a north – south direction)
- A small waste stockpile (containing bricks, tyres and metal) was observed in the southern portion of the development footprint
- Several unformalised access roads service the site
- Agricultural machinery was observed within proximity to the access road corridor
- Scrap metal, as well as plastic and rubber waste were observed within the access road corridor
- Bulk storage containers were observed within the access road corridor
- No notable signs of contamination (odour, soil staining, etc) were noted
- No Asbestos Containing Material (ACM) was observed.

Refer to Appendix H for site photos and Figure 8-1 for the location of onsite observations.



Figure 8-1 Onsite observations

8.2. Soil sampling program

A NGH Environmental Consultant and a local bobcat operator attended the site on 7 July 2025.

Soil sampling involved the excavation and sampling of four (4) test pits to a maximum depth of 0.5 mbgl.

No surface soil contamination (e.g. staining or odours) was identified during the site walkover. Therefore, the boreholes were located on a judgemental basis, to target areas where cropping has been undertaken.

NGH engaged a local bobcat operator to undertake the intrusive investigation (under the direction of a NGH Environmental Consultant). Surface samples were taken immediately below any vegetation or detritus layers. Subsurface soil samples were taken at 0.5 mbgl. Additional samples were collected if:

- There was a change in soil profile
- Fill was encountered
- Staining / odours were observed.

Refer to Figure 5-1 for soil sampling locations.

8.3. Laboratory analysis program

Soil samples were sent to ALS Environmental (Sydney) for the following analyses, refer to Table 8-1.

Table 8-1 Laboratory analysis program

Test pit ID	Heavy metals	OCPs/OPPS
TP01 – surface (0.0 – 0.1 m)	X	X
TP01 – subsurface (0.5 m)	X	X
TP02 – surface (0.0 – 0.1 m)	X	X
TP02 – subsurface (0.5 m)	X	X
TP03 – surface (0.0 – 0.1 m)	X	X
TP03 – subsurface (0.5 m)	X	X
TP04 – surface (0.0 – 0.1 m)	X	X
TP04 – subsurface (0.5 m)	X	X
DUP01	X	
TRIP01	X	

9. Soil investigation results

9.1. Field observations

The following observations were recorded during the intrusive investigation:

- Four (4) test pits were advanced to 0.5 mbgl using an excavator
- Borehole lithologies were generally observed to consist of dark brown light clay (0.0 – 0.1 m) over reddish brown medium clay (0.5m)
- Ground coverings, including soil and grass, were observed
- No anthropogenic materials, such as waste, nails or rubble, were observed
- No asbestos containing material (ACM) was observed within the test pits
- Mottling was observed at TP01, TP02 and TP03
- Groundwater was not encountered during the investigation.

Refer to Appendix D for soil logs and Appendix H for photos taken during the sampling program.

9.2. Soil analysis results

Laboratory documentation is provided in Appendix E. Detailed analysis results with comparison against Tier 1 SSLs are provided in Appendix F.

9.2.1. Analysis program

A total of eight (8) primary soil samples and 1 QA/QC soil samples were submitted to ALS Environmental (Sydney), a NATA accredited laboratory, for analysis of the CoPCs, refer to Table 8-1.

The inter-laboratory duplicate sample was analysed by ALS Environmental (Melbourne).

Laboratory results are provided in Appendix E. A chemical summary tables is provided in Appendix F.

9.2.2. Comparison against HILs/HSLs (protection of human health)

The soil analysis results can be summarised as follows:

- OCP concentrations were below the LOR in all analysed samples
- OPP concentrations were below the LOR in all analysed samples
- Metal concentrations exceeded the LOR but were less than HIL D Tier 1 SSLs, as further discussed below.

Metals in soil samples

A summary of the metal concentrations is provided in Table 9-1.

Table 9-1 Summary of metal concentrations (mg/kg) in primary soil samples

Analyte	No. Results	LOR (mg)	No < LOR	No. > LOR	Minimum result > LOR (mg/kg)	Maximum result > LOR (mg/kg)	HIL D criteria (mg/kg)
Arsenic	8	5	4	4	6	8	3,000
Cadmium	8	1	8	0	N/A	N/A	900
Chromium	8	2	0	8	29	71	3,600
Copper	8	5	0	8	6	23	240,000
Lead	8	5	0	8	8	15	1,500
Mercury	8	0.1	8	0	N/A	N/A	730
Nickel	8	2	0	8	6	14	6,000
Zinc	8	5	0	8	9	18	400,000

10. Revised conceptual site model

A revised tabulated CSM based on the findings of the PSI has been developed. The revised CSM has been prepared to provide an understanding of the contamination risk to the site and discuss the linkages between the mechanisms for the identified contamination, affected media, receptors and exposure pathways as outlined below.

Table 10-1 Revised CSM

Potential Source of Contamination	Potential Chemicals of Concern	Transport Mechanisms	Potential Exposure Pathways	Potential Receptors	Risk rating	Summary comments
AEC1 Agricultural practices (cropping)	• Heavy metals • OCPs • OPPs	• Disturbance – airborne release • Surface water runoff • Leachability into surficial, sub soils and underlying groundwater and transport via groundwater flows	• Inhalation of dust • Ingestion • Dermal contact	**Human receptors:** Construction workers and intrusive maintenance workers Farm workers	**LOW RISK**	Minor detections above the laboratory LOR for heavy metals. Results for OCPs & OPPs were below the LOR. No anthropogenic materials were noted within the soil profile.
			• Inhalation of dust • Dermal contact	**Off-site human receptors:** Adjacent land users	**LOW RISK**	
			• Inhalation of dust • Ingestion • Dermal contact	**Environmentally sensitive receptors:** Paper Forest Creek, a fifth order waterway, intersects the southern portion of the site. Three additional	**LOW RISK**	

Potential Source of Contamination	Potential Chemicals of Concern	Transport Mechanisms	Potential Exposure Pathways	Potential Receptors	Risk rating	Summary comments
				waterways (one fourth order, one second order and one first order) also intersect the site, before feeding into Paper Forest Creek. Five farm dams occur within the site.		

11. Discussion

The results of the PSI indicate that the northern portion of the site is situated on kandosols and kurosols, while the southern portion of the site is situated on chromosols and sodosols. Soils occurring within the site are associated with the Red Podzolic soils, Red Podzolic soils – less fertile, non-calcic Brown soils and Sodolic Soils GSGs. The site occurs at an elevation of approximately 270 mAHD. The topography of the site is generally flat, sloping gently downgradient to the west.

Paper Forest Creek, a fifth order waterway, intersects the southern portion of the site. Three additional waterways (one fourth order, one second order and one first order) also intersect the site, before feeding into Paper Forest Creek. Five farm dams occur within the site.

A search of the Contaminated Land Record returned no records within the site. The Contaminated Land Record of Notices did not return any notices within the site, nor is the land known to contain a former gasworks development. The site is currently used for the purposes of electrical infrastructure, irrigated cropping, residential and farm infrastructure and transport.

CoPCs associated with cropping activities include heavy metals, OCPs and OPPs. Previous soil testing conducted within the site indicates that the soils are not saline. The site is not mapped as containing NOA or ASS.

Analytical results for the soil sampling program were below the LOR for all analytes, except for some metals/metalloids and nutrients. All results were below the adopted Tier 1 SSLs.

11.1. Data gaps

Based on the findings of this PSI, the following data gaps have been identified:

- **Contaminants of Potential Concern** - The CoPC were limited to the chemicals associated with agricultural activities and the substation. Should it become known that other CoPC may have been present on the site, further testing may be required
- **Groundwater** – Groundwater sampling was not undertaken due to the likely depth to groundwater (>20m) and low potential for runoff infiltration. Groundwater was not encountered during the investigation
- **Vertical extent of contamination –** this sampling program was conducted to a maximum depth of 0.5 mbgl. Additional testing will be required, should additional works (below 0.5 mbgl) be required.

Additional limitations regarding this PSI have been discussed in Section 14 of this PSI.

12. Conclusion

NGH were engaged by the Client to undertake a PSI to support the development of a BESS on part of Lot 222 DP 754557, Lot 225 DP 754557 and Lot 228 DP 754557, also known as 4178 Holbrook Road, Mangoplah, NSW. The purpose of this PSI was to summarise the history of the site, provide up to date site information, a CSM and recommendations for further investigation, if required.

The soil investigation and analytical testing undertaken concludes that all chemical analysis results were below the adopted site assessment criteria at the sampled locations. This analysis indicates that disturbance of site soils during construction activities are not likely to present a risk to human health or the environment under a commercial / industrial land use.

12.1. Recommendations

An Unexpected Finds Procedure should be developed and implemented, should contaminated material be identified onsite during the construction program.

13. References

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14. Limitations

NGH Pty Ltd (NGH) has prepared this report for Mangoplah BESS Pty Ltd in accordance with the usual care and thoroughness of the consulting profession. This report is based on current practices and professional standards at the time of the preparation of this report. Opinions and judgements herein, based on our understanding and interpretation of existing regulatory standards, should not be construed as legal opinions. This report may not be relied upon by any other party without the explicit written agreement of NGH. No other warranty, expressed or implied, is made regarding the professional advice included in this report.

The scope of work undertaken, and sources of information used by NGH in this report were limited to that detailed in this report. NGH has made no independent verification of this information beyond the agreed scope of works. NGH assumes no responsibility for any inaccuracies or omissions in the provided information.

This report was prepared between the period of April and July 2025 and is based on the conditions encountered and information reviewed during preparation. NGH disclaims responsibility for any changes that may have occurred after this time. We do not assume any liability for misinterpretation or items not visible, accessible or present at the site during the time of works.

This report should be read in full. No responsibility is accepted for using any part of this report in any other context, for any other purpose, or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

This report may contain information obtained by interview(s), documentation review, inspection, sampling, testing or other means of investigation. Our conclusions are based on professional experience. Future advances regarding the understanding of chemicals and their behaviour, and changes in regulations affecting their management, could impact our conclusions and recommendations regarding their potential presence on this site. Given that the agreed scope of work performed was limited and governed by budgetary constraints, NGH does not guarantee that hazardous substances, other than those identified in this report, do not exist at the site. Certain conditions that could cause contamination of the land may not have been identified such as naturally occurring toxins in groundwater and flora, contamination from domestic products or building materials, or contamination that has occurred after the site investigations/ monitoring by NGH.

There are no investigative or remedial works that are thorough enough to preclude the presence of material, which, presently or in the future, may be considered hazardous at the site. As regulatory evaluation criteria are constantly changing, concentrations of contaminants presently regarded as low may, in the future, fall under different regulatory standards that require further investigations or remediation.

Where conditions encountered at the site are subsequently found to differ significantly from those anticipated in this report, NGH must be notified of any such findings and be provided with an opportunity to review the recommendations of this report.

To the best of our knowledge, information contained in this report is accurate at the date of issue, but subsurface conditions, including groundwater levels, can change in a limited time. Therefore, this document and the information contained herein should only be regarded as valid at the time of the investigation unless otherwise explicitly stated in this report.

Appendix A Lotsearch

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 21 May 2025 15:21:39

Reference: LS082171 EP

Address: 4178 Holbrook Road, Mangoplah, NSW 2652

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:

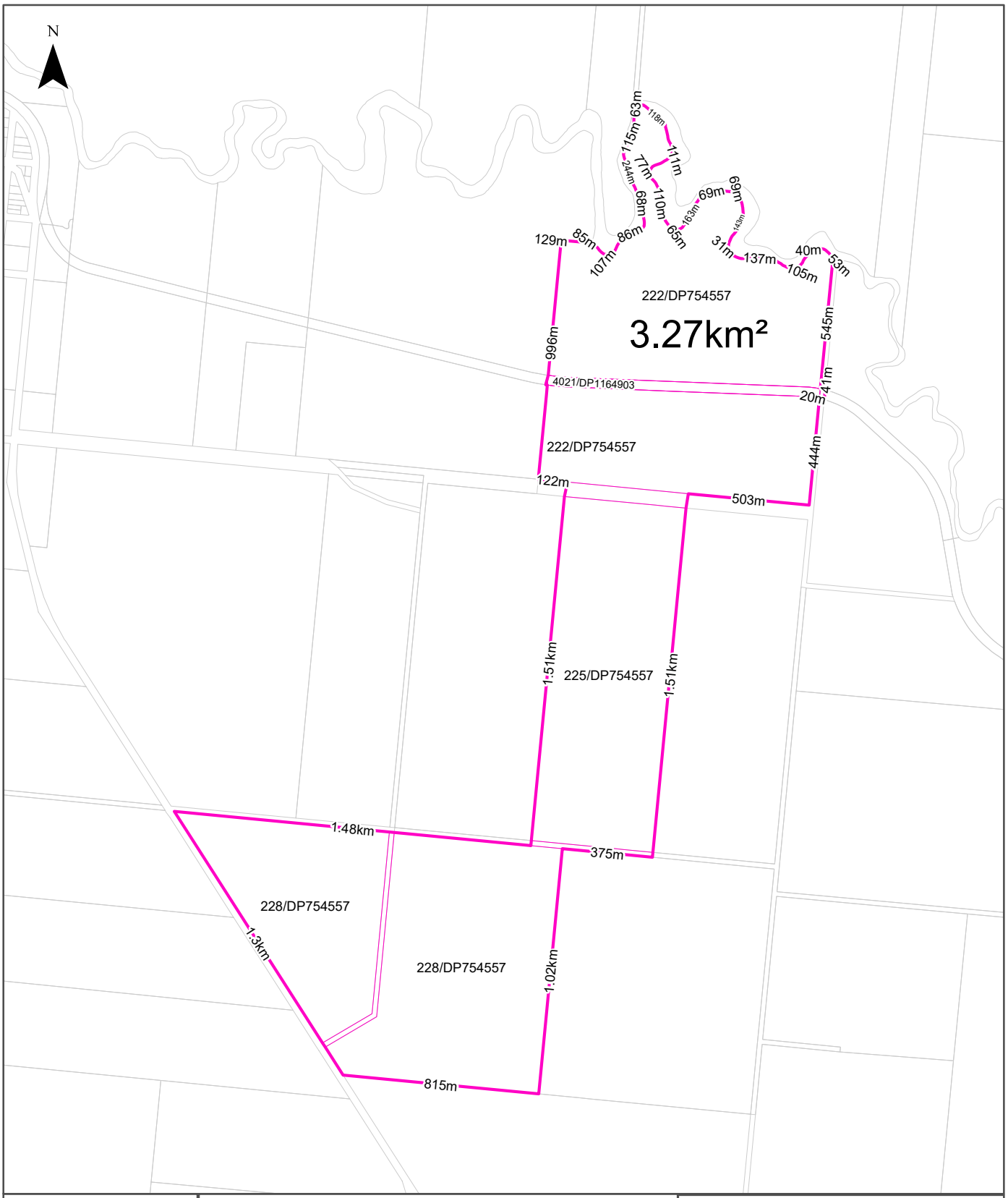
Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	22/04/2025	22/04/2025	Monthly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	20/05/2025	20/05/2025	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	07/05/2025	09/04/2025	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority NSW	12/05/2025	12/05/2025	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	20/05/2025	15/05/2025	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	28/04/2025	28/04/2025	Monthly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	16/10/2024	19/01/2023	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority NSW	28/04/2025	05/02/2025	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	07/04/2025	28/10/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	07/04/2025	28/10/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	07/04/2025	07/04/2025	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	10/04/2025	10/04/2025	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	18/02/2025	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Australian Department of Defence	10/04/2025	10/04/2025	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	28/11/2024	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	15/05/2025	15/05/2025	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	15/05/2025	15/05/2025	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	15/05/2025	15/05/2025	Monthly	1000m	3	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	19/05/2025	19/05/2025	Quarterly	1000m	1	1	8
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/05/2025	19/05/2025	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/05/2025	19/05/2025	Quarterly	1000m	1	1	1
Major Easements	NSW Department of Customer Service - Spatial Services	20/05/2025	20/05/2025	Quarterly	1000m	1	2	2
State Forest	Forestry Corporation of NSW	18/12/2024	11/11/2024	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	22/04/2025	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 2024	NSW Department of Climate Change, Energy, the Environment and Water	13/05/2025	28/06/2024	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	20/06/2023	Annually	2000m	0	0	10
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Primary Industries and Regional Development	19/05/2025	16/04/2024	Annually	1000m	3	3	4
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Primary Industries and Regional Development	19/05/2025	16/04/2024	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Primary Industries and Regional Development	19/05/2025	16/04/2024	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Fold Axes	NSW Department of Primary Industries and Regional Development	19/05/2025	16/04/2024	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Department of Primary Industries and Regional Development	05/05/2025	30/09/2015	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	15/01/2025	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	18/12/2024	27/07/2020	Annually	1000m	4	4	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	19/05/2025	28/02/2025	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	15/01/2025	21/02/2013	Annually	1000m	1	1	1
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service	20/05/2025	20/05/2025	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Primary Industries and Regional Development	05/05/2025	05/05/2025	Monthly	1000m	0	0	1
Mining Title Applications	NSW Department of Primary Industries and Regional Development	05/05/2025	05/05/2025	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Primary Industries and Regional Development	05/05/2025	05/05/2025	Monthly	1000m	4	4	7
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	19/05/2025	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	19/05/2025	24/05/2025	Monthly	1000m	1	3	3
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	23/10/2024	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	23/10/2024	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	20/05/2025	21/03/2025	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	19/05/2025	02/05/2025	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	21/05/2025	31/03/2025	Monthly	1000m	3	3	3
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	26/02/2025	08/11/2024	Quarterly	1000m	22	33	64
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	19/05/2025	05/03/2025	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	20/03/2025	19/06/2024	Annually	1000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	20/03/2025	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	2	2	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	5	5	6
NSW BioNet Species Sightings	NSW Department of Climate Change, Energy, the Environment and Water	13/05/2025	13/05/2025	Monthly	10000m	-	-	-

Site Diagram

4178 Holbrook Road, Mangoplah, NSW 2652



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 3.27km²

Total Perimeter: 13.44km

Disclaimers:

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

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

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

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2025

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 May 2025

Contaminated Land

4178 Holbrook Road, Mangoplah, NSW 2652

List of NSW contaminated sites notified to EPA

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

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

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land

4178 Holbrook Road, Mangoplah, NSW 2652

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

4178 Holbrook Road, Mangoplah, NSW 2652

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
N/A	No records in buffer											

NSW EPA Notice Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

4178 Holbrook Road, Mangoplah, NSW 2652

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 Facilties within the dataset buffer:

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

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

PFAS Investigation & Management Programs

4178 Holbrook Road, Mangoplah, NSW 2652

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

4178 Holbrook Road, Mangoplah, NSW 2652

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

4178 Holbrook Road, Mangoplah, NSW 2652

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

4178 Holbrook Road, Mangoplah, NSW 2652

Licensed Activities under the POEO Act 1997

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

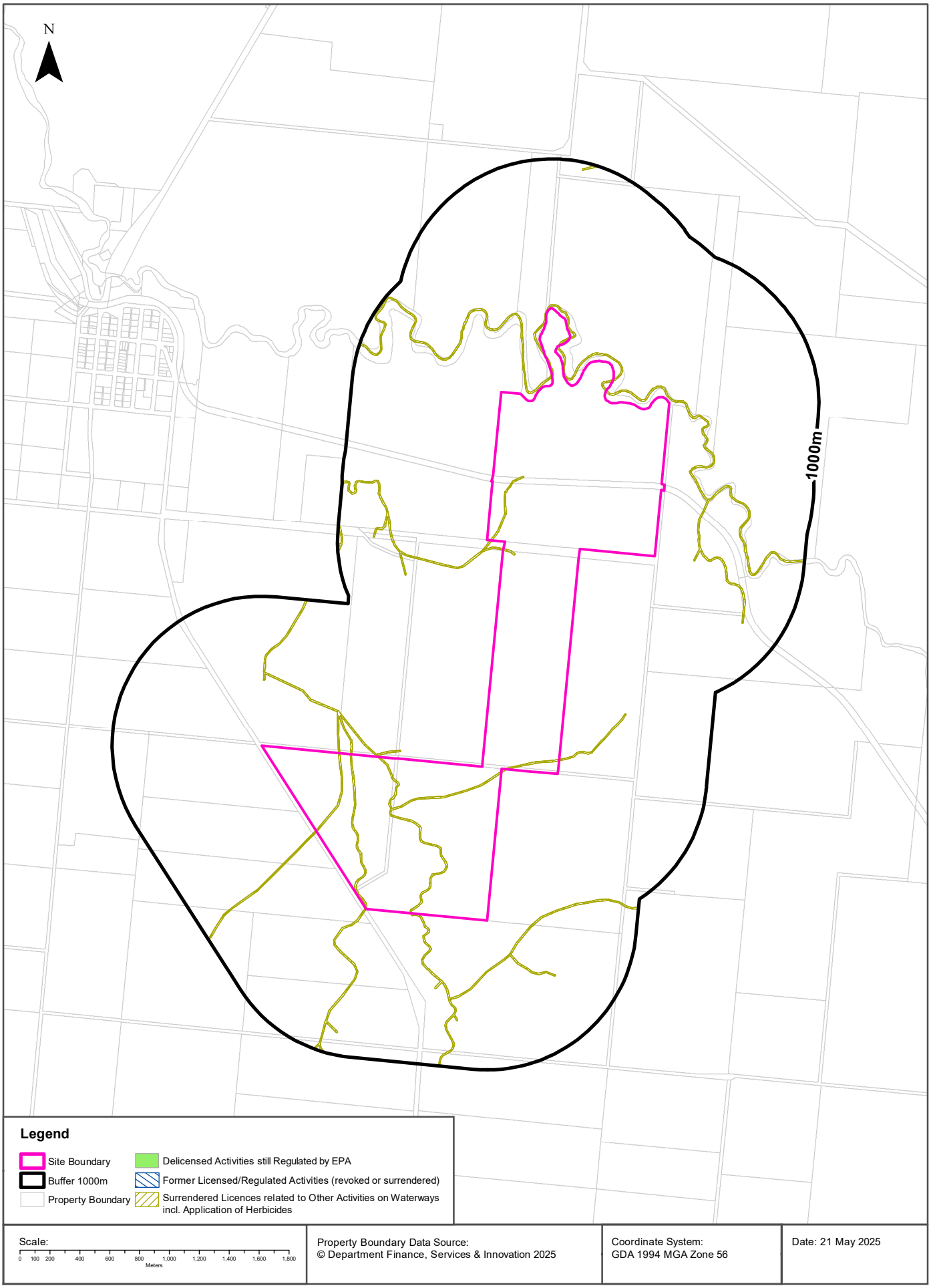
EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

4178 Holbrook Road, Mangoplah, NSW 2652



EPA Activities

4178 Holbrook Road, Mangoplah, NSW 2652

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

Former Licensed Activities Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Historical Business Directories

4178 Holbrook Road, Mangoplah, NSW 2652

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
N/A	No records in buffer					

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

Historical Business Directories

4178 Holbrook Road, Mangoplah, NSW 2652

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						

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

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

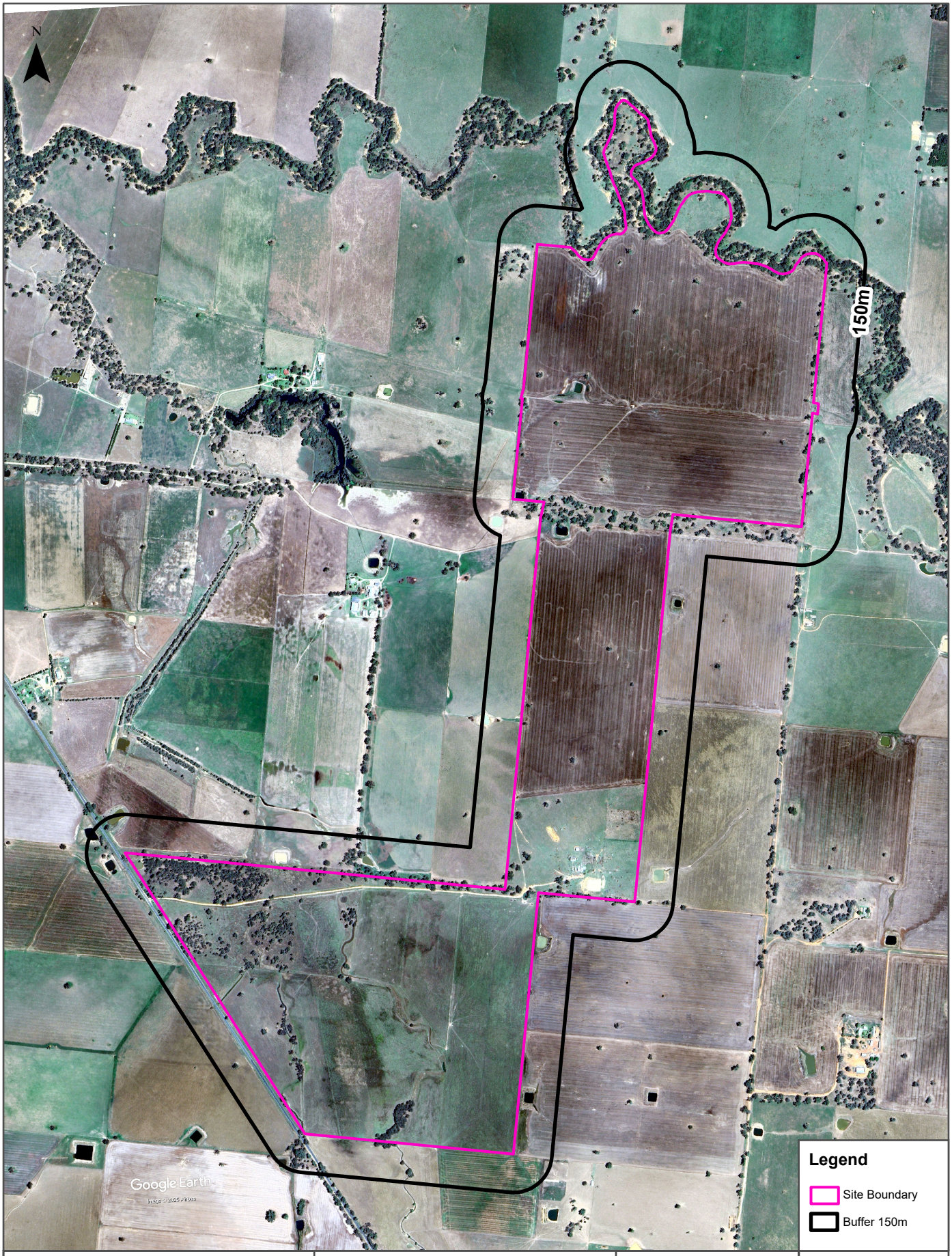
Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

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

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Aerial Imagery 2023

4178 Holbrook Road, Mangoplah, NSW 2652



Scale:
0 240 480 720 960
Meters

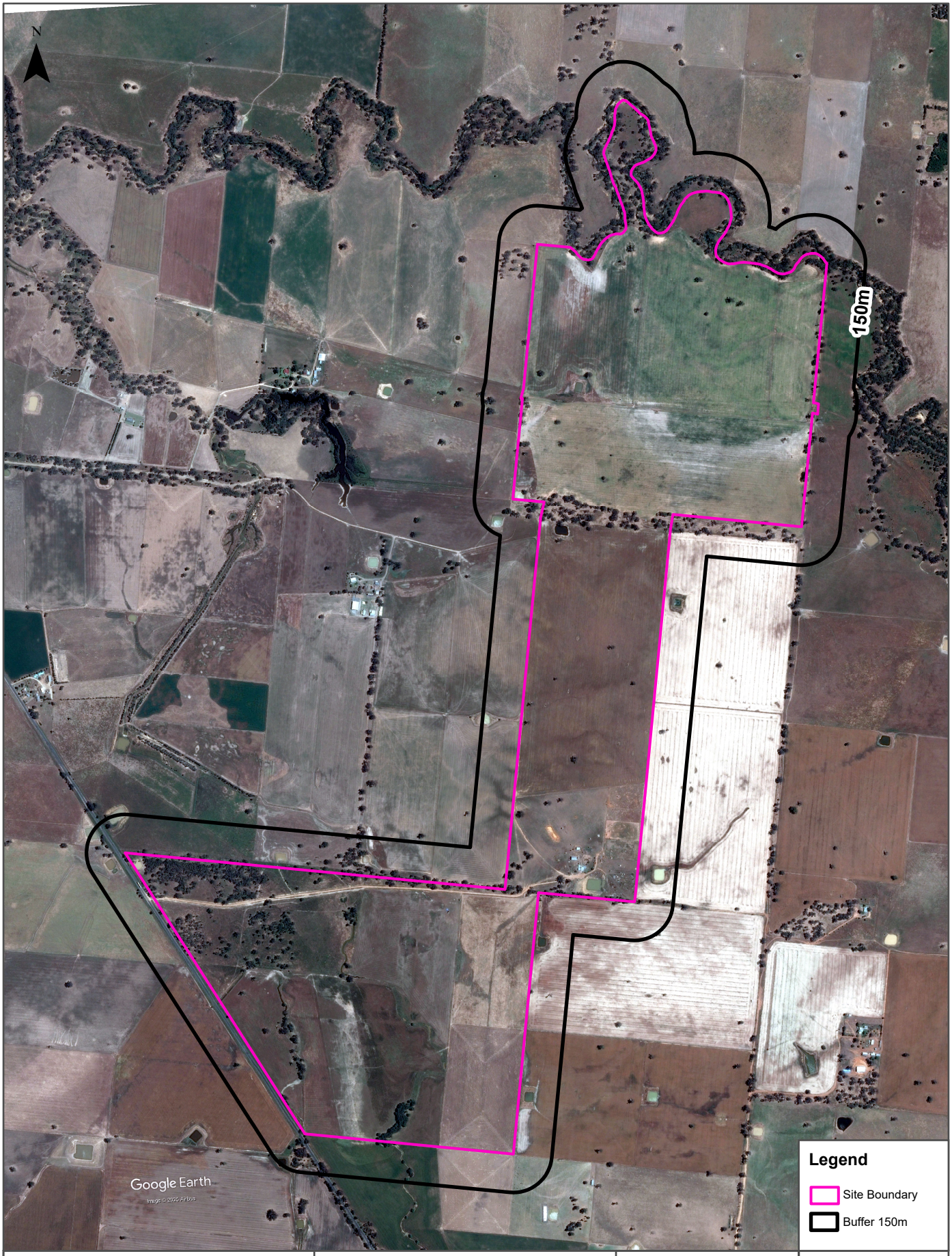
Data Source Aerial Imagery: © 2025 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 20 May 2025

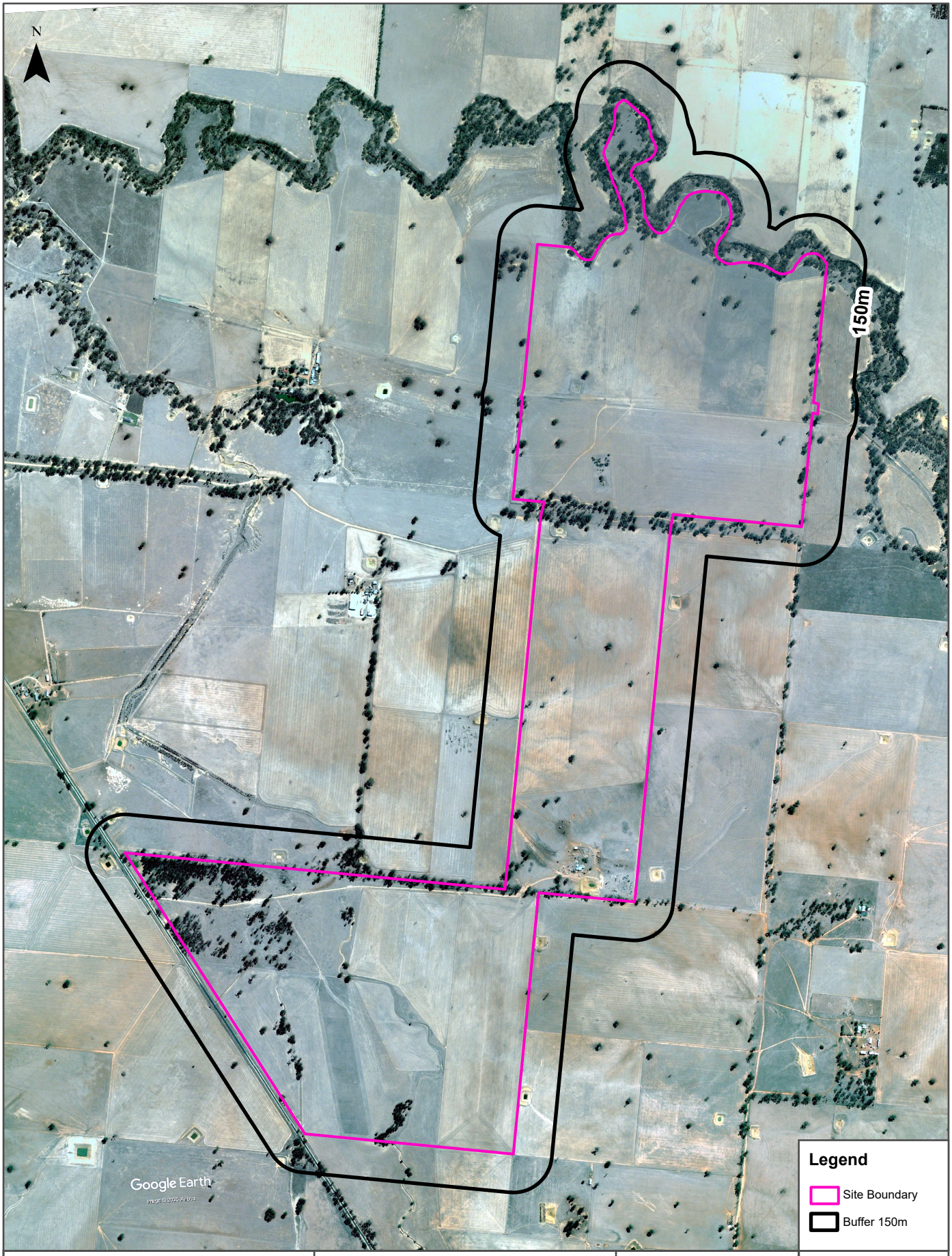
Aerial Imagery 2016

4178 Holbrook Road, Mangoplah, NSW 2652



Aerial Imagery 2007

4178 Holbrook Road, Mangoplah, NSW 2652



Scale:
0 240 480 720 960
Meters

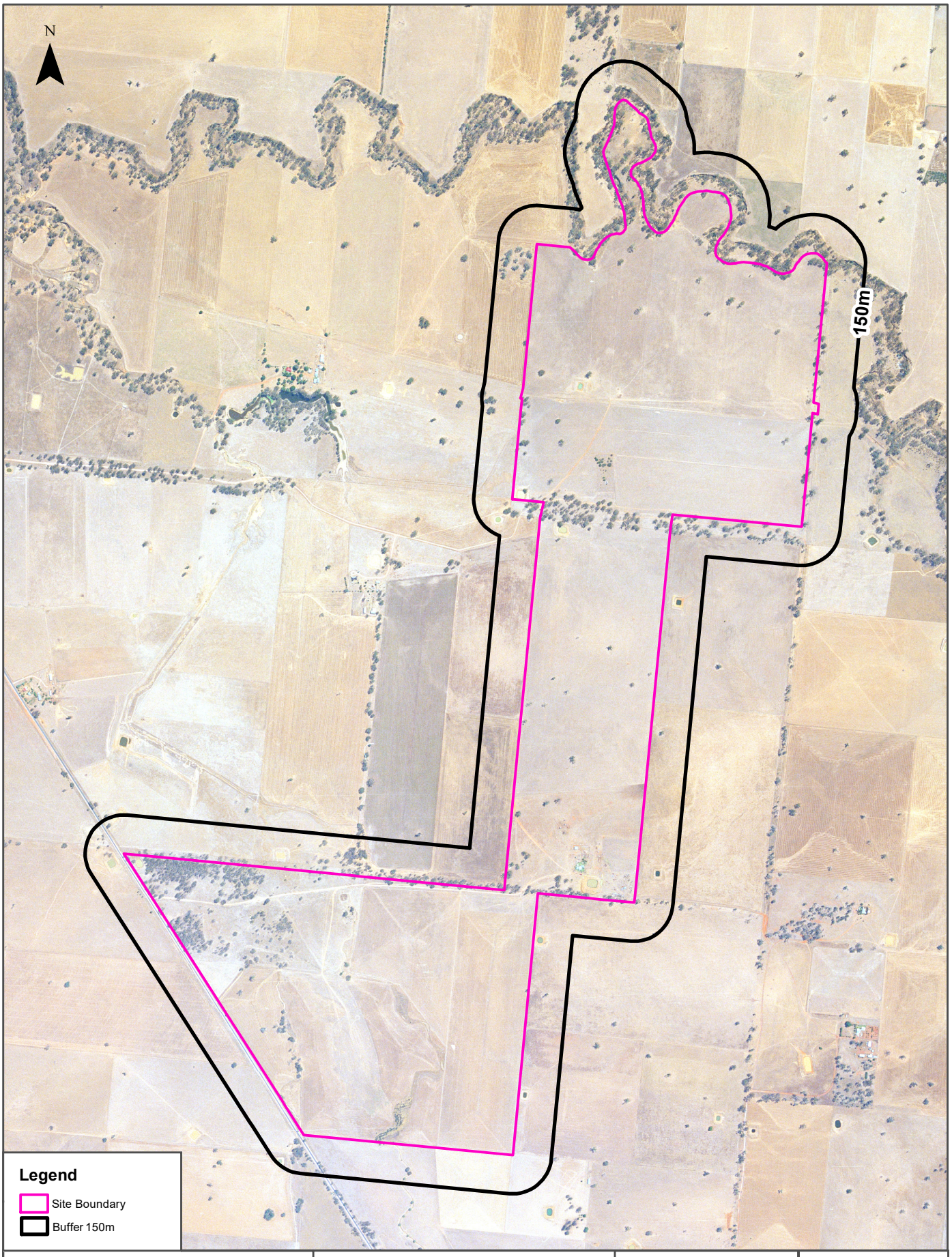
Data Source Aerial Imagery: © 2025 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 20 May 2025

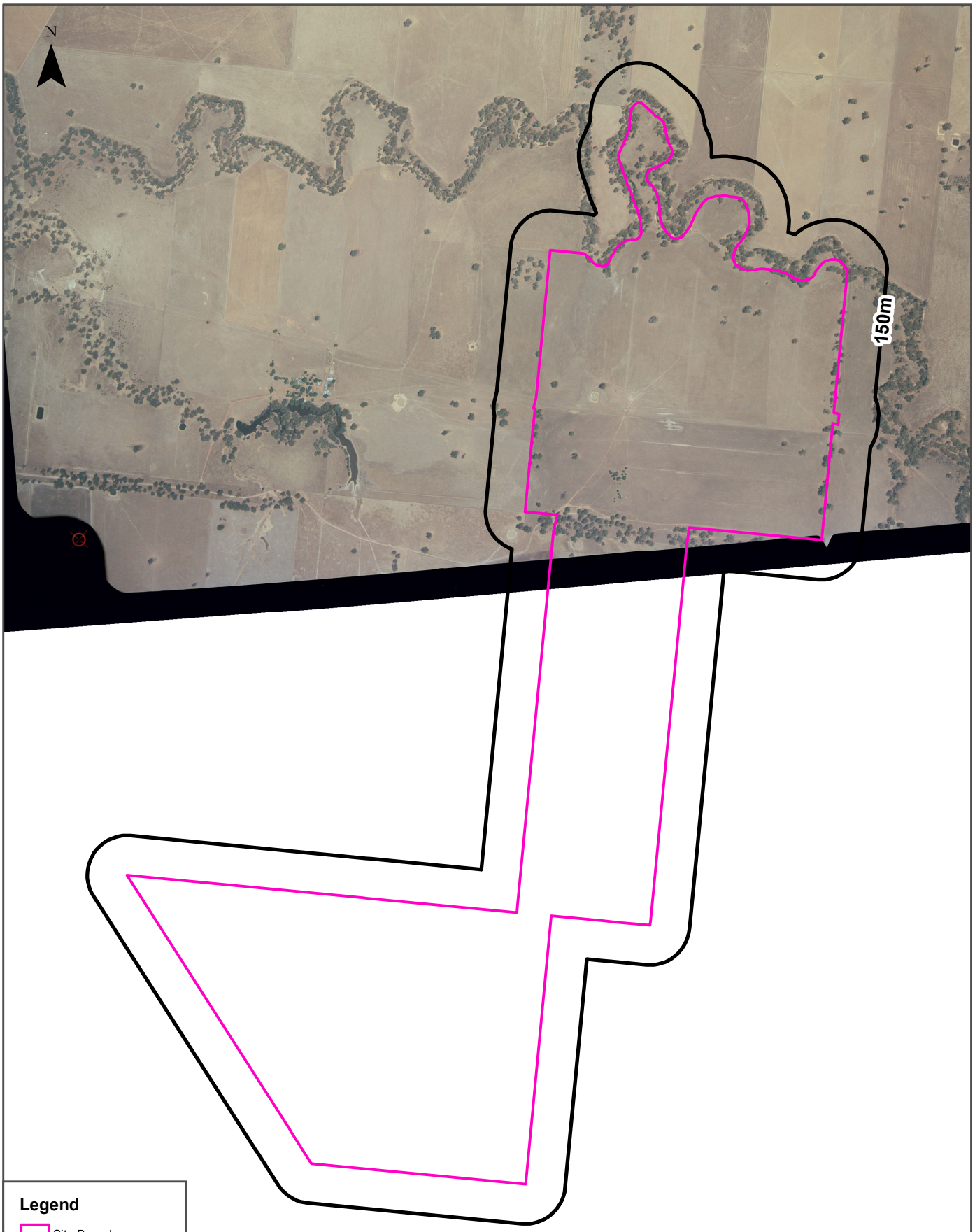
Aerial Imagery 1997

4178 Holbrook Road, Mangoplah, NSW 2652



Aerial Imagery 1991

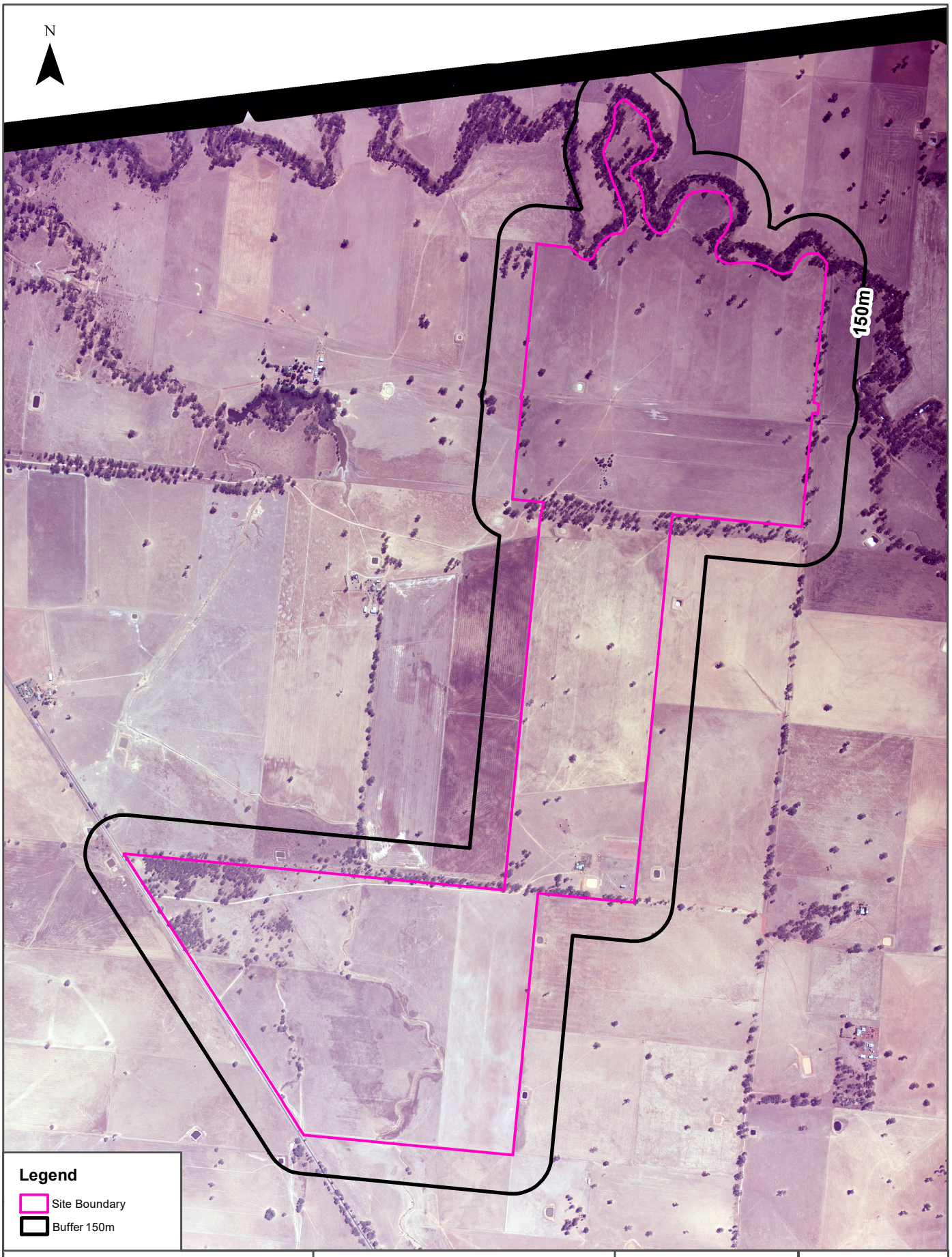
4178 Holbrook Road, Mangoplah, NSW 2652



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 20 May 2025
0 230 460 690 920 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

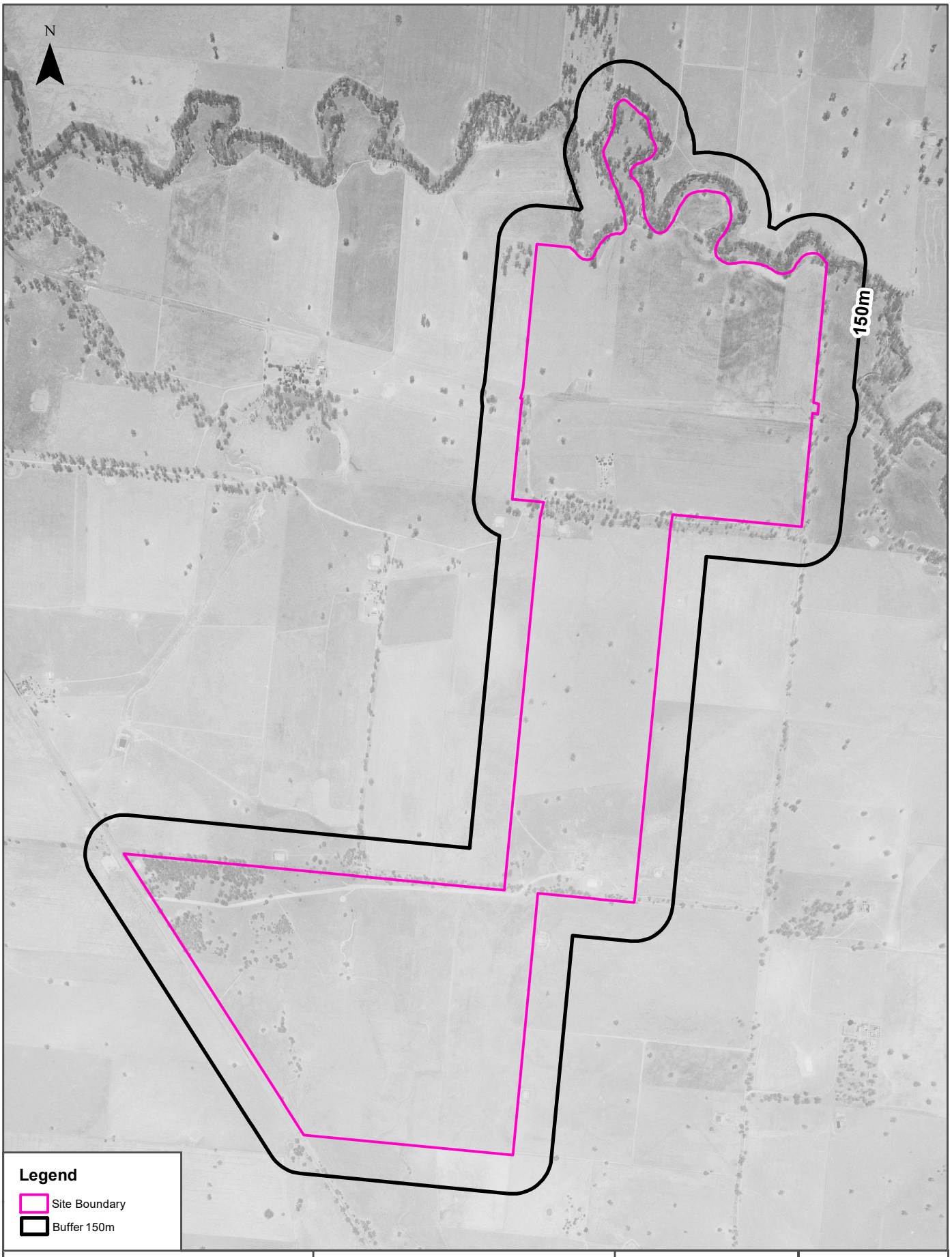
Aerial Imagery 1991

4178 Holbrook Road, Mangoplah, NSW 2652



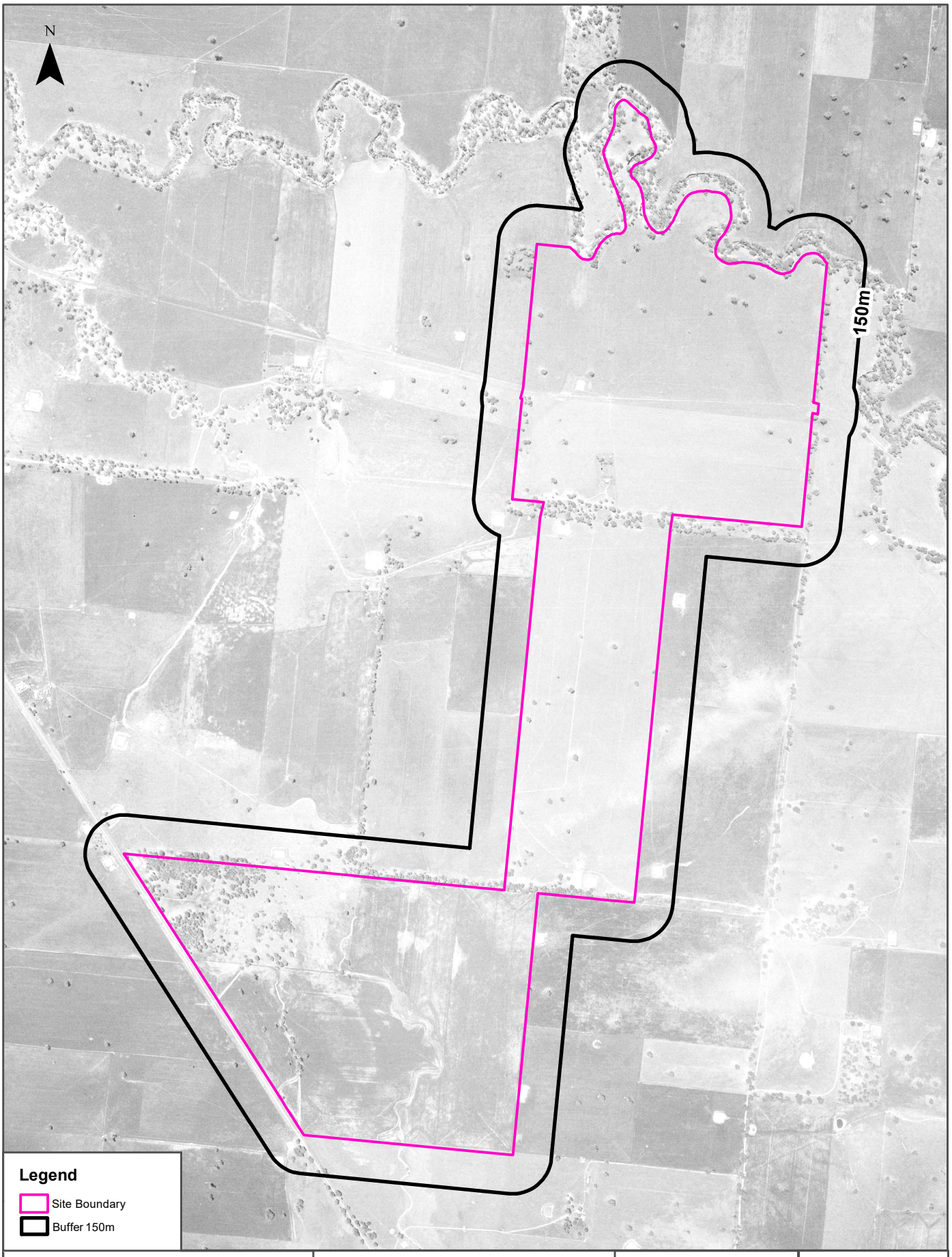
Aerial Imagery 1980

4178 Holbrook Road, Mangoplah, NSW 2652



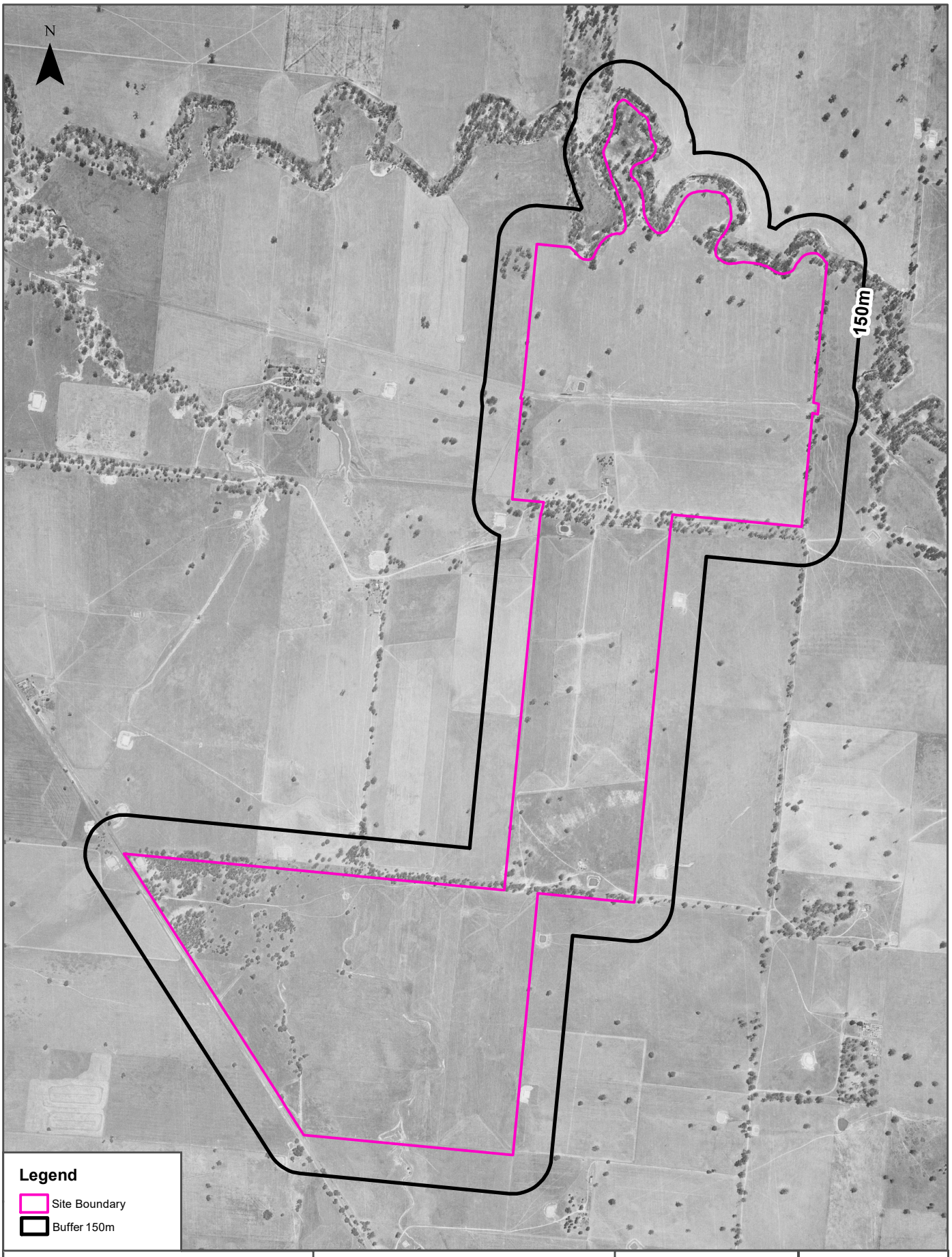
Aerial Imagery 1971

4178 Holbrook Road, Mangoplah, NSW 2652



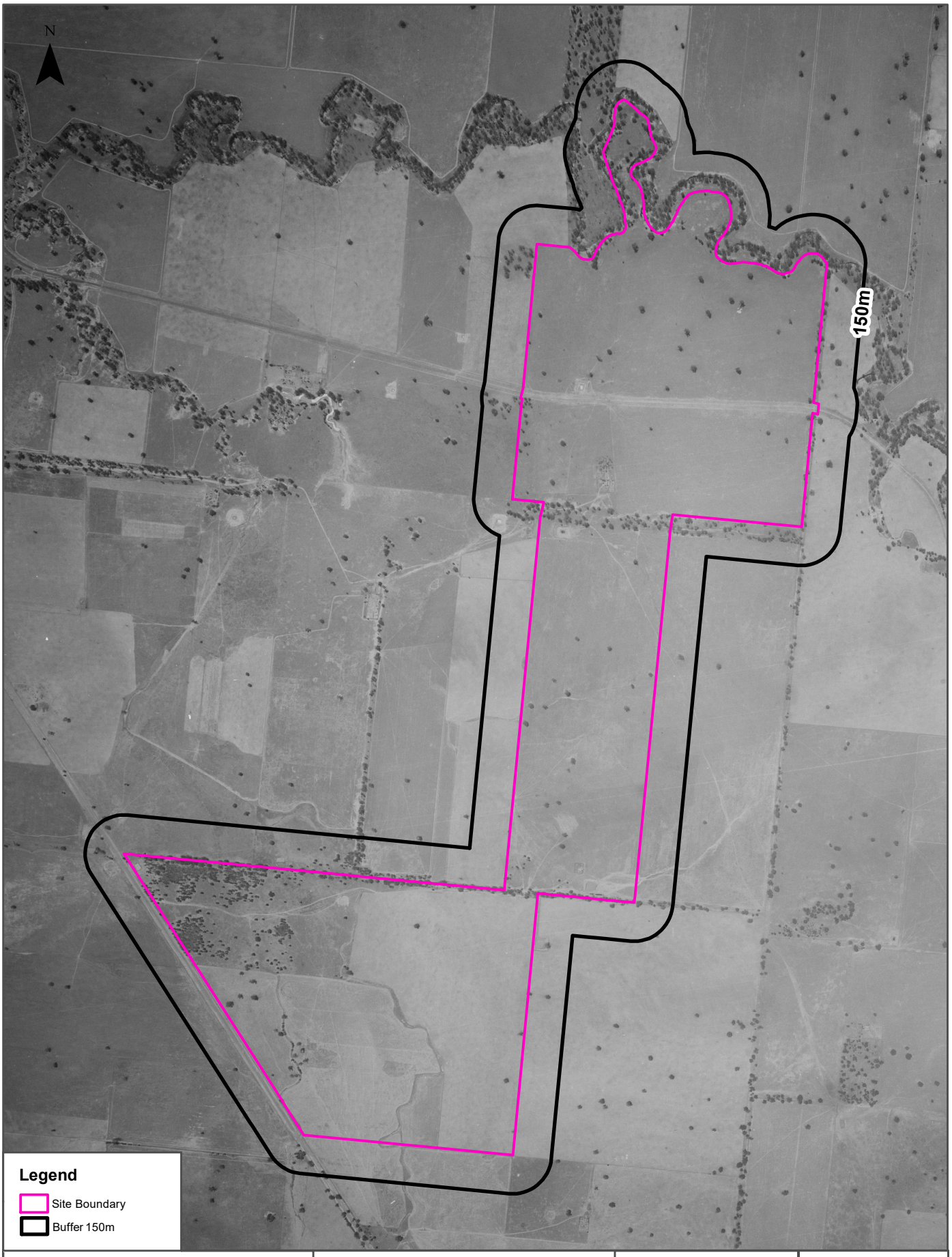
Aerial Imagery 1969

4178 Holbrook Road, Mangoplah, NSW 2652



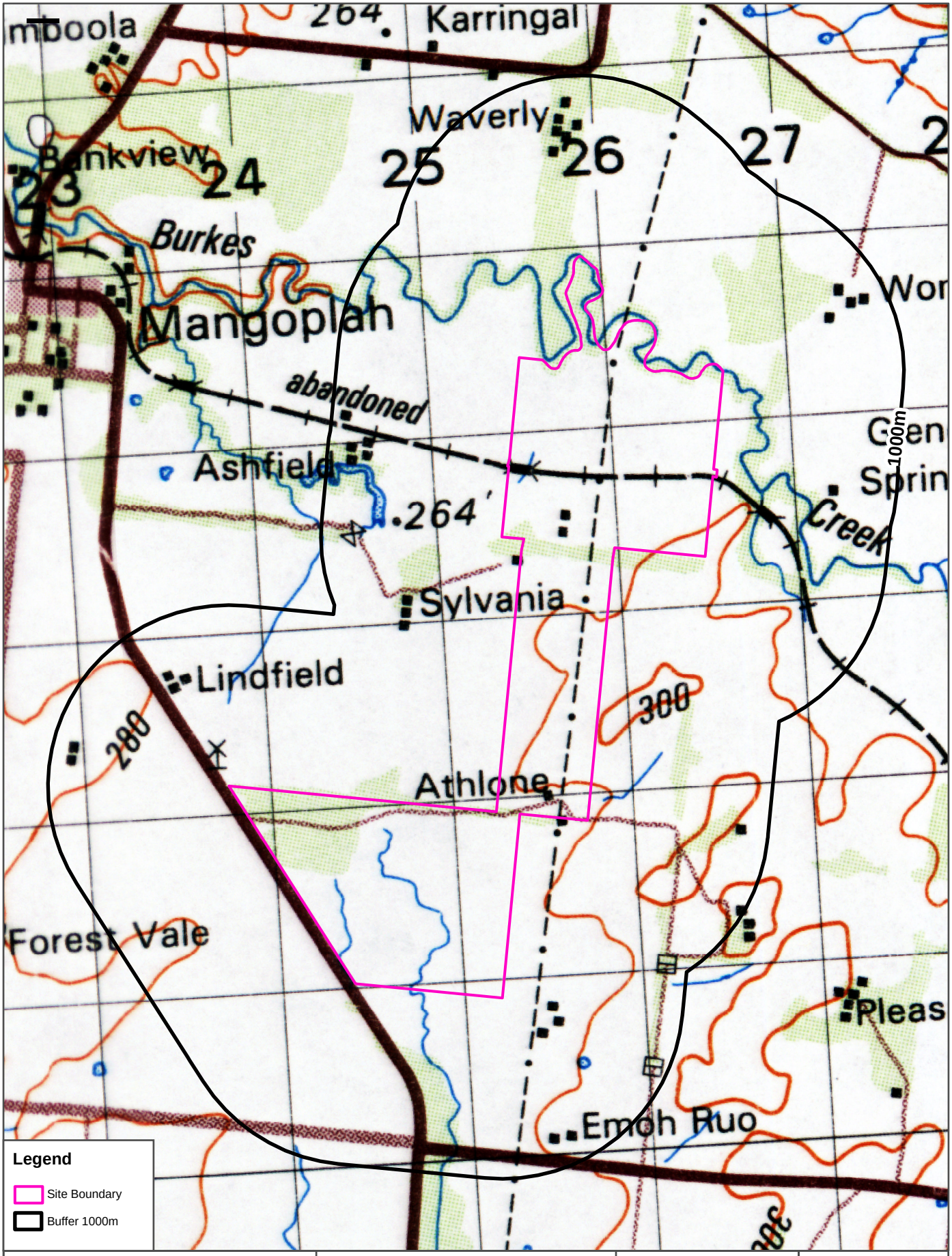
Aerial Imagery 1945

4178 Holbrook Road, Mangoplah, NSW 2652



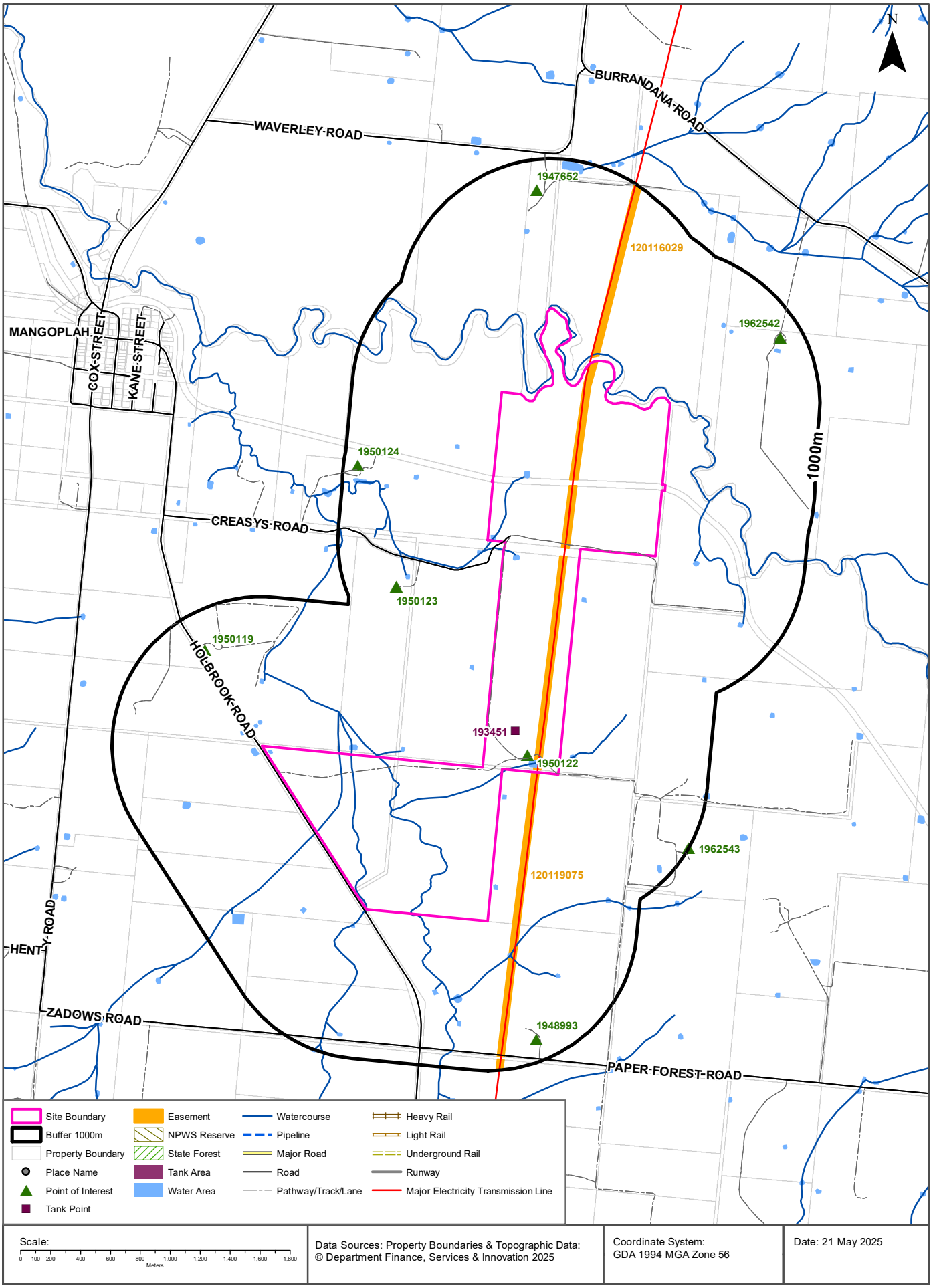
Historical Map 1982

4178 Holbrook Road, Mangoplah, NSW 2652



Topographic Features

4178 Holbrook Road, Mangoplah, NSW 2652



Topographic Features

4178 Holbrook Road, Mangoplah, NSW 2652

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
1950122	Homestead	ATHLONE	0m	On-site
1950123	Homestead	SYLVANIA	683m	North West
1950119	Homestead	LINDFIELD	746m	West
1947652	Homestead	WAVERLEY	798m	North
1962542	Homestead	BEN BOLT	855m	North East
1948993	Homestead	EMOH RUO	855m	South
1950124	Homestead	ASHFIELD	904m	North West
1962543	Homestead	FAIRLYN VIRGINIA	1000m	South East

Topographic Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Topographic Features

4178 Holbrook Road, Mangoplah, NSW 2652

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
193451	Water	Operational		01/02/2014	0m	On-site

Tanks Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

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
120119075	Primary	Undefined		0m	On-site
120116029	Primary	Undefined		32m	North

Easements Data Source: © Land and Property Information (2015)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Topographic Features

4178 Holbrook Road, Mangoplah, NSW 2652

State Forest

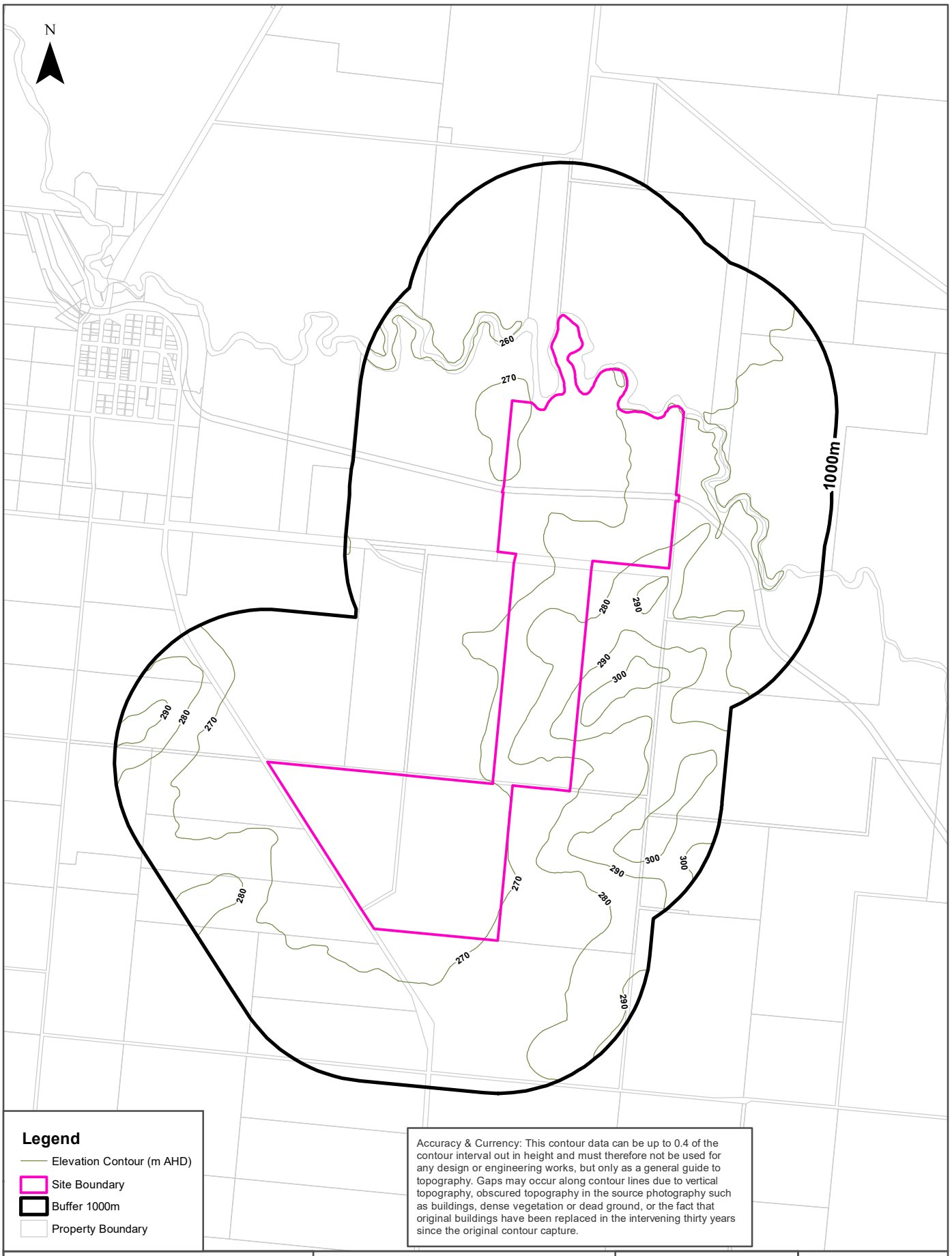
What State Forest exist within the dataset buffer?

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

Elevation Contours (m AHD)

4178 Holbrook Road, Mangoplah, NSW 2652



Hydrogeology & Groundwater

4178 Holbrook Road, Mangoplah, NSW 2652

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 2024

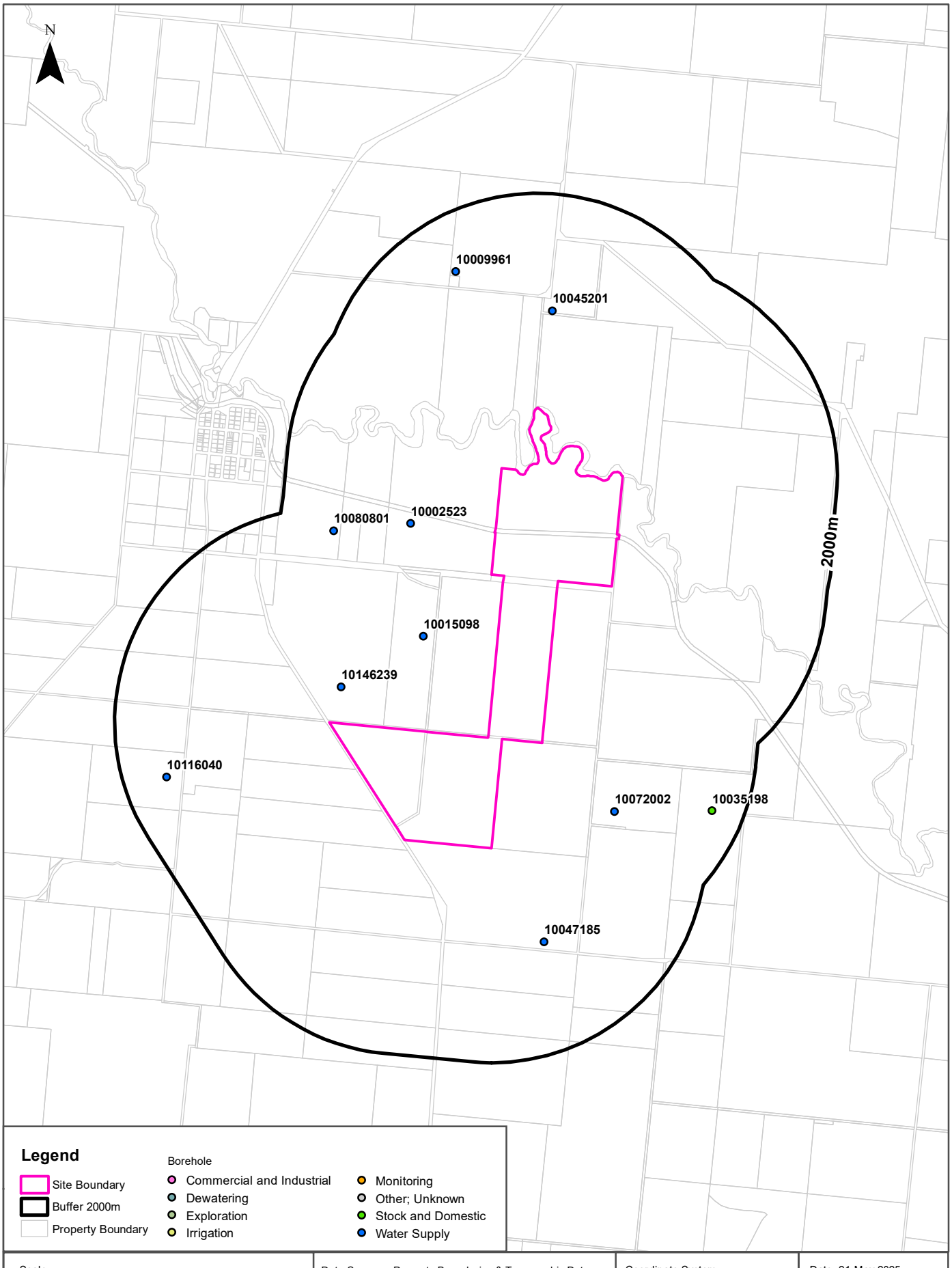
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2024 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

4178 Holbrook Road, Mangoplah, NSW 2652



Hydrogeology & Groundwater

4178 Holbrook Road, Mangoplah, NSW 2652

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
10146239	GW048258	Water Supply	Unknown	01/05/1977	67.10		AHD	1001-3000 ppm			336m	West
10015098	GW405411	Water Supply	Functioning	07/05/2009	62.00		AHD				684m	West
10002523	GW029176	Water Supply	Unknown	01/12/1967	91.40		AHD	1001-3000 ppm			784m	North West
10045201	GW404536	Water Supply	Functioning	18/09/2002	36.00		AHD		1.500	12.00	913m	North
10072002	GW401693	Water Supply	Unknown	02/04/2001	80.00		AHD	Good	0.200	42.00	935m	South East
10047185	GW402372	Water Supply	Unknown	01/03/2003	117.00		AHD		2.000	52.00	1004m	South
10009961	GW029527	Water Supply	Unknown	01/06/1968	78.00		AHD				1476m	North
10080801	GW404385	Water Supply	Unknown	01/05/2000	116.00		AHD		1.000	32.50	1497m	North West
10116040	GW015381	Water Supply	Unknown	01/05/1957	100.60		AHD	Good			1595m	West
10035198	GW401964	Stock and Domestic	Unknown	20/01/1998	60.00		AHD	Good	1.500	18.00	1709m	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

4178 Holbrook Road, Mangoplah, NSW 2652

Driller's Logs

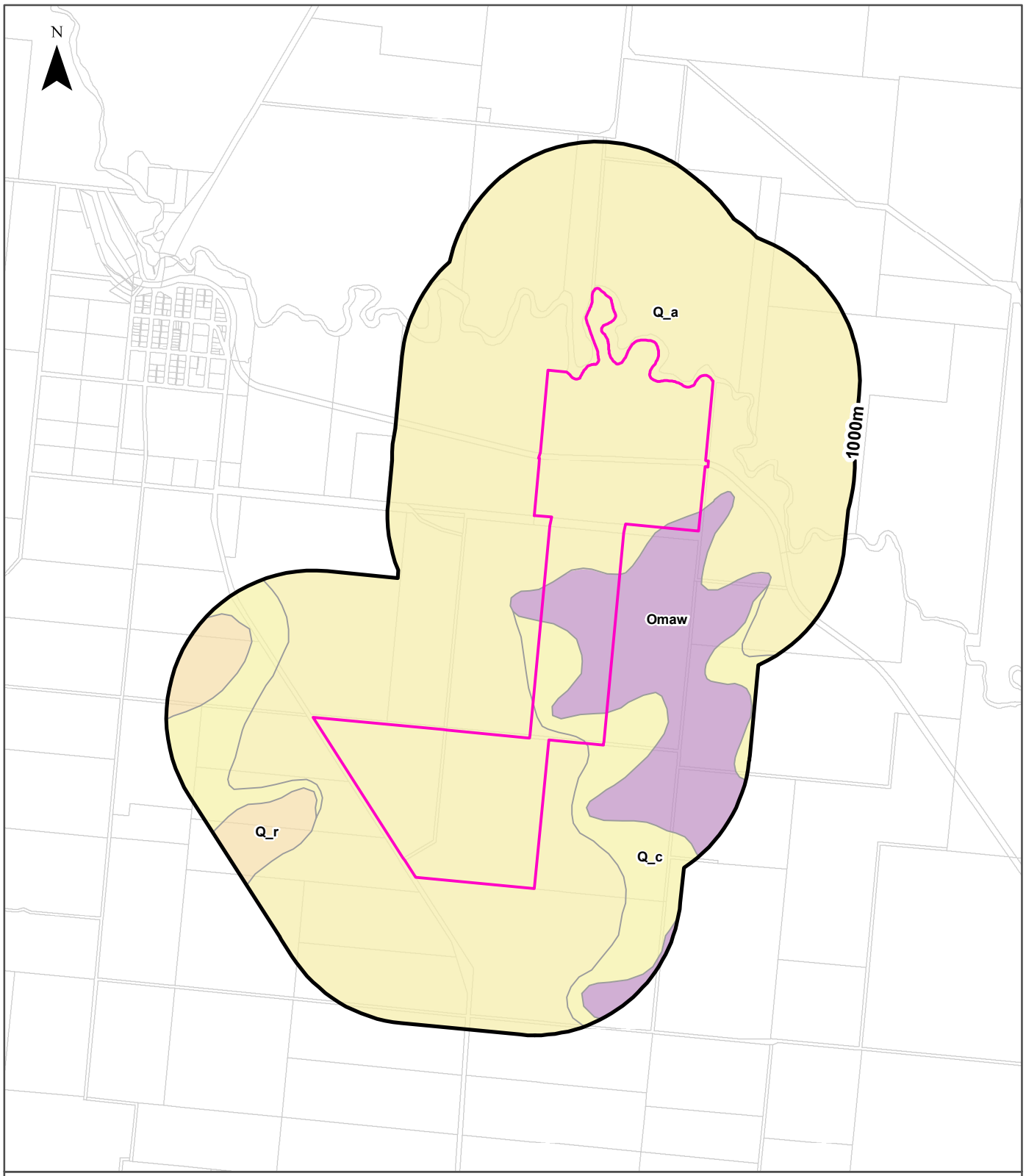
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10146239	0.00m-15.24m Clay Limestone Seams 15.24m-24.08m Clay Gritty 24.08m-36.58m Clay Shaley 36.58m-67.06m Slate Water Supply Quartz Seams	336m	West
10015098	0.00m-1.00m Topsoil, brown clay 1.00m-47.00m Clays, coloured 47.00m-55.00m Shale, grey brown 55.00m-62.00m Quartz & Shale	684m	West
10002523	0.00m-0.91m Topsoil Clay 0.91m-2.74m Sand Gravel 2.74m-36.58m Clay 36.58m-62.79m Shale Soft 62.79m-91.44m Shale	784m	North West
10072002	0.00m-2.10m CLAY, RED 2.10m-80.00m SHALE, POWDER	935m	South East
10047185	0.00m-1.00m Topsoil 1.00m-3.00m Shale, brown 3.00m-48.00m Shale, verigated 48.00m-50.00m Shale, blue 50.00m-65.00m Shale, red 65.00m-90.00m Shale, green 90.00m-117.00m Shale, hard blue - water bearing	1004m	South
10009961	0.00m-16.76m Clay 16.76m-17.37m Sand 17.37m-19.51m Clay 19.51m-20.12m Gravel 20.12m-21.64m Clay 21.64m-24.99m Sand 24.99m-27.74m Stones Rubble 27.74m-28.35m Clay 28.35m-29.87m Stones Rubble 29.87m-30.78m Clay 30.78m-32.92m Sand Fine 32.92m-34.14m Clay 34.14m-38.40m Sand Silty Water Bearing 38.40m-39.62m Clay Silty 39.62m-67.67m Clay Multicoloured 67.67m-78.03m Shale Water Supply	1476m	North
10080801	0.00m-16.00m CLAY, MAINLY BROWN 16.00m-16.50m GRAVEL - ROUGH AND ROCK FRAGMENTS 16.50m-60.00m SLATE - REEF - PINK, YELLOW AND ORANGE 60.00m-62.00m QUARTZ - LEADER NOTICED 62.00m-104.00m Quartz 104.00m-106.00m ROCK - REEF - YELLOW/BROWN, SOFT, DECOMPOSED 106.00m-109.00m ROCK - REEF - SLIGHT INCREASE IN YIELD 109.00m-116.00m REEF - BLUE - SHALEY	1497m	North West
10116040	0.00m-20.42m Clay Yellow Red 20.42m-96.62m Slate Soft Shaley Water Supply 96.62m-100.58m Slate Hard Water Supply	1595m	West
10035198	0.00m-0.20m Topsoil 0.20m-4.00m Clay 4.00m-29.00m Shale, powder 29.00m-60.00m Slate	1709m	South 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

4178 Holbrook Road, Mangoplah, NSW 2652



Legend

Linear Geological Structures and Boundaries

- Site Boundary
- Report Buffer
- Property Boundary
- Trendline
- Fold Axis
- Geological Boundary
- Marker Bed
- Faulted Boundary
- Shear Zone or Schist Zone Boundary
- Miscellaneous Boundary
- Water/Coastline Boundary
- State/Territory Border

Scale: 0 100 200 400 600 800 1,000 Meters 1,200 1,400 1,600 1,800 2,000

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2025

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 May 2025

Geology

4178 Holbrook Road, Mangoplah, NSW 2652

Geological Units

Geological units within the dataset buffer:

Code	Unit Name	Description	Stratigraphy	Age Range	Dominant Lithology	Dist	Dir
Omaw	Willandra Sandstone	Grey, thick-bedded, fine- to coarse-grained, moderately to poorly sorted lithic quartz arenite, typically with distinctive dark glassy quartz grains. The sandstone is intercalated with subordinate, up to metre-thick, packets of graptolitic black shale.	/Margules Group//Willandra Sandstone//	Ea3 (Eastonian) (base) to Bo3 (Bolindian) (top)	Sandstone	0m	On-site
Q_a	Alluvium	Unconsolidated grey to brown to beige humic (±)micaceous silty clay, quartz-(±)lithic silt, fine- to medium-grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravel (as sporadic lenses); sporadic palaeosol horizons.	/Alluvium////	Quaternary (base) to Now (top)	Clastic sediment	0m	On-site
Q_c	Colluvium	Poorly sorted, weakly cemented to unconsolidated colluvial lenses of polymictic conglomerate with medium- to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand layers, modified by pedogenesis.	/Colluvium////	Quaternary (base) to Now (top)	Clastic sediment	0m	On-site
Q_r	Residual deposits	A weakly-consolidated regolithic residuum such as soil or saprolite mostly developed in-situ as a result of advanced weathering and/or pedogenesis.	/Residual deposits////	Quaternary (base) to Now (top)	Saprolite	267m	West

Geology

4178 Holbrook Road, Mangoplah, NSW 2652

Linear Geological Structures

Fault and shear or schist zone boundaries within the dataset buffer:

Map ID	Boundary Type	Feature Description	Fault Dip Angle	Fault Dip Direction	Dist	Dir
NA	No records in buffer					

Trendlines within the dataset buffer:

Map ID	Feature Description	Observation Method	Structure Name	Dist	Dir
NA	No records in buffer				

Fold axes within the dataset buffer:

Map ID	Feature Description	Observation Method	Structure Name	Dist	Dir
NA	No records in buffer				

Marker beds within the dataset buffer:

Map ID	Feature Description	Rock Unit Description	Dist	Dir
NA	No records in buffer			

Geological Data Source: Statewide Seamless Geology v2.4, NSW Department of Primary Industries and Regional Development
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Naturally Occurring Asbestos Potential

4178 Holbrook Road, Mangoplah, NSW 2652

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

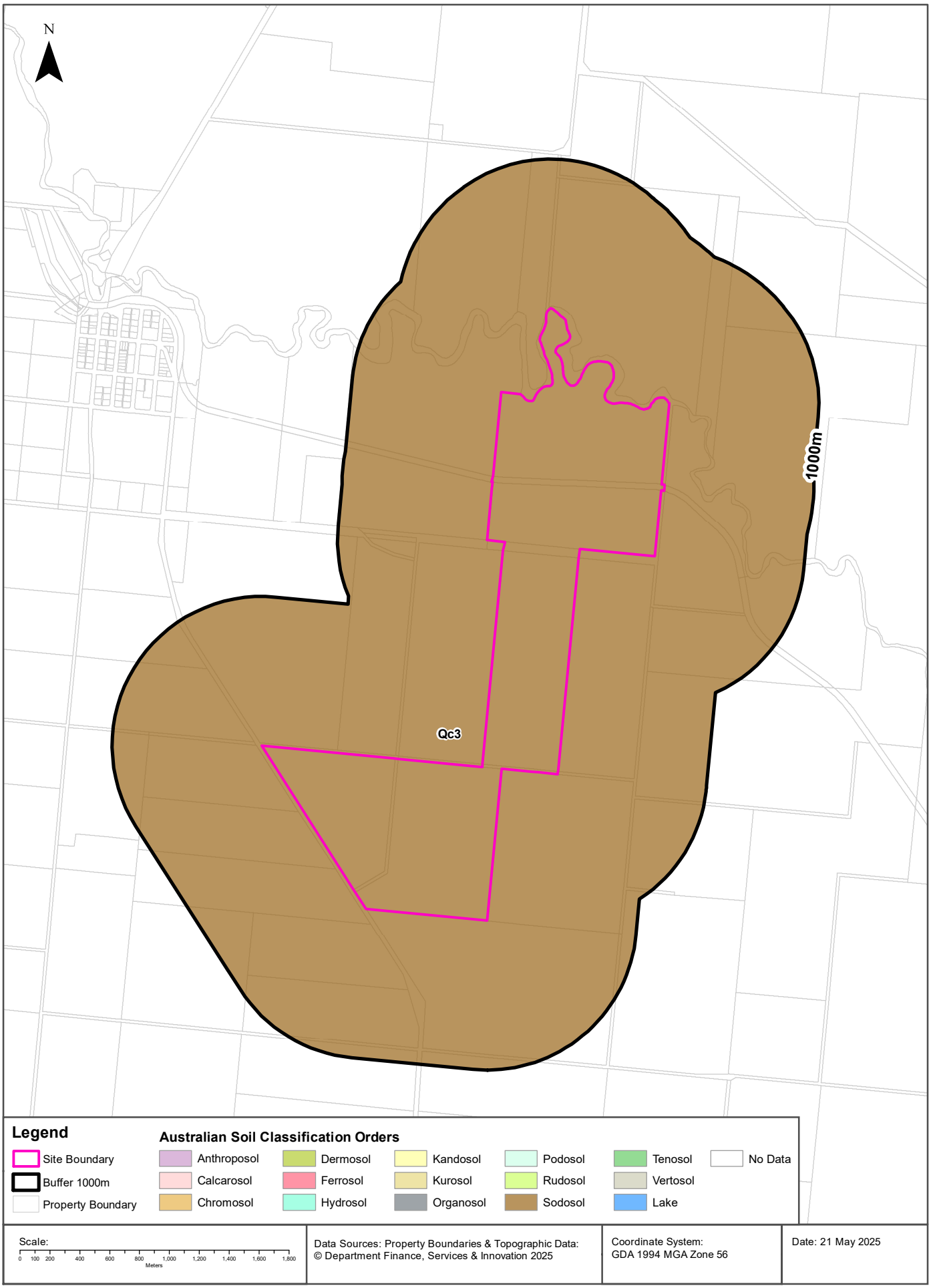
Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Naturally Occurring Asbestos Potential Data Source: Statewide Seamless Geology v2.4, NSW Department of Primary Industries and Regional Development

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Atlas of Australian Soils

4178 Holbrook Road, Mangoplah, NSW 2652



Soils

4178 Holbrook Road, Mangoplah, NSW 2652

Atlas of Australian Soils

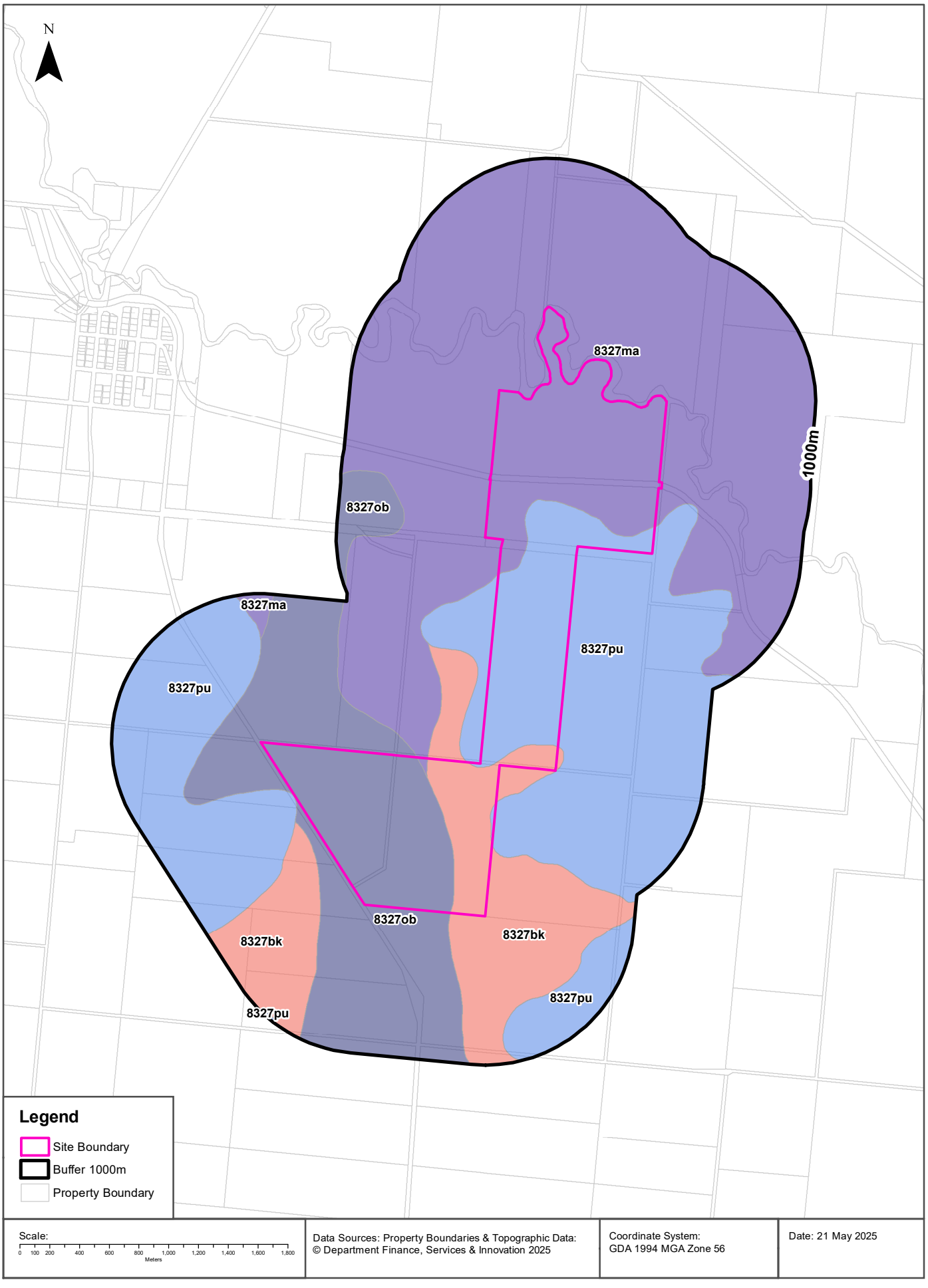
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Qc3	Sodosol	Hills and/or undulating ridges often characterized by chips of shaly rock: chief soils are hard neutral red soils (Dr2.32), (Dr3.42), (Dr2.22), (Dr2.42), and (Um4.1) soils with other (D) soils, such as (Db2.4) and (Dy3.42). Associated are the soils of unit My9 in areas of milder relief. As mapped, small areas of unit Qb10 are included. There are similarities with unit Ta5 of Sheet 2. Data are limited.	0m	On-site

Atlas of Australian Soils Data Source: CSIRO
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Soil Landscapes of Central and Eastern NSW

4178 Holbrook Road, Mangoplah, NSW 2652



Soils

4178 Holbrook Road, Mangoplah, NSW 2652

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
8327ma	Mangoplah	0m	On-site
8327ob	O'briens Creek	0m	On-site
8327pu	Pulletop	0m	On-site
8327bk	Becks Lane	0m	On-site

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

4178 Holbrook Road, Mangoplah, NSW 2652

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		

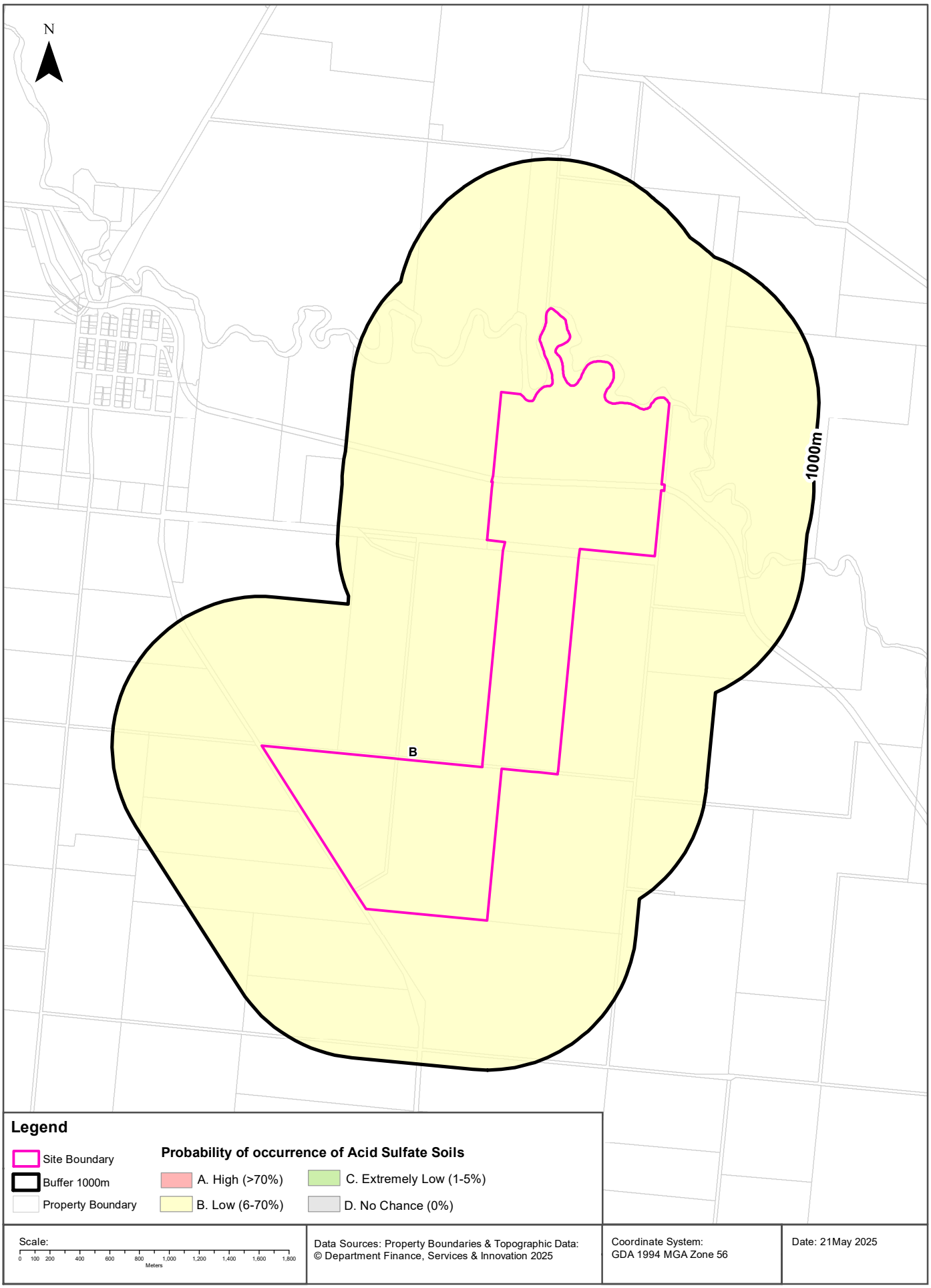
If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

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Atlas of Australian Acid Sulfate Soils

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Acid Sulfate Soils

4178 Holbrook Road, Mangoplah, NSW 2652

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

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

4178 Holbrook Road, Mangoplah, NSW 2652

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

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

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

Mining

4178 Holbrook Road, Mangoplah, NSW 2652

Mining Subsidence Districts

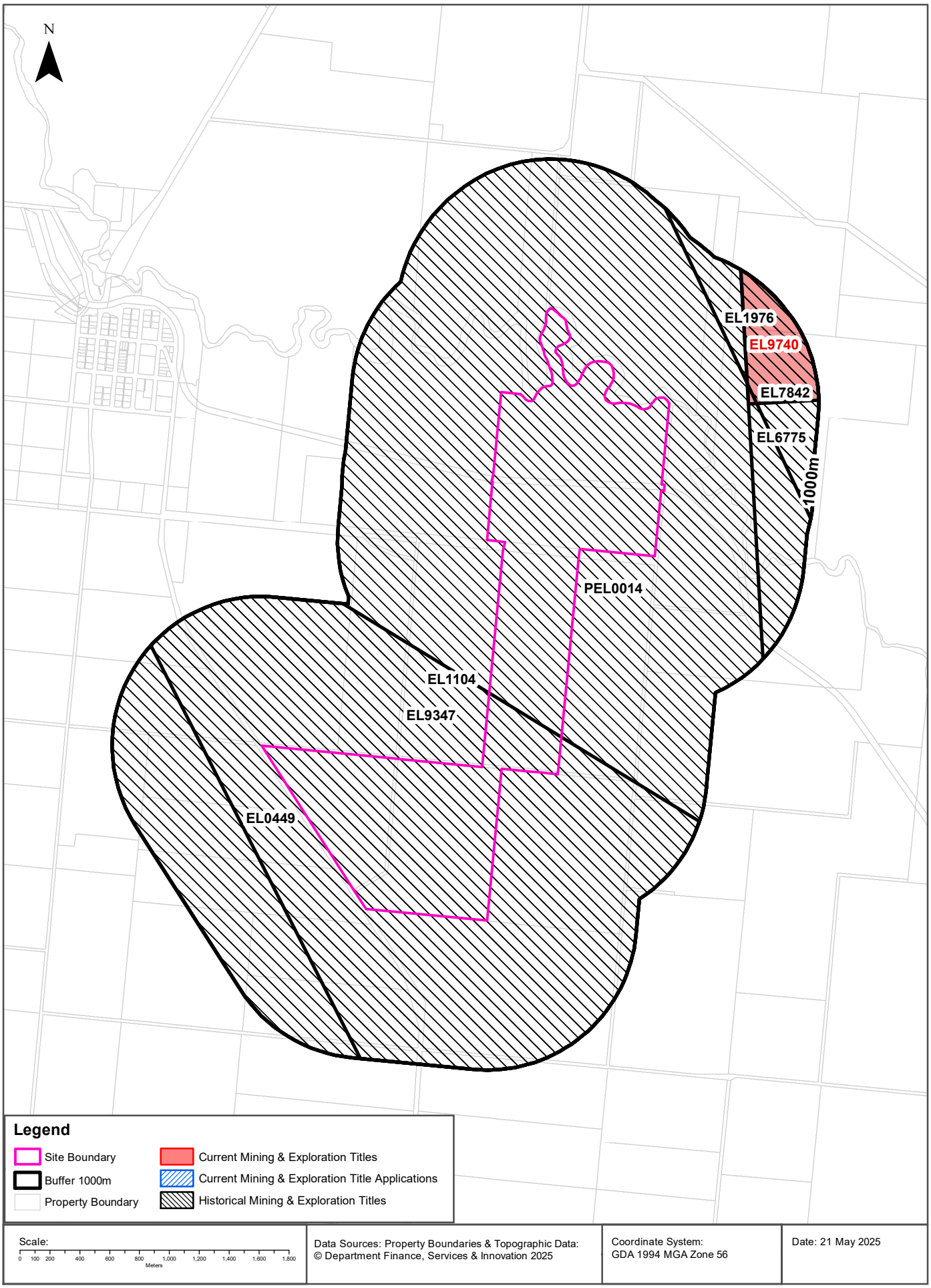
Mining Subsidence Districts within the dataset buffer:

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

4178 Holbrook Road, Mangoplah, NSW 2652



Mining

4178 Holbrook Road, Mangoplah, NSW 2652

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
EL9740	GREEN COPPER PTY LTD	28/01/2025	28/01/2027	20250128	EXPLORING	MINERALS	Group 1	528m	North East

Current Mining & Exploration Titles Data Source: Statewide Seamless Geology v2.4, NSW Department of Primary Industries and Regional Development
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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: Statewide Seamless Geology v2.4, NSW Department of Primary Industries and Regional Development
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Mining

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Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL1104	SHELL COMPANY OF AUSTRALIA LIMITED	19780401	19831201	MINERALS	Sn W	0m	On-site
EL0449	METALS EXPLORATION LIMITED	19710501	19720501	MINERALS	Sn W	0m	On-site
PEL0014	KNIGHT INDUSTRIES PTY LTD,PETROLEUM DEVELOPMENT PTY LTD	19961003	19981002	PETROLEUM	Petroleum	0m	On-site
EL9347	TINONE RESOURCES AUSTRALIA PTY LTD	20220127	30000101	MINERALS		0m	On-site
EL6775	WOLF MINERALS LIMITED	20070508	20110508	MINERALS	Sn W	528m	North East
EL1976	SHELL COMPANY OF AUSTRALIA LIMITED	19820601	19830401	MINERALS	Sn W	528m	North East
EL7842	GRIGM RESOURCES PTY LTD	20110920	20130920	MINERALS	Sn W Au	528m	North East

Historical Mining & Exploration Titles Data Source: Statewide Seamless Geology v2.4, NSW Department of Primary Industries and Regional Development

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State Environmental Planning Policy

4178 Holbrook Road, Mangoplah, NSW 2652

State Significant Precincts

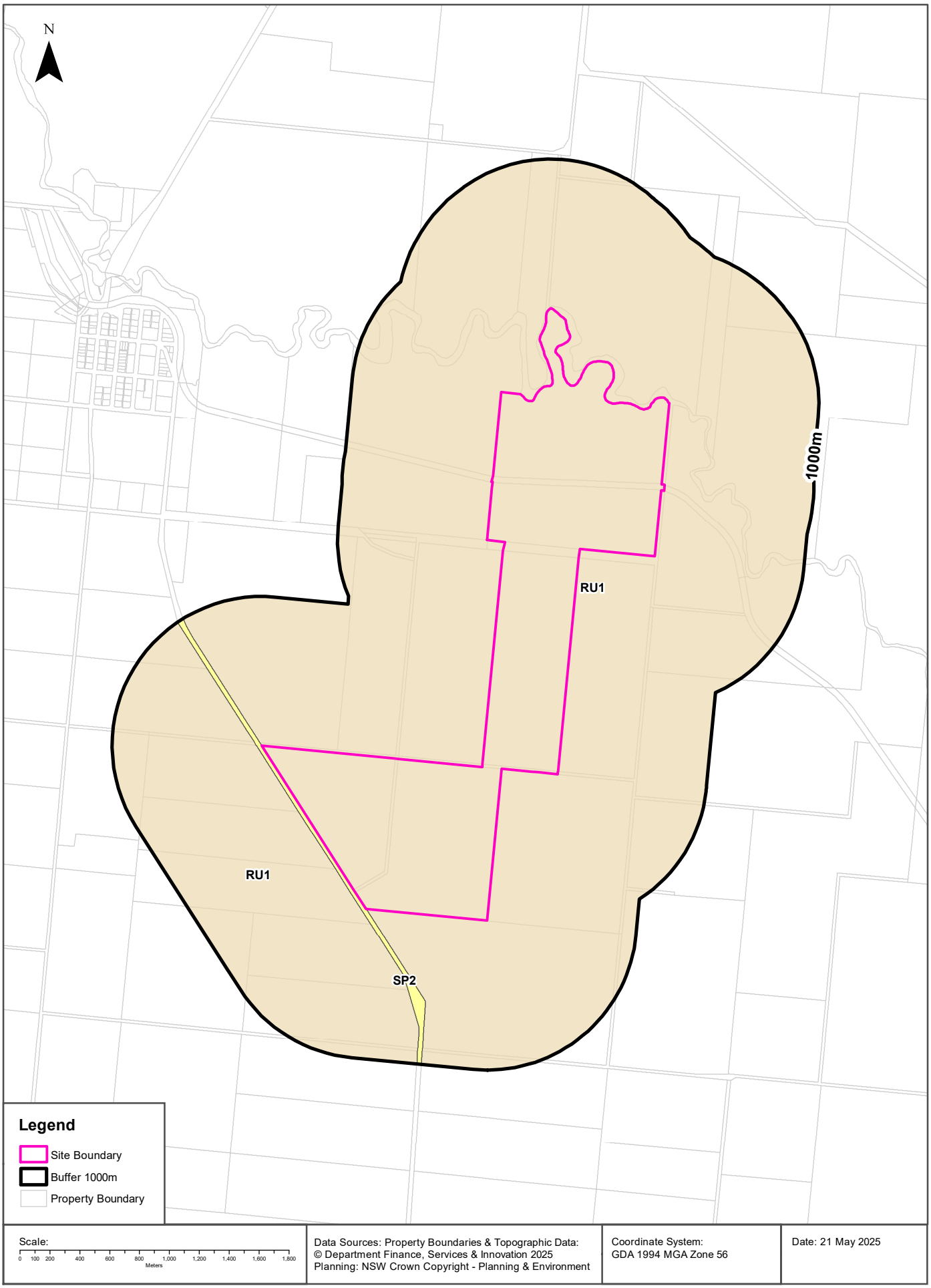
What SEPP State Significant Precincts exist within the dataset buffer?

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

4178 Holbrook Road, Mangoplah, NSW 2652



Environmental Planning Instrument

4178 Holbrook Road, Mangoplah, NSW 2652

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RU1	Primary Production		Wagga Wagga Local Environmental Plan 2010	14/04/2023	26/04/2023	01/11/2024	Map Amendment No 12	0m	On-site
SP2	Infrastructure	Road	Wagga Wagga Local Environmental Plan 2010	14/04/2023	26/04/2023	01/11/2024	Map Amendment No 12	0m	South West
RU1	Primary Production		Wagga Wagga Local Environmental Plan 2010	14/04/2023	26/04/2023	01/11/2024	Map Amendment No 12	29m	South West

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

4178 Holbrook Road, Mangoplah, NSW 2652

Commonwealth Heritage List

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

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

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

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

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

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

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

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

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

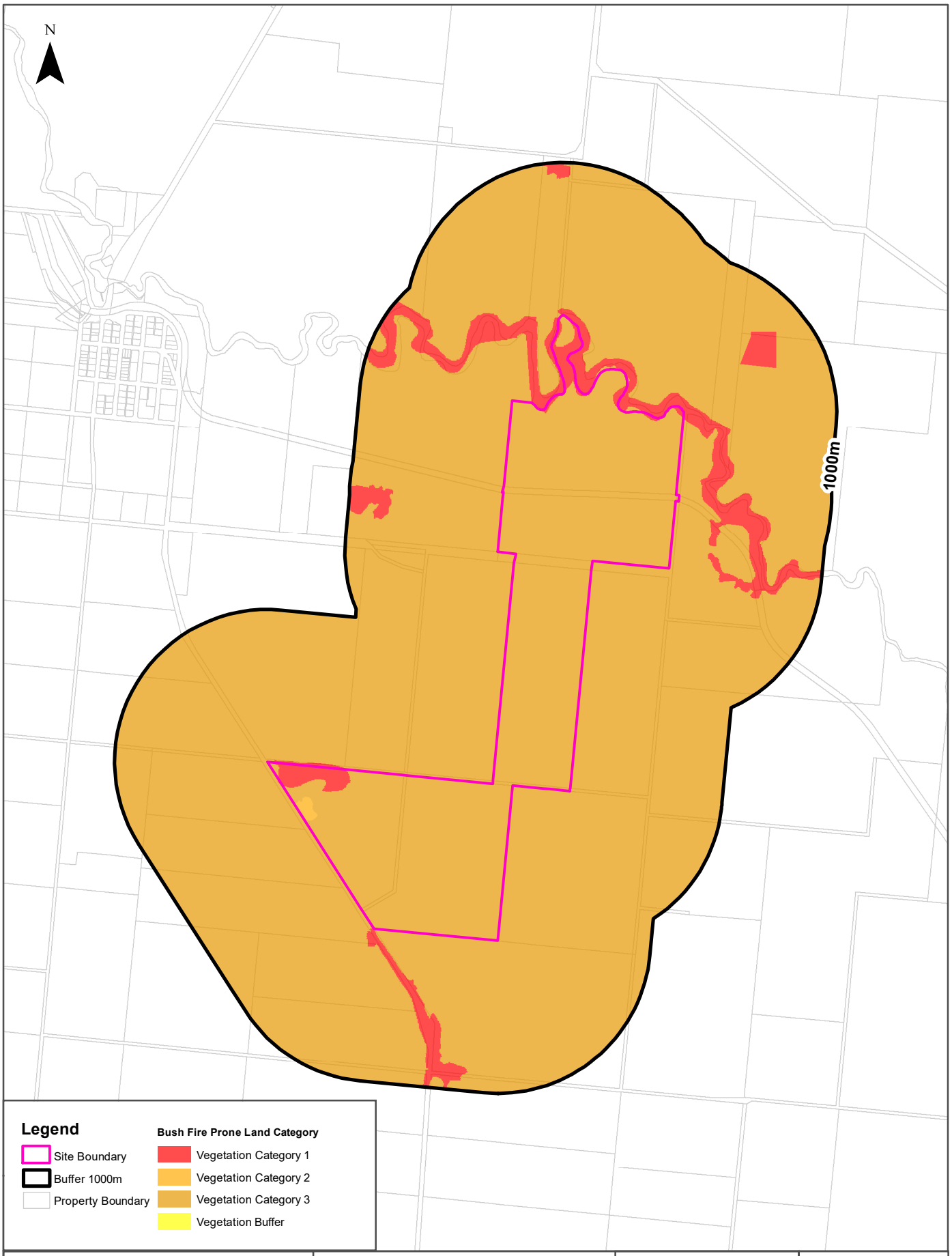
What are the EPI Heritage Items located within the dataset buffer?

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

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Natural Hazards - Bush Fire Prone Land

4178 Holbrook Road, Mangoplah, NSW 2652



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2025. Property Boundaries: © Department Finance, Services & Innovation 2025

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 May 2025

Natural Hazards

4178 Holbrook Road, Mangoplah, NSW 2652

Bush Fire Prone Land

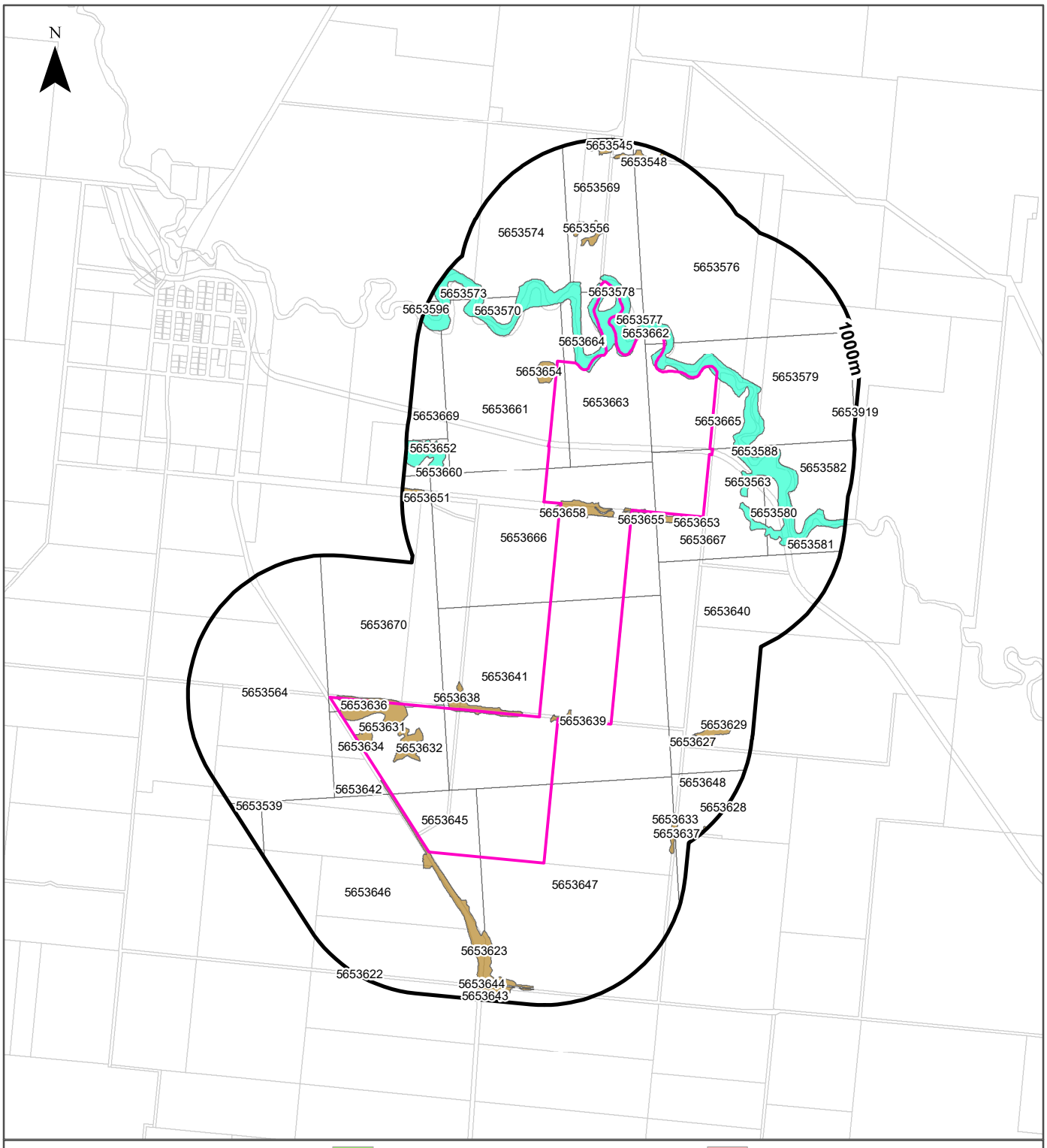
What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Category 1	0m	On-site
Vegetation Category 3	0m	On-site
Vegetation Category 2	0m	On-site

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

Ecological Constraints - Vegetation & Ramsar Wetlands

4178 Holbrook Road, Mangoplah, NSW 2652



Site Boundary
ReportBuffer
Property Boundary
Ramsar Wetland

Native Vegetation

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

Scale: 0 100 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2025

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 May 2025

Ecological Constraints

4178 Holbrook Road, Mangoplah, NSW 2652

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
5653563	Forested Wetlands	(Forested Wetlands) River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion	Inland Riverine Forests	0m	On-site
5653578	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653631	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653632	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653634	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653636	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653638	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653639	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653641	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653642	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653645	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653647	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653655	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653656	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653658	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	0m	On-site
5653661	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653662	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653663	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653665	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653666	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653667	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653670	Not classified	(Not classified) Not classified	Not classified	0m	On-site
5653569	Not classified	(Not classified) Not classified	Not classified	0m	North
5653623	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	3m	South

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
5653657	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	4m	North
5653653	Grassy Woodlands	(Grassy Woodlands) White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	9m	North East
5653564	Not classified	(Not classified) Not classified	Not classified	11m	West
5653654	Grassy Woodlands	(Grassy Woodlands) White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	13m	North
5653664	Not classified	(Not classified) Not classified	Not classified	15m	North
5653646	Not classified	(Not classified) Not classified	Not classified	19m	South West
5653579	Not classified	(Not classified) Not classified	Not classified	26m	North East
5653577	Not classified	(Not classified) Not classified	Not classified	32m	North
5653576	Not classified	(Not classified) Not classified	Not classified	61m	North East
5653574	Not classified	(Not classified) Not classified	Not classified	218m	North
5653640	Not classified	(Not classified) Not classified	Not classified	219m	East
5653588	Not classified	(Not classified) Not classified	Not classified	243m	North East
5653556	Grassy Woodlands	(Grassy Woodlands) Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	265m	North
5653582	Not classified	(Not classified) Not classified	Not classified	339m	North East
5653580	Not classified	(Not classified) Not classified	Not classified	384m	North East
5653570	Not classified	(Not classified) Not classified	Not classified	438m	North
5653581	Not classified	(Not classified) Not classified	Not classified	462m	East
5653648	Not classified	(Not classified) Not classified	Not classified	550m	South East
5653627	Grassy Woodlands	(Grassy Woodlands) White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	576m	South East
5653629	Grassy Woodlands	(Grassy Woodlands) White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	586m	South East
5653660	Not classified	(Not classified) Not classified	Not classified	681m	North West
5653652	Forested Wetlands	(Forested Wetlands) River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion	Inland Riverine Forests	711m	North West
5653669	Not classified	(Not classified) Not classified	Not classified	714m	North West
5653573	Not classified	(Not classified) Not classified	Not classified	757m	North
5653633	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	807m	South East
5653539	Not classified	(Not classified) Not classified	Not classified	809m	South West
5653651	Grassy Woodlands	(Grassy Woodlands) Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Floodplain Transition Woodlands	811m	North West
5653548	Grassy Woodlands	(Grassy Woodlands) Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	867m	North
5653637	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	873m	South East
5653644	Not classified	(Not classified) Not classified	Not classified	879m	South

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
5653619	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	891m	South
5653545	Grassy Woodlands	(Grassy Woodlands) Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	892m	North
5653571	Not classified	(Not classified) Not classified	Not classified	895m	North
5653596	Not classified	(Not classified) Not classified	Not classified	895m	North West
5653544	Grassy Woodlands	(Grassy Woodlands) Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	920m	North
5653643	Not classified	(Not classified) Not classified	Not classified	930m	South
5653919	Not classified	(Not classified) Not classified	Not classified	941m	North East
5653622	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	963m	South West
5653635	Grassy Woodlands	(Grassy Woodlands) Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	972m	South East
5653628	Grassy Woodlands	(Grassy Woodlands) White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Western Slopes Grassy Woodlands	983m	South East

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

4178 Holbrook Road, Mangoplah, NSW 2652

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

4178 Holbrook Road, Mangoplah, NSW 2652

Collaborative Australian Protected Areas Database - Terrestrial

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

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

Collaborative Australian Protected Areas Database - Marine

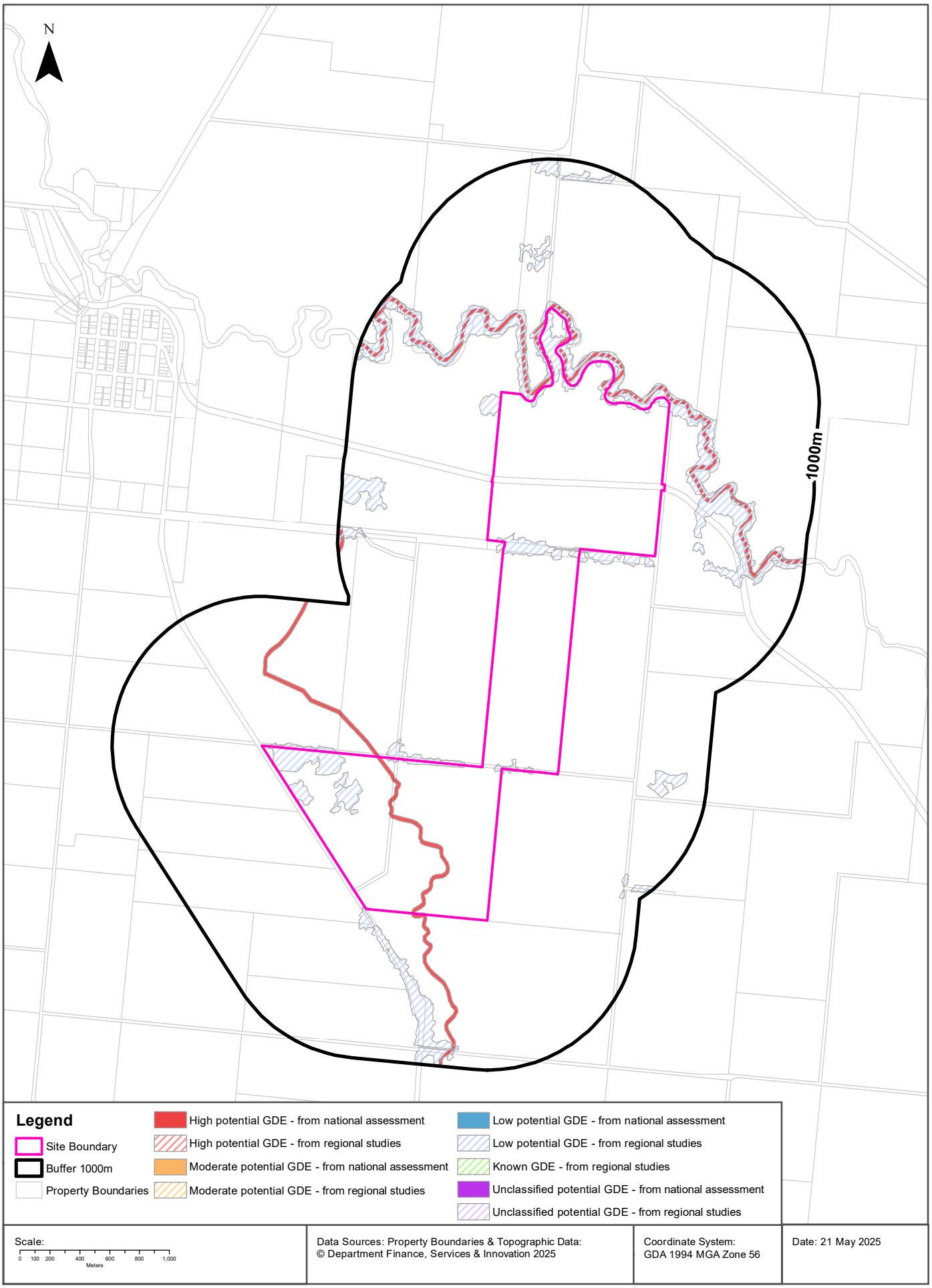
Protected areas in marine environments identified by the CAPAD within the dataset buffer:

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

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

4178 Holbrook Road, Mangoplah, NSW 2652



Ecological Constraints

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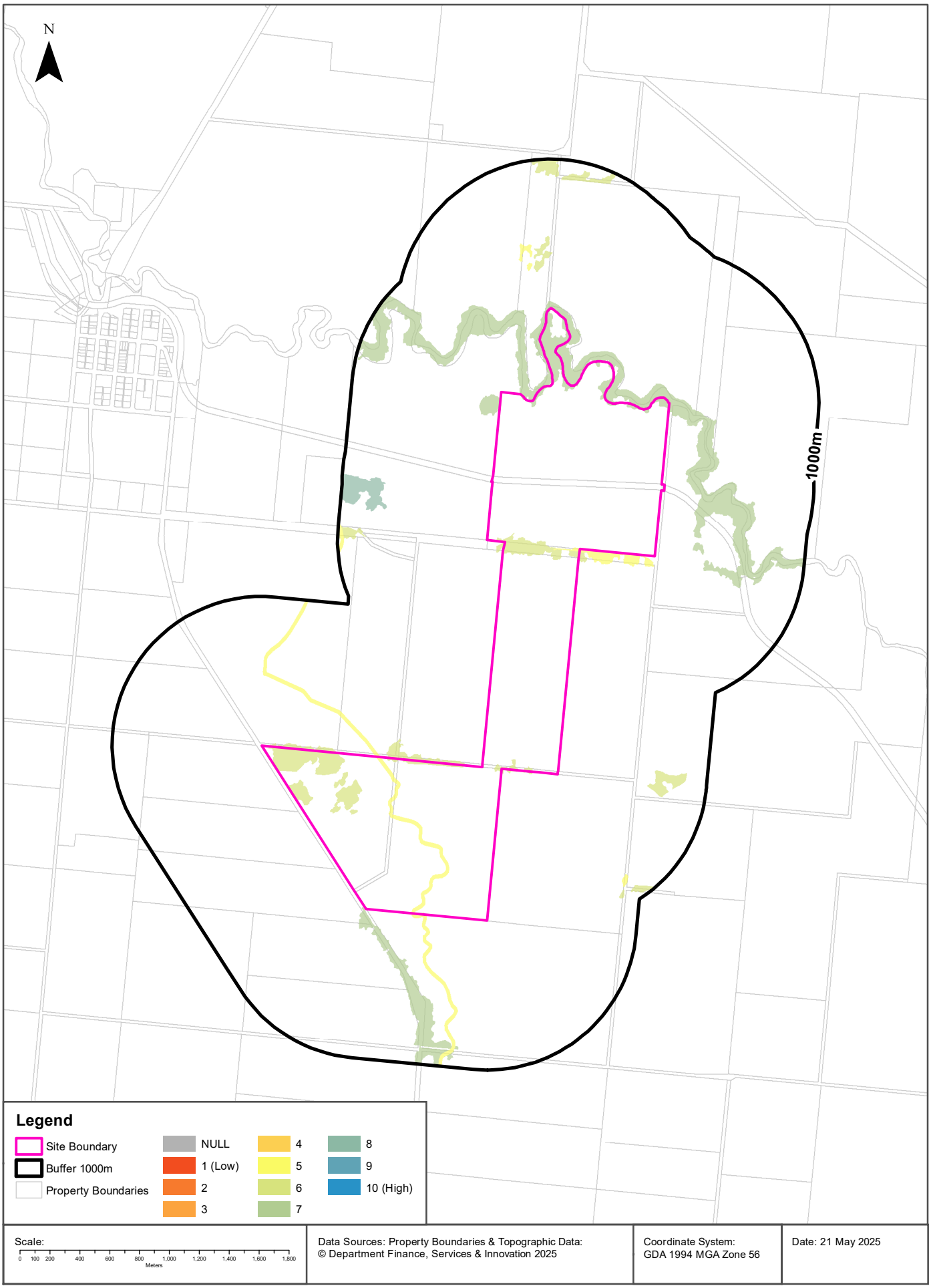
Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Aquatic	High potential GDE - from national assessment	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	River		0m	On-site
Terrestrial	Low potential GDE - from regional studies	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		0m	On-site

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

4178 Holbrook Road, Mangoplah, NSW 2652



Ecological Constraints

4178 Holbrook Road, Mangoplah, NSW 2652

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	7	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		0m	On-site
Aquatic	5	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	River		0m	On-site
Aquatic	7	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	River		0m	On-site
Terrestrial	6	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		0m	On-site
Terrestrial	5	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		0m	On-site
Terrestrial	8	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		691m	North West

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

4178 Holbrook Road, Mangoplah, NSW 2652

NSW BioNet Species Sightings

Species sightings from the NSW BioNet Repository that have either a state or federal conservation status, or a sensitivity status, and are within 10 km of the site:
Note: This data does not include NSW Category 1 sensitive species.

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Crinia sloanei	Sloane's Froglet	Not Sensitive	Endangered	Endangered	
Animalia	Amphibia	Heleioporus australiacus	Giant Burrowing Frog	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Category 2	Critically Endangered	Critically Endangered	
Animalia	Aves	Aphelocephala leucopsis	Southern Whiteface	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Category 3	Endangered	Endangered	
Animalia	Aves	Circus assimilis	Spotted Harrier	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Sensitive	Vulnerable	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Not Sensitive	Endangered	Critically Endangered	
Animalia	Aves	Melanodryas cucullata cucullata	South-eastern Hooded Robin	Not Sensitive	Endangered	Endangered	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Category 3	Vulnerable	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Category 3	Vulnerable	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Category 3	Vulnerable	Not Listed	
Animalia	Aves	Parvipsitta pusilla	Little Lorikeet	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Pyrrholaemus sagittatus	Speckled Warbler	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Not Sensitive	Vulnerable	Endangered	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Not Sensitive	Endangered Population, Vulnerable	Not Listed	
Plantae	Flora	Ammobium craspedioides	Yass Daisy	Not Sensitive	Vulnerable	Vulnerable	

Source: NSW BioNet Species Sightings

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Location Confidences

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

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

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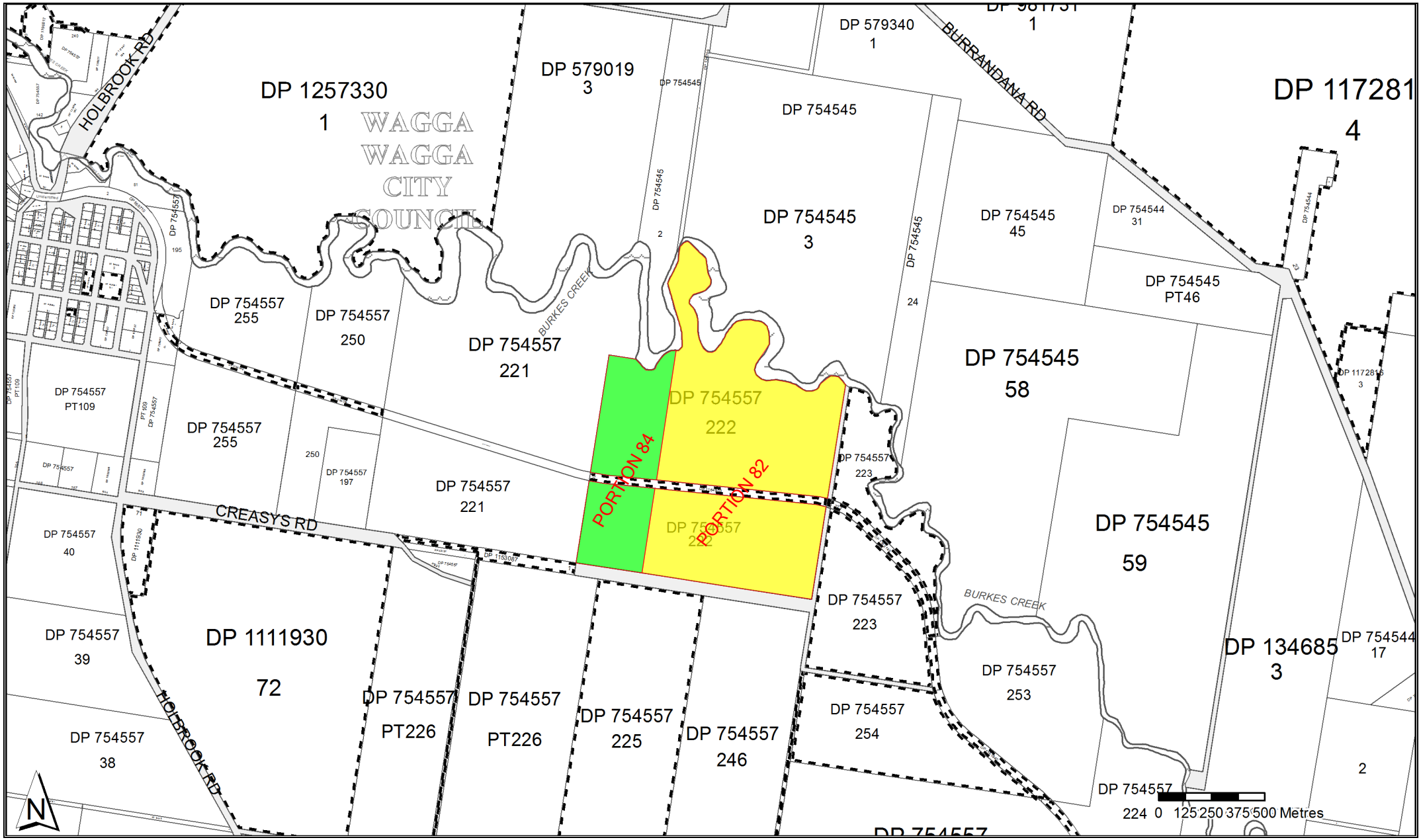
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Appendix B Title Search

Cadastral Records Enquiry Report : Lot 222 DP 754557

Locality : MANGOPLAH
Parish : MANGOPLAH
LGA : WAGGA WAGGA
County : MITCHELL



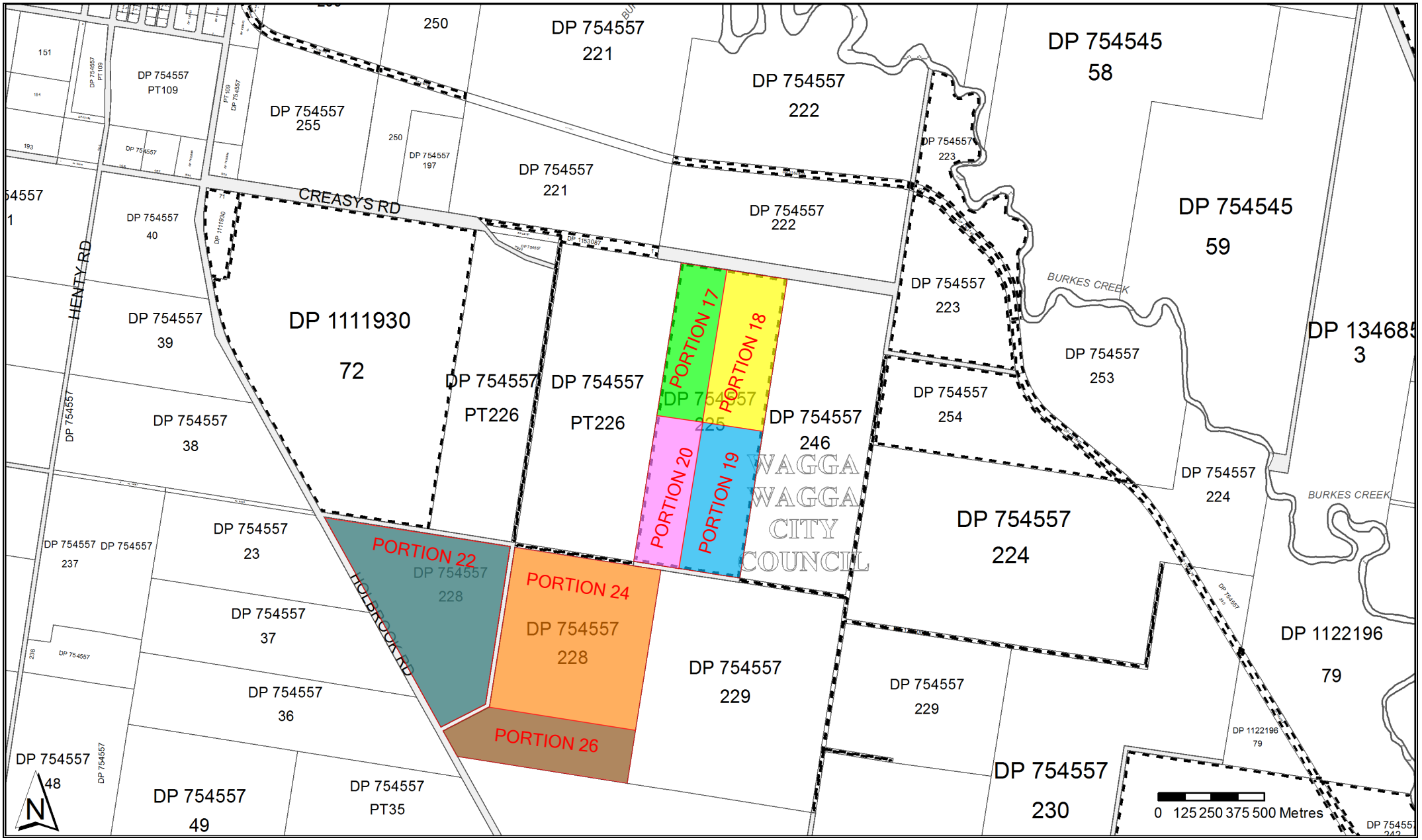
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Cadastral Records Enquiry Report : Lot 225 DP 754557

Locality : MANGOPLAH
Parish : MANGOPLAH
LGA : WAGGA WAGGA
County : MITCHELL



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Reference to Traverse

Line	Bearing	Distance
1a	314.24	433
1	116.35	690
2	293.33	682
3	261.17	754
4	328.41	532
5	53.01	444
6	48.35	389
7	319.31	366
8	301.35	240
9	265.23	246
10	247.18	319
11	206.58	873
12	276.30	429
13	315.53	240
14	359.08	474
15	325.11	458
16	5.28	279
17	56.29	426
18	338.47	637
19	303.01	372
20	13.44	583
21	227.14	423
22	149.27	809
23	148.00	614
24	157.08	138
25	227.28	348
26	227.30	965
27	298.45	366
28	352.45	782
29	350.30	1324
30	339.15	263
31	234.30	707
32	269.15	419
33	5.45	504
34	324.00	283
35	270.45	778
36	192.30	647
37	196.15	1038
38	242.15	680
39	313.30	241
40	321.30	330
41	288.30	274
42	281.00	563
43	338.15	332
44	50.45	264
45	17.30	209
46	24.09	236
47	294.00	784
48	290.45	169
49	211.30	347
50	209.15	250
51	95.15	417
52	185.00	322
53	182.45	1124
54	284.15	514
55	299.11	405

254 - 1888

14. 1852

ALIENATION BRANCH LANDS DEPARTMENT

Wagga Wagga

NO ADDITIONS OR AMENDMENTS TO BE MADE

PLAN MICROFILMED

PLAN

of 3 portions of Land

Parish of Mangoplah

COUNTY OF MITCHELL

Applied for under the 23rd clause of the Crown Lands Alienation Act of 1861 by John Cox

Portions 82. 83. 84 Applied to be brought under provisions of Clo. Sett. Promotion Act. Vide Clo. Sett. 12 - 5127

Sale at Wagga Wagga 26th Feb. 1875

Countrylots BB to DD . Portions 82 to 84

Vide Aln 16883 above lots sold

Portions 82. 83 & 84 surrendered to the Crown under provisions of Clo. Sett. Promotion Act vide Clo. Sett. 13. 2094. Gaz. 25. 6. 1913

R.37

M 254, 1888

Cancelled by M 2820, 2921 - 1888

CANCELLED BY M 2820, 2921 - 1888

John Cox 257ac 83 84

John Cox 250ac forest farm 82

John Cox 50ac 70

M 115. 1888

M 2820, 2921 - 1888

Open

back water

RESERVED ROAD 3 CHAINS WIDE

4014 E 3918 E

M 93 roll 16 — 169 ac 2r

M 93 roll 17 — 139ac

M 93 roll 18 — 139 ac

Road 1 chain by 1 chain

Reference to Corners

Corner	Bearing	From	Links	No on Tree
a	53°32′	Box	103	82
b	80°09′	"	14	"
c	27°09′	"	85	82-84
d	281°30′	"	17	"
e	331°15′	"	22	83-84
f	Corner inaccessible			
g	81°13′	"	46	83
h	236°30′	Apple	69	83-70
i	76°38′	Oak	11	83

Reference to Traverse

Line	Bearing	Distance

Scale 20 Chains to an Inch.

Marked in accordance with regulations

Instrument used in Survey Theodolite

Date of Survey Sept 1st 1873

Value of Improvements

Situated in the

Transmitted to the Surveyor General with my letter of the 13th January N° 7/40

William Berthon

Licensed Surveyor

1 Sept 1874 Col

254 - 1888

Req:R643904 /Doc:CP 02821-1888 P /Rev:27-Nov-2012 /NSW LRS /Prt:25-Jul-2025 15:32 /Seq:1 of 1
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Partly cancels M.254 1888

Papers LB.12.10690

PLAN OF PORTION 222 Farm ~~of~~ 29

County of Mitchell Parish of Mangoplah

Land District Wagga Wagga Land Board District Wagga-Wagga Central Division

RESUMED AREA No. PASTORAL HOLDING

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

Measured in connection with Mangoplah Clo Sett Promotion Area

Por. 222 Farm 29 Alloted to Robert Smith Creasy

Sett. Pur. 1913 - 29 Wagga Wagga Mangoplah Estate. Vide Gaz. 25.6.13.

Within R. 1819 from Comn. under M.R. or B.L. notd. 19th Oct. 1928.

Land acquired for Railway purposes 13th June '24 Under Act No 9 of 1919 shewn by purple tint Area 11a. 0r. 27p

X Easement 150 feet wide acquired for Trans. Line Gaz. 14.4.61 M.S.3847 Wga

(1) (Por 222 Now William Francis Lloyd Sale completed Ten 55-2623

Original plan indicates bank is the portion boundary (ADDED FOR MICROFILM PURPOSES)

Parish of Coffin Rock

BURKES CR

PULLETOP CREEK

221

222

223

Farm 29

Farm N'

Fr The Rock

RAILWAY

Good LINE Fenced

Farm P'

To Westby's Pulletop

M.2820

M.2822

M.2825

M.2824

226

225

246

Farm S'

Farm R'

ROAD 3 CHAINS WIDE

639 270° 00' 24

82

257·0·0 Undulating

317ac

305a 3r 13p ex rly incl. Easement.

239 ac

325 ac

328 ac ex rd

356·2·0

350 ac

Easement 150 feet wide for Electricity transmission line (MS 3847 Wga)

Area 305a 3r 13p This area does not include the area of the railway. Coloured purple

(plots shown)

PLAN MICROFILMED NO ADDITIONS OR AMENDMENTS TO BE MADE

Azimuth taken from North 6° per 18

Field Book Vol. Folio (Private Survey)

Reference to Corners

Corner	Bearing	From	Links	No on Tree
Large numbered painted posts at Corners				

Improvements

Reference to Traverse

Line	Bearing	Distance
1	315° 09'	465·5
2	24° 28'	729
3	296° 55'	629
4	265° 03'	793
5	321° 20'	873·5
6	41° 34'	860
7	322° 01'	434
8	267° 00'	542
9	205° 24'	1016
10	282° 47'	600
11	2° 28'	547
12	326° 49'	518
13	3° 22'	270
14	54° 42'	443
15	337° 48'	680
16	293° 27'	331·5
17	180° 55'	511
18	235° 08'	363
19	169° 36'	320
20	146° 29'	1053
21	161° 57'	365·5
22	235° 42'	652
23	210° 36'	488
24	289° 16'	534

I hereby certify that I in person made and completed the survey represented on this plan on the 17th June 1912 on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of licensed Surveyors and the practice of the Department of Lands.

Licensed Surveyor

Transmitted to the District Surveyor with my letter of 16th Dec. 1912 No

Voucher No. Passed Private Instn

Calculation Book No 1942 Folio 78. E.W.K.

Checked and Charted A.J. Buchanan 13/2/13

Examined G.H. Butterfield 17th Feb 1913.

Plan approved 18th February 1913

J.R. Trindridge Draftsman in Charge

Lithographed by Turners & Henderson

Scale 20 Chains to an Inch.

Changed in Head Office Maps Sydney 31 March 1913

Examined A.V. 31st March 1913

Cat. No. M.2821 1888

No. of Lith. OS 803 e 6 Lith 19/2/13

STANDARD PLAN PREPARED

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/7/2025 3:33PM

FOLIO: 222/754557

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 8475 FOL 115

Recorded	Number	Type of Instrument	C.T. Issue
1/3/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
13/6/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
2/10/1990	Z192715	MORTGAGE	EDITION 1
29/1/1992	E205792	DISCHARGE OF MORTGAGE	EDITION 2
20/5/1994	U281521	MORTGAGE	EDITION 3
16/5/1995	O234079	DISCHARGE OF MORTGAGE	EDITION 4
9/5/1996	2135823	REQUEST	
22/12/2006	AC827279	DEPARTMENTAL DEALING	
22/5/2009	AE694855	MORTGAGE	EDITION 5
16/6/2011	AG303783	DISCHARGE OF MORTGAGE	
16/6/2011	AG303784	MORTGAGE	EDITION 6
8/11/2011	AG603960	DEPARTMENTAL DEALING	
30/10/2012	AH332652	DEPARTMENTAL DEALING	
28/11/2015	AK21231	DISCHARGE OF MORTGAGE	
28/11/2015	AK21232	TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	
28/11/2015	AK21233	MORTGAGE	EDITION 7
24/4/2018	AN285322	CONVERSION TO CORD	EDITION 8 CORD ISSUED
12/9/2018	AN703017	LEASE	EDITION 9 CORD ISSUED
12/5/2020	AQ98733	MORTGAGE	EDITION 10

END OF PAGE 1 - CONTINUED OVER

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/7/2025 3:33PM

FOLIO: 222/754557 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
			CORD ISSUED
4/8/2020	AQ294846	DEPARTMENTAL DEALING	
23/12/2022	AS757674	DISCHARGE OF MORTGAGE	
23/12/2022	AS757675	DISCHARGE OF MORTGAGE	
23/12/2022	AS757676	MORTGAGE	EDITION 11
16/7/2024	AU242980	CAVEAT	EDITION 12
15/10/2024	AU496392	DISCHARGE OF MORTGAGE	
15/10/2024	AU496393	MORTGAGE	EDITION 13

*** END OF SEARCH ***

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NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 222/754557

SEARCH DATE	TIME	EDITION NO	DATE
25/7/2025	3:31 PM	13	15/10/2024

LAND

LOT 222 IN DEPOSITED PLAN 754557
LOCAL GOVERNMENT AREA WAGGA WAGGA
PARISH OF MANGOPLAH COUNTY OF MITCHELL
(FORMERLY KNOWN AS PORTION 222)
TITLE DIAGRAM CROWN PLAN 2821.1888

FIRST SCHEDULE

DANIEL NORMAN LLOYD (AD AK21232)

SECOND SCHEDULE (6 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
2 LAND EXCLUDES THE RAILWAY SHOWN IN THE TITLE DIAGRAM
3 EASEMENT FOR TRANSMISSION LINE AFFECTING THE LAND ABOVE DESCRIBED SHOWN 150 FT WIDE IN THE TITLE DIAGRAM BY GOV. GAZ. DATED 14.2.1961
2135823 EASEMENT VESTED IN NEW SOUTH WALES ELECTRICITY TRANSMISSION AUTHORITY
4 AN703017 LEASE TO MARK DAVID ROBERSON & ADAM PAUL ROBERSON EXPIRES: 31/3/2022. OPTION OF RENEWAL: 4 YEARS.
* 5 AU242980 CAVEAT BY SAMSUNG C&T RENEWABLE ENERGY AUSTRALIA PTY LTD
* AU496393 CAVEATOR CONSENTED
6 AU496393 MORTGAGE TO GURRDIAN WEALTH MORTGAGE MANAGERS (SA) PTY LTD & STIRLINGBURNS PTY LTD

NOTATIONS

NOTE: THIS FOLIO MAY BE ASSOCIATED WITH A CROWN TENURE WHICH IS SUBJECT TO PAYMENT OF AN ANNUAL RENT. FOR FURTHER DETAILS CONTACT CROWN LANDS.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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Plan

of

52 Portions of Land, Measured for Sale,

Nos 15 to 66.

Parish of Mangoplah, County of Mitchell

Portions 15 to 52

Country lots B to C

Country lots A to N

Portions 53 to 66

Portions 44, 52, 53, 56, 66

DIAGRAM 'A'

showing por. 56 and part of por. 47.

Scale — 20ch. : 1 Inch.

Pors 45, 47 to 51 Within N. 1919 from noon, under M.R. or R.L. note. 19th Oct. 1926.

Pors. 52, 53, 56 & 249 Added to Forest Vale Sett. Pur. Area Grs. 3-1-31

① Por. 32 Pt Sett: Pur 18/2 now Arthur Baynor Roberson. Sale completed C.S. 7031/As. Pt 34a 3r. 37p. See also M 2356 & 2832. 1888

② Closed road Grs. 44-19.1 & 3 r 0 p. granted to Arthur Harold Jarick & Raymond Jarick under Sec. 12, Public Roads Act 1902. Note. 49-664. See also M.1420, M.1824-1911 & R.11640 1888.

③ Pors. 30 & 32 Pt Sett. Pur. 18/5 Now Herbert Rudolf Zadow. Sale completed

④ Clos. Sett. 51/6962 Pt 30 ac. See also M 1311, M 3133 - 1888

⑤ Pors. 33 & 35 1st Pur 13-47 Now Herbert Rudolf Zadow. Sale completed Clos. sett. 6937-41. Total area 372a 3r.

⑥ Pors 36 & 37 Sett. Pur. 13-46, Arthur Charles Roberson. Sale completed Ten. 52. 2437. Total area 228ac 3r.

⑦ Pors 48 & 49 Pt. Sett. Pur 13-74 Arthur Charles Roberson. Sale completed Ten 52. 24-36. Pt 308 ac See also M 2850 - 1888.

⑧ Pors 45, 47, 53 & 56 Pt Sett. Pur 13-73 Now Francis Leslie Dew. Sale completed Clos. Sett 6961-45.

(pt 558ac 3r 7p. See also M 2849 - 1888.

Richard Cox 30-3-0 Pors 36 & 249 2a 2r 12p. sold to Alice Eliza Roberson under Sec. 20 P. Rds. Act 1902. See also M 2849 - 1888.

⑨ Closed road Grs. 45.2.20, Rds. 59.2.03, Pt 3a 2r. 22p sold to Herbert Rudolf Zadow under Sec. 20 P. Rds. Act, 1902. See also M. 2803 & 1261. 1888, also M. 1311. 1888.

⑩ Pors. 30 & 31 Pt Sett. Pur. 13-68, Pors. 13-68, Now William Patrick Lloyd. Sale Completed Ten. 60-6770. Pt. 302a 3r. See also. M. 2840. 1888.

⑪ Closed road Grs. 13.2.00, Rds. 59.3.05. 2a 2r. 6p sold to Francis Leslie Dew under Sec. 20 P. Rds. Act, 1902. See also M. 2849. 1888.

⑫ Through portions 30 & 31. Easement. 150 Feet wide. Reserved for Roadway Purposes Gov. Gazette N.S.W. 4-61.

⑬ Pors 38, 249 & 40. Now The Commercial Bank of Australia Limited, Sale completed. Ten. 24-5740.

Land No. 3 & 4 resumed from portion 56 & Sett. Pur. 13-23 for road R. 11641, 1903 & unnd. (western) part of rd. on 6th, 7th closed & added to the portion & to Sett. Pur. 13-23 Gaz. 4th April, 1919 - Rds. 13.162. Area & widths amended.

Lands 6a. 2r. 0p. resumed for road R. 15715, 1903 & 1a. 2r. 31p. resumed as severed land from por. 56 & Sett. Pur. 13-23 & unnam'd po. resumed road R. 11641, 1903 & unnam't remainder (eastern part) of road on 5th, 7th, 8th closed & added to the holding & pur. 56 gaz. 19th Feb't. 1926 - Rds. 13.163. Area & widths amended.

Land 23 per. resumed frm. por. 47 for road R. 15715, 1903 gaz. 18.22 - Rds. 22.123. Area & widths amended.

Por. 47 & 56 part of Sett. Pur. 13-73 of 558a. 3r. 7p — Thomas Losh Taylor.

PLAN MICROFILMED

NO ADDITIONS OR AMENDMENTS TO BE MADE

97-1888

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Partly cancels M.93 1888 Roll

See Mines Maps for Applications under Mining Acts affecting Portion

Papers LB.12.10690

PLAN OF PORTIONS 225 & 246 Farm. Pt 32

County of Mitchell Parish of Mangoplah

Land District Wagga-Wagga Land Board District Wagga Wagga Central Division

RESUMED AREA No PASTORAL HOLDING

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

Measured in connection with Mangoplah Cl. Sett Promotion Area

Por. 225 Farm 32 Allotted to Grover Cleveland Creasy as

Sett. Pur. 1913-32 52 Wagga Wagga Mangoplah Estate. Vide Gaz. 25.6.13 Forfeited Gaz. 3rd Oct. 1919.

(2) Set apart within "Mangoplah" Sett. Pur. Area. Available 10th Jan.y 1921 Gaz. 17th Dec. 1921.

(2) Por 246 Block A, John Joseph Lloyd, Sett. Pur 21-5 (Add!) Jan '10th (Allowed) Now The Bank of Australasia Limited. Sale completed. Ten. 61-112.

(1) Por 225 " B, Daniel Joseph Lloyd, " " 21-6 (Add!) do do. Now The M.2821 Bank of Australasia Limited. Sale completed Ten. 60.4079.

Within R. 1819 from occn. under M.R. or B.L. notd. 19th Oct. 1928.

Farm O' 317 ac

223

Road 3 Chains Wide

89°58' 90°03 2818 E 90°03 1102 A 90°00 1408·4 F 39[19] 2510·6 B

Tree fd

226 17 225 18 246

Farm S' Farm Pt 32

M.2822

Farm P'

254

350 ac

7101 7100 (3548)

360°00' Country

(1) Undulating 139 ac (2) 139 ac Tree fd Land

M.2825

20

Good wheat ground for the plough

360°00' 7100 180°00' (3552) Road

338 ac ex rd

a r p 178·0·39 a r p 356·2·0 a r p 178·1·0

a r p 138·3·0 a r p 138·3·0

Tree fd 90°00 2816 Road D (1697) Cor. fd 270°00 2510·4 2510·6 [5021] G Tree fd G 100 Wide

224

M.2823

Farm Q'

364 ac 1 r 0 p

228 229

Farm U' Farm V'

M.2826 M.2827

300 ac ex rd 338 ac 1 r 30 p ex rd

For amendments in red see Mr Sur Martin's field notes 1921 folios 103-112.

Plan approved for portion 225 of 178a 0r 39p & portion 246 of 178a 1r

Azimuth taken from AB

Field Book Vol. Folio Private Survey

Draftsman-in-Charge.

12th November 1921

Reference to Corners

Corner	Bearing	From	Links	No on Tree
B				
C				
D large numbered painted posts at all Corners				
E				
F	146°34'	Gum	23	
G	295°51'	Y. Box	135	

Improvements

Reference to Traverse

Line	Bearing	Distance

I hereby certify that I in person made and on the 11th June 1912 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

Licensed Surveyor

Transmitted to the District Surveyor with my letter of 16th Dec.r 1912 No

Voucher No Passed Private Instn

Calculation Book No B.148 Folio 6 (118)

Checked and Charted AA/Buchanan 13/2/13

Examined 17th Feb 1913

Plan approved 18th February 1913

J.W. Windridge Draftsman-in-Charge

Scale 20 Chains to an Inch.

Lithographed at Forbes by Anderson

No of Lith. 05-803.0

Checked on Head Office Maps 31 March 1913

Examined AP 31st March 1913

SAB 25 NW 1921

Cat. No M.2824 1888

M2824

STANDARD TRACING PREPARED Emt 17/2/13

NO ADDITIONS OR AMENDMENTS TO BE MADE PLAN MICROFILMED

MANGOPLAH SETTLEMENT PURCHASE AREA No. 602 GAZETTED 17.12.20

SETTLEMENT PURCHASE No. 21·6 (Additional) ADDRESS OF HOLDER Mangoplah via Wagga Wagga

LAND DISTRICT WAGGA WAGGA C.S. 30·12959 AF AR 13607

NATURE OF TRANSFER	LESSEE AND TRANSFEREES	DATE OF APPN. & OF TRANSFERS	AREA	RATE PER ACRE	CAPITAL VALUE	ANNUAL INSTAL 6%
	LLOYD, DANIEL JOSEPH	10·1·21	178 : 0 : 39	~~6 14 6~~	~~1200 0 0~~	~~72 0 0~~
M	Cheney, Daniel Denis 602/4	24.5.30			1150 - -	57 10 0
R.M.	Lloyd, Daniel Joseph 602/5	27.4.36				
M	The Bank of Australasia 602:6	27.4.36				
C.S.C. No. 53/1833	Lloyd, Walter Lloyd, William Francis	C.S.C. 8.6.53 53/3126				
	(Holders only as Exors. will of Daniel Joseph Lloyd decd.) Subject to existing mortgage					

ACQUIRED LAND AREA	ACQUIRED LAND VALUE	CROWN LAND AREA	CROWN LAND VALUE
178:1:0	1200:0:0	—	—

DEED COVER PREPARED 2 JUL 1960 DEED 60/1760

FARM	LOCALITY
No. "B" (WEST½ HALF ORIG FARM 32)	PARISH MANGOPLAH
PORTION 225	
PLAN M2824·1888	COUNTY MITCHELL

ALLOWANCE BY LAND BOARD	NOTIFICAT'N OF CONF'MITY	GRANT
29th April, 1921	L. D. J. Lloyd 8.7	

Bal. D.F. & S.D. Credited Tenure 60/4029.

Final Sale to W.S. Board 4/1007

DEED TO REG. GENL. 28/6/60

REFERENCE TO SUSPENSIONS OF CONDITIONS

Deposit paid

Appraised 31. 3. 1933

@ £1150 - 0 - 0 by 13 - 10. 33 Board

Amended Instalt.:- £57. 10 - 0

Clo. Sett. 33. 1619 (12000 - 16)

602 SETTLEMENT PURCHASE No.

NAME AND ADDRESS OF PRESENT HOLDER

WAGGA WAGGA

REMARKS

INSTALMENTS AND INSURANCE PREMIUMS.						INSTALMENTS POSTPONED.								OUTSTANDING BALANCE (FOR OFFICIAL USE ONLY).		REMARKS.
YEAR OR PERIOD.	AMOUNT DUE. £ s. d.			PAYMENTS MADE. DATE.	£ s. d.	YEAR.	AMOUNT. £ s. d.			ANNUAL INTEREST. YEAR.	AMOUNT DUE. £ s. d.			PAYMENTS MADE. DATE.	£ s. d.	DATE.	AMOUNT. £	
Reg Sale to Walter John Lloyd apprvd 29/3/71 - 1007TR																

28 AUG 1972

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/7/2025 3:33PM

FOLIO: 225/754557

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 8005 FOL 215

Recorded	Number	Type of Instrument	C.T. Issue
27/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
13/11/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
2/10/1990	Z192715	MORTGAGE	EDITION 1
29/1/1992	E205792	DISCHARGE OF MORTGAGE	EDITION 2
20/5/1994	U281521	MORTGAGE	EDITION 3
16/5/1995	O234079	DISCHARGE OF MORTGAGE	EDITION 4
9/5/1996	2135823	REQUEST	
10/1/1998	3721792	DEPARTMENTAL DEALING	
22/12/2006	AC827279	DEPARTMENTAL DEALING	
22/5/2009	AE694855	MORTGAGE	EDITION 5
16/6/2011	AG303783	DISCHARGE OF MORTGAGE	
16/6/2011	AG303784	MORTGAGE	EDITION 6
25/9/2014	DP1201065	DEPOSITED PLAN	
28/11/2015	AK21231	DISCHARGE OF MORTGAGE	
28/11/2015	AK21232	TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	
28/11/2015	AK21233	MORTGAGE	EDITION 7
24/4/2018	AN285322	CONVERSION TO CORD	EDITION 8 CORD ISSUED
12/9/2018	AN703017	LEASE	EDITION 9 CORD ISSUED
12/5/2020	AQ98733	MORTGAGE	EDITION 10

END OF PAGE 1 - CONTINUED OVER

SEARCH DATE
25/7/2025 3:33PM

FOLIO: 225/754557 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
			CORD ISSUED
4/8/2020	AQ294846	DEPARTMENTAL DEALING	
23/12/2022	AS757674	DISCHARGE OF MORTGAGE	
23/12/2022	AS757675	DISCHARGE OF MORTGAGE	
23/12/2022	AS757676	MORTGAGE	EDITION 11
15/10/2024	AU496392	DISCHARGE OF MORTGAGE	
15/10/2024	AU496393	MORTGAGE	EDITION 12
2/5/2025	AV21381	CAVEAT	EDITION 13

*** END OF SEARCH ***

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Received: 25/07/2025 15:33:39

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 225/754557

SEARCH DATE	TIME	EDITION NO	DATE
25/7/2025	3:31 PM	13	2/5/2025

LAND

LOT 225 IN DEPOSITED PLAN 754557
LOCAL GOVERNMENT AREA WAGGA WAGGA
PARISH OF MANGOPLAH COUNTY OF MITCHELL
(FORMERLY KNOWN AS PORTION 225)
TITLE DIAGRAM CROWN PLAN 2824.1888

FIRST SCHEDULE

DANIEL NORMAN LLOYD (AD AK21232)

SECOND SCHEDULE (6 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
2 K219009 EASEMENT AFFECTING THAT PART SHOWN IN VOL 8005 FOL 215
2135823 EASEMENT VESTED IN NEW SOUTH WALES ELECTRICITY TRANSMISSION AUTHORITY
3 DP1201065 RIGHT OF CARRIAGEWAY 20.115 METRE(S) WIDE DESIGNATED (A) APPURTENANT TO THE LAND ABOVE DESCRIBED
4 AN703017 LEASE TO MARK DAVID ROBERSON & ADAM PAUL ROBERSON EXPIRES: 31/3/2022. OPTION OF RENEWAL: 4 YEARS.
5 AU496393 MORTGAGE TO GURRDIAN WEALTH MORTGAGE MANAGERS (SA) PTY LTD & STIRLINGBURNS PTY LTD
* 6 AV21381 CAVEAT BY SAMSUNG C&T RENEWABLE ENERGY AUSTRALIA PTY LTD

NOTATIONS

NOTE: THIS FOLIO MAY BE ASSOCIATED WITH A CROWN TENURE WHICH IS SUBJECT TO PAYMENT OF AN ANNUAL RENT. FOR FURTHER DETAILS CONTACT CROWN LANDS.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 25/07/2025 15:31:16

Req:R643900 /Doc:CP 02826-1888 P /Rev:23-Nov-2012 /NSW LRS /Prt:25-Jul-2025 15:32 /Seq:1 of 1
© Office of the Registrar-General /Src:InfoTrack /Ref:4178 Holbrook Road, Mangoplah

KYEAMBA SHIRE

Partly cancels M.93 1888 Roll

Papers LB.12.10690

PLAN OF PORTION 228 Farm #35

County of Mitchell Parish of Mangoplah

Land District Wagga-Wagga Land Board District Wagga-Wagga Central Division

RESUMED AREA No PASTORAL HOLDING

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

Measured in connection with Mangoplah Clo Sett Promotion Area

For 228 Farm 35 Allotted to Daniel Joseph Lloyd as

55 Wagga Wagga

Sett. Pur. 1913-35 Mangoplah June 6th. Estate. Vide Gaz. 25.6.13.

Within R. 7819 from occn. under M.R. or B.L. notd. 19th Oct. 1928.

① Por 228. Now Walter Lloyd and William Francis Lloyd. Sale completed. Cl.Sett. 51/6943.

227 Farm T' M.2839 355.1.0

226 Farm S' M.2826 338 ac ex rd

225 Farm R' M.2824 356a 2r 0p

38 Pt Farm I' 118 ac M.93 RI

From Wagga-Wagga Corgone Corgone 4519 Road Tree Fd Tree Fd House (Lloyd Share Farmer) Occupier 100 Wide

23 John Cox M.93 RI a r p 87-3-0

Corgone Corgone 269°59' 4441 Corgone Tank 100 270° Corgone 270° 3465 to east side of rd

22 228 Farm #35 ① 24 229 25 Farm V'

Road 141.58 All cleared and partly under cultivation 3759.6 180°00' 3801 Wide 5061

118 ac Good wheat Land 300 ac ex rd

37 Pt Farm J' M.93 RI a r p 105-3-0

Scaling Short on these lines

(5841.6) To road 6422.6 1193 Corgone Road 225°00' 1246.5 Corner gone 141.58 (480) 90°00' (182 ac) 4051 360°00' Wide

a r p 191-1-0 a r p 106-1-0 M.2827

36 Pt Farm J' M.93 RI 123 ac

338a 1r 30p ex rd 28

26

94 ac

35 27 232 Farm Y' M.2830 300 ac

a r p 99-1-0 a r p 93-2-0 a r p 106-1-0

To Albury

PLAN MICROFILMED
NO ADDITIONS OR AMENDMENTS TO BE MADE

Azimuth taken from West boundary Portion 18

Field Book Vol. Folio (Private Survey)

Reference to Corners

Corner	Bearing	From	Links	No on Tree
Large numbered painted posts at Corners				

Reference to Traverse

Line	Bearing	Distance

Improvements

I hereby certify that I in person made and on the 13th June 1912 completed the survey represented on this plan on which are written the bearings and lengths of the lines measured by me and I declare that the survey has been executed in accordance with the regulations published for the guidance of Licensed Surveyors and the practice of the Department of Lands.

E.A. Ellis

Licensed Surveyor

Transmitted to the District Surveyor with my letter of 16 Decr 1912 No

Voucher No Passed Private Instn

Calculation Book No 1508 Folio 77 P.P.

Checked and Charted A.G. Buchanan 13/2/13

Examined H.C. Butterfield 17th February 1913

Plan approved 18th February 1913

J.R. Windridge

Draftsman in Charge

Scale 20 Chains to an Inch.

Lithographed at Forrer Pedersen

Checked on Head Office Maps

Examined 31st March 1913

Cat. No M.2826 1888

No of Lith. 05-603-0

STANDARD TRACING PREPARED Encl 19/2/13

LAND REGISTRY SERVICES Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
25/7/2025 3:33PM

FOLIO: 228/754557

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 8494 FOL 19

Recorded	Number	Type of Instrument	C.T. Issue
1/3/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
10/7/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
9/8/1989	Y531533	DISCHARGE OF MORTGAGE	EDITION 1
2/10/1990	Z192715	MORTGAGE	EDITION 2
29/1/1992	E205792	DISCHARGE OF MORTGAGE	EDITION 3
20/5/1994	U281521	MORTGAGE	EDITION 4
16/5/1995	O234079	DISCHARGE OF MORTGAGE	EDITION 5
26/8/1999	6134784	DEPARTMENTAL DEALING	
22/12/2006	AC827279	DEPARTMENTAL DEALING	
22/5/2009	AE694855	MORTGAGE	EDITION 6
16/6/2011	AG303783	DISCHARGE OF MORTGAGE	
16/6/2011	AG303784	MORTGAGE	EDITION 7
22/2/2012	AG829452	DEPARTMENTAL DEALING	
28/11/2015	AK21231	DISCHARGE OF MORTGAGE	
28/11/2015	AK21232	TRANSMISSION APPLICATION (DEVISEE,BENEFICIARY,NEXT OF KIN)	
28/11/2015	AK21233	MORTGAGE	EDITION 8
8/9/2018	AN695391	DEPARTMENTAL DEALING	EDITION 9 CORD ISSUED
12/5/2020	AQ98733	MORTGAGE	EDITION 10 CORD ISSUED
4/8/2020	AQ294846	DEPARTMENTAL DEALING	

END OF PAGE 1 - CONTINUED OVER

SEARCH DATE
25/7/2025 3:33PM

FOLIO: 228/754557 PAGE 2

Recorded	Number	Type of Instrument	C.T. Issue
23/12/2022	AS757674	DISCHARGE OF MORTGAGE	
23/12/2022	AS757675	DISCHARGE OF MORTGAGE	
23/12/2022	AS757676	MORTGAGE	EDITION 11
15/10/2024	AU496392	DISCHARGE OF MORTGAGE	
15/10/2024	AU496393	MORTGAGE	EDITION 12
2/5/2025	AV21381	CAVEAT	EDITION 13

*** END OF SEARCH ***

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Received: 25/07/2025 15:33:40

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 228/754557

SEARCH DATE	TIME	EDITION NO	DATE
25/7/2025	3:31 PM	13	2/5/2025

LAND

LOT 228 IN DEPOSITED PLAN 754557
LOCAL GOVERNMENT AREA WAGGA WAGGA
PARISH OF MANGOPLAH COUNTY OF MITCHELL
(FORMERLY KNOWN AS PORTION 228)
TITLE DIAGRAM CROWN PLAN 2826.1888

FIRST SCHEDULE

DANIEL NORMAN LLOYD (AD AK21232)

SECOND SCHEDULE (4 NOTIFICATIONS)

---

1 LAND EXCLUDES MINERALS AND IS SUBJECT TO RESERVATIONS AND CONDITIONS IN FAVOUR OF THE CROWN - SEE CROWN GRANT(S)
2 LAND EXCLUDES THE ROAD(S) SHOWN IN THE TITLE DIAGRAM
3 AU496393 MORTGAGE TO GURRDIAN WEALTH MORTGAGE MANAGERS (SA) PTY LTD & STIRLINGBURNS PTY LTD
* 4 AV21381 CAVEAT BY SAMSUNG C&T RENEWABLE ENERGY AUSTRALIA PTY LTD

NOTATIONS

NOTE: THIS FOLIO MAY BE ASSOCIATED WITH A CROWN TENURE WHICH IS SUBJECT TO PAYMENT OF AN ANNUAL RENT. FOR FURTHER DETAILS CONTACT CROWN LANDS.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

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Received: 25/07/2025 15:31:15

City of Wagga Wagga

Planning Certificate

(Section 10.7(2) & (5) – Environmental Planning and Assessment Act 1979)
(previously s149(2) & (5) certificate)

Certificate Details

Certificate No:	ePL2025/0605
Receipt date:	30 July 2025

Applicant Details

Name & Address:	Infotrack Pty Ltd GPO Box 4029 SYDNEY NSW 2001
Your Reference:	4178 Holbrook Road, Mangoplah

Land

Property No:	333185
Title Description:	Lot 222 DP 754557 Lot 225 DP 754557 Lot 228 DP 754557
Address:	4178 Holbrook Rd MANGOPLAH NSW 2652

Disclaimer

Information contained in this certificate is valid on the date issued and relates only to the land for which this certificate is issued. The information is provided in good faith subject to sections Schedule 6(2) and 10.7(6) of the Environmental Planning and Assessment Act 1979 and Council shall not incur any liability in respect of any such advice.

This certificate provides prescribed and other relevant information affecting how land may be used including certain restrictions on development. The certificate contains information Council is aware of through its records and environmental plans, along with data supplied by the State Government. Title information shown on this certificate is provided from Council's records and may not conform to information shown on the current Certificate of Title. Easements, restrictions as to uses, rights of way and other similar information shown on the title of the land are not provided on this certificate.

1 Names of relevant planning instruments and development control plans

(1) The name of each environmental planning instrument and development control plan that applies to the carrying out of development on the land.

Wagga Wagga Local Environmental Plan 2010 (WWLEP 2010)

State Environmental Planning Policies

Wagga Wagga Development Control Plan 2010

- SEPP (Biodiversity and Conservation) 2021
- SEPP (Sustainable Buildings) 2022
- SEPP (Exempt and Complying Development Codes) 2008
- SEPP (Housing) 2021
- SEPP (Industry and Employment) 2021
- SEPP (Planning Systems) 2021
- SEPP (Precincts – Regional) 2021
- SEPP (Primary Production) 2021
- SEPP (Resilience and Hazards) 2021
- SEPP (Resources and Energy) 2021
- SEPP (Transport and Infrastructure) 2021

(2) The name of each proposed environmental planning instrument and draft development control plan, which is or has been subject to community consultation or public exhibition under the Act, that will apply to the carrying out of development on the land.

Draft LEP proposed under WWLEP 2010

Nil

Draft DCP

Nil

Draft SEPP

Draft Amendment to Transport and Infrastructure SEPP amendment (Chapter 4 Major Infrastructure Corridors).

(3) Subclause (2) does not apply in relation to a proposed environmental planning instrument or draft development control plan if—

(a) it has been more than 3 years since the end of the public exhibition period for the proposed instrument or draft plan, or

(b) for a proposed environmental planning instrument—the Planning Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved.

N/A

(4) In this clause—

proposed environmental planning instrument means a draft environmental planning instrument and includes a planning proposal for a local environmental plan

2 Zoning and land use under relevant planning instruments

The following matters for each environmental planning instrument or draft environmental planning instrument that includes the land in a zone, however described—

(a) the identity of the zone, whether by reference to—

(i) a name, such as “Residential Zone” or “Heritage Area”, or

(ii) a number, such as “Zone No 2 (a)”,

RU1 Primary Production under WWLEP 2010:

Objectives of zone

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To foster strong, sustainable rural community lifestyles.
- To maintain the rural landscape character of the land.
- To allow tourist and visitor accommodation only where it is in association with agricultural activities.

(b) the purposes for which development in the zone-

(i) may be carried out without development consent, and

- Environmental protection works; Extensive agriculture; Home businesses; Home occupations; Roads

(ii) may not be carried out except with development consent, and

- Aquaculture; Artisan food and drink industries; Bed and breakfast accommodation; Cellar door premises; Dual occupancies; Dwelling houses; Extractive industries; Farm buildings; Farm stay accommodation; Hardware and building supplies; Home industries; Intensive livestock agriculture; Intensive plant agriculture; Markets; Open cut mining; Roadside stalls; Rural supplies; Rural workers' dwellings; Secondary dwellings; Timber yards; Any other development not specified in item 2(b)(i) or 2(b)(iii)

(iii) is prohibited,

- Airports; Amusement centres; Camping grounds; Caravan parks; Commercial premises; Crematoria; Eco-tourist facilities; Entertainment facilities; Exhibition homes; Exhibition villages; Freight transport facilities; Function centres; Health services facilities; Heavy industrial storage establishments; Home occupations (sex services); Industrial training facilities; Industries; Local distribution premises; Mortuaries; Passenger transport facilities; Recreation facilities (indoor); Registered clubs; Residential accommodation; Restricted premises; Sex services premises; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops;

Vehicle repair stations; Warehouse or distribution centres; Wharf or boating facilities; Wholesale supplies

(c) whether any additional permitted uses apply to the land,

No

(d) whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling house on the land and, if so, the fixed minimum land dimensions,

Yes, 200 hectares

(e) whether the land is in an area of outstanding biodiversity value under the Biodiversity Conservation Act 2016,

No

(f) whether the land is in a conservation area, however described,

No

(g) whether an item of environmental heritage, however described, is located on the land.

No

3 Contributions plans

(1) The name of each contributions plan under the Act, Division 7.1 applying to the land, including any draft contributions plan.

Wagga Wagga Local Infrastructure Contributions Plan 2019-2034

City of Wagga Wagga - Development Servicing Plan - Stormwater: 2007, not mapped on Council's development contribution plan however maybe imposed as part of a development proposal. Please check with Council

City of Wagga Wagga - Development Servicing Plan No 1: Sewerage Services 2013, not mapped on Council's development contribution plan however maybe imposed as part of a development proposal. Please check with Council.

(2) If the land is in a region within the meaning of the Act, Division 7.1, Subdivision 4.

(a) the name of the region, and

(b) the name of the Ministerial planning order in which the region is identified.

No

(3) If the land is in a special contributions area to which a continued 7.23 determination applies, the name of the area.

No

(4) In this section—

continued 7.23 determination means a 7.23 determination that—

(a) has been continued in force by the Act, Schedule 4, Part 1, and

(b) has not been repealed as provided by that part

Note: The Act, Schedule 4, Part 1 contains other definitions that affect the interpretation of this section.

Riverina Water County Council (RWCC) is responsible for potable water supply within the Wagga Wagga City Council, Lockhart, Urana and Greater Hume Shire Council area. More information can be found on RWCC's website located at www.rwcc.nsw.gov.au

4 Complying Development

(1) If the land is land on which complying development may be carried out under each of the complying development codes under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* because of that Policy, clause 1.17A(1)(c)–(e), (2), (3) or (4), 1.18(1)(c3) or 1.19.

(2) If complying development may not be carried out on the land because of one of those clauses, the reasons why it may not be carried out under the clause.

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that—

(a) a restriction applies to the land, but it may not apply to all of the land, and

(b) the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

(4) If the complying development codes are varied, under that Policy, clause 1.12, in relation to the land.

In relation to clause 1.19(1)(c1) Council have insufficient information to identify significantly contaminated land within the meaning of the Contaminated Land Management Act 1997. Please refer to the EPA register of properties at https://apps.epa.nsw.gov.au/prclmapp/searchregister.aspx.

Part 3B Low Rise Housing Diversity Code (R or RU Zones)

Yes

Part 3C Greenfield Housing Code (R or RU Zones)

No

Part 3D Inland Housing Code (R or RU Zones)

Yes

Part 4 Housing Alterations Code

Yes

Part 4A General Development Code

Yes

Part 5 Industrial and Business Alterations Code

Yes

Part 5A Industrial Business Code (New Buildings and Additions) Code (B or IN or SP Zones)

Yes

Part 5B Container Recycling Facilities Code (B or IN or SP Zones)

Yes

Part 6 Subdivisions Code

Yes

Part 7 Demolition Code

Yes

Part 8 Fire Safety Code

Yes

Part 9 Agritourism and Farm Stay Accommodation Code (RU1 or RU2 or RU4 Zones)

Yes

Note: When identifying if complying development may be carried out on land under State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, the response is based only on those matters identified under clauses 1.17A (1)(c) to (e), (2), (3) and (4) and 1.19 of the policy. A s10.7 certificate cannot list other matters that may result in a development being precluded from complying development (e.g. zone, lot size, etc).

5 Exempt development

(1) If the land is land on which exempt development may be carried out under each of the exempt development codes under the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 because of that Policy, clause 1.16(1)(b1)–(d) or 1.16A.

(2) If exempt development may not be carried out on the land because of one of those clauses, the reasons why it may not be carried out under the clause.

(3) If the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land, a statement that—

(a) a restriction applies to the land, but it may not apply to all of the land, and

(b) the council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land.

(4) If the exempt development codes are varied, under that Policy, clause 1.12, in relation to the land.

Council does not have sufficient information to ascertain the extent to which exempt development may or may not be carried out on the land.

Note:

Schedule 2 Exempt development codes—variations does not list any land within the Wagga City Council local government area as being land to which a variation applies.

6 Affected building notices and building product rectification orders

(1) Whether the council is aware that—

(a) an affected building notice is in force in relation to the land, or

(b) a building product rectification order is in force in relation to the land that has not been fully complied with, or

(c) a notice of intention to make a building product rectification order given in relation to the land is outstanding.

(2) In this clause—

affected building notice has the same meaning as in the *Building Products (Safety) Act 2017*, Part 4. building product rectification order has the same meaning as in the Building Products (Safety) Act 2017.In this clause:

building product rectification order has the same meaning as in the *Building Products (Safety) Act 2017*.

No information available, please contact NSW Fair Trading 13 32 20.

Note:

For more information, please refer to NSW Fair Trading –

Fire safety and external wall cladding www.fairtrading.nsw.gov.au/housing-andproperty/fire-safety-and-external-wall-cladding

Affected building notices and building product rectification orders https://www.fairtrading.nsw.gov.au/trades-and-businesses/construction-and-trade-essentials/building-products#CurrentNotices

7 Land reserved for acquisition

Whether an environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by an authority of the State, as referred to in the Act, section 3.15.

No

8 Road widening and road realignment.

Whether the land is affected by road widening or road realignment under—

(a) the *Roads Act 1993*, Part 3, Division 2 or

(b) an environmental planning instrument, or

(c) a resolution of the council.

No information available for the purpose of this certificate. Contact Council to obtain current information regarding potential road widening.

9 Flood related development controls information

(1) If the land or part of the land is within the flood planning area and subject to flood related development controls.

Council considers the land to which this certificate applies to be above the Flood Planning Area (FPA) identified within the Riverine 2018 flood study and the Major Overland Flow Flood Study 2021 (MOFFS FPA) therefore no flood related development controls apply. Property owners can review relevant information on the Wagga Online Mapping system.

(2) If the land or part of the land is between the flood planning area and the probable maximum flood and subject to flood related development controls.

Council considers the land to which this certificate applies, is not located between the Special Flood Consideration (SFC) identified within the Riverine 2018 flood study and the Major Overland Flow Flood Study 2021 (MOFFS SFC) therefore no flood related development controls apply. Property owners can review relevant information on the Wagga Online Mapping system.

(3) In this clause –

flood planning area has the same meaning as in the Flood Risk Management Manual.

Floodplain Development Manual means the Flood Risk Management Manual, ISBN 978-1-923076-17-4, published by the NSW Government in June 2023.

probable maximum flood has the same meaning as in the Flood Risk Management Manual.

Note:
This information is based on the Flood Planning areas of the Wagga Wagga Revised Murrumbidgee River Floodplain Risk Management Study and Plan 2018 and the Major Overland Flow Study 2021. Property owners are advised to contact Council to obtain current information regarding local flooding and are encouraged to seek independent flooding advice from a suitably qualified person. For more information see https://wagga.nsw.gov.au/services/emergencies/floods/flood-studies

10 Council and other public authority policies on hazard risk restrictions

(1) Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bush fire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk, other than flooding.

(2) In this clause—

adopted policy means a policy adopted—

(a) by the council, or

(b) by another public authority, if the public authority has notified the council that the policy will be included in a planning certificate issued by the council.

- land slip?
  No, Council does not have a policy on landslip
- bushfire?
  No, Council does not have a policy on bushfire
- tidal inundation?
  No, Council does not have a policy on tidal inundation.
- subsidence?
  No, Council does not have a policy on subsidence.
- acid sulphate soils?
  No, Council does not have a policy on acid sulphate soils.
- contamination
  Yes, Contaminated Land Management Policy 2020 - POL 030
  Yes, Asbestos Policy - POL 029
- aircraft noise
  No, Council does not have a policy on aircraft noise.
- salinity
  No, Council does not have a policy on salinity.
- coastal hazards
  N/A
- sea level rise
  N/A
- any other risk (other than flooding)?
  No, Council does not have a policy on any other risk (other than flooding).

11 Bush fire prone land

(1) If any of the land is bush fire prone land, designated by the Commissioner of the NSW Rural Fire Service under the Act, section 10.3, a statement that all or some of the land is bush fire prone land.

All or some of the land is mapped as bush fire prone land. A copy of the NSW Rural Fire Service Bushfire Prone Land mapping for the Wagga Wagga City Council local government area may be viewed at https://wagga.nsw.gov.au/building-and-development/development-applications/development-on-bush-fire-prone-land

(2) If none of the land is bush fire prone land, a statement to that effect.

12 Loose-fill asbestos insulation

If the land includes residential premises, within the meaning of the Home Building Act 1989, Part 8, Division 1A, that are listed on the Register kept under that Division, a statement to that effect.

No information available. Contact NSW Fair Trading for more information https://www.fairtrading.nsw.gov.au/loose-fill-asbestos-insulation-register

13 Mine subsidence

Whether the land is declared to be a mine subsidence district, within the meaning of the Coal Mine Subsidence Compensation Act 2017

No

14 Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that—

(a) applies to the land, or

(b) is proposed to be subject to a ballot No

(2) The date of any subdivision order that applies to the land.

(3) Words and expressions used in this clause have the same meaning as in this Regulation, Part 10 and the Act, Schedule 7.

N/A

15 Property vegetation plans

If the land is land in relation to which a property vegetation plan is approved and in force under the Native Vegetation Act 2003, Part 4, a statement to that effect, but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act.

No, PVP No 10471 was applied to this property on 3 June 2009 and expired on 3 June 2019.

For further information, contact the Local Land Services 1300 795 299 admin.riverina@lls.nsw.gov.au

16 Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under the Biodiversity Conservation Act 2016, Part 5, a statement to that effect, but only if the council has been notified of the existence of the agreement by the Biodiversity Conservation Trust.

No, Council has not been notified by the Director General of the Office of Environment and Heritage that an agreement exists on the subject land

Note— Biodiversity stewardship agreements include biobanking agreements under the *Threatened Species Conservation Act 1995*, Part 7AA that is taken to be certified under the *Biodiversity Conservation Act 2016*, Part 8.

17 Biodiversity certified land

If the land is biodiversity certified land under the *Biodiversity Conservation Act 2016*, Part 8, a statement to that effect.

Note— Biodiversity certified land includes land certified under the ***Threatened Species Conservation Act 1995***, Part 7AA that is taken to be certified under the ***Biodiversity Conservation Act 2016***, Part 8.

No

18 Orders under Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land, but only if the council has been notified of the order.

No Information available

19 Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

(1) If the Coastal Management Act 2016 applies to the council, whether the owner, or a previous owner, of the land has given written consent to the land being subject to annual charges under the Local Government Act 1993, section 496B, for coastal protection services that relate to existing coastal protection works.

(2) In this clause—

existing coastal protection works has the same meaning as in the Local Government Act 1993, section 553B.

Note— Existing coastal protection works are works to reduce the impact of coastal hazards on land, such as seawalls, revetments, groynes and beach nourishment, that existed before 1.1.2011.

N/A

20 Western Sydney Aerotropolis

Whether under State Environmental Planning Policy (Precincts—Western Parkland City) 2021, Chapter 4 the land is—

(a) in an ANEF or ANEC contour of 20 or greater, as referred to in that Chapter, Section 4.17, or

(b) shown on the Lighting Intensity and Wind Shear Map, or

(c) shown on the Obstacle Limitation Surface Map, or

(d) in the “public safety area” on the Public Safety Area Map, or

(e) in the “3 kilometre wildlife buffer zone” or the “13 kilometre wildlife buffer zone” on the Wildlife Buffer Zone Map.

N/A

21 Development consent conditions for seniors housing

If State Environmental Planning Policy (Housing) 2021, Chapter 3, Part 5 applies to the land, any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2).

There are no conditions of a development consent granted after 11 October 2007, in relation to the land, that are of the kind set out in Section 88(2) of SEPP (Housing 2021).

22 Site compatibility certificates and development consent conditions for affordable rental housing

(1) Whether there is a current site compatibility certificate under State Environmental Planning Policy (Housing) 2021, or a former site compatibility certificate, of which the council is aware, in relation to proposed development on the land and, if there is a certificate—

(a) the period for which the certificate is current, and

(b) that a copy may be obtained from the Department.

(2) If State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 2, Division 1 or 5 applies to the land, any conditions of a development consent in relation to the land that are of a kind referred to in that Policy, section 21(1) or 40(1).

(3) Any conditions of a development consent in relation to land that are of a kind referred to in State Environmental Planning Policy (Affordable Rental Housing) 2009, clause 17(1) or 38(1).

(4) In this section—

former site compatibility certificate means a site compatibility certificate issued under State Environmental Planning Policy (Affordable Rental Housing) 2009.

There is no site compatibility certificate under SEPP (Housing) 2021, or a former site compatibility certificate, that Council is aware of in relation to the land. There are no conditions of a development consent, in relation to the land, that are of the kind set out in clause 17(1) or 38(1) of SEPP Housing 2021.

23 Water or sewerage services

If water or sewerage services are, or are to be, provided to the land under the Water Industry Competition Act 2006, a statement to that effect.

Note: A public water utility may not be the provider of some or all of the services to the land. If a water or sewerage service is provided to the land by a licensee under the Water Industry Competition Act 2006, a contract for the service will be deemed to have been entered into between the licensee and the owner of the land. A register relating to approvals and licences necessary for the provision of water or sewerage services under the Water Industry Competition Act 2006 is maintained by the Independent Pricing and Regulatory Tribunal and provides information about the areas serviced, or to be serviced, under that Act. Purchasers should check the register to understand who will service the property. Outstanding charges for water or sewerage services provided under the Water Industry Competition Act 2006 become the responsibility of the purchaser.

N/A

Contaminated Land

The following matters are prescribed by section 59(2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act—if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

No, The land is not listed on the State Register for significantly contaminated land.

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,

No, the land is not subject to an order.

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act—if it is the subject of such an approved proposal at the date when the certificate is issued,

No, the land is not subject to a voluntary management proposal.

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act—if it is subject to such an order at the date when the certificate is issued,

No, the land is not subject to an ongoing maintenance order.

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act—if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

No, the land is not subject of a site audit statement.

Notes:

In addition to the above and in line with the Council's Contaminated Land Management Policy 2020 - POL 030 and Asbestos Policy - POL 029, the site is not listed on Council's Register of potentially contaminated land. Property owners should conduct their own investigations to be satisfied that this property is not affected by land contamination.

Other Relevant Matters S.10.7(5)

No general information is available other than that provided under section 10.7 (2). If you require research on a specific matter for the purpose of a S10.7(5) please contact us.



Amy Crouch
Development Administration Officer

FOR:
GENERAL MANAGER

Appendix C Planning Certificates

Property Report

4178 HOLBROOK ROAD MANGOPLAH 2652



Property Details

Address:	4178 HOLBROOK ROAD MANGOPLAH 2652
Lot/Section /Plan No:	222/-/DP754557 225/-/DP754557 228/-/DP754557
Council:	WAGGA WAGGA CITY COUNCIL

Summary of planning controls

Planning controls held within the Planning Database are summarised below. The property may be affected by additional planning controls not outlined in this report. Please contact your council for more information.

Local Environmental Plans	Wagga Wagga Local Environmental Plan 2010 (pub. 26-8-2022)
Land Zoning	RU1 - Primary Production: (pub. 25-7-2025)
Height Of Building	NA
Floor Space Ratio	NA
Minimum Lot Size	200 ha
Heritage	NA
Land Reservation Acquisition	NA
Foreshore Building Line	NA
Riparian Lands and Watercourses	Water Resource
Terrestrial Biodiversity	Biodiversity

Detailed planning information

State Environmental Planning Policies which apply to this property

State Environmental Planning Policies can specify planning controls for certain areas and/or types of development. They can also identify the development assessment system that applies and the type of environmental assessment that is required.

This report provides general information only and does not replace a Section 10.7 Certificate (formerly Section 149)

- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Allowable Clearing Area (pub. 21-10-2022)
- State Environmental Planning Policy (Biodiversity and Conservation) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008: Land Application (pub. 12-12-2008)
- State Environmental Planning Policy (Housing) 2021: Land Application (pub. 26-11-2021)
- State Environmental Planning Policy (Industry and Employment) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Planning Systems) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Primary Production) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Resilience and Hazards) 2021: Land Application (pub. 2 -12-2021)
- State Environmental Planning Policy (Resources and Energy) 2021: Land Application (pub. 2-12-2021)
- State Environmental Planning Policy (Sustainable Buildings) 2022: Land Application (pub. 29-8-2022)
- State Environmental Planning Policy (Transport and Infrastructure) 2021: Land Application (pub. 2-12-2021)

Other matters affecting the property

Information held in the Planning Database about other matters affecting the property appears below. The property may also be affected by additional planning controls not outlined in this report. Please speak to your council for more information

1.5 m Buffer around Classified Roads	Classified Road Adjacent
Biodiversity Value (BV) Map	Clearing native vegetation for a development on an area on the BV Map may require a Biodiversity Development Assessment Report. Consult your local council.
Bushfire Prone Land	Vegetation Category
Land near Electrical Infrastructure	This property may be located near electrical infrastructure and could be subject to requirements listed under Transport and Infrastructure SEPP 2021 Clause 2.48. Please contact Essential Energy for more information.
Local Aboriginal Land Council	WAGGA WAGGA
Regional Plan Boundary	Riverina Murray

Appendix D Soil logs

ENVIRONMENTAL TESTPIT TP01

PROJECT NUMBER 240799
PROJECT NAME Mangoplah BESS PSI
CLIENT Samsung
ADDRESS 4178 Holbrook Road, Mangoplah, NSW

DRILLING DATE 07/07/2025
METHOD Excavator
TOTAL DEPTH 0.5m
SURFACE COVERAGE Cropped Grassland

COORDINATES
COORD SYS
LOGGED BY MW
CHECKED BY

COMMENTS Weather: Early morning, Cloudy, Foggy no wind. Groundcover predominantly exotic pasture / cropped land, even coverage. Predominantly flat land, few standing trees present

Depth (m)	Sample ID	Sample Type	Moisture	Graphic Log	Material Description - (texture, coarse fragments, mottling, nodules etc)	Additional Observations
	TP01 _0.0-0.1m	Soil	SM		Dark brown Light Clay No coarse fragments No mottling No nodules Some fine roots	
0.1	TP01_0.5m	Soil	SM		Yellowish brown Light clay No coarse fragments Some orange mottling Black nodules <2mm Few fine roots	
0.2						
0.3						
0.4						
0.5					Termination Depth at: 0.5m	

Disclaimer This bore log is intended for environmental not geotechnical purposes.
produced by ESlog.ESdat.net on 22 Jul 2025

ENVIRONMENTAL TESTPIT TP02

PROJECT NUMBER 240799
PROJECT NAME Mangoplah BESS PSI
CLIENT Samsung
ADDRESS 4178 Holbrook Road, Mangoplah, NSW

DRILLING DATE 07/07/2025
METHOD Excavator
TOTAL DEPTH 0.5m
SURFACE COVERAGE Cropped Grassland

COORDINATES
COORD SYS
LOGGED BY MW
CHECKED BY

COMMENTS Weather: Early morning, Cloudy, Foggy no wind. Groundcover predominantly exotic pasture / cropped land, even coverage. Predominantly flat land, few standing trees present

Depth (m)	Sample ID	Sample Type	Moisture	Graphic Log	Material Description - (texture, coarse fragments, mottling, nodules etc)	Additional Observations
	TP02 _0.0-0.1m	Soil	SM		Dark brown Light Clay No coarse fragments No mottling No nodules Some fine roots Some large roots	
0.1	TP02_0.5m	Soil	SM		Reddish brown Light clay No coarse fragments No mottling No nodules Few fine roots	
0.5					Termination Depth at: 0.5m	

ENVIRONMENTAL TESTPIT TP03

PROJECT NUMBER 240799
PROJECT NAME Mangoplah BESS PSI
CLIENT Samsung
ADDRESS 4178 Holbrook Road, Mangoplah, NSW

DRILLING DATE 07/07/2025
METHOD Excavator
TOTAL DEPTH 0.5m
SURFACE COVERAGE Cropped Grassland

COORDINATES
COORD SYS
LOGGED BY MW
CHECKED BY

COMMENTS Weather: Early morning, Cloudy, Foggy no wind. Groundcover predominantly exotic pasture / cropped land, even coverageby sheep. Predominantly flat land, few standing trees present

Depth (m)	Sample ID	Sample Type	Moisture	Graphic Log	Material Description - (texture, coarse fragments, mottling, nodules etc)	Additional Observations
	TP03 _0.0-0.1m	Soil	SM		Dark brown Light Clay No coarse fragments No mottling No nodules Some fine roots Some large roots	
0.1	TP03_0.5m	Soil	SM		Reddish brown Light clay No coarse fragments Few orange mottling No nodules Some fine roots	DUP01 taken here
0.5					Termination Depth at: 0.5m	

Disclaimer This bore log is intended for environmental not geotechnical purposes.
produced by ESlog.ESdat.net on 22 Jul 2025

ENVIRONMENTAL TESTPIT TP04

PROJECT NUMBER 240799
PROJECT NAME Mangoplah BESS PSI
CLIENT Samsung
ADDRESS 4178 Holbrook Road, Mangoplah, NSW

DRILLING DATE 07/07/2025
METHOD Excavator
TOTAL DEPTH 0.5m
SURFACE COVERAGE Cropped Grassland

COORDINATES
COORD SYS
LOGGED BY MW
CHECKED BY

COMMENTS Weather: Early morning, Cloudy, Foggy no wind. Groundcover predominantly exotic pasture / cropped land, even coverage. Low undulating hills. Along access road

Depth (m)	Sample ID	Sample Type	Moisture	Graphic Log	Material Description - (texture, coarse fragments, mottling, nodules etc)	Additional Observations
	TP04 _0.0-0.1m	Soil	SM		Dark brown Light Clay No coarse fragments No mottling No nodules Common fine roots Some large roots	
0.1	TP04_0.5m	Soil	SM		Reddish brown Medium clay No coarse fragments No mottling Few black nodules <2mm Few fine roots	
0.2						
0.3						
0.4						
0.5					Termination Depth at: 0.5m	

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

produced by ESlog.ESdat.net on 22 Jul 2025

Appendix E Laboratory results

E.1 Certificate of analysis

CERTIFICATE OF ANALYSIS

Work Order	: **ES2520824**	Page	: 1 of 9
Client	: **NGH PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MARTIN WYBURN	Contact	: Customer Services ES
Address	: Wagga Wagga	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 240779 Mangoplah BESS PSI	Date Samples Received	: 09-Jul-2025 11:40
Order number	: ----	Date Analysis Commenced	: 09-Jul-2025
C-O-C number	: ----	Issue Date	: 14-Jul-2025 15:43
Sampler	: MARTIN WYBURN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01_0.0-0.1m	TP01_0.5m	TP02_0.0-0.1m	TP02_0.5m	TP03_0.0-0.1m
			Sampling date / time	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00
Compound	CAS Number	LOR	Unit	ES2520824-001	ES2520824-002	ES2520824-003	ES2520824-004	ES2520824-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**14.8**	**19.2**	**15.7**	**16.4**	**15.6**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	**8**	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**54**	**57**	**29**	**52**	**37**
Copper	7440-50-8	5	mg/kg	**9**	**23**	**7**	**18**	**6**
Lead	7439-92-1	5	mg/kg	**10**	**12**	**8**	**10**	**9**
Nickel	7440-02-0	2	mg/kg	**8**	**13**	**6**	**12**	**6**
Zinc	7440-66-6	5	mg/kg	**11**	**14**	**10**	**17**	**9**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1m	TP01_0.5m	TP02_0.0-0.1m	TP02_0.5m	TP03_0.0-0.1m
				Sampling date / time	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00
Compound	CAS Number	LOR	Unit		ES2520824-001	ES2520824-002	ES2520824-003	ES2520824-004	ES2520824-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.0-0.1m	TP01_0.5m	TP02_0.0-0.1m	TP02_0.5m	TP03_0.0-0.1m
				Sampling date / time	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00
Compound	CAS Number	LOR	Unit		ES2520824-001	ES2520824-002	ES2520824-003	ES2520824-004	ES2520824-005
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**81.5**	**94.7**	**87.1**	**89.9**	**103**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**78.6**	**53.2**	**80.2**	**73.0**	**110**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP03_0.5m	TP04_0.0-0.1m	TP04_0.5m	DUP01	----
			Sampling date / time	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	----
Compound	CAS Number	LOR	Unit	ES2520824-006	ES2520824-007	ES2520824-008	ES2520824-009	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**16.6**	**15.1**	**24.1**	**22.9**	**----**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**5**	**6**	**6**	**5**	**----**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	**----**
Chromium	7440-47-3	2	mg/kg	**50**	**71**	**40**	**41**	**----**
Copper	7440-50-8	5	mg/kg	**15**	**10**	**19**	**16**	**----**
Lead	7439-92-1	5	mg/kg	**11**	**10**	**15**	**11**	**----**
Nickel	7440-02-0	2	mg/kg	**12**	**7**	**14**	**14**	**----**
Zinc	7440-66-6	5	mg/kg	**14**	**9**	**18**	**18**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	**----**
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP03_0.5m	TP04_0.0-0.1m	TP04_0.5m	DUP01	----
			Sampling date / time	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	----
Compound	CAS Number	LOR	Unit	ES2520824-006	ES2520824-007	ES2520824-008	ES2520824-009	--------
				Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP03_0.5m	TP04_0.0-0.1m	TP04_0.5m	DUP01	----
				Sampling date / time	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	07-Jul-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2520824-006	ES2520824-007	ES2520824-008	ES2520824-009	--------
					Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**89.1**	**96.3**	**83.7**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**86.6**	**97.0**	**91.9**	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	***Low***	***High***
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143

CERTIFICATE OF ANALYSIS

Work Order	: **EM2512357**	Page	: 1 of 2
Client	: **NGH PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MADDY SHAW	Contact	: Customer Services EM
Address	: Wagga Wagga	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 240779	Date Samples Received	: 10-Jul-2025 12:15
Order number	: ----	Date Analysis Commenced	: 11-Jul-2025
C-O-C number	: ----	Issue Date	: 15-Jul-2025 16:44
Sampler	: MW		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	DUP02	----	----	----	----
				Sampling date / time	07-Jul-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2512357-001	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**17.3**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**43**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**19**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**12**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**11**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**12**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----

E.2 Chain of custody forms

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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☐BRISBANE 2 Byth Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 48 Callemondah Drive Gladstone QLD 4680 Ph: 07 4978 7944 E: ALSEnviro.Gladstone@alsglobal.com
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☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 1/29 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
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☐TOWNSVILLE 13 Carlton Street Kirwan QLD 4817 Ph: 07 4773 0000 E: ALSEnviro.Townsville@alsglobal.com
☐WOLLONGONG 1/19-21 Ralph Black Drive, Nth Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: NGH Pty Ltd	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: 35 Kincaid Street Wagga Wagga NSW 2650	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☒ Non Standard or urgent TAT **(List due date):** Three day turnaround please	Custody Seal Intact? Yes No N/A
Mangoplah BESS PSI PROJECT NO. 240779	**ALS QUOTE NO.:**	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
ORDER NUMBER: PURCHASE ORDER NO.:	**COUNTRY OF ORIGIN:** australia	Free ice / frozen ice bricks present upon receipt? Yes No N/A
PROJECT MANAGER: Maddy Shaw	**CONTACT PH:** 0431 842 388	Random Sample Temperature on Receipt: °C
SAMPLER: Martin Wyburn	**SAMPLER MOBILE:** 0431 842 388	Other comment:
COC Emailed to ALS? (YES)	**EDD FORMAT (or default):** YES (ESDAT)	
Email Reports to (will default to PM if no other addresses are listed) martin.wyburn@nghconsulting.com.au		
Email Invoice to (will default to PM if no other addresses are listed): accounts@nghconsulting.com.au		

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME: 08/07/25	DATE/TIME: FRI 9/7/25 11:40	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)												Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-2 (8 Metals - As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	S-12 (OC/OP Pesticides)										HOLD	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	TP01_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
2	TP01_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
3	TP02_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
4	TP02_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
5	TP03_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
6	TP03_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
7	TP04_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
8	TP04_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x											
9	DUP01	07/07/2025	Soil	Unpreserved glass jar	1	x												
Fwd	DUP02	07/07/2025	Soil	Unpreserved glass jar	1	x												please send intra-lab (Melb for testing)
				TOTAL	10	10	8	0	0	0	0	0	0	0	0	0	0	

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

Subcon / ~~Forward Lab~~ / Split WO:

Lab / Analysis: Melbourne - DUP02

Relinquished Date:

WO:

Environmental Division
Sydney
Work Order Reference
ES2520824

Telephone : +61-2-8784 8555

TAT

CHAIN OF CUSTODY

ALS Laboratory: please tick →

ADELAIDE 3/1 Burma Road Pooraka SA 5095 Ph 08 8462 9100 E: adelaide@alsglobal.com
BRISBANE 2 Byth Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
GLADSTONE 45 Callemondah Drive Gladstone QLD 4680 Ph: 07 4972 7944 E: MLSEnviro.Gladstone@alsglobal.com
MACKAY Unit 2/20 Caterpillar Drive Paget QLD 4740 Ph: 07 4952 5795 E: ALSEnviro.Mackay@alsglobal.com
MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
MUDGEE 1/20 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
NEWCASTLE 5/585 Maitland Road Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com
NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com
PERTH 26 Rigali Way Wangara WA 6065 Ph: 08 9405 1301 E: samples.perth@alsglobal.com
SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
TOWNSVILLE 13 Carlton Street Kirwan QLD 4817 Ph: 07 4773 0000 E: ALSEnviro.Townsville@alsglobal.com
WOLLONGONG 1/19-21 Ralph Black Drive, Nth Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: NGH Pty Ltd

OFFICE: 35 Kincaid Street Wagga Wagga NSW 2650

TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date):

(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☒ Non Standard or urgent TAT (List due date): Three day turnaroud please

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comment:

Mangoplah BESS PSI	PROJECT NO. 240779	ALS QUOTE NO.:	
ORDER NUMBER:	PURCHASE ORDER NO.:	COUNTRY OF ORIGIN: australia	
PROJECT MANAGER: Maddy Shaw		CONTACT PH: 0431 842 388	
SAMPLER: Martin Wyburn		SAMPLER MOBILE: 0431 842 388	
COC Emailed to ALS? (YES)		EDD FORMAT (or default): YES (ESDAT)	
Email Reports to (will default to PM if no other addresses are listed) martin.wyburn@nghconsulting.com.au			
Email Invoice to (will default to PM if no other addresses are listed): accounts@nghconsulting.com.au			
COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:			

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME: 08/07/25	DATE/TIME: 9/7/25 11:40	DATE/TIME:	DATE/TIME: ALS Hannah 10/7 12:15

ALS USE ONLY	SAMPLE DETAILS			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)											Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	S-2 (8 Metals - As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	S-12 (OC/OP Pesticides)									HOLD	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	TP01_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
2	TP01_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
3	TP02_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
4	TP02_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
5	TP03_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
6	TP03_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
7	TP04_0.0-0.1m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
8	TP04_0.5m	07/07/2025	Soil	Unpreserved glass jar	1	x	x										
9	DUP01	07/07/2025	Soil	Unpreserved glass jar	1	x											
Fwd	DUP02	07/07/2025	Soil	Unpreserved glass jar	1	x											please send intra-lab (Melb for testing)
				TOTAL	10	10	8	0	0	0	0	0	0	0	0	0	

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

Subcon / ~~Forward Lab~~ / Split WO:

Lab / Analysis: Melbourne - DUP02

Relinquished Date:

WO:

Environmental Division
Melbourne
Work Order Reference
EM2512357

Telephone : + 61-3-8549 9600

URGENT

TAT

E.3 Laboratory QA / QC certificates

QUALITY CONTROL REPORT

Work Order	: **ES2520824**	Page	: 1 of 7
Client	: **NGH PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MARTIN WYBURN	Contact	: Customer Services ES
Address	: Wagga Wagga	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 240779 Mangoplah BESS PSI	Date Samples Received	: 09-Jul-2025
Order number	: ----	Date Analysis Commenced	: 09-Jul-2025
C-O-C number	: ----	Issue Date	: 14-Jul-2025
Sampler	: MARTIN WYBURN		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 9		
No. of samples analysed	: 9		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6708093)									
ES2520442-003	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	21	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	6	7	18.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	10	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	19	19	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	61	85	33.1	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	173	172	0.0	0% - 20%
ES2520824-005	TP03_0.0-0.1m	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	37	33	10.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	6	6	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	6	6	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	9	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	9	10	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6708098)									
ES2519575-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	4.6	7.0	40.6	No Limit
ES2520580-003	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	17.8	19.0	6.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6708099)									
ES2520824-007	TP04_0.0-0.1m	EA055: Moisture Content	----	0.1 (1.0)*	%	15.1	15.0	0.0	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6708092)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6708092) - continued									
ES2519575-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2520442-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6708094)									
ES2520824-005	TP03_0.0-0.1m	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6707819)									
ES2520824-001	TP01_0.0-0.1m	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6707819)									
ES2520824-001	TP01_0.0-0.1m	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6707819) - continued									
ES2520824-001	TP01_0.0-0.1m	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6708093)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	92.0	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	91.3	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	98.4	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	91.1	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	90.8	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	85.0	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	85.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6708092)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	76.4	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6708094)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	86.8	70.0	125
EP068A: Organochlorine Pesticides (OC) (QCLot: 6707819)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	78.7	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	67.0	119
EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.2	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.1	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.7	62.0	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 6707819) - continued								
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	82.8	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	81.1	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6707819)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.3	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	75.4	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.3	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	76.5	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	75.4	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	76.9	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	64.4	41.0	123

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6708093)							
ES2520442-003	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	104	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	99.3	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	97.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	100	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6708093) - continued							
ES2520442-003	Anonymous	EG005T: Lead	7439-92-1	250 mg/kg	107	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.8	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	94.3	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6708092)							
ES2519575-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	84.3	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6708094)							
ES2520824-005	TP03_0.0-0.1m	EG035T: Mercury	7439-97-6	5 mg/kg	82.6	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 6707819)							
ES2520824-001	TP01_0.0-0.1m	EP068: gamma-BHC - (Lindane)	58-89-9	0.5 mg/kg	84.2	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	75.3	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	81.0	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	85.6	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	73.5	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	97.2	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6707819)							
ES2520824-001	TP01_0.0-0.1m	EP068: Diazinon	333-41-5	0.5 mg/kg	89.1	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	77.7	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.0	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	86.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	76.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2520824**	Page	: 1 of 5
Client	: **NGH PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MARTIN WYBURN	Telephone	: +61-2-8784 8555
Project	: 240779 Mangoplah BESS PSI	Date Samples Received	: 09-Jul-2025
Site	: ----	Issue Date	: 14-Jul-2025
Sampler	: MARTIN WYBURN	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
TP01_0.0-0.1m, TP01_0.5m, TP02_0.0-0.1m, TP02_0.5m, TP03_0.0-0.1m, TP03_0.5m, TP04_0.0-0.1m, TP04_0.5m, DUP01	**07-Jul-2025**	**----**	----	----	**09-Jul-2025**	21-Jul-2025	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
TP01_0.0-0.1m, TP01_0.5m, TP02_0.0-0.1m, TP02_0.5m, TP03_0.0-0.1m, TP03_0.5m, TP04_0.0-0.1m, TP04_0.5m, DUP01	**07-Jul-2025**	**09-Jul-2025**	03-Jan-2026	✓	**10-Jul-2025**	03-Jan-2026	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP01_0.0-0.1m, TP01_0.5m, TP02_0.0-0.1m, TP02_0.5m, TP03_0.0-0.1m, TP03_0.5m, TP04_0.0-0.1m, TP04_0.5m, DUP01	**07-Jul-2025**	**09-Jul-2025**	04-Aug-2025	✓	**10-Jul-2025**	04-Aug-2025	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
TP01_0.0-0.1m, TP01_0.5m, TP02_0.0-0.1m	**07-Jul-2025**	**10-Jul-2025**	21-Jul-2025	✓	**11-Jul-2025**	19-Aug-2025	✓
Soil Glass Jar - Unpreserved (EP068)							
TP02_0.5m, TP03_0.0-0.1m, TP03_0.5m, TP04_0.0-0.1m, TP04_0.5m	**07-Jul-2025**	**10-Jul-2025**	21-Jul-2025	✓	**12-Jul-2025**	19-Aug-2025	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) TP01_0.0-0.1m, TP01_0.5m, TP02_0.0-0.1m	**07-Jul-2025**	**10-Jul-2025**	21-Jul-2025	✓	**11-Jul-2025**	19-Aug-2025	✓
Soil Glass Jar - Unpreserved (EP068) TP02_0.5m, TP03_0.0-0.1m, TP03_0.5m, TP04_0.0-0.1m, TP04_0.5m	**07-Jul-2025**	**10-Jul-2025**	21-Jul-2025	✓	**12-Jul-2025**	19-Aug-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	25	**12.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	25	**8.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).

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

QUALITY CONTROL REPORT

Work Order	: **EM2512357**	Page	: 1 of 3
Client	: **NGH PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MADDY SHAW	Contact	: Customer Services EM
Address	: Wagga Wagga	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61-3-8549 9600
Project	: 240779	Date Samples Received	: 10-Jul-2025
Order number	: ----	Date Analysis Commenced	: 11-Jul-2025
C-O-C number	: ----	Issue Date	: 15-Jul-2025
Sampler	: MW		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

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

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

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Laboratory Coordinator	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Inorganics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6712618)									
EM2512307-008	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	41	41	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	131	144	8.9	0% - 20%
EM2512307-008	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	10	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	31	38	19.1	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	1830	1700	7.6	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	39	36	7.8	No Limit
EM2512348-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	30	28	6.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	46	45	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	27	40	40.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	9	12.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	58	62	7.2	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6713209)									
EM2512357-001	DUP02	EA055: Moisture Content	----	0.1 (1.0)*	%	17.3	17.0	1.9	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6712619)									
EM2512307-008	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	1.3	1.3	0.0	0% - 50%
EM2512348-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6712618)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	123 mg/kg	97.5	70.0	130
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	1.23 mg/kg	61.4	50.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	103	70.0	130
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.9 mg/kg	97.8	70.0	130
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.4 mg/kg	83.9	70.0	130
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	92.8	70.0	130
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	75.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6712619)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.64 mg/kg	92.2	69.0	128

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6712618)							
EM2512307-009	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	# Not Determined	78.0	124
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	79.7	116
		EG005T: Chromium	7440-47-3	50 mg/kg	98.6	79.0	121
		EG005T: Copper	7440-50-8	250 mg/kg	107	80.0	120
		EG005T: Lead	7439-92-1	250 mg/kg	102	80.0	120
		EG005T: Nickel	7440-02-0	50 mg/kg	102	78.0	120
		EG005T: Zinc	7440-66-6	250 mg/kg	99.5	80.0	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6712619)							
EM2512307-009	Anonymous	EG035T: Mercury	7439-97-6	0.5 mg/kg	113	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2512357**	Page	: 1 of 4
Client	: **NGH PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MADDY SHAW	Telephone	: +61-3-8549 9600
Project	: 240779	Date Samples Received	: 10-Jul-2025
Site	: ----	Issue Date	: 15-Jul-2025
Sampler	: MW	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	EM2512307--009	Anonymous	**Arsenic**	7440-38-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) DUP02	**07-Jul-2025**	**----**	----	**----**	**11-Jul-2025**	21-Jul-2025	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) DUP02	**07-Jul-2025**	**11-Jul-2025**	03-Jan-2026	✓	**11-Jul-2025**	03-Jan-2026	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) DUP02	**07-Jul-2025**	**11-Jul-2025**	04-Aug-2025	✓	**11-Jul-2025**	04-Aug-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	11	**27.27**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).

Appendix F Chemical summary tables

Location					TP01	TP01	TP02	TP02	TP03	TP03	TP03	TP04	TP04
Sample ID					TP01_0.0-0.1m	TP01_0.5m	TP02_0.0-0.1m	TP02_0.5m	TP03_0.0-0.1m	TP03_0.5m	DUP01	TP04_0.0-0.1m	TP04_0.5m
Date Sampled					07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025	07/07/2025
Sample Type					Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Primary Sample	Duplicate Sample	Primary Sample	Primary Sample
Primary Sample ID					TP01_0.0-0.1m	TP01_0.5m	TP02_0.0-0.1m	TP02_0.5m	TP03_0.0-0.1m	TP03_0.5m	TP03_0.5m	TP04_0.0-0.1m	TP04_0.5m
Lab Sample ID					ES2520824001	ES2520824002	ES2520824003	ES2520824004	ES2520824005	ES2520824006	ES2520824009	ES2520824007	ES2520824008
Batch No.					ES2520824	ES2520824	ES2520824	ES2520824	ES2520824	ES2520824	ES2520824	ES2520824	ES2520824
Analyte	**LOR**	**Units**	**HIL 'A'**	**HIL 'D'**									
Physico-Chemical Parameters													
Moisture Content	1	%	ne	ne	**14.8**	**19.2**	**15.7**	**16.4**	**15.6**	**16.6**	**22.9**	**15.1**	**24.1**
Metals (total)													
Arsenic	5	mg/kg	100	3000	<5	**8**	<5	<5	<5	**5**	**5**	**6**	**6**
Cadmium	1	mg/kg	20	900	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	2	mg/kg	100	3600	**54**	**57**	**29**	**52**	**37**	**50**	**41**	**71**	**40**
Copper	5	mg/kg	6000	240000	**9**	**23**	**7**	**18**	**6**	**15**	**16**	**10**	**19**
Lead	5	mg/kg	300	1500	**10**	**12**	**8**	**10**	**9**	**11**	**11**	**10**	**15**
Mercury	0.1	mg/kg	40	730	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	2	mg/kg	400	6000	**8**	**13**	**6**	**12**	**6**	**12**	**14**	**7**	**14**
Zinc	5	mg/kg	7400	400000	**11**	**14**	**10**	**17**	**9**	**14**	**18**	**9**	**18**
Organochlorine Pesticides													
Aldrin	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Aldrin + Dieldrin	0.05	mg/kg	6	45	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
alpha-BHC	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
alpha-Endosulfan	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
beta-BHC	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
beta-Endosulfan	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
cis-Chlordane	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
DDD	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
DDD+DDE+DDT	0.05	mg/kg	240	3600	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
DDE	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
DDT	0.2	mg/kg	ne	ne	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
delta-BHC	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Dieldrin	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Endosulfan (sum)	0.05	mg/kg	270	2000	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Endosulfan sulfate	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Endrin	0.05	mg/kg	10	100	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Endrin aldehyde	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Endrin ketone	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
gamma-BHC	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Heptachlor	0.05	mg/kg	6	50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Heptachlor epoxide	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Hexachlorobenzene (HCB)	0.05	mg/kg	10	80	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Methoxychlor	0.2	mg/kg	300	2500	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Total Chlordane (sum)	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
trans-Chlordane	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Organophosphorus Pesticides													
Methyl Parathion	0.2	mg/kg	ne	ne	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Azinphos Methyl	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Bromophos-ethyl	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Carbophenothion	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Chlorfenvinphos	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Chlorpyrifos	0.05	mg/kg	160	2000	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Chlorpyrifos-methyl	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Demeton-S-methyl	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05

Diazinon	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Dichlorvos	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Dimethoate	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Ethion	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Fenamiphos	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Fenthion	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Malathion	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Monocrotophos	0.2	mg/kg	ne	ne	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Parathion	0.2	mg/kg	ne	ne	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
Pirimiphos-ethyl	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Prothiofos	0.05	mg/kg	ne	ne	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05
Exceeds the NEPC - 2013 Health-based investigation levels for low-density residen													
Exceeds the NEPC - 2013 Health-based investigation levels for commercial/industr													

Appendix G RPD tables

G.1 Intra-laboratory duplicate

	Metals							
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP03_0.5m (primary)	5	< 1	50	15	11	< 0.1	12	14
DUP01	5	< 1	41	16	11	< 0.1	14	18
RPD (%)	0%	0%	19.8%	6.5%	0%	0%	15.4%	25%

G.2 Inter-laboratory duplicate

	Metals						
	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP04_0.5m (primary)	6	<1	40	19	15	14	18
DUP02	6	<1	43	19	12	11	12
RPD (%)	0	0%	4.80%	0.0	14.3	15.4%	25%

Appendix H Site photos



Figure 14-1 Groundcover vegetation within the site



Figure 14-2 Transmission line infrastructure



Figure 14-3 Waste stockpile



Figure 14-4 Access roads



Figure 14-5 Bulk storage containers



Figure 14-6 TP01 soil profile

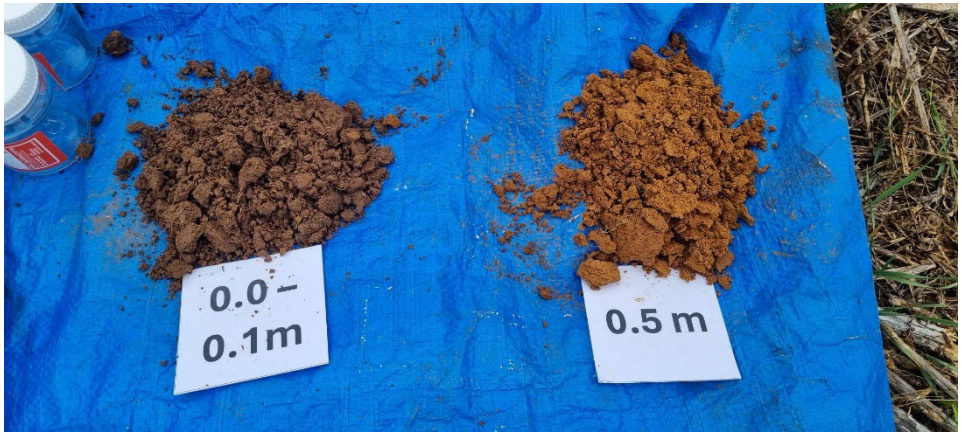


Figure 14-7 TP01 soil samples



Figure 14-8 TP01 post-sampling



Figure 14-9 TP02 soil profile

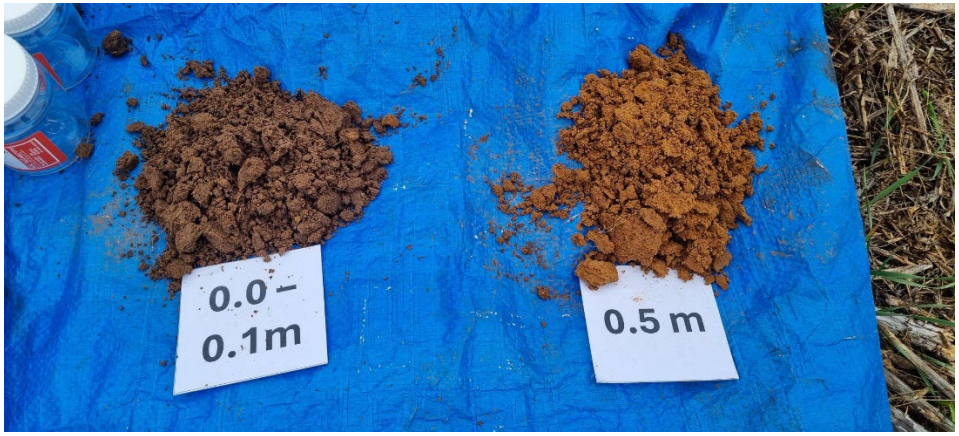


Figure 14-10 TP02 soil samples



Figure 14-11 TP02 post sampling



Figure 14-12 TP03 soil profile

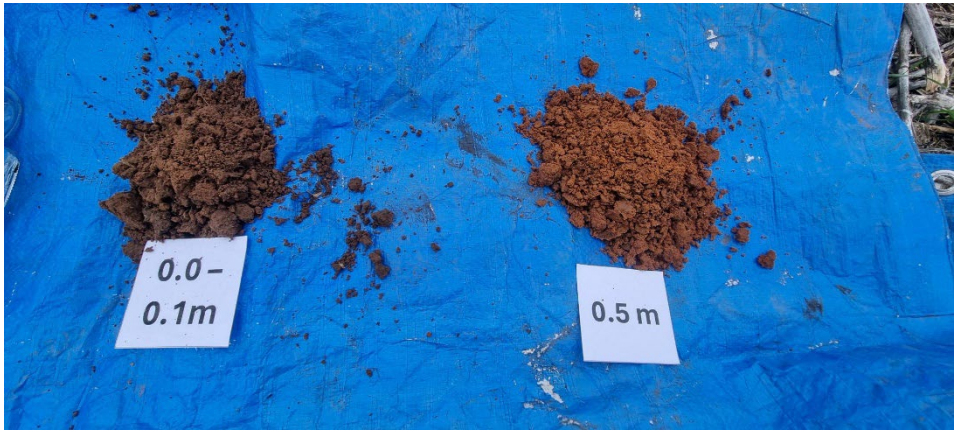


Figure 14-13 TP03 soil samples



Figure 14-14 TP03 post-sampling



Figure 14-15 TP04 soil profile



Figure 14-16 TP04 soil samples



Figure 14-17 TP04 post-sampling

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