

Dinawan Energy Hub

Preliminary Site Investigation

Prepared for Spark Renewables Pty Ltd

August 2025

Dinawan Energy Hub

Preliminary Site Investigation

Spark Renewables Pty Ltd

E220305 RP1

August 2025

Version	Date	Prepared by	Reviewed by	Comments
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11 August 2025

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Executive Summary

ES1 Introduction

EMM Consulting Pty Limited (EMM) was engaged by Spark Renewables Pty Limited (Spark Renewables) to undertake a preliminary site investigation (PSI) to identify potential contamination issues associated with the proposed Dinawan Energy Hub (the project). The project is a combined wind farm, solar farm and battery energy storage system (BESS) with potential capacity of up to 2 gigawatts (GW).

ES2 Objectives

The objectives of this PSI were to:

- identify if previous or current land use activities may require further assessment and/or management for the proposed development of the project
- outline potential sources of contamination and determine contaminants of potential concern (CoPC) within the disturbance footprint
- evaluate the risk that identified potential contamination sources may pose to human health and the environment
- outline options for further investigation, remediation or appropriate management measures (as required).

ES3 Findings

Based on the data from the desktop review and targeted site inspection, the disturbance footprint land use is primarily agricultural grazing land. Potential sources of contamination identified within the disturbance footprint included the following:

- Historic agricultural land use activities, including:
 - potential leaks and spills associated with the use of farm machinery and chemicals
 - fuel and chemical storage
 - septic tank overflow and leakage
 - possible waste disposal areas
 - application of pesticides and/or herbicides
 - possible presence of former sheep dips.
- Two small, mapped areas of 'high potential' acid sulfate soils (ASS) were identified within the western portion of the project area for Dinawan Wind Farm within wetland environments. These areas are outside of the disturbance footprint. Should project-related ground disturbance activities be required within or adjacent to these mapped 'high potential' areas, further investigation and/or management measures would be required.

The conceptual site model (CSM) identified potentially complete contamination source-pathway-receptor (S-P-R) linkages associated with the following activities:

- bulk fuel storage
- chemical storage.

ES4 Recommendations

The following recommendations are made with regards to making the disturbance footprint suitable for construction:

- Prior to construction commencing, targeted soil sampling is recommended in areas where a moderate contamination risk has been identified within the disturbance footprint to quantitatively assess risk and inform appropriate material management/disposal/remediation measures during construction.
- A construction environmental management plan (CEMP), or similar documentation, should be developed and implemented to address the contamination sources identified in the CSM.
- It is possible that potential contamination not identified during this PSI will be encountered during construction. An unexpected finds protocol for managing potential contamination should be prepared by an appropriately qualified contamination consultant and form part of the overall project CEMP.

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Abbreviations

Abbreviation	Term
ACM	asbestos containing material
AOI	area of interest
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999
ASC NEPM 2013	National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended in 2013
ASS	acid sulfate soils
AST	aboveground storage tank
BESS	battery energy storage system
BTEXN	benzene, toluene, ethylbenzene, xylene, naphthalene
CEMP	construction environmental management plan
CICL	Coleambally irrigation co-operative limited
CoPC	contaminants of potential concern
CSM	conceptual site model
DPHI	Department of Planning, Housing and Infrastructure (NSW)
DSI	detailed site investigation
EIS	environmental impact statement
EMM	EMM Consulting Pty Limited
EPA	Environment Protection Authority
GDE	groundwater dependent ecosystems
ha	hectare
IBC	intermediate bulk container
km	kilometre
kV	kilovolt
m	metre
mAHD	metres Australian Height Datum
mbgl	metres below ground level
MW	megawatts
NEPC	National environmental protection council
NOA	naturally occurring asbestos
NSW	New South Wales
OCP	organochlorine pesticides
OPP	organophosphate pesticides

Abbreviation	Term
PAHs	polycyclic aromatic hydrocarbons
PFAS	per- and polyfluoroalkyl substances
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
PSI	preliminary site investigation
SEPP	State Environmental Planning Policy
S-P-R	source-pathway-receptor
SSD	state significant development
TRH	total recoverable hydrocarbons
UXO	unexploded ordinance

1 Introduction

EMM Consulting Pty Limited (EMM) was engaged by Spark Renewables Pty Limited (Spark Renewables) to prepare this preliminary site investigation (PSI) to identify potential contamination issues associated with the proposed Dinawan Energy Hub (the project). The project is a combined wind farm, solar farm and battery energy storage system (BESS) with potential capacity of up to 2 gigawatts (GW). The project is located on the traditional lands of the Wiradjuri people and several smaller nations of the Murrumbidgee plains, approximately halfway between the towns of Coleambally and Jerilderie in NSW.

Two separate, but related, State significant development (SSD) applications for the Dinawan Energy Hub have been submitted to the New South Wales (NSW) Department of Planning, Housing and Infrastructure (DPHI):

- Dinawan Solar Farm (SSD-50725959) – comprising a large-scale solar development up to 800 megawatts (MW), including a BESS
- Dinawan Wind Farm (SSD-50725708) – comprising a large-scale wind development up to 1.2 GW.

As part of their review of the development applications for Dinawan Wind Farm and Dinawan Solar Farm, DPHI requested confirmation that a preliminary investigation for contamination was prepared in accordance with Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021 (the Resilience and Hazards SEPP). This PSI has been prepared in accordance with the requirements of the Resilience and Hazards SEPP and includes consideration of contamination risk for Dinawan Wind Farm and Dinawan Solar Farm.

For the purposes of this PSI, the following terminology is used:

- project area – an area of approximately 39,060 hectares (ha) that encompasses the entire project area for Dinawan Solar Farm and Dinawan Wind Farm
- disturbance footprint – an area of approximately 8,160 ha that encompasses the development footprint for Dinawan Solar Farm and the development corridor and development footprint for Dinawan Wind Farm.

The project area and disturbance footprint are shown on Figure 1.1. The disturbance footprint is the area where the potential for ground disturbance is greatest and is the primary focus of this PSI.

1.1 Objectives

The objectives of this PSI are to:

- identify if previous or current land use activities within the disturbance footprint require further assessment and/or management for the proposed development of the project
- outline potential sources of contamination and evaluate contaminants of potential concern (CoPC) that may be present within the disturbance footprint
- evaluate the risk that identified potential contamination sources may pose to human health and the environment
- outline options for further investigation, remediation or appropriate management measures (as required).

1.2 Scope of work

To achieve the objectives, EMM completed a desktop review of available information and undertook a two-day site inspection to assess current and historical potential contamination sources. The scope of work developed was based on the requirements of the National Environmental Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended in 2013 (ASC NEPM 2013), and with consideration to the Resilience and Hazards SEPP.

1.2.1 Desktop review

The desktop review included:

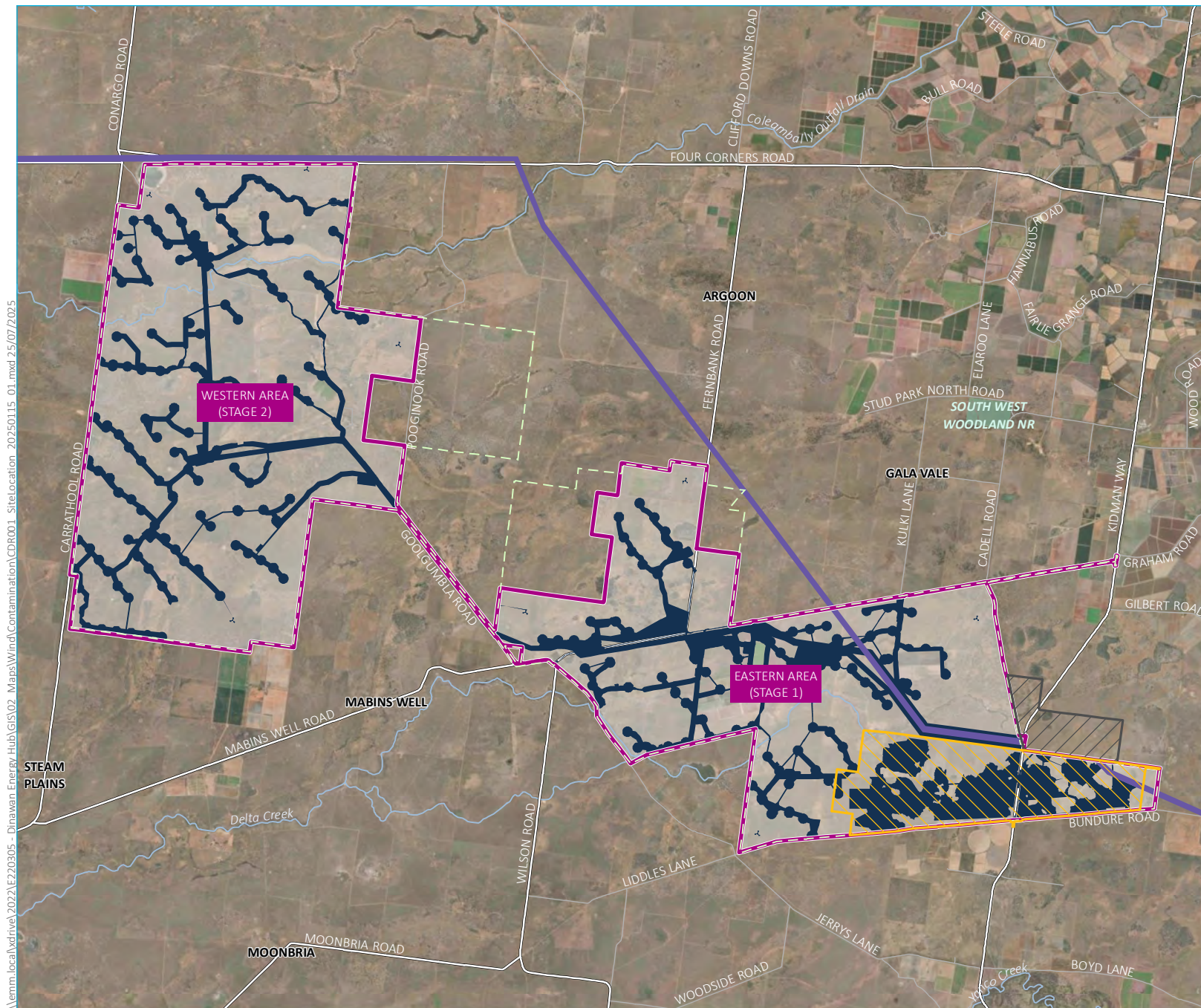
- interpretation of historical aerial imagery, which may indicate past land uses and activities
- review of historical trade directory data and/or records of previous land uses
- search of NSW Environment Protection Authority (EPA) contaminated land databases
- analysis of relevant information from various datasets and searches, including information relating to:
 - site setting
 - hydrogeology and geotechnical information
 - environmental registers, groundwater bores, licences and incidents
 - natural hazards
- based on the review of the above information, identify potential contamination sources and receptors
- development of a preliminary conceptual site model (CSM) including a qualitative contamination risk level assessment. The risk level was considered to evaluate potential contamination liabilities and indicate whether further targeted investigations or detailed site investigation (DSI) would be required.

A list of the information sources and databases considered as part of this review is included in Appendix B.

1.2.2 Site inspection

A targeted inspection of the project area was completed by an EMM Environmental Scientist on 25-26 June 2025. The inspection focused on:

- areas of Interest (AOI) within the disturbance footprint
- relevant information about the project area and surrounds gathered during an interview held with one of the project landowner's who has extensive knowledge of the project area and surrounds.



\\lemm.local\drive\2021\E220305 - Dinawan Energy Hub\GIS\02 Maps\Wind\Contamination\CDR001_Sirelocation_20250115_01.mxd 25/07/2025

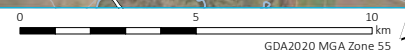
Source: EMM (2025); Spark Renewables (2025); DFSI (2020, 2021); ESRI (2025)



- KEY**
- PSI project area
 - PSI disturbance footprint
 - Dinawan Energy Hub
 - Wind Farm project area
 - Solar Farm project area
 - Project EnergyConnect (Transgrid)
 - Dinawan Substation
 - Transmission line
 - Existing environment
 - Major road
 - Minor road
 - Watercourse (third order and higher)
 - NPWS reserve

Regional setting

Dinawan Energy Hub
Contamination preliminary site investigation
Figure 1.1



2 Background information

Background information for the project area and disturbance footprint is provided in in Table 2.1.

Table 2.1 Overview of project area and disturbance footprint

Item	Details
Address	The project area is predominantly private landholdings between Coleambally and Jerilderie (Figure 1.1). The project area is accessible from: • Dinawan Solar Farm: Kidman Way and Bundure Road, Bundure NSW 2716 • Dinawan Wind Farm: McLennons Bore Road (Jerilderie NSW 2716), Fernbank Road (Argoon NSW 2707) and Goolgumbra Road (Mabins Well NSW 2716).
Project area	The project area is approximately 39,060 ha and encompasses: • Dinawan Solar Farm project area • Dinawan Wind Farm project area.
Disturbance footprint	The disturbance footprint is approximately 8,160 ha and encompasses: • Dinawan Solar Farm development footprint • Dinawan Wind Farm development corridor and development footprint.
Owner	Two private landholders own the majority of land parcels within the project area. Coleambally Irrigation Co-operative Limited (CICL) owns the Coleambally Irrigation Channel which runs through the project area east of Kidman Way. Murrumbidgee Council and Edward River Council own the land within public road reserves. There is also some Crown land within the project area.
Local government area (LGA)	Murrumbidgee and Edward River
Lot numbers	There are 349 individual parcels of land (Lot and deposited plan (DP) numbers) within the project area. Lot and DP details are provided in Appendix A.
Current zoning	Predominantly RU1 – Primary Production (Kidman Way is zoned SP2 – Infrastructure (Classified Road) where it passes through the project area).
Current land use	Agriculture – predominantly sheep and cattle grazing with some cropping
Proposed land use	Solar farm, wind farm and BESS
Elevation	Approximately 110–115 metres Australian Height Datum (mAHD)

3 Regulatory framework

Applicable legislation informing this assessment includes:

- NSW *Contaminated Land Management Act 1997* (CLM Act)
- NSW *Protection of the Environment Operations Act 1997* (POEO Act)
- NSW *Environmental Planning and Assessment Act 1979* (EP&A Act)
- Resilience and Hazards SEPP (formerly SEPP no.55 – Remediation of Land)
- National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended on 16 May 2013 (ASC NEPM 2013)
- NSW EPA 2017, *Guidelines for the NSW Site Auditor Scheme*
- NSW EPA 2020, *Contaminated Land Guidelines: Consultants reporting on contaminated land*.

4 Environmental setting

A review of publicly available data is summarised in Table 4.1 with search results provided in Appendix B, together with accompanying maps. The database search result report provided in Appendix B was prepared using the project area, inclusive of the disturbance footprint.

Table 4.1 Summary of the environmental setting

Aspect	Summary details
Geology and soils	
Geology	The main geology is mapped to comprise of Alluvial floodplain deposits of the Cenozoic to now age with a dominant lithology of silt. To the north of the project area, there is mapped small areas of Aeolian dune deposits of the Quaternary to now age with a dominant lithology of sand and a small area of Claypan and lacustrine deposits with a dominant lithology of clay. In the central of the project area, there is mapped small area of Alluvial floodplain deposits of the Quaternary to now age with a dominant lithology of clastic sediments. To the south of the project area, there is a mapped area of Aeolian sand plain of the Upper Pleistocene to now age with the dominant lithology of sand and an area of Alluvium of the Quaternary to now age with a dominant lithology of clastic sediments.
Soils	The main soil mapped at the project area is Coleambally Variant A in the Aeolian soil group consisting of Rudosols on higher sandy ridges, Kandosols on some less distinct rises, Red Sodosols on levees and minor Brown Vertosols on lower depressions. These soils are generally found on level sandplains prior to stream aeolian infills with slopes <5%, local relief <3 m and elevation of 60–140 m. The second most abundant soil group mapped within the project area is Rudosols of the Siliceous Sands soil group which are usually young soils in the sense that the soil forming factors have had little time to pedologically modify parent rocks or sediments. These are identified predominantly to the north of the project area and one small area in the centre of the project area. Areas of Chromosols of the Red Brown Earth soil group were identified in small areas to the south of the project area and Jerilderie of the Stagnant alluvial soil group were identified along the southern boundary of the project area.
Topography	The project area elevation ranges from approximately 110–115 mAH.
Acid sulfate soils (ASS)	The State and Local Register did not identify any ASS within the project area. The National Acid Sulfate Soil Register identified the majority of the project area as having a low probability of ASS occurrence. The north-western portion of the project area has an extremely low probability of ASS occurrence. Bowna Swamp and a section of Carse Lake, both of which are in the western portion of the project area for Dinawan Wind Farm are mapped as having a high probability of ASS occurrence.
Salinity	There is no hazard or risk of dryland salinity for the project area according to National Assessment database with salinity values less than 1,000 milligrams per litre (mg/L).
Naturally occurring asbestos (NOA)	There is no NOA potential for the project area according to NSW Department of Industry Resources and Energy.
Hydrology and hydrogeology	
Surface water features	The project is within the lower Murrumbidgee River catchment with Yanco Creek to the south, and Cooinbil Creek to the north.
Aquifer	The project area features two aquifer types: porous, extensive aquifers of low to moderate productivity which cover most of the project area and porous, extensive highly productive aquifers. A groundwater assessment conducted by the NSW Office of Water found the salinity value to be <500 mg/L.

Aspect	Summary details																																																																								
Groundwater dependent ecosystems (GDEs)	Most wetland and creek areas within the project area are considered low potential for aquatic GDEs. There is an area associated with Yanco Creek in the far eastern portion of the project area that is considered moderate potential for aquatic GDEs. Small areas within the central portion of the project area and to the north are considered high potential for terrestrial GDEs.																																																																								
Groundwater protection areas	The south-east of the project area is mapped as ‘vulnerable’ on the groundwater vulnerability mapping within the Jerilderie Local Environmental Plan 2012.																																																																								
Groundwater bores	A total of 60 boreholes are located within the project area and are used for observation, monitoring, irrigation, household, water supply for livestock, and unknown uses. Groundwater bore depths range from 21 metres below ground level (mbgl) to 193 mbgl with an approximate average standing water level (SWL) of 24 m.																																																																								
Groundwater restriction use zones	No groundwater restriction use zones were identified within a 2 km radius of the project area.																																																																								
Ecology and natural hazards																																																																									
Sensitive receptors	<table><tr><th>Name</th><th>Type</th><th>Distance (m)</th><th>Direction from project area</th></tr><tr><td>Unnamed watercourse</td><td>Watercourse</td><td>0</td><td>On-site</td></tr><tr><td>Blind Creek</td><td>Watercourse</td><td>0</td><td>On-site</td></tr><tr><td>Bublebundie Creek</td><td>Connector</td><td>0</td><td>On-site</td></tr><tr><td>Bublebundie Creek</td><td>Watercourse</td><td>0</td><td>On-site</td></tr><tr><td>Delta Creek</td><td>Connector</td><td>0</td><td>On-site</td></tr><tr><td>Delta Creek</td><td>Watercourse</td><td>0</td><td>On-site</td></tr><tr><td>Coleambally Creek</td><td>Watercourse area</td><td>0</td><td>On-site</td></tr><tr><td>Bublebundie Creek</td><td>Watercourse area</td><td>0</td><td>On-site</td></tr><tr><td>Gum Lagoon</td><td>Lake</td><td>0</td><td>On-site</td></tr><tr><td>Carse Lake</td><td>Lake</td><td>0</td><td>On-site</td></tr><tr><td>Coleambally Outfall Drain</td><td>Canal line</td><td>0</td><td>On-site</td></tr><tr><td>Bowna Swamp</td><td>Swamp</td><td>0</td><td>On-site</td></tr><tr><td>Unnamed watercourse</td><td>Farm dam area</td><td>0</td><td>On-site</td></tr><tr><td>Blind Creek</td><td>Watercourse area</td><td>0</td><td>On-site</td></tr><tr><td>Mabins Corner Tank</td><td>Reservoir area</td><td>33</td><td>North-east</td></tr><tr><td>Yamma Channel</td><td>Canal line</td><td>90</td><td>North-east</td></tr><tr><td>Four Corners Tank</td><td>Reservoir area</td><td>150</td><td>North</td></tr></table>	Name	Type	Distance (m)	Direction from project area	Unnamed watercourse	Watercourse	0	On-site	Blind Creek	Watercourse	0	On-site	Bublebundie Creek	Connector	0	On-site	Bublebundie Creek	Watercourse	0	On-site	Delta Creek	Connector	0	On-site	Delta Creek	Watercourse	0	On-site	Coleambally Creek	Watercourse area	0	On-site	Bublebundie Creek	Watercourse area	0	On-site	Gum Lagoon	Lake	0	On-site	Carse Lake	Lake	0	On-site	Coleambally Outfall Drain	Canal line	0	On-site	Bowna Swamp	Swamp	0	On-site	Unnamed watercourse	Farm dam area	0	On-site	Blind Creek	Watercourse area	0	On-site	Mabins Corner Tank	Reservoir area	33	North-east	Yamma Channel	Canal line	90	North-east	Four Corners Tank	Reservoir area	150	North
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Wetlands	The project area is largely flat with some minor drainage depressions that temporarily hold water during and following rainfall. Several minor topographic depressions on the floodplain hold water for longer, creating scattered swamp environments within the project area. Parts of the project area are mapped as floodplain or local wetlands. Further information is provided in the <i>Dinawan Wind Farm Biodiversity Development Assessment Report</i> (Biosis 2024).																																																																								

Aspect	Summary details
Flora and fauna	Vegetation within the project area is dominated by native vegetation in varying condition. Native vegetation has historically been impacted by overstorey removal, livestock grazing and cropping, resulting in large tracts of derived native grasslands, areas of natural grasslands, fragmented and regenerating woodlands. Detailed information on the flora and fauna identified within the project area is provided in the <i>Dinawan Wind Farm Amended Biodiversity Development Assessment Report</i> (Biosis 2025).
National parks, nature reserves and state forest areas	The nearest national parks, nature reserves and state forest areas are: • Oolambeyan National Park, approximately 11 km north-west • South-West Woodland Nature Reserves, comprising of: – Edgar and Puckawidgee precincts, approximately 10 km to the south-west – Kulki precinct, approximately 6 km to the north • Murrumbidgee Valley National Park, approximately 30 km to the north-east • Bretts State Forest, approximately 24 km to the north-east.
Bushfire prone areas	A Vegetation Category 3 area was identified to the north and north-west of the project area which is described as a medium bush fire risk. A Vegetation Buffer area was also identified to the north around Coleambally Creek line which is an area of land that can support a bushfire attack.
Bushfire history	One wildfire occurred in 1986–87 in Wanganella which affected a small section on the northern boundary of the project area. A wildfire occurred in 1990–91 in Glencoa to the north of the project area.
Flood hazard	No records of flood planning areas or flood history were identified (Land Insight 2025).
Erosion hazard	Review of the erosion hazard within the project area and surrounding lands (500 m buffer) identified the following erosion risks: • Wind erosion was very high to low risk throughout the project area • Water erosion was moderate to very low • Landslip erosion was very slight to negligible.
Planning and heritage information	
Zoning	The dominant zoning for the project area is RU1: Primary Production. A small area to the east, aligned to the Kidman Way Road reserve, is zoned as SP2: Infrastructure.
Major easements	The project area includes public road reserves and land owned and managed by Coleambally Irrigation Cooperative Limited (including Coleambally Irrigation Channel and Coleambally Outfall Drain).
Heritage	There are no listed State and Local Heritage or Australia Heritage Database Registered items within a 200 m radius of the project area.

5 Potential contamination issues

A review of the Land Insight database search report is summarised in Table 5.1 with search results provided in Appendix B together with accompanying maps.

Table 5.1 Summary of potential contamination issues

Aspect	Summary details
NSW EPA records	The following NSW EPA records/databases were searched for locations within a minimum 500 m radius of the project area: • List of NSW contaminated sites notified to EPA. • Contaminated Land Records of Notice. • Licensed activities under the POEO Act. • Delicensed POEO Act activities still regulated by the EPA. • Former POEO Act licensed activities now revoked or surrendered. • EPA other sites with contamination issues. NSW EPA records identified from these searches are listed below.
Contaminated sites	There are no records identified of contaminated sites within 1 km of the project area.
Clean up, penalty notices and orders	No penalty notices, s.91 and s.92 clean up notices or s.96 prevention notices were identified in the EPA database within 500 m of the project area.
Audits	No records were identified within the project area or surrounding area.
Licensed activities	There are no records of any current licences in place for the project area or surrounding area.
Delicensed activities	No delicensed activities were identified within the project area or surrounding area.
Former licensed activities	There is one record of a licence which is no longer in force. The licence was granted for a logging operation (licence number: 13419). It was held by Forestry Corporation of New South Wales with works being conducted in state forests and other crown-timber lands within south-western NSW. There was no record of a footprint for this activity.
Mines and quarries (current and historical)	No records of current mines or quarries were identified within the project area or surrounding area.
Landfills (current and historical)	No records of landfills were identified within the project area or surrounding area.
National pollutant inventory (NPI)	No records of national pollutant sites were identified within the project area or surrounding area.
Contaminated legacy areas	No records of contaminated legacy areas were identified within the project or surrounding area.
Former gasworks sites	No records of former gasworks were identified in the EPA database on-site or within the surrounding area.
Waste management and liquid fuel facilities	No records of national waste management sites or national liquid fuel facilities were identified on the project area or within the surrounding area.
Per- and polyfluoroalkyl substances (PFAS)	No records of PFAS related areas were identified on the project area or within the surrounding area from the following databases: • EPA PFAS Investigation Program. • Defence PFAS Investigation Program. • Defence PFAS Management Program. • Airservices Australia National PFAS Management Program.

Aspect	Summary details
Defence sites and unexploded ordnance (UXO)	No records of Defence sites or UXO were identified within the project area or surrounding area.
Historical business directories	No business directory records that may indicate the presence of historical contamination were identified within the project area or surrounding areas.

6 Land use history

6.1 Previous investigations

No previous investigations relating to contamination within the project area or disturbance footprint were identified or provided for review at the time of preparing this PSI report.

6.2 Historical aerial imagery

A review of historical aerals for the period 1954-2024 provided insights into the historical and current land uses at the project area as described in Table 6.1. The reviewed historical aerals are provided in Appendix C.

Table 6.1 Review of historical aerial images

Year and image type	Project area	Surrounding area
1954–1958 aerial imagery, black and white	- There is dense tree cover along the riparian zone with blocks of vegetation in the north of the eastern area (Stage 1) and the east of the western area (Stage 2) for Dinawan Wind Farm. - There are two rural properties east of the western area (Stage 2) for Dinawan Wind Farm. It is unclear whether some of the structures are farm sheds or houses. - The development footprint for Dinawan Solar Farm is mostly cleared with <1 km² of forested area in the south-east. Image is low resolution therefore fine detail is hard to detect (such as possible landfill areas within the rural properties).	Heavily vegetated area approximately 500 m east of Pooginook Road.
1962–1968 aerial imagery, black and white	- Generally consistent with the above historical imagery (1954–1958). - Appears to be a new agricultural land use area, possibly for cropping, to the north-east of the western area (Stage 2) for Dinawan Wind Farm. - Appears to be a dwelling present to the north of the eastern area (Stage 1) for Dinawan Wind Farm Image is low resolution therefore fine detail is hard to detect.	Landscape reflects similar characteristics to those identified within the project area. Minimal patches of dense vegetation occurring near riparian zones.
1970–1979 aerial imagery, black and white	- Vegetation surrounding riparian zone consistent with previous imagery. - Agricultural practice becoming more apparent within the project area in the western area (Stage 2) for Dinawan Wind Farm with new buildings being developed within the possible cropping area seen in 1962–1968 and new fields developed around all properties. - A new building is present directly north of Coleambally Creek. Eastern area (Stage 1) for Dinawan Wind Farm mapping unclear and information is not present in database.	Intensive agricultural development occurs to the east of the project area with clearly defined cropping occurring within approximately 500 m of the project area.
1980–1986 aerial imagery, colour	- Clearing in centre of eastern area (Stage 1) for Dinawan Wind Farm with riparian vegetation remaining consistent with previous observations. - Cropping still utilised within the project area with paddocks established near residence. - A cleared area appears where two new residences are present within the eastern area (Stage 1) for Dinawan Wind Farm. It is unclear if a residence exists during the time of this imagery.	External agricultural practices encroach past 500 m buffer on the eastern side of the project area.
1996–1997 aerial imagery, colour	- Two new rural properties with associated agricultural land are present and appear within the eastern area (Stage 1) for Dinawan Wind Farm. - The potential property mentioned in the 1962–1968 image appears to only be two dams.	Agricultural land is being developed in between the eastern and western areas of the project area.

Year and image type	Project area	Surrounding area
2003 aerial imagery, colour	• Generally consistent with the previous imagery. • Six dwellings observed within project area (two within the eastern area (Stage 1) and four within the western area (Stage 2) for Dinawan Wind Farm.	Observations similar to previously identified features.
2019 Google Earth Pro, colour	• Generally consistent with the previous imagery. • A material disposal site (confirmed by landowner) appears visible within the western area (Stage 2) for Dinawan Wind Farm and east of main dwelling on property. Various unidentified materials are visible, however specific details cannot be discerned due to the poor resolution.	Observations similar to previously identified features.
2024 aerial imagery, colour	• Developed agricultural land appears in the north of the western area (Stage 2) for Dinawan Wind Farm, within proximity to a dam in the north-west corner of the project area. • Potential for structures to be present around a dam in the south-east corner of the western area (Stage 2) for Dinawan Wind Farm. • Two new agricultural areas present to the north of the eastern area (Stage 1) for Dinawan Wind Farm. The south of the project area is extensively disturbed with cleared fields and possible cropping locations. It is unclear if buildings associated with agricultural land are present. • Material disposal site as mentioned in 2019 google earth imagery, cannot be identified due to low resolution of image.	Observations similar to previously identified features.
2025 Google Earth Pro, colour	• Generally consistent with the previous imagery. • The amount of waste appears to have increased at the material disposal site, within the western area (Stage 2) for Dinawan Wind Farm, east of the main dwelling on the property. The material appears to comprise multiple abandoned vehicles, building materials, large irrigation pipelines, and stockpiled waste.	Observations similar to previously identified features.

7 Site inspection

A targeted inspection was undertaken by an EMM Environmental Scientist on 25 and 26 June 2025. The project area was generally observed to be used for sheep grazing and cropping for agricultural purposes. The potential contamination sources identified during the site inspection were considered typical of the project area setting and land use.

On 26 June 2025, an interview was held with one of the project landholder's who has extensive knowledge of the project area. The interview focused on current and historical land uses and potential contamination sources within the project area.

Areas of interest (AOI) identified during the inspection and interview are provided in Table 7.1 and shown on Figure 7.1. A photographic record is provided in Appendix D.

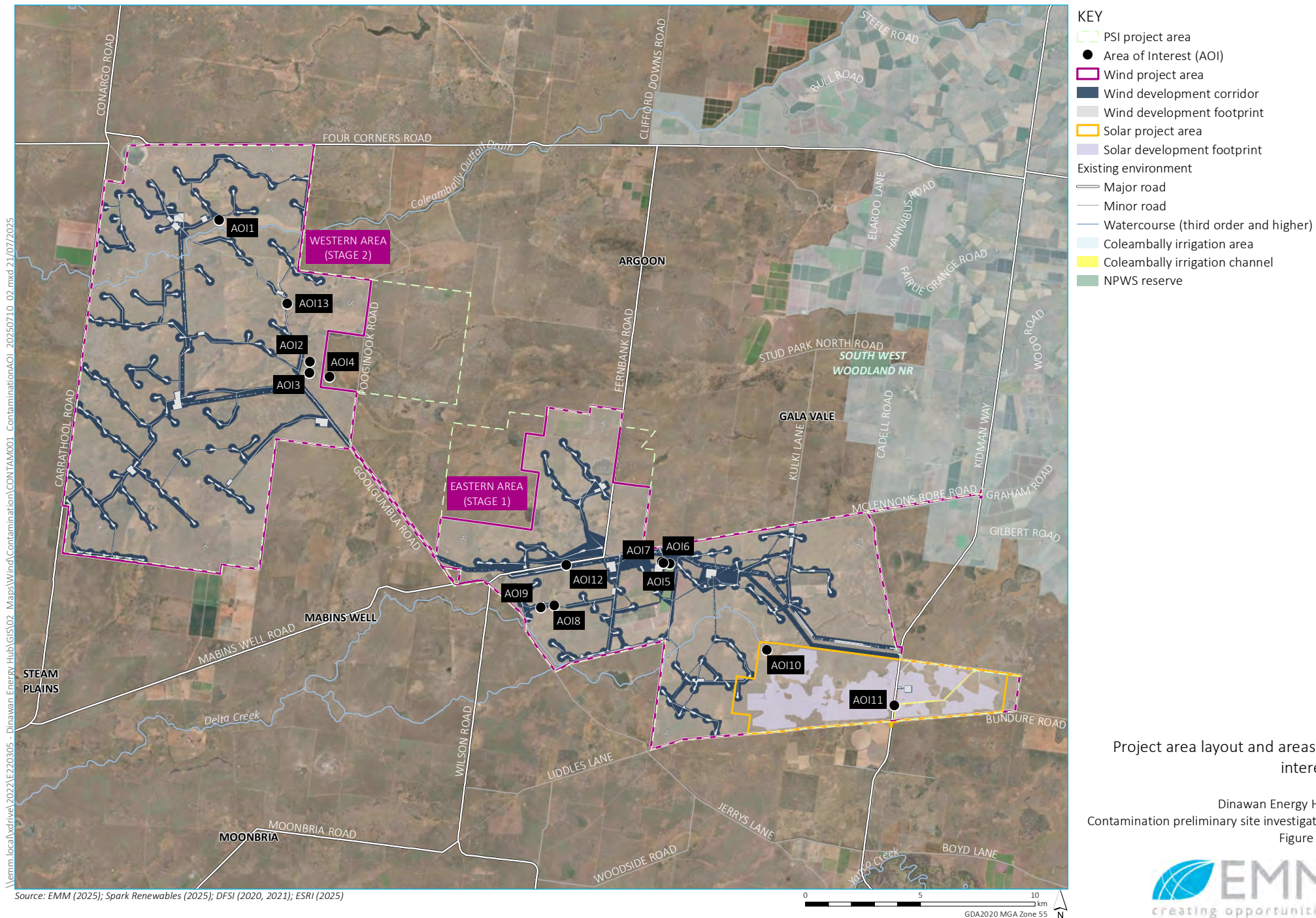
Table 7.1 **Details of areas of interest**

ID	Location description	Within disturbance footprint	Approximate area (m²)	Co-ordinates (latitude, longitude)	Title	Description	Appendix D reference
1	Approximately 150 m outside of disturbance footprint Western area (Stage 2) of Dinawan Wind Farm, northern portion	No	250	34°53'6.10"S, 145°28'7.72"E	Dinawan Wind Farm: Active and abandoned diesel aboveground storage tank (AST), irrigation bore and pumping station	- Active irrigation bore with diesel powered pumping station. - Active unbunded diesel AST of approximately 6,000 litres (L), refuelled via diesel truck, no observed evidence of leaks or spills. - Minor hydrocarbon staining coming from pump engine, onto unbunded concrete slab, no odour or sheen observed. - Abandoned unbunded diesel AST of approximately 5,000 L, no observed evidence of leaks or spills. - Discarded lead acid batteries present on unbunded concrete slab. - Building material waste piles.	Photos 6-9
2	Approximately 300 m outside of disturbance footprint Western area (Stage 2) of Dinawan Wind Farm, eastern portion	No	164	34°56'28.24"S, 145°30'39.61"E	Dinawan Wind Farm: Abandoned irrigation bore and infrastructure	- Abandoned irrigation bore and pumping station infrastructure. - Three unbunded concrete slabs.	Photos 23-24
3	Approximately 300 m outside of disturbance footprint Western area (Stage 2) of Dinawan Wind Farm, eastern portion	No	200	34°56'44.10"S, 145°30'38.93"E	Dinawan Wind Farm: Active diesel AST, irrigation bore and pumping station	- The interview identified the presence of an active irrigation bore with diesel powered pumping station. - Active unbunded diesel AST of unknown capacity, refuelled via diesel truck, no observed evidence of leaks or spills.	Area identified from landowner interview but not inspected.

ID	Location description	Within disturbance footprint	Approximate area (m²)	Co-ordinates (latitude, longitude)	Title	Description	Appendix D reference
4	Approximately 1.2 km from disturbance footprint Western area (Stage 2) of Dinawan Wind Farm, eastern portion	No	27,800	34°56'50.93"S, 145°31'13.28"E	Waste piles.	- The interview identified the presence of multiple piles containing various types of waste. - Quantity and contents unknown.	Area identified from landowner interview but not inspected.
5	Within disturbance footprint Eastern area (Stage 1) of Dinawan Wind Farm, central portion	Yes	275	35° 1'21.70"S, 145°40'53.08"E	Dinawan Wind Farm: Active irrigation bore, pumping station, chemical storage and diesel AST	- Active irrigation bore with fuel powered pumping station. - Active unbunded diesel AST of approximately 10,000 L, refuelled via diesel truck, no observed evidence of leaks or spills. - Discarded lead acid batteries. - Two intermediate bulk containers (IBCs). - Coolant plastic containers. 200 L drum of engine oil. 110 L drum of herbicide with open lid. - Minor hydrocarbon leak coming from pump engine, onto unbunded concrete slab causing some surface staining, no odour or sheen observed. - Multiple unbunded concrete slabs. - Wooden pallettes. - Building material waste piles.	Photos 10-15
6	Within disturbance footprint Eastern area (Stage 1) of Dinawan Wind Farm, central portion	Yes	2,500	35° 1'18.61"S, 145°40'40.08"E	Dinawan Wind Farm: Storage shed containing agricultural equipment, containers and IBCs	- Agricultural vehicles and equipment, such as combine harvesters and tractors. - Large vehicle and equipment storage shed. - Multiple empty IBCs and chemical containers.	Photo 16

ID	Location description	Within disturbance footprint	Approximate area (m²)	Co-ordinates (latitude, longitude)	Title	Description	Appendix D reference
7	Within disturbance footprint Eastern area (Stage 1) of Dinawan Wind Farm, central portion	Yes	20	35° 1'20.91"S, 145°40'42.45"E	Dinawan Wind Farm: Abandoned irrigation bore, pump station and diesel AST	- Abandoned irrigation bore. - One unbunded concrete slab. - Pumping station infrastructure - Abandoned, unbunded and tipped over diesel AST of approximately 1,000 L capacity, no observed evidence of leaks or spills.	Photos 17-18
8	Within disturbance footprint Eastern area (Stage 1) of Dinawan Wind Farm, western portion	Yes	160	35° 2'18.32"S, 145°37'33.79"E	Dinawan Wind Farm: Active irrigation bore, pumping station and AST	- Active irrigation bore with fuel powered pumping station. - Active unbunded assumed diesel AST of approximately 6,000 L, refuelled via diesel truck, no observed evidence of leaks or spills. - One concrete slab underneath the diesel AST. - Minor hydrocarbon leak coming from pump engine, onto unbunded concrete slab causing some surface staining, no odour or sheen observed.	Photos 19-20
9	Within disturbance footprint Eastern area (Stage 1) of Dinawan Wind Farm, western portion	Yes	900	35° 2'21.32"S, 145°37'10.76"E	Dinawan Wind Farm: Large waste area – abandoned vehicles, scrap metals, plastic containers	- Depression in ground, surrounded by established trees. - Waste stockpile within depression. - Waste includes scrap metal, old vehicles, chemical containers, bricks, concrete pieces. - Evidence of previously burned material and tree logs. - No evidence of asbestos containing material (ACM).	Photos 21-22
10	Approximately 900 m outside of disturbance footprint Dinawan Solar Farm, north-western corner	No	2,100	35° 3'25.48"S, 145°43'38.53"E	Dinawan Solar Farm: Waste pile	The interview identified the presence of an unknown type and quantity of stockpiled domestic waste and chemical drums.	Area identified from landowner interview but not inspected.

ID	Location description	Within disturbance footprint	Approximate area (m²)	Co-ordinates (latitude, longitude)	Title	Description	Appendix D reference
11	Within disturbance footprint Dinawan Solar Farm	Yes	250	35° 4'45.96"S, 145°47'17.12"E	Dinawan Solar Farm: Irrigation bore and pumping station	• Active irrigation bore and electric pumping station. • Concrete pad. • Abandoned concrete building material.	Photos 1-4
12	Within disturbance footprint Eastern area (Stage 1) of Dinawan Wind Farm, western portion	Yes	70	35° 1'21.26"S, 145°37'55.63"E	Dinawan Wind Farm: Fencing material stockpile	• Metal and wood were visible.	Photo 5
13	Approximately 40 m outside of disturbance footprint Western area (Stage 2) of Dinawan Wind Farm, eastern portion	No	8,200	34°55'5.74"S, 145°30'2.59"E	Dinawan Wind Farm: Woolshed – sheep dip and chemical storage	• The interview identified the presence of sheep dips and chemical storage at woolshed. The type and quantity of chemicals are unknown.	Area identified from landowner interview but not inspected.



8 Assessment of sources, pathways and receptors

8.1 Sources and contaminants of potential concern

8.1.1 Sources and contaminants

A summary of the potential sources of contamination and associated contaminants of potential concern (CoPC) identified through the desktop review and site inspection is provided in Table 8.1.

Table 8.1 Summary of potential sources of historical contamination and CoPC

Source and CoPC	Evaluation
Historic agricultural land use OCPs/OPPs ¹ , arsenic, herbicides, ammonia, nitrite, nitrate, phosphorus, phenols, PAHs ²	The historical and current use of the project area has involved the application of herbicides, pesticides and/or insecticides. These could have potentially accumulated in soils where cropping has occurred. There is land used for cropping in the centre of the eastern area (Stage 1) and the northern and central parts of the western area (Stage 2) of Dinawan Wind Farm. Historical treatment of farming fences, power poles and shed foundation timber with creosote may be present within the disturbance footprint. No creosote treatment was identified during the site inspection; however, given the size of the project area and the extensive amount of fencing present, there is potential for treated timber to be present.
Use of farm machinery, equipment and farm shed chemical storage TRH ⁴ , BTEXN ⁵ , PAHs, metals, OCPs/OPPs	Spills and leaks associated with machinery laydown areas, refuelling activities, irrigation pump stations and chemical storage areas have the potential to result in localised soil contamination. Depending on the nature of chemicals historically stored and used within the sheds in the disturbance footprint, hydrocarbons, heavy metals and herbicides/pesticides may be present. Three irrigation pump station engines were observed to have a hydrocarbon leak or surface staining, located at AOI 1, AOI 5 and AOI 8. Empty chemical containers were observed at multiple AOIs, none within bunded areas. No odour or staining associated with chemical storage was observed during the site inspection.
Bulk fuel storage Heavy metals, OCPs/OPPs, TRH, BTEXN	Spills and leaks related to fuel storage may have occurred within project area. Visual evidence of minor contamination staining/leaks were observed during the inspection at AOI 1, AOI 5 and AOI 8. Three active and two abandoned assumed diesel ASTs ranging from 1,000 to 10,000 L capacity were identified at AOI 1, AOI 3, AOI 5 and AOI 8. All ASTs were not bunded.
Waste burials and tips TRH, BTEXN, PAHs, metals, ACM ³	Historically, burials have been used for the disposal of household and farm wastes. Seven stockpiles or waste areas were identified during the inspection at AOI 1, AOI 4, AOI 5, AOI 9, AOI 10, AOI 11 and AOI 12. Due to the size of the project area and disturbance footprint, more may be present.
Sheep dips OCP/OPP, arsenic	The interview with one of the project landowners identified the presence of a sheep dip at AOI 13. Considering the historical and current agricultural land use, there is the potential for more sheep dips to be within the project area and disturbance footprint. If sheep dips are present, the status of the dips and surrounding environment is unknown.

Notes:

1. OCPs/OPPs – organochlorine pesticides/organophosphate pesticides
2. PAHs – polycyclic aromatic hydrocarbons
3. ACM – asbestos containing material
4. TRH – total recoverable hydrocarbons
5. BTEXN – benzene, toluene, ethylbenzene, xylene and naphthalene

8.1.2 Pathways

The following transport mechanisms may apply within the disturbance footprint:

- excavation, disturbance and relocation of soil during construction activities
- surface run-off of CoPC (water and sediments)
- vertical seepage of CoPC into the underlying soils and into the local groundwater system
- migration of CoPC via groundwater transport
- mobilisation of CoPC in surface water channels and dams
- atmospheric dispersion of dust, derived from contaminated soil.

Identified potential exposure pathways for the nominated CoPC include:

- i) direct contact and incidental ingestion with impacted surface water and sediment
- ii) dermal contact and incidental ingestion of impacted soil
- iii) dermal contact and incidental ingestion of impacted groundwater
- iv) inhalation of dust (including soil derived) or fibres
- v) plant uptake and/or ingestion by animals
- vi) inhalation of dust and/or vapour in outdoor air.

Based on the physical and chemical features of the CoPC identified, the exposure pathways that may be applicable to each CoPC within the disturbance footprint are presented in Table 8.2.

Table 8.2 CoPC and applicable exposure pathways

CoPC	Applicable pathways
TRH/BTEXN	i, ii, iii, iv, v, vi
PAHs	i, ii, iii, iv, v, vi
OCPs/OPPs	i, ii, iii, iv, v, vi
Asbestos	iv
Heavy metals (arsenic, cadmium, chromium, mercury, lead, nickel and zinc)	i, ii, iii, iv, v, vi

8.1.3 Potential receptors

A preliminary conceptual site model (CSM) has been developed to identify existing known sources and areas of contamination, associated potential impacts to human health and ecological receptors and to identify exposure source-pathway-receptor (S-P-R) linkages.

Potential human receptors have been identified to be:

- current and future land users of the disturbance footprint
- residents within project area
- adjoining land users/occupants
- future construction, intrusive maintenance workers and operators.

The ecological receptors are:

- surface water bodies receiving runoff from the disturbance footprint and project area
- regional groundwater systems including GDEs
- current and future livestock, crops and native flora/fauna.

8.2 Conceptual site model

The contamination risk level is informed by the matrix outlined in Table 8.3.

Table 8.3 Preliminary qualitative risk assessment matrix

Consequence	Likelihood of soil or groundwater contamination to be present				
	Rare (1) – Very unlikely at concentrations above the relevant assessment criteria and limited in extent.	Unlikely (2) – Potentially present at concentrations above the relevant assessment criteria and limited in extent.	Possible (3) – Potentially present at concentrations above the relevant assessment criteria and widespread.	Likely (4) – Most likely present at concentrations above the relevant assessment criteria and widespread.	Almost certain (5) – Known to be present at concentrations above the relevant assessment criteria and widespread.
Insignificant (1) – No or highly unlikely exposure pathway for human or ecological receptors [^] .	Low 1	Low 2	Low 3	Low 4	Moderate 5
Minor (2) – Unlikely exposure pathway for human or ecological receptors [^] .	Low 2	Low 4	Low 6	Moderate 8	Moderate 10
Moderate (3) – Exposure pathway for human or ecological receptors may be present and complete [^] .	Low 3	Low 6	Moderate 9	Moderate 12	High 15
High (4) – Exposure pathway for human or ecological receptors likely to be present and complete [^] .	Low 4	Moderate 8	Moderate 12	High 16	High 20
Significant (5) – Exposure pathway for human or ecological receptors present and are considered complete [^] .	Moderate 5	Moderate 10	High 15	High 20	High 25

Note: [^]Without further investigation or implementation of appropriate management controls.

The CSM is provided in Table 8.4.

Table 8.4 Conceptual site model

Source	COPC	Relevant AOIs (refer Figure 7.1)	Mechanism	Pathway	Receptor	S-P-R linkage	Contamination risk	
Historic agricultural land use Application of pesticides/herbicides and fertilisers to crops Historical timber post treatment	OCPs/OPPs ¹ , arsenic, herbicides, ammonia, nitrite, nitrate, phosphorus, phenols, PAHs ²	Throughout project area	Surface run-off of CoPC (water and sediment)	Plant uptake and/or ingestion by animals	Ecological: - surface water bodies receiving runoff from the disturbance footprint (e.g. Bublebundie Creek, Blind Creek, Delta Creek, Coleambally Outfall Drain and unnamed watercourses) - regional groundwater systems including GDEs - current and future livestock, crops and native flora/fauna.	Potentially complete	Low 4	
			Vertical seepage of CoPC into the underlying soils and into the local groundwater system				Low 2	
			Migration of CoPC via groundwater transport				Low 2	
			Excavation and re-location of soil during future activities	Dermal contact and incidental ingestion of soil	Human health: - current agricultural users of the disturbance footprint - residents within project area - adjoining land users/occupants - future construction and operations workers.		Low 4	
			Migration and infiltration of vapours from contaminants in soil, groundwater and/or surface water				Inhalation of soil, groundwater and/or surface water vapours	Low 2
			Atmospheric dispersion (aeolian transport) of dust, derived from contaminated soil				Inhalation of dust or fibres	Low 2
			Mobilisation of CoPC in surface water channels, irrigation lines and/or dams	Dermal contact and incidental ingestion of surface water	Ecological: - current and future livestock and crops. Human health: - future construction and operations workers.		Low 4	
Storage of farm machinery, pump equipment and chemical storage	TRH ⁴ , BTEXN ⁵ , PAHs ² , metals, OCPs/OPPs ¹	AOI 5 AOI 6 AOI 10 AOI 13	Surface run-off of CoPC (water and sediment)	Plant uptake and/or ingestion by animals	Ecological: - surface water bodies receiving runoff from the disturbance footprint (e.g. Bublebundie Creek, Blind Creek, Delta Creek, Coleambally Outfall Drain and unnamed watercourses) - regional groundwater systems including GDEs - current and future livestock, crops and native flora/fauna.	Potentially complete	Moderate 12	
			Vertical seepage of CoPC into the underlying soils and into the local groundwater system				Moderate 9	
			Migration of CoPC via groundwater transport				Low 4	
			Excavation and re-location of soil during future activities	Dermal contact and incidental ingestion of soil	Human health: - current agricultural users of the disturbance footprint - adjoining land users/occupants - future construction and operations workers.		Low 6	
			Migration and infiltration of vapours from contaminants in soil, groundwater and/or surface water				Inhalation of soil, groundwater and/or surface water	Low 2
			Atmospheric dispersion (aeolian transport) of dust, derived from contaminated soil				Inhalation of dust or fibres	Low 2
			Mobilisation of CoPC in surface water channels, irrigation lines and/or dams	Dermal contact and incidental ingestion of surface water	Ecological: - current and future livestock and crops. Human health: - future construction and operations workers.		Low 2	
Bulk fuel storage	Heavy metals, OCPs/OPPs ¹ , TRH ⁴ , BTEXN ⁵	AOI 1 AOI 3 AOI 5 AOI 7 AOI 8	Surface run-off of CoPC (water and sediment)	Plant uptake and/or ingestion by animals	Ecological: - surface water bodies receiving runoff from the disturbance footprint (e.g. Bublebundie Creek, Blind Creek, Delta Creek, Coleambally Outfall Drain and unnamed watercourses) - regional groundwater systems including GDEs - current and future livestock, crops and native flora/fauna.	Potentially complete	Moderate 9	
			Vertical seepage of CoPC into the underlying soils and into the local groundwater system				Low 6	
			Migration of CoPC via groundwater transport				Low 4	
			Excavation and re-location of soil during future activities	Dermal contact and incidental ingestion of soil	Human health: - current agricultural users of the disturbance footprint - adjoining land users/occupants - future construction and operations workers.		Moderate 8	
			Migration and infiltration of vapours from contaminants in soil, groundwater and/or surface water				Inhalation of soil, groundwater and/or surface water vapours	Low 2
			Atmospheric dispersion (aeolian transport) of dust, derived from contaminated soil				Inhalation of dust or fibres	Low 2

Source	COPC	Relevant AOIs (refer Figure 7.1)	Mechanism	Pathway	Receptor	S-P-R linkage	Contamination risk
			Mobilisation of CoPC in surface water channels, irrigation lines and/or dams	Dermal contact and incidental ingestion of surface water	Ecological: - current and future livestock and crops. Human health: - future construction and operations workers.		Low 4
Waste burials and tips	ACM ³ , heavy metals, OCPs/OPPs ¹ , TRH ⁴ , BTEXN ⁵	AOI 1 AOI 4 AOI 5 AOI 9 AOI 10 AOI 12	Surface run-off of CoPC (water and sediment)	Plant uptake and/or ingestion by animals	Ecological: - surface water bodies receiving runoff from the disturbance footprint (e.g. Bublebundie Creek, Blind Creek, Delta Creek, Coleambally Outfall Drain and unnamed watercourses) - regional groundwater systems including GDEs - current and future livestock, crops and native flora/fauna.	Potentially complete	Low 6
			Vertical seepage of CoPC into the underlying soils and into the local groundwater system				Low 4
			Migration of CoPC via groundwater transport				Low 2
			Excavation and re-location of soil during future activities	Dermal contact and incidental ingestion of soil			Low 6
			Migration and infiltration of vapours from contaminants in soil, groundwater and/or surface water	Inhalation of soil, groundwater and/or surface water vapours	Human health: - current agricultural users of the disturbance footprint - adjoining land users/occupants - future construction and operations workers.		Low 2
			Atmospheric dispersion (aeolian transport) of dust, derived from contaminated soil	Inhalation of dust or fibres			Low 2
			Mobilisation of CoPC in surface water channels, irrigation lines and/or dams	Dermal contact and incidental ingestion of surface water	Ecological: - current and future livestock and crops. Human health: - future construction and operations workers.		Low 4
			Sheep dips	OCPs/OPPs ¹ , arsenic	AOI 13		Surface run-off of CoPC (water and sediment)
Vertical seepage of CoPC into the underlying soils and into the local groundwater system	Low 4						
Migration of CoPC via groundwater transport	Low 4						
Excavation and re-location of soil during future activities	Dermal contact and incidental ingestion of soil	Low 6					
Migration and infiltration of vapours from contaminants in soil, groundwater and/or surface water	Inhalation of soil, groundwater and/or surface water vapours	Human health: - current agricultural users of the disturbance footprint - adjoining land users/occupants - future construction and operations workers.				Low 4	
Atmospheric dispersion (aeolian transport) of dust, derived from contaminated soil	Inhalation of dust or fibres					Low 2	
Mobilisation of CoPC in surface water channels, irrigation lines and/or dams	Dermal contact and incidental ingestion of surface water	Ecological: - current and future livestock and crops. Human health: - future construction and operations workers.				Low 4	

Notes:

- 1. OCPs/OPPs – organochlorine pesticides/organophosphate pesticides
- 2. PAHs – polycyclic aromatic hydrocarbons
- 3. ACM – asbestos containing material
- 4. TRH – total recoverable hydrocarbons
- 5. BTEXN – benzene, toluene, ethylbenzene, xylene and naphthalene

Following assessment of the source-pathway-receptor (S-P-R) linkages via the CSM, the contamination risk is considered low with the exception of the following moderate risk contamination sources:

- Three active and two abandoned assumed diesel ASTs ranging in size from 1,000 L to 10,000 L were observed at AOI 1, AOI 5, AOI 7 and AOI 8. Surface run-off of CoPCs into local soils, various irrigation lines, Coleambally Outfall Drain and/or Delta Creek could impact ecological receptors within the area. Soil disturbance as part of construction and/or intrusive maintenance work during operations could lead to dermal contact and incidental ingestion.
- Three irrigation pump station engines were observed to have a hydrocarbon leak or surface staining, located at AOI 1, AOI 5 and AOI 8, all of which were not isolated within a bund. Surface run-off and potential vertical seepage of CoPCs into local soils, various irrigation lines, Coleambally Outfall Drain and/or Delta Creek could impact ecological receptors within the area. Soil disturbance as part of construction and/or intrusive maintenance work during operations could lead to dermal contact and incidental ingestion.

More detail on these areas of interest is provided in Table 7.1. Of note, AOI 1 is within the project area, but outside of the disturbance footprint, whilst AOI 5, AOI 7 and AOI 8 are within the project area and disturbance footprint. The moderate risk contamination sources are at areas of interest associated with Dinawan Wind Farm.

9 Conclusions and recommendations

The objectives of this PSI were to identify potential sources of contamination and evaluate the presence of CoPC within the disturbance footprint, evaluate the risk that identified contamination may pose to human health and the environment and outline options for further investigation, as well as appropriate measures for management or remediation (as required).

Based on the data from the desktop review and site inspection, the following conclusions are made:

- No specific records of known contaminated sites were identified within the project area or disturbance footprint.
- The historic and current land use within the disturbance footprint is primarily agricultural grazing land with some cropping. Potential contaminating activities identified within the disturbance footprint include:
 - historic agricultural land use
 - use of farm machinery, irrigation equipment and farm shed chemical storage
 - bulk fuel storage
 - septic tanks
 - waste disposal areas (i.e. burials and tips)
 - the application of pesticides and/or herbicides and presence of former sheep dips.
- Two small, mapped areas of 'high potential' acid sulfate soils (ASS) were identified within the western part of the project area (Stage 2 of Dinawan Wind Farm) within wetland environments. Although ASS is naturally occurring, when they are exposed (e.g. due to excavation associated with project-related construction), ASS can oxidise, releasing sulfuric acid and leaching heavy metals into the surrounding environment. These areas are outside of the disturbance footprint. Should project-related ground disturbance activities be required within or adjacent to these mapped 'high potential' areas, further investigation and/or management measures would be required.

The CSM identified potentially complete contamination S-P-R linkages at the following moderate risk rated AOIs:

- bulk fuel storage observed at AOI 1, AOI 5, AOI 7 and AOI 8
- pump engine hydrocarbon leaks or surface staining observed at AOI 1, AOI 5 and AOI 8.

The following recommendations are made with regards to making the disturbance footprint suitable for construction:

- Prior to construction commencing, targeted soil sampling is recommended in areas where a moderate contamination risk has been identified within the disturbance footprint to quantitatively assess risk and inform appropriate material management/disposal/remediation measures during construction.
- A construction environmental management plan (CEMP), or similar documentation, should be developed and implemented to address the contamination sources identified in the CSM.
- It is possible that potential contamination not identified during this PSI will be encountered during construction. An unexpected finds protocol for managing potential contamination should be prepared by an appropriately qualified contamination consultant and form part of the overall CEMP.

References

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NEPC 1999, *National Environment Protection (Assessment of Site Contamination) Measure*. National Environmental Protection Council.

Appendix A

Lots within the project area

Cadastral lots within project area

Table A.1 Cadastral lots within project area

Lot	DP	Lot	DP	Lot	DP	Lot	DP	Lot	DP
A	DP100260	24	DP756265	46	DP756291	39	DP756396	8	DP756418
B	DP100260	25	DP756265	47	DP756291	40	DP756396	9	DP756418
1	DP113903	26	DP756265	48	DP756291	41	DP756396	100	DP756444
10	DP113903	27	DP756265	49	DP756291	42	DP756396	101	DP756444
6	DP113903	28	DP756265	5	DP756291	43	DP756396	102	DP756444
8	DP113903	29	DP756265	50	DP756291	44	DP756396	103	DP756444
9	DP113903	3	DP756265	51	DP756291	45	DP756396	104	DP756444
1	DP1244278	30	DP756265	52	DP756291	46	DP756396	105	DP756444
2	DP1244278	31	DP756265	53	DP756291	47	DP756396	106	DP756444
3	DP1244278	32	DP756265	54	DP756291	48	DP756396	107	DP756444
1	DP1245394	33	DP756265	55	DP756291	1	DP756418	108	DP756444
2	DP1245394	34	DP756265	56	DP756291	10	DP756418	109	DP756444
3	DP1245394	35	DP756265	57	DP756291	11	DP756418	11	DP756444
4	DP1245394	36	DP756265	58	DP756291	12	DP756418	110	DP756444
1	DP1252143	37	DP756265	59	DP756291	123	DP756418	111	DP756444
2	DP1252143	38	DP756265	6	DP756291	124	DP756418	112	DP756444
5	DP1282091	39	DP756265	60	DP756291	125	DP756418	113	DP756444
6	DP1282091	40	DP756265	61	DP756291	126	DP756418	114	DP756444
1	DP532988	41	DP756265	62	DP756291	127	DP756418	12	DP756444
2	DP532988	42	DP756265	63	DP756291	128	DP756418	125	DP756444
3	DP532988	43	DP756265	64	DP756291	129	DP756418	13	DP756444
4	DP532988	44	DP756265	65	DP756291	13	DP756418	14	DP756444
5	DP532988	45	DP756265	66	DP756291	130	DP756418	15	DP756444
6	DP532988	46	DP756265	67	DP756291	131	DP756418	16	DP756444
7	DP532988	47	DP756265	68	DP756291	132	DP756418	17	DP756444
8	DP532988	48	DP756265	69	DP756291	133	DP756418	18	DP756444
107	DP568083	49	DP756265	7	DP756291	134	DP756418	19	DP756444
3	DP593483	50	DP756265	70	DP756291	135	DP756418	20A	DP756444
1	DP593484	51	DP756265	71	DP756291	136	DP756418	21A	DP756444
5	DP594041	52	DP756265	8	DP756291	137	DP756418	22A	DP756444
6	DP594041	53	DP756265	9	DP756291	139	DP756418	23	DP756444

Lot	DP	Lot	DP	Lot	DP	Lot	DP	Lot	DP
7	DP594041	54	DP756265	11	DP756299	14	DP756418	24	DP756444
111	DP739677	55	DP756265	12	DP756299	140	DP756418	26	DP756444
112	DP739677	56	DP756265	13	DP756299	141	DP756418	27	DP756444
113	DP739677	57	DP756265	14	DP756299	142	DP756418	28	DP756444
1	DP756257	58	DP756265	19	DP756299	143	DP756418	29	DP756444
10	DP756257	59	DP756265	20	DP756299	144	DP756418	30	DP756444
11	DP756257	60	DP756265	21	DP756299	146	DP756418	31	DP756444
12	DP756257	61	DP756265	22	DP756299	147	DP756418	32	DP756444
13	DP756257	62	DP756265	23	DP756299	148	DP756418	33	DP756444
14	DP756257	77	DP756265	24	DP756299	15	DP756418	34	DP756444
15	DP756257	1	DP756291	27	DP756299	152	DP756418	35	DP756444
16	DP756257	10	DP756291	28	DP756299	153	DP756418	36	DP756444
17	DP756257	11	DP756291	29	DP756299	154	DP756418	37	DP756444
18	DP756257	14	DP756291	30	DP756299	16	DP756418	38	DP756444
19	DP756257	15	DP756291	31	DP756299	17	DP756418	39	DP756444
2	DP756257	16	DP756291	32	DP756299	18	DP756418	40	DP756444
20	DP756257	17	DP756291	33	DP756299	19	DP756418	41	DP756444
21	DP756257	18	DP756291	34	DP756299	2	DP756418	42	DP756444
22	DP756257	2	DP756291	35	DP756299	20	DP756418	43	DP756444
23	DP756257	22	DP756291	36	DP756299	21	DP756418	44	DP756444
24	DP756257	23	DP756291	37	DP756299	22	DP756418	45	DP756444
3	DP756257	3	DP756291	39	DP756299	23	DP756418	46	DP756444
4	DP756257	30	DP756291	40	DP756299	25	DP756418	47	DP756444
5	DP756257	31	DP756291	41	DP756299	26	DP756418	48	DP756444
6	DP756257	32	DP756291	42	DP756299	27	DP756418	49	DP756444
7	DP756257	33	DP756291	43	DP756299	28	DP756418	41	DP756450
8	DP756257	34	DP756291	66	DP756299	29	DP756418	84	DP756450
9	DP756257	35	DP756291	67	DP756299	3	DP756418	52	DP756459
1	DP756265	36	DP756291	76	DP756299	30	DP756418	53	DP756459
15	DP756265	37	DP756291	1	DP756334	31	DP756418	56	DP756459
16	DP756265	38	DP756291	2	DP756334	32	DP756418	57	DP756459
17	DP756265	39	DP756291	25	DP756334	33	DP756418	58	DP756459
18	DP756265	4	DP756291	26	DP756334	34	DP756418	59	DP756459
19	DP756265	40	DP756291	3	DP756334	35	DP756418	60	DP756459

Lot	DP	Lot	DP	Lot	DP	Lot	DP	Lot	DP
2	DP756265	41	DP756291	38	DP756334	36	DP756418	61	DP756459
20	DP756265	42	DP756291	66	DP756334	4	DP756418	62	DP756459
21	DP756265	43	DP756291	67	DP756334	5	DP756418	63	DP756459
22	DP756265	44	DP756291	133	DP756396	6	DP756418	64	DP756459
23	DP756265	45	DP756291	134	DP756396	7	DP756418	-	-

Appendix B

Database search results

Due Diligence Insight Report

Dinawan

Bundure, NSW

10 Jan 2025

Report n°:
LI-4529 DDR

Understanding your report

Thank you for ordering your report from Land Insight. If you have any feedback, questions or queries, please get in touch with us at orders@landinsight.co.

Your Report has been produced by Land Insight and contains information related to current and historical land use information, environmental risks and hazards.

The information presented in this report includes Land Insights' comprehensive research into current and historical land use derived from Land Insight's proprietary National Land Use Atlas (NLUA), environmental risk information and data available from public databases, third party providers, local and state authorities. The report also includes detailed property and soil setting information, hydrogeology, identification of potential pollution and contamination along with ground and natural hazards. The records identified are presented within a 200 to 2000m radius (buffer zone) from the boundaries of the Property searched, depending on the screened constraint. The report is separated and grouped into easy to navigate sections as per Summary below:

	Section 1	PROPERTY SETTING	Sensitive Receptors, Planning Controls, Zoning, Heritage, Soil and Land Information, Geology and Topography
	Section 2	HYDROGEOLOGY AND GEOTECHNICAL	Groundwater Bores and Other Borehole investigations, Groundwater Dependent Ecosystems (GDE), Aquifer and Wetland, Other Hydrogeology information.
	Section 3	ENVIRONMENTAL REGISTERS, LICENCES AND INCIDENTS	Contaminated Land Public Register, Licences, Audits and Orders, Sites Regulated by Other Jurisdictional Body (Former Gaswork sites / PFAS sites, UXO Areas), Historical Landfills, Derelict Mines and National Pollutant Inventory (NPI).
	Section 4	POTENTIALLY CONTAMINATED AREAS	Potentially Contaminating activities (Industries, businesses and activities that may cause contamination), Historical Potentially Contaminating activities and Historical Land Use.
	Section 5	NATURAL HAZARDS	Erosion hazard, Flood hazards, Bushfire prone land and Bushfire history.

This report includes data listed on page 4 (table of contents). All sources of data and definitions are provided in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact orders@landinsight.co.

This report does not include information derived from a physical inspection. It is important to note that a site inspection can present information relevant to other risks and hazards that may not be identified by this Report.

Due to the ongoing nature of database development and frequency of updates provided by various state government regulators and data sources, the data displayed within this report is only current from date of production. While every effort is made to ensure the details in your Report are correct, Land Insight cannot guarantee the accuracy or completeness of the information and/or data provided.

This Report, and your use of it, is regulated by Land Insight's Terms and Conditions. For more information, see Land Insight's Product Guide.

Report Summary

Dataset name		Onsite	On Buffer	Buffer Distance
Section 1 - Property Setting				
1.1	Sensitive Receptors	✓	✓	200m
1.2a	Planning Controls (<i>Zoning</i>)	✓	✓	500m
1.2b	Planning Overlays (<i>Environmental Planning Instruments</i>)	✓	✓	500m
	Planning Overlays (<i>Other Planning Information</i>)			500m
1.3	Heritage (<i>State and Local Heritage</i>)			200m
	Heritage (<i>Australian and World Heritage Database Register</i>)			200m
1.4a	Soil and Land Use Information (<i>Soil Landscape</i>)	✓	✓	500m
	Soil and Land Use Information (<i>Soil Salinity</i>)			500m
	Soil and Land Use Information (<i>Radon</i>)	✓	✓	500m
1.4b	Acid Sulfate Soil (<i>State and Local Acid Sulfate Soil Registers</i>)			500m
	Acid Sulfate Soil (<i>National Acid Sulfate Soil Registers</i>)	✓	✓	500m
1.5	Geology and Topography (<i>Geology</i>)	✓	✓	500m
	Geology and Topography (<i>Naturally Occurring Asbestos Potential NOA</i>)			500m
Section 2 - Hydrogeology and Geotechnical				
2.1	GDE & Hydrogeology Constraints (<i>Aquifer Type</i>)	✓	✓	2000m
	GDE & Hydrogeology Constraints (<i>Groundwater Protection Areas</i>)	✓	✓	2000m
	GDE & Hydrogeology Constraints (<i>Wetlands</i>)	✓	✓	2000m
	GDE & Hydrogeology Constraints (<i>GDE Surface</i>)	✓	✓	2000m
	GDE & Hydrogeology Constraints (<i>GDE Subsurface</i>)	✓	✓	2000m
	GDE & Hydrogeology Constraints (<i>Groundwater Licences</i>)			2000m
	GDE & Hydrogeology Constraints (<i>Groundwater Bores</i>)	✓	✓	2000m
2.2	Groundwater and Other Bores (<i>Groundwater Restricted Use Zones</i>)			2000m
	Groundwater and Other Bores (<i>Groundwater Salinity</i>)	✓	✓	2000m
	Groundwater and Other Bores (<i>Other Known Boreholes Investigations</i>)	✓	✓	2000m
Section 3 - Environmental Registers, Licences and Incidents				
3.1	Contaminated Land Public Register (<i>Contaminated Sites</i>)			1000m
3.2	Licences, Approvals & Assessments (<i>Licences</i>)		✓	1000m
	Licences, Approvals & Assessments (<i>Audits</i>)			1000m
	Licences, Approvals & Assessments (<i>Clean up Notices, Penalty Notices and Orders</i>)			1000m
3.3a	Sites Regulated by other Jurisdictional Body (<i>Contaminated Legacy Areas</i>)			2000m
	Sites Regulated by other Jurisdictional Body (<i>Defence, Military Sites and UXO Areas</i>)			2000m
	Sites Regulated by other Jurisdictional Body (<i>Former Gasworks Sites</i>)			2000m
	Sites Regulated by other Jurisdictional Body (<i>PFAS Sites</i>)			2000m
3.3b	Other Potential Hazard Sources (<i>Mines and Quarries</i>)			500m
	Other Potential Hazard Sources (<i>Landfills</i>)			500m
	Other Potential Hazard Sources (<i>National Pollutant Inventory NPI</i>)			500m
Section 4 - Potentially Contaminated Areas				
4.1	Potentially Contaminating Activities (<i>Liquid Fuel Facilities</i>)			200m
4.2	Historical Business Directories			200m
Section 5 - Natural Hazards				
5.1	Fire Hazard (<i>Bushfire Prone Areas</i>)	✓	✓	500m
	Fire Hazard (<i>Bushfire History</i>)	✓	✓	500m
5.2	Flood Hazard (<i>Flood Planning Area</i>)			500m
	Flood Hazard (<i>Other Flood Studies</i>)			500m
	Flood Hazard (<i>Flood History</i>)			500m
5.3	Erosion Hazard	✓	✓	500m

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ATTACHMENTS

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Land Insight Product Guide and Terms and Conditions



Section 1 Property Setting

1.1 SENSITIVE RECEPTORS

Map 1.1 (200m Buffer)

Sensitive receptor	Type	Distance (m)	Direction
Null	Watercourse	0.0	Onsite
BLIND CREEK	Watercourse	0.0	Onsite
BUBLEBUNDIE CREEK	Watercourse	0.0	Onsite
DELTA CREEK	Watercourse	0.0	Onsite
COLEAMBALLY CREEK	Watercourse Area	0.0	Onsite
BUBLEBUNDIE CREEK	Watercourse Area	0.0	Onsite
GUM LAGOON	Lake	0.0	Onsite
CARSE LAKE	Lake	0.0	Onsite
COLEAMBALLY OUTFALL DRAIN	Canal Line	0.0	Onsite
BOWNA SWAMP	Swamp	0.0	Onsite
Null	Farm Dam Area	0.0	Onsite
BLIND CREEK	Watercourse Area	0.0	Onsite
MABINS CORNER TANK	Reservoir Area	33.0	North-east
YAMMA CHANNEL	Canal Line	89.8	North-east
FOUR CORNERS TANK	Reservoir Area	150.1	North

1.2a PLANNING CONTROLS

Map 1.2a (500m Buffer)

Zoning

Zoning	Type	Details	Distance (m)	Direction
RU1	Primary Production	Jerilderie Local Environmental Plan 2012	0.0	Onsite
SP2	Infrastructure	Jerilderie Local Environmental Plan 2012	0.0	Onsite
RU1	Primary Production	Murrumbidgee Local Environmental Plan 2013	0.0	Onsite
RU1	Primary Production	Conargo Local Environmental Plan 2013	0.0	Onsite

1.2b PLANNING OVERLAYS

Map 1.2b (500m Buffer)

Environmental Planning Instruments

Name	Type	Details	Distance (m)	Direction
Vulnerable	Vulnerable	Jerilderie Local Environmental Plan 2012	0.0	Onsite
Biodiversity	Biodiversity	Conargo Local Environmental Plan 2013	0.0	Onsite
200-399.9	Minimum Lot Size (sq m)	Murrumbidgee Local Environmental Plan 2013	0.0	Onsite
200-399.9	Minimum Lot Size (sq m)	Jerilderie Local Environmental Plan 2012	0.0	Onsite
Refer to Clause 4.2B	Refer to Clause 4.2B	Conargo Local Environmental Plan 2013	0.0	Onsite
Included	Land Application	Conargo Local Environmental Plan 2013	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Sustainable Buildings) 2022	0.0	Onsite
Allowable Clearing Area	Allowable Clearing	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Excluded	Allowable Clearing	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Subject Land	SEPP Land Application	State Environmental Planning Policy (Biodiversity and Conservation) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Housing) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Transport and Infrastructure) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Planning Systems) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Primary Production) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Industry and Employment) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Resilience and Hazards) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy (Resources and Energy) 2021	0.0	Onsite
Land Application	SEPP Land Application	State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development	0.0	Onsite

Name	Type	Details	Distance (m)	Direction
Included	Land Application	Murrumbidgee Local Environmental Plan 2013	0.0	Onsite
Included	Land Application	Jerilderie Local Environmental Plan 2012	0.0	Onsite
Biodiversity	Biodiversity	Jerilderie Local Environmental Plan 2012	0.0	Onsite
Wetland	Wetlands	Jerilderie Local Environmental Plan 2012	0.0	Onsite
Biodiversity	Biodiversity	Murrumbidgee Local Environmental Plan 2013	0.0	Onsite
10%	Minimum Water Use Standard (%)	State Environmental Planning Policy (Sustainable Buildings) 2022	0.0	Onsite
20%	Minimum Water Use Standard (%)	State Environmental Planning Policy (Sustainable Buildings) 2022	0.0	Onsite
Wetland	Wetlands	Conargo Local Environmental Plan 2013	0.0	Onsite
200-399.9	Minimum Lot Size (sq m)	Conargo Local Environmental Plan 2013	0.0	Onsite
Wetland	Wetlands	Murrumbidgee Local Environmental Plan 2013	68.1	North

Other Planning Information

Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

1.3 HERITAGE

Map 1.3 (200m Buffer)

State and Local Heritage Registers

Site ID	Site Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-	-

Australian Heritage Database Register

Site ID	Site Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-	-

Commonwealth Heritage List, National Heritage List and World Heritage Area.

Soil Landscape

Code	Name	Soil Group	Description	Distance (m)	Direction
AEcloa	Colleambally Variant A	Aeolian	Landscape summary Level sandplains; prior stream aeolian infills. Slopes <5%, local relief <3 m, elevation 60-140 m. Extensively to completely cleared box - cypress woodland. Soils Arenic Rudosols (Siliceous Sands) on higher sandy ridges, Red and Brown Kandosols (Red Earths) on some less distinct rises, Red Sodosols (Red-brown Earths) with sandy topsoils on levees. Minor Brown Vertosols (Cracking Clays) on some included lower depressions where the clay plain reveals itself through the shallow sandy aeolian sheet. Geology and regolith Relict east-west distributary network of prior stream ridges of the Murrumbidgee and Murray River systems, part of the Shepparton Formation (Czsws). They originate from past climates where sandy bedload dominated streams were flowing across the plain. Thermoluminescence dating (Page et al., 1996) has estimated the ages of the prior streams and these ridges - the streams were active during periods 30-100 thousand years ago, the ridges are therefore formed later.	0.0	Onsite
AEclob	Colleambally Variant B	Aeolian	Landscape summary Prior stream sand ridges which exhibit fairly narrow and sinuous characteristics, and are usually quite clearly defined and raised above the surrounding plain. Slopes <5%, local relief <3 m, elevation 80-130 m. Mixed bluebush, old-man saltbush and pine dominate. Soils Arenic Rudosols (Siliceous Sands) on higher sandy ridges, Red and Brown Kandosols (Red Earths) on some less distinct rises, Red Sodosols (Red-brown Earths) with sandy topsoils on levees. Geology and regolith Relict east-west distributary network of prior stream ridges of the former Murray and Murrumbidgee River systems, part of the Shepparton Formation (Czsws). These originate from past climates where sandy bedload dominated streams were flowing across the plain. Thermoluminescence dating (Page et al., 1996) has estimated the ages of the prior streams and these ridges - the streams were active during periods 30-100 thousand years ago, the ridges were therefore formed later.	0.0	Onsite
ALnmu	Niemur River	Alluvial	Landscape summary Active inset floodplains and meander plains of the Niemur, Edward and Wakool Rivers and their tributaries and distributaries, extending from Lockhart in the east into the far west of the catchment. Includes incised stream channels with steep banks, floodrunners, oxbows, levees and floodplains 300-1500 m wide. Slopes 0-3%, up to 50% on banks; local relief 0-9 m, elevation 60-180 m. Partly cleared river red gum grassy woodlands. Soils Grey or other dark-coloured Vertosols dominate (Grey Cracking Clays), often with a slightly sandy B3 horizon. These occasionally grade to Grey or Brown Chromosols (Brown Clays/Brown Podzolic Soils). Occasional Redoxic Hydrosols (no suitable group) occur in frequently waterlogged areas. Geology and regolith Quaternary Alluvium (Qa), comprising clay, silt and sand in decreasing order.	0.0	Onsite

Code	Name	Soil Group	Description	Distance (m)	Direction
STjex	Jerilderie	Stagnant alluvial	Landscape summary Broad level plains on alluvium of the Riverine Plains. Slopes <1%, local relief <5 m, elevation 80-120 m. This soil landscape covers the intermediate rainfall zone of the plains characterised by open boree woodlands and open grasslands before grading into the westerly Chenopod shrublands of the Hay (hyx) soil landscape; to the south-east, as rainfall rises, this soil landscape grades into the Wait-A-While (wal) landscape. Gilgais occur locally. Soils Red and Brown Sub-plastic Chromosols and Sodosols (Red-brown Earths/transitional Red-brown Earths), with Reddish Brown Chromosol/Vertosols (transitional Red-brown Earths/Brown Podzolic Soils) and Grey and Brown Self-mulching and Epipedal Vertosols (Cracking Grey and Brown Clays). These soils are closely related to the prior stream network, palaeochannels and drainage. However, the lower rainfall, relative to the Wait-a-While (wal) soil landscape, means that woodland and forest have given way to grasslands and open plains. Consequently topsoils have less organic matter and depth. Wind erosion potential increases and cracking clay soils increase in percentage. Less leaching of the soil profile occurs and lime is more common and occurs shallower in the subsoil, often locally associated with gypsum. Self-mulching and non-self mulching clay	0.0	Onsite
CG, BC_RC	Vertosols	Grey, Brown and Red Clays	GSG classification - Black, heavy clay, alkaline to neutral soil with wide, deep cracks when dry.	0.0	Onsite
RBE	Chromosols	Red Brown Earths	GSG classification - Very similar to Red-brown Earths but without an A2 horizon. They have a carbonate-free solum and a neutral to slightly alkaline (with lower base saturation) B horizon; and are also generally thinner soils, varying from about 40-80 cm deep.	0.0	Onsite
SS	Rudosols	Siliceous Sands	ASC Soil Order classification - Soils with negligible pedologic organisation. They are usually young soils in the sense that the soil forming factors have had little time to pedologically modify parent rocks or sediments. The component soils can vary widely in terms of texture and depth; many are stratified and some are highly saline. sand- Soil particles in the size range 2.0 - 0.02 mm.	0.0	Onsite

Salinity

Salinity Hazard	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-

Radon

Radon Level (Bq/m ³)	Distance (m)	Direction
14	0.0	Onsite
15	0.0	Onsite
12	0.0	Onsite

Typical radon levels in Australia are low and the values shown are the average values for each census district. For specific location, factors such as the local geology and house type could lead to different values. (ARPANSA).

1.4b ACID SULFATE SOIL

Map 1.4b (500m Buffer)

State and Local Acid Sulfate Soil Registers

Name	Classification	Description	Distance (m)	Direction
Not identified	-	-	-	-

To ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage, development consent may be required for the carrying out of works within areas and land shown on the Acid Sulfate Soils Map.

National Acid Sulfate Soil Register

Name	Classification	Description	Distance (m)	Direction
Atlas of Australian Acid Sulfate Soils	High Probability of occurrence	Acid sulfate soil generally within upper 1m in wet / riparian areas.	0.0	Onsite
Atlas of Australian Acid Sulfate Soils	Low Probability of occurrence	Acid sulfate soil generally within upper 1m in wet / riparian areas.	0.0	Onsite
Atlas of Australian Acid Sulfate Soils	Extremely low probability of occurrence	Acid sulfate soil generally within upper 1m in wet / riparian areas.	0.0	Onsite

Source: ASRIS Atlas of Australian Sulfate Soils (CSIRO). Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics.

1.5 GEOLOGY AND TOPOGRAPHY

Map 1.5 (500m Buffer)

Geology

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	CZ_af	Alluvial floodplain deposits	Cenozoic (base) to Now (top)	Alluvium	Silt	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	Q_l	Null	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clay	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand.	0.0	Onsite
NSW Western Division - Basement Interpretation dataset	CZ_af	Alluvial floodplain deposits	Cenozoic (base) to Now (top)	Alluvium	Silt	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
Murray Basin 1:1,000,000 Surface Geology Map	Q_a	Null	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	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	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						palaeosol horizons.		
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	Q_a	Null	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	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.	0.0	Onsite
Hay 1:250 000 geophysical-geological interpretation	CZ_af	Alluvial floodplain deposits	Cenozoic (base) to Now (top)	Alluvium	Silt	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
Murray Basin 1:1,000,000 Surface Geology Map	CZ_af	Alluvial floodplain deposits	Cenozoic (base) to Now (top)	Alluvium	Silt	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
Narrandera 1:250,000 Geological Sheet	CZ_af	Alluvial floodplain deposits	Cenozoic (base) to Now (top)	Alluvium	Silt	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
NSW Western Division - Basement Interpretation dataset	Q_a	Null	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	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.	0.0	Onsite
Jerilderie 1:250,000 Geological Sheet - 2nd Edition	Q_a	Null	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	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	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						(as sporadic lenses); sporadic palaeosol horizons.		
NSW Western Division - Basement Interpretation dataset	Q _{ds}	Aeolian sand plain	Upper Pleistocene (base) to Now (top)	Aeolian deposits	Sand	Flat to low undulating or hummocky fossil sand plain, red-brown to brown and humic, clayey, silty to fine-grained sand, silty clay at depth; abundant regolithic & pedogenic carbonate, extensively modified by pedogenesis.	0.0	Onsite
Jerilderie 1:250,000 Geological Sheet - 2nd Edition	Q _{ds}	Aeolian sand plain	Upper Pleistocene (base) to Now (top)	Aeolian deposits	Sand	Flat to low undulating or hummocky fossil sand plain, red-brown to brown and humic, clayey, silty to fine-grained sand, silty clay at depth; abundant regolithic & pedogenic carbonate, extensively modified by pedogenesis.	0.0	Onsite
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	Q _{ds}	Aeolian sand plain	Upper Pleistocene (base) to Now (top)	Aeolian deposits	Sand	Flat to low undulating or hummocky fossil sand plain, red-brown to brown and humic, clayey, silty to fine-grained sand, silty clay at depth; abundant regolithic & pedogenic carbonate, extensively modified by pedogenesis.	0.0	Onsite
Murray Basin 1:1,000,000 Surface Geology Map	Q _l	Null	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clay	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						medium- to fine-grained sand.		
Hay 1:250 000 geophysical-geological interpretation	Q _l	Null	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clay	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand.	0.0	Onsite
Hay 1:250 000 geophysical-geological interpretation	Q _a	Null	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	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.	0.0	Onsite
NSW Western Division - Basement Interpretation dataset	Q _{af}	Alluvial floodplain deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
Narrandera 1:250,000 Geological Sheet	Q _{af}	Alluvial floodplain deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	Q _{af}	Alluvial floodplain deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
NSW Western Division - Basement Interpretation dataset	Q _l	Null	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clay	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand.	0.0	Onsite
Narrandera 1:250,000 Geological Sheet	Q _l	Null	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clay	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand.	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
Jerilderie 1:250,000 Geological Sheet - 2nd Edition	CZ_af	Alluvial floodplain deposits	Cenozoic (base) to Now (top)	Alluvium	Silt	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	0.0	Onsite
NSW Western Division - Basement Interpretation dataset	Q_dds	Aeolian dune	Quaternary (base) to Now (top)	Aeolian deposits	Sand	Red-brown to light-brown, poorly sorted to bi-modal, very fine- to medium-grained feldspathic quartz sand.	0.0	Onsite
Narrandera 1:250,000 Geological Sheet	Q_dds	Aeolian dune	Quaternary (base) to Now (top)	Aeolian deposits	Sand	Red-brown to light-brown, poorly sorted to bi-modal, very fine- to medium-grained feldspathic quartz sand.	0.0	Onsite
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	Q_dds	Aeolian dune	Quaternary (base) to Now (top)	Aeolian deposits	Sand	Red-brown to light-brown, poorly sorted to bi-modal, very fine- to medium-grained feldspathic quartz sand.	0.0	Onsite
Hay 1:250 000 geophysical-geological interpretation	Q_dds	Aeolian dune	Quaternary (base) to Now (top)	Aeolian deposits	Sand	Red-brown to light-brown, poorly sorted to bi-modal, very fine- to medium-grained feldspathic quartz sand.	0.0	Onsite
Murray Basin 1:1,000,000 Surface Geology Map	Q_dds	Aeolian dune	Quaternary (base) to Now (top)	Aeolian deposits	Sand	Red-brown to light-brown, poorly sorted to bi-modal, very fine- to medium-grained feldspathic quartz sand.	0.0	Onsite
Jerilderie 1:250,000 Geological Sheet - 2nd Edition	Q_lp	Playa lake deposits	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clastic sediment	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand; gypsiferous (kopi) surficial deposits, selenite beds sub-surface.	318.9	North
NSW Western Division - Basement	Q_lp	Playa lake deposits	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clastic sediment	Friable to plastic, finely laminated grey clay, silty clay,	318.9	North

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
Interpretation dataset						humic clay, grey paleosols; locally includes medium- to fine-grained sand; gypsiferous (kopi) surficial deposits, selenite beds sub-surface.		
NSW Seamless Geology v. 2.1 - Murray Basin geology upgrade.	Q_lp	Playa lake deposits	Quaternary (base) to Now (top)	Claypan and lacustrine deposits	Clastic sediment	Friable to plastic, finely laminated grey clay, silty clay, humic clay, grey paleosols; locally includes medium- to fine-grained sand; gypsiferous (kopi) surficial deposits, selenite beds sub-surface.	318.9	North
Jerilderie 1:250,000 Geological Sheet - 2nd Edition	Q_af	Alluvial floodplain deposits	Quaternary (base) to Now (top)	Alluvium	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	343.3	South-west

Naturally Occurring Asbestos Potential (NOA)

Category	On the Property?	Within Buffer?
Not identified	-	-

Topography

Topography (Onsite)	110 - 115 mAHD
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Section 2 Hydrogeology and Geotechnical



2.1 GDE & HYDROGEOLOGY CONSTRAINTS

Map 2.1 (2000m Buffer)

Aquifer Type

Type	Distance (m)	Direction
Porous, extensive aquifers of low to moderate productivity	0.0	Onsite
Porous, extensive highly productive aquifers	0.0	Onsite

Groundwater Protection Areas

Name	Water Plan Area	Distance (m)	Direction
Murrumbidgee	Jerilderie Local Environmental Plan 2012	0.0	Onsite

Wetlands

Name	Description	Distance (m)	Direction
Floodplain water body	Floodplain water body	0.0	Onsite

Groundwater Dependent Ecosystems (GDE) - Aquatic (Surface)

Potential	Distance (m)	Direction
Low potential GDE - from national assessment	0.0	Onsite
Moderate potential GDE - from national assessment	0.0	Onsite

Aquatic - Ecosystems that rely on the Surface expression of groundwater.

Groundwater Dependent Ecosystems (GDE) - Terrestrial (Subsurface)

Potential	Distance (m)	Direction
High potential GDE - from regional studies	0.0	Onsite

Terrestrial - Ecosystems that rely on the Subsurface expression of groundwater.

Groundwater Licences (Western Australia)

Map ID	WRI number	Allocation (KL)	Address	All Parties	Distance (m)	Direction
Not identified	-	-	-	-	-	-

Groundwater Bores

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
168	110340	Observation	28/09/1988	Null	171.0	14.4	Null	Null	0.0	Onsite
129	GW011850	Monitoring	01/01/1956	Null	43.3	Null	Null	Null	0.0	Onsite
59	GW500977	Irrigated agriculture	31/03/2001	69.0	69.0	27.5	Null	50.0	0.0	Onsite
130	GW012882	Monitoring	01/01/1956	Null	29.6	Null	Null	Null	0.0	Onsite
57	GW500860	Irrigated agriculture	01/12/2000	193.0	184.0	32.1	Null	190.0	0.0	Onsite
131	GW069055	Monitoring	01/01/2011	Null	60.0	Null	Null	Null	0.0	Onsite
54	GW400978	Irrigated agriculture	01/11/1998	182.9	176.8	21.0	Null	250.0	0.0	Onsite
53	GW401211	Household	25/03/1997	185.0	185.0	20.5	Null	265.0	0.0	Onsite
132	GW012888	Monitoring	01/01/1956	Null	31.4	Null	Null	Null	0.0	Onsite
50	GW400687	Monitoring	25/10/1997	151.8	151.8	Null	Null	Null	0.0	Onsite
48	GW011038	Monitoring	01/11/1954	54.3	54.3	Null	Good	0.9	0.0	Onsite
133	GW012860	Monitoring	01/01/1956	Null	39.3	Null	Null	Null	0.0	Onsite
46	GW010933	Monitoring	01/09/1954	46.0	46.0	Null	Potable	Null	0.0	Onsite
44	GW017312	Monitoring	01/03/1958	33.2	33.2	23.2	Good	0.6	0.0	Onsite
43	GW010454	Monitoring	01/07/1953	36.6	36.6	12.2	Null	0.8	0.0	Onsite
42	GW008851	Monitoring	01/09/1950	24.1	24.1	20.7	Fresh	0.5	0.0	Onsite
61	GW005704	Monitoring	01/03/1932	32.9	32.9	Null	S.Brackish	0.3	0.0	Onsite
135	GW012892	Monitoring	01/01/1956	Null	27.4	Null	Null	Null	0.0	Onsite

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
62	GW010999	Monitoring	01/11/1954	50.3	50.3	Null	Good	Null	0.0	Onsite
126	GW042143	Unknown	Null	Null	30.5	Null	Null	Null	0.0	Onsite
101	41010218	Unknown	Null	Null	Null	Null	Null	Null	0.0	Onsite
91	GW405774	Monitoring	08/02/2010	24.1	24.1	Null	Null	Null	0.0	Onsite
89	GW405775	Monitoring	08/02/2010	21.9	21.9	Null	Null	Null	0.0	Onsite
102	41010221	Unknown	Null	Null	Null	Null	Null	Null	0.0	Onsite
105	GW030325.1	Null	Null	Null	Null	Null	Null	Null	0.0	Onsite
106	GW030325.1.1	Null	Null	Null	Null	Null	Null	Null	0.0	Onsite
107	GW030325.3	Null	Null	Null	Null	Null	Null	Null	0.0	Onsite
80	GW401702	Irrigated agriculture	03/04/2001	242.0	242.0	Null	Null	Null	0.0	Onsite
108	GW030325.3.3	Null	Null	Null	Null	Null	Null	Null	0.0	Onsite
117	GW414356	Irrigated agriculture	06/07/2008	146.0	146.0	Null	Null	160.0	0.0	Onsite
72	GW032076	Monitoring	01/12/1969	74.4	74.4	Null	Null	0.6	0.0	Onsite
119	GW065223	Household	20/10/1988	Null	54.5	21.9	0-500 ppm	0.6	0.0	Onsite
121	GW012554	Monitoring	01/01/1956	Null	25.3	Null	Null	Null	0.0	Onsite
69	GW017615	Water supply for livestock	01/09/1959	63.4	63.4	Null	Good Stock	0.4	0.0	Onsite
124	GW065217	Monitoring	06/10/1988	Null	56.0	20.1	501-1000 ppm	0.6	0.0	Onsite
63	GW501052	Irrigated agriculture	01/11/2001	181.0	178.0	Null	Null	Null	0.0	Onsite
40	GW008850	Monitoring	01/09/1950	24.1	24.1	20.7	Brackish	0.5	0.0	Onsite
49	GW400095	Unknown	24/02/1993	62.2	62.2	Null	Potable	Null	0.0	Onsite
150	GW069057	Monitoring	06/10/1988	Null	56.1	Null	501-1000 ppm	Null	0.0	Onsite
151	GW012887	Monitoring	01/01/1956	Null	40.6	Null	Null	Null	0.0	Onsite
19	GW035045	Monitoring	01/11/1972	25.0	24.9	19.8	Null	0.6	0.0	Onsite
15	GW416059	Domestic,stock	01/03/2006	59.0	59.0	27.0	Null	3.0	0.0	Onsite
21	GW017769	Household	01/10/1959	46.3	46.3	24.4	Good	0.4	0.0	Onsite
147	GW011854	Monitoring	01/01/1956	Null	39.3	Null	Null	Null	0.0	Onsite
145	GW012890	Monitoring	01/01/1956	Null	28.0	Null	Null	Null	0.0	Onsite
143	GW012862	Monitoring	01/01/1956	Null	35.1	Null	Null	Null	0.0	Onsite
25	GW028853	Irrigated agriculture	01/04/1968	190.5	164.6	Null	Null	Null	0.0	Onsite
142	GW011849	Monitoring	01/01/1956	Null	32.9	Null	Null	Null	0.0	Onsite
140	GW012889	Monitoring	01/01/1956	Null	25.3	Null	Null	Null	0.0	Onsite

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
38	GW042849	Irrigated agriculture	01/03/1977	161.8	161.6	21.2	Null	Null	0.0	Onsite
28	GW062421	Monitoring	01/06/1988	168.0	121.5	Null	Null	Null	0.0	Onsite
29	GW062049	Monitoring	01/06/1986	192.0	171.0	Null	501-1000 ppm	Null	0.0	Onsite
30	GW050184	Monitoring	01/12/1979	77.7	77.7	Null	Null	Null	0.0	Onsite
138	GW012861	Monitoring	01/01/1956	Null	41.1	Null	Null	Null	0.0	Onsite
137	GW069056	Monitoring	01/01/2011	Null	60.0	Null	Null	Null	0.0	Onsite
33	GW065059	Household	09/05/1990	138.7	138.7	22.4	0-500 ppm	227.5	0.0	Onsite
34	GW005707	Monitoring	01/05/1932	43.3	43.3	Null	S.Brackish	Null	0.0	Onsite
35	GW063851	Water supply for livestock	01/12/1986	32.1	32.0	Null	Null	Null	0.0	Onsite
136	GW047145	Irrigated agriculture	01/01/1926	Null	73.2	Null	7001-10000 ppm	Null	0.0	Onsite
16	GW505524	Domestic,stock	03/07/2008	68.0	68.0	27.0	Null	3.0	0.0	Onsite
85	GW405800	Monitoring	08/02/2010	24.1	24.1	Null	Null	Null	0.8	South
109	GW403747.3	Null	Null	Null	Null	Null	Null	Null	3.0	South-west
110	GW403747.3.3	Null	Null	Null	Null	Null	Null	Null	3.0	South-west
10	GW403747	Unknown	31/05/2007	Null	Null	Null	Null	Null	16.7	South-west
9	GW403747	Unknown	31/05/2007	Null	Null	Null	Null	Null	16.7	South-west
98	GW403747	Monitoring	31/05/2007	229.0	229.0	Null	Null	Null	16.7	South-west
8	GW403747	Unknown	31/05/2007	Null	Null	Null	Null	Null	16.7	South-west
97	GW403747	Monitoring	31/05/2007	229.0	229.0	Null	Null	Null	16.7	South-west
156	GW504922	Water supply for livestock	25/07/2011	Null	20.0	Null	Null	Null	20.1	North
96	GW405644	Monitoring	04/02/2010	27.4	27.4	Null	Null	Null	37.9	North
112	GW405642	Monitoring	04/02/2010	27.1	27.1	Null	Null	Null	37.9	North
114	GW405643	Monitoring	04/02/2010	24.1	24.1	Null	Null	Null	42.0	North
164	110220	Observation	07/09/1988	Null	115.5	21.1	Null	Null	68.4	West
163	110219	Observation	07/09/1988	Null	115.5	22.2	Null	Null	68.4	West
165	110221	Observation	07/09/1988	Null	115.5	20.9	Null	Null	68.4	West
81	GW400379	Water supply for livestock	20/07/1994	71.6	71.6	21.3	Null	0.8	75.8	South
87	GW405638	Monitoring	04/02/2010	24.7	24.7	Null	Null	Null	77.7	North
100	41010228	Unknown	Null	Null	Null	Null	Null	Null	86.0	West
66	GW400859	Monitoring	28/02/1998	216.0	209.0	24.0	Good	120.0	97.0	South
55	GW400990	Irrigated agriculture	01/03/1998	183.0	180.0	24.0	Null	180.0	116.2	West

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
159	GW414753	Water supply for livestock	25/08/2011	Null	50.0	Null	Null	Null	133.1	South
6	GW030325	Unknown	01/08/1974	Null	Null	18.5	0-500 ppm	2.5	171.0	West
7	GW030325	Unknown	01/08/1974	Null	Null	18.5	0-500 ppm	2.5	171.0	West
4	GW030325	Unknown	01/08/1974	Null	Null	18.5	0-500 ppm	2.5	171.0	West
92	GW030325	Monitoring	01/08/1974	120.3	115.5	18.5	0-500 ppm	2.5	171.0	West
95	GW030325	Monitoring	01/08/1974	120.3	115.5	18.5	0-500 ppm	2.5	171.0	West
154	GW504920	Water supply for livestock	25/07/2011	Null	20.0	Null	Null	Null	171.5	South
82	GW500504	Irrigated agriculture	19/08/1997	160.0	157.0	20.0	Null	Null	186.0	South
155	GW504919	Water supply for livestock	25/07/2011	Null	20.0	Null	Null	Null	215.0	West
68	GW400022	Monitoring	02/08/1995	173.0	140.5	Null	Null	Null	223.2	West
51	GW500469	Irrigated agriculture	19/08/1997	160.0	157.0	20.0	Null	Null	224.5	South
12	GW416577	Stock	17/12/2013	53.0	53.0	15.0	Null	3.0	229.0	South-east
39	GW008878	Monitoring	01/11/1950	57.3	57.3	Null	Fresh	Null	259.9	South
36	GW045236	Water supply for livestock	01/09/1975	44.5	44.5	16.2	Fresh	0.6	274.3	North
125	GW050925	Monitoring	Null	Null	29.0	Null	Brackish	Null	289.1	South
45	GW017804	Monitoring	01/09/1959	66.5	66.5	21.3	Good Stock	0.5	384.7	North
90	GW405772	Monitoring	08/02/2010	21.9	21.9	Null	Null	Null	454.4	North
73	GW039270	Exploration or research	01/06/1982	69.6	69.6	22.8	501-1000 ppm	1.1	469.1	North-east
1	GW030946	Irrigated agriculture	01/09/1981	137.0	Null	24.0	Null	Null	546.7	North-east
83	GW404542	Household	03/09/2001	108.0	104.5	26.7	Null	4.0	553.3	North
67	GW007207	Water supply for livestock	01/04/1946	54.0	53.9	22.9	Fresh	0.8	574.4	North
76	GW016841	Monitoring	01/02/1958	47.9	47.9	Null	Good	Null	595.9	South
11	GW416527	Domestic,stock	17/02/2007	96.0	74.0	15.0	Null	Null	614.2	East
149	GW012859	Monitoring	01/01/1956	Null	21.9	Null	Null	Null	626.2	South
78	GW059225	Monitoring	01/12/1984	144.8	121.3	Null	Null	Null	682.9	South
13	GW416255	Irrigation	14/03/2012	146.0	146.0	21.0	Null	150.0	726.7	South
160	GW416768	Null	Null	Null	56.0	19.5	Null	19.5	816.2	North
134	GW012863	Monitoring	01/01/1956	Null	31.7	Null	Null	Null	833.5	South-west
24	GW021876	Monitoring	01/07/1964	39.0	39.0	21.3	Good	0.6	837.4	South-west
148	GW012881	Monitoring	01/01/1956	Null	28.0	Null	Null	Null	847.9	North
65	GW019474	Monitoring	01/06/1961	41.8	41.8	Null	Good	1.0	847.9	North

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
58	GW500973	Unknown	01/04/1997	205.0	195.0	Null	Null	Null	865.3	West
153	GW403632	Unknown	01/01/1940	Null	20.0	Null	Null	Null	870.2	North-west
77	GW067953	Water supply for livestock	19/04/1990	67.1	67.1	20.4	0-500 ppm	0.6	901.9	East
123	GW012520	Monitoring	01/01/1927	Null	38.4	Null	Null	Null	913.5	South
5	GW030959	Irrigated agriculture	01/11/1981	184.0	Null	Null	Null	Null	915.8	North-east
32	GW020151	Monitoring	01/03/1963	38.1	38.1	20.7	Null	0.6	925.8	South
144	GW012878	Monitoring	01/01/1956	Null	27.4	Null	Null	Null	963.7	South
161	GW416911	Null	Null	Null	59.0	Null	Null	3.0	967.0	South
128	GW012891	Monitoring	01/01/1956	Null	28.3	Null	Null	Null	981.3	South
141	GW050923	Monitoring	Null	Null	29.0	Null	Brackish	Null	1004.4	South
122	GW050924	Monitoring	Null	Null	29.0	Null	Brackish	Null	1015.6	South
139	GW012880	Monitoring	01/01/1956	Null	39.6	Null	Null	Null	1024.8	North-east
17	GW505577	Stock	08/05/2012	93.0	92.0	27.7	Null	2.0	1117.6	North-east
18	GW505577	Stock	08/05/2012	93.0	92.0	27.7	Null	2.0	1117.6	North-east
167	110339	Observation	23/09/1988	Null	363.0	17.9	Null	Null	1145.1	South
166	110338	Observation	23/09/1988	Null	363.0	17.3	Null	Null	1145.1	South
41	GW014027	Monitoring	01/08/1959	53.3	53.3	22.9	Null	0.6	1163.5	East
47	GW011206	Water supply for livestock	01/07/1955	40.2	40.2	Null	Null	0.6	1169.5	South
157	GW415887	Unknown	26/02/2003	Null	46.3	15.6	Null	2.0	1204.2	South
104	GW030323.1.1	Null	Null	Null	Null	Null	Null	Null	1228.1	South
103	GW030323.1	Null	Null	Null	Null	Null	Null	Null	1228.1	South
3	GW030323	Unknown	01/09/1975	Null	Null	Null	0-500 ppm	Null	1240.3	South
2	GW030323	Unknown	01/09/1975	Null	Null	Null	0-500 ppm	Null	1240.3	South
31	GW030323	Monitoring	01/09/1975	362.7	362.7	Null	0-500 ppm	Null	1240.3	South
84	GW404502	Water supply for livestock	02/04/2008	78.0	78.0	16.4	Null	2.0	1241.3	East
120	GW011853	Monitoring	01/01/1956	Null	31.7	Null	Null	Null	1305.3	South
27	GW019899	Monitoring	01/06/1962	65.5	65.5	Null	Null	Null	1311.3	South
93	GW404956	Household	02/04/2008	109.0	109.0	21.0	Null	5.0	1330.4	East
118	GW273215	Monitoring	23/06/2011	207.0	207.0	22.7	Null	0.8	1349.7	South
74	GW063047	Irrigated agriculture	01/10/1987	176.0	160.5	Null	0-500 ppm	Null	1405.3	South-west
64	GW007406	Household	01/04/1947	52.8	52.7	23.8	Fresh	0.6	1413.3	North

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
127	GW012874	Monitoring	01/01/1956	Null	48.8	Null	Null	Null	1443.4	East
26	GW004986	Unknown	01/12/2013	46.3	46.3	Null	Very Good	0.8	1553.8	West
52	GW401077	Unknown	01/04/1999	182.0	182.0	Null	Null	Null	1572.4	South-west
60	GW500964	Irrigated agriculture	29/09/1999	208.5	198.0	26.2	Null	220.0	1612.6	South
56	GW401592	Monitoring	23/10/2000	223.0	223.0	Null	Null	Null	1627.6	South-west
115	GW407165	Monitoring	25/02/2010	24.1	24.1	Null	Null	Null	1663.3	North
113	GW411659	Monitoring	04/05/2010	12.2	12.2	Null	Null	Null	1679.5	South
86	GW405761	Monitoring	08/02/2010	23.5	23.5	Null	Null	Null	1695.1	South
94	GW411648	Monitoring	04/05/2010	9.8	9.8	Null	Null	Null	1717.0	North
23	GW047719	Irrigated agriculture	01/08/1980	104.2	104.2	Null	Null	Null	1722.5	West
162	GW417234	Null	Null	150.0	150.0	24.0	Null	175.0	1722.8	North
152	GW012858	Monitoring	01/01/1956	Null	27.4	Null	Null	Null	1757.4	South
79	GW017308	Monitoring	01/03/1958	55.5	55.5	Null	Good	Null	1760.3	South
20	GW017783	Water supply for livestock	01/12/1959	50.3	50.3	Null	Very Good	0.4	1765.2	East
158	GW414700	Household	10/12/2002	Null	75.0	13.5	Null	3.0	1782.1	South
99	410108	Unknown	Null	Null	Null	Null	Null	Null	1786.3	South
75	GW021975	Monitoring	01/07/1964	40.6	40.6	Null	Null	Null	1821.9	North
146	GW012875	Monitoring	01/01/1956	Null	43.9	Null	Null	Null	1833.6	North
14	GW416583	Domestic,stock	30/04/2008	105.0	105.0	25.0	Null	3.0	1838.0	North
70	GW054830	Exploration or research	01/01/1981	120.0	120.0	24.0	Very Good	Null	1842.7	West
37	GW011298	Monitoring	01/10/1955	55.2	55.2	Null	Good	0.8	1874.0	South-east
111	GW411647	Monitoring	04/05/2010	9.1	9.1	Null	Null	Null	1885.8	East
116	GW407174	Monitoring	25/02/2010	9.1	9.1	Null	Null	Null	1898.6	South
71	GW011053	Household	01/12/1954	35.1	35.1	Null	Good	0.6	1925.2	South-west
88	GW405799	Monitoring	08/02/2010	14.6	14.6	Null	Null	Null	1945.1	South
22	GW039266	Water supply for livestock	01/06/1982	44.0	44.0	22.4	501-1000 ppm	0.4	1967.3	South-east

Note: The use of the symbol "-" or "Null" indicates that no records were found.

SWL: Standing Water Level, the latest record is displayed. RWL: Rest Water Level, the latest record is displayed. TSS: Total Soluble Salts.

Groundwater Bores Driller Lithology Details

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
110340	Null		0.0	Onsite
GW011850	Null		0.0	Onsite
GW500977	0m-2m Topsoil 2m-14m Gritty grey clay 14m-24m Grey clay 24m-44m Red and grey clay 44m-54m Grey clay 54m-59m Brown sand 59m-64m Silty brown clay 64m-69m Brown sand		0.0	Onsite
GW012882	Null		0.0	Onsite
GW500860	0m-3m Clay brown 3m-6m Sand brown 6m-11m Clay brown and grey 11m-14m Sand brown 14m-19m Clay brown 19m-20m Sand brown 20m-28m Clay brown 28m-37m Sand brown 37m-76m Sand and clay brown 76m-79m Sand brown and white 79m-82m Clay 82m-84m Sand and clay white and brown 84m-86m Sand white and brown 86m-88m Sand and clay white and brown 88m-88.5m Rock 88.5m-99m Sand and clay brown and white 99m-105m Sand light grey 105m-107m Sand and clay light grey 107m-109m Sand light grey 109m-113m Sand and clay 113m-119m Sand grey 119m-126m Sand and clay grey 126m-136m Sand grey 136m-139m Sand and coal 139m-142m Sand grey 142m-160m Coal and clay 160m-162m Sand grey 162m-163m Coal 163m-167m Sand clay and coal 167m-171m Sand grey 171m-173m Coal 173m-182m Sand grey 182m-193m Coal		0.0	Onsite
GW069055	Null		0.0	Onsite
GW400978	0m-17.98m Clay, brown grey yellow 17.98m-21.95m Sand, yellow, some claybound 21.95m-38.1m Clay, heavy re brown yellow, grey sandy 38.1m-42.06m Sand & gravel, coarse yellow 42.06m-51.82m Clay, sticky brown grey 51.82m-59.13m Sand, yellow becoming v/coarse 59.13m-60.35m Clay, yellow brown 60.35m-65.23m Sand, yellow, fine to coarse 65.23m-71.32m Clay, heavy grey brown 71.32m-74.68m Sand, l/yellow, fine to coarse 74.68m-90.83m Clay, white kaolinitic, traces of purple & yellow 90.83m-97.23m Sand, fine white, becoming coarser 97.23m-101.8m Clay, white kaolinitic 101.8m-122.53m Sand, v/fine white, densely compacted, traces of pyrites, lignites 122.53m-124.36m Clay, brown lignitic 124.36m-124.97m Sand, coarse brown, lignite, pyrites 124.97m-130.45m Lignitic clay, some thin sandy seams 130.45m-136.86m Sand, l/grey, fine grain 136.86m-137.46m Lignite 137.46m-138.07m Sand, coarse grey		0.0	Onsite

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	138.07m-142.65m	Lignitic clay, sone thin sandy seams		
	142.65m-144.17m	Sand & lignite, fine brown		
	144.17m-153.92m	Clay, silty lignitic		
	153.92m-161.24m	Sand, brown, fine to coarse		
	161.24m-167.94m	Lignitic clay		
	167.94m-174.96m	Sand, fine to med grain, white grey, becoming coarser		
	174.96m-182.88m	Clay, silty brown, seams lignite		
GW401211	0m-1m	Topsoil & brown clay	0.0	Onsite
	1m-9m	Clay, brown grey		
	9m-15m	Sand, yellow white		
	15m-21m	Clay, brown		
	21m-26m	Sand, yellow		
	26m-32m	Clay, grey brown		
	32m-40m	Sand, yellow brown		
	40m-60m	Clay, brown		
	60m-70m	Sand, yellow		
	70m-83m	Clay, white , grey, brown		
	83m-125m	Sand, grey		
	125m-145m	Clay, grey		
	145m-155m	Clay, dark brown, decomp wood		
	155m-170m	Sand, grey		
	170m-175m	Clay, dark brown		
	175m-180m	Sand, grey medium		
	180m-185m	Sand, dark grey & coal layer		
GW012888	Null		0.0	Onsite
GW400687	0m-28.3m	Mottled clay	0.0	Onsite
	28.3m-29.8m	Grey clay		
	29.8m-31.4m	Silty red clay		
	31.4m-35.9m	Clay with coarse red bands		
	35.9m-39m	Mottley clay		
	39m-42m	Red coarse sand, gravel		
	42m-51.2m	Clay		
	51.2m-57.3m	Fine silty clay		
	57.3m-61.8m	Coarse red sand, gravel		
	61.8m-63.4m	Silty clay		
	63.4m-66.4m	Red sand, gravel		
	66.4m-69.5m	Silty clay		
	69.5m-72.5m	Mottley clay		
	72.5m-74m	Red sand, gravel		
	74m-77.1m	Coarse grey sand, gravel		
	77.1m-78.6m	Mottley clay		
	78.6m-84.9m	Silty clay		
	84.9m-100m	White clay		
	100m-104.5m	Fine silty clay		
	104.5m-118.2m	Medium grey sand, gravel		
	118.2m-125.9m	Cemented band of grey sand stone very hard		
	125.9m-128.9m	Dark grey clay		
	128.9m-142.6m	Medium grey clay		
	142.6m-145.7m	Silty grey clay		
	145.7m-150.3m	Lignite		
	150.3m-151.8m	Silty clay		
GW011038	0m-0.91m	Topsoil	0.0	Onsite
	0.91m-3.66m	Clay		
	3.66m-5.18m	Clay grey		
	5.18m-7.92m	Clay yellow sandy		
	7.92m-9.14m	Sand yellow dry		
	9.14m-17.07m	Clay grey stiff		
	17.07m-18.9m	Sand fine dry		
	18.9m-21.34m	Clay black stiff		
	21.34m-22.86m	Clay stiff		
	22.86m-23.16m	Sand coarse soak		
	23.16m-25.91m	Sand fine clay		
	25.91m-26.52m	Sand coarse soak		
	26.52m-34.14m	Clay grey stiff		
	34.14m-41.15m	Clay soft		
	41.15m-44.5m	Clay very sandy		
	44.5m-51.51m	Clay grey stiff		
	51.51m-54.25m	Sand medium-coarse clean water supply		
	54.25m-54.27m	Clay sandy		

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
GW012860	Null		0.0	Onsite
GW010933	0m-0.3m Loam sandy 0.3m-2.74m Clay yellow 2.74m-7.92m Sand coarse 7.92m-13.72m Clay yellow 13.72m-17.37m Clay yellow stiff 17.37m-21.34m Clay yellow soft 21.34m-22.86m Clay grey stiff 22.86m-23.77m Clay very sandy 23.77m-25.91m Sand very fine 25.91m-28.96m Clay yellow soft 28.96m-35.05m Clay yellow firm 35.05m-37.49m Sand fine 37.49m-41.15m Clay black firm 41.15m-42.67m Clay sandy 42.67m-43.89m Clay grey very stiff 43.89m-46.02m Sand medium-coarse water supply 46.02m-46.04m Clay sandy		0.0	Onsite
GW017312	0m-0.91m Clay red 0.91m-2.44m Clay grey 2.44m-6.1m Clay black 6.1m-7.62m Clay grey 7.62m-9.14m Clay black 9.14m-15.54m Clay grey 15.54m-17.37m Clay sandy 17.37m-18.29m Clay grey 18.29m-21.03m Clay black 21.03m-21.95m Clay sandy 21.95m-24.69m Clay black 24.69m-25.6m Sand slurry 25.6m-29.26m Clay grey 29.26m-33.22m Clay sandy 33.22m-33.24m Sand water supply		0.0	Onsite
GW010454	0m-6.1m Clay 6.1m-10.36m Sand 10.36m-28.65m Clay 28.65m-29.57m Drift 29.57m-36.58m Clay		0.0	Onsite
GW008851	0m-1.22m Clay red 1.22m-11.28m Clay yellow 11.28m-15.24m Sand dry 15.24m-20.73m Clay yellow 20.73m-23.16m Clay sand 23.16m-24.08m Sand		0.0	Onsite
GW005704	0m-9.14m Clay 9.14m-19.81m Sand dry 19.81m-21.64m Clay 21.64m-21.66m Sand coarse soak 21.66m-32.92m Clay		0.0	Onsite
GW012892	Null		0.0	Onsite
GW010999	0m-2.13m Clay white sandy 2.13m-5.79m Clay yellow sandy 5.79m-7.01m Clay grey 7.01m-7.92m Clay 7.92m-10.67m Clay grey stiff 10.67m-13.41m Clay grey soft 13.41m-15.85m Clay soft sandy 15.85m-17.37m Sand dry 17.37m-23.16m Clay grey stiff 23.16m-25.6m Clay black 25.6m-26.21m Sand fine soak 26.21m-28.04m Clay grey stiff 28.04m-31.09m Sand silty water bearing 31.09m-37.49m Clay grey stiff 37.49m-45.72m Clay sandy 45.72m-48.16m Clay grey stiff 48.16m-50.29m Sand coarse clean water supply 50.29m-50.31m Clay sandy		0.0	Onsite

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
GW042143	Null		0.0	Onsite
41010218	Null		0.0	Onsite
GW405774	0m-3.353m Clay, heavy 3.35m-4.572m Sandy clay, medium 4.57m-6.401m Clay, medium 6.4m-10.058m Clay, heavy 10.06m-12.497m Clay, medium 12.5m-13.106m Sandy clay, fine 13.11m-13.411m Sand, loamy fine 13.41m-14.63m Clayey sand, coarse and gravel 14.63m-16.154m Clay, medium 16.15m-17.678m Sandy clay, fine 17.68m-17.983m Sand, loamy 17.98m-24.079m Clay, heavy		0.0	Onsite
GW405775	0m-3.962m Clay, heavy 3.96m-6.096m Clay, medium 6.1m-10.973m Clay, heavy 10.97m-14.935m Sandy clay, fine 14.94m-17.069m Clay, medium 17.07m-17.983m Clayey sand, coarse 17.98m-20.117m Sand, coarse 20.12m-21.946m Clay, heavy		0.0	Onsite
41010221	Null		0.0	Onsite
GW030325.1	Null		0.0	Onsite
GW030325.1.1	Null		0.0	Onsite
GW030325.3	Null		0.0	Onsite
GW401702	0m-38m Clay, brown silty grey 38m-39m Sand, brown 39m-48m Clay, brown 48m-53m Sand, brown 53m-59m Clay, brown yellow 59m-66m Sand, brown 66m-71m Clay, stiff yellow 71m-76m Sandy clay, white 76m-86m Clay, white 86m-107m Sand 107m-110m Clay, grey 110m-135m Sand 135m-148m Clay, brown white 148m-168m Sand & clay & coal 168m-171m Coal 171m-204m Clay, brittle brown 204m-242m Sand, hard 242m-242m Hard bottom		0.0	Onsite
GW030325.3.3	Null		0.0	Onsite
GW414356	0m-30m Clay 30m-33m Sand 33m-42m Clay 42m-44m Sand 44m-52m Clay 52m-55m Sand 55m-65m Clay 65m-81m Silt 81m-91m Sand 91m-92.5m Silt 92.5m-99m Sand 99m-129.5m Silt and sand 129.5m-146m Sand		0.0	Onsite
GW032076	0m-0.61m Clay red 0.61m-3.35m Clay 3.35m-6.1m Clay grey 6.1m-12.8m Clay black 12.8m-21.34m Sand dry, gravel moist 21.34m-33.22m Clay black 33.22m-33.38m Sand slurry water bearing		0.0	Onsite

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	33.38m-36.88m Clay grey 36.88m-44.5m Clay red grey 44.5m-47.85m Clay grey stiff 47.85m-61.26m Clay 61.26m-62.48m Clay grey 62.48m-63.7m Clay grey yellow 63.7m-65.84m Clay stiff 65.84m-74.07m Clay grey stiff 74.07m-74.37m Clay grey sandy 74.37m-74.39m Sand white coarse water supply			
GW065223	Null		0.0	Onsite
GW012554	Null		0.0	Onsite
GW017615	0m-2.44m Clay red 2.44m-5.18m Clay grey 5.18m-5.49m Clay sandy 5.49m-7.62m Sand dry coarse 7.62m-9.75m Clay grey 9.75m-13.11m Sand dry 13.11m-22.25m Clay black 22.25m-24.38m Sand slurry 24.38m-27.43m Sand coarse soak 27.43m-30.18m Clay black 30.18m-33.53m Clay grey 33.53m-38.86m Clay black 38.86m-39.01m Sand coarse soak 39.01m-49.68m Clay black 49.68m-58.52m Clay grey 58.52m-62.79m Clay black 62.79m-63.4m Clay sandy 63.4m-63.41m Sand water supply		0.0	Onsite
GW065217	Null		0.0	Onsite
GW501052	0m-1m Topsoil and clay grey 1m-14m Clay grey 14m-16m Clay brown 16m-22m Clay grey 22m-25m Clay grey brown gravel 25m-33m Gravel white brown clay layers 33m-60m Clay grey brown 60m-79m Clay brown grey 79m-92m Sand yellow clay layers 92m-100m Sand white grey 100m-101m Sand and clay white 101m-114m Clay grey brown sticky 114m-125m Clay dark grey 125m-127m Clay ligneous 127m-130m Clay grey white 130m-137m Clay brown white sandy 137m-140m Sand grey 140m-146m Clay dark brown 146m-150m Sand 150m-155m Clay ligneous 155m-156m Clay brown grey 156m-168m Sand 168m-169m Clay ligneous 169m-178m Sand 178m-181m Clay ligneous		0.0	Onsite
GW008850	0m-1.52m Clay grey 1.52m-4.57m Sand 4.57m-7.32m Clay yellow 7.32m-8.84m Sand 8.84m-14.94m Clay red 14.94m-24.08m Sand clay		0.0	Onsite
GW400095	0m-0.305m Grey loam 0.3m-7.62m Grey white sandy clay 7.62m-20.72m Grey brown clays 20.72m-22.55m Fine yellow brown sand 22.55m-26.82m Yellow brown white clay 26.82m-28.65m Medium grain brown sand		0.0	Onsite

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	28.65m-56.39m Heavy brown grey clays 56.39m-59.13m Coarse brown sand & gravel 59.13m-62.18m Grey brown clay			
GW069057	Null		0.0	Onsite
GW012887	Null		0.0	Onsite
GW035045	0m-0.6m Loam red 0.6m-7.62m Clay grey 7.62m-9.14m Clay grey sandy 9.14m-12.8m Clay grey stiff 12.8m-15.24m Clay grey sandy 15.24m-20.72m Clay grey stiff stones 20.72m-23.46m Clay grey sandy 23.46m-24.38m Clay grey 24.38m-24.99m Clay sandy water supply, sand water supply		0.0	Onsite
GW416059	Null		0.0	Onsite
GW017769	0m-0.3m Subsoil sandy 0.3m-0.91m Clay sandy 0.91m-3.35m Clay black 3.35m-6.1m Sand dry 6.1m-18.9m Clay black 18.9m-23.16m Clay sandy 23.16m-24.38m Sand slurry 24.38m-45.11m Clay black 45.11m-46.33m Clay sandy 46.33m-46.34m Wash sandy water supply		0.0	Onsite
GW011854	Null		0.0	Onsite
GW012890	Null		0.0	Onsite
GW012862	Null		0.0	Onsite
GW028853	0m-6.1m Sand gravel 6.1m-8.23m Gravel light brown 8.23m-9.75m Clay sand 9.75m-11.58m Clay multicoloured 11.58m-22.25m Clay light grey 22.25m-25.6m Sand coarse 25.6m-49.07m Clay grey 49.07m-53.95m Clay red grey some small pebbles/pebbly 53.95m-55.47m Sand fine-medium 55.47m-65.23m Clay grey 65.23m-73.15m Gravel fine 65.23m-73.15m Sand coarse 73.15m-81.38m Clay grey 81.38m-96.32m Clay white sandy 96.32m-104.55m Sand white clayey 104.55m-111.56m Sand medium-coarse 111.56m-127.71m Clay white sandy 111.56m-127.71m Coal water bearing 127.71m-130.45m Coal water bearing gravel 130.45m-142.65m Coal water bearing 130.45m-142.65m Sand layers 142.65m-147.52m Sand fine some clay 147.52m-156.06m Clay grey seams 147.52m-156.06m Coal 156.06m-158.19m Sand coarse water bearing 158.19m-166.73m Clay grey 158.19m-166.73m Coal 166.73m-190.5m Coal		0.0	Onsite
GW011849	Null		0.0	Onsite
GW012889	Null		0.0	Onsite
GW042849	0m-0.6m Clay red sandy 0.6m-1.82m Clay lighter 1.82m-8.23m Sand gravel 8.23m-19.82m Clay white 19.82m-32m Sand white yellow fine 32m-50.3m Clay white sticky 50.3m-54.8m Clay white yellow silty sandy		0.0	Onsite

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	54.8m-55.7m Sand yellow fine 55.7m-64.6m Clay yellow 64.6m-70.7m Sand white yellow medium-coarse water supply 70.7m-76.8m Clay white yellow 76.8m-78.3m Sand muddy 78.3m-89.9m Sand white clay 89.9m-97.2m Clay white sandy 97.2m-104.5m Sand white medium water supply 104.5m-107.6m Clay white silty 107.6m-123.1m Clay silty some lignite pyrite 123.1m-125.3m Clay sandy 125.3m-130.7m Clay grey lignite 130.7m-131.4m Clay sandy 131.4m-139m Sand white fine water supply 139m-139.9m Lignite clay 139.9m-151.5m Clay sand 139.9m-151.5m Lignite silty 151.5m-153.9m Sand white fine 153.9m-157.9m Sand white coarse water supply 157.9m-161.8m Clay lignite			
GW062421	0m-1m Clay red topsoil 1m-4m Clay sandy 4m-11m Clay grey 11m-13.5m Sand dry 13.5m-31m Clay grey 31m-32m Clay soft sandy 32m-56m Clay red grey 56m-58m Sand tight water supply 58m-70.5m Clay hard 70.5m-72.3m Quartz limestone 72.3m-80m Clay tough 80m-80.5m Clay grey sandy 80.5m-88m Sand coarse water supply 88m-92m Clay gritty 92m-118.5m Sand coarse water supply 118.5m-133m Clay black soft 133m-151m Soft silty 151m-159m Coal 159m-162m Coal black tight 162m-165m Clay black silty 165m-168m Coal black tight		0.0	Onsite
GW062049	0m-20m Clay grey 20m-21m Sand coarse water bearing 21m-54m Clay hard 54m-79m Clay soft gritty 79m-85.5m Clay red hard gritty 85.5m-90m Clay white dry 90m-93m Limestone white soft 93m-98m Clay white sandy 98m-106m Sand fine free water bearing 106m-112m Clay white sandy 112m-118m Sand coarse very free water bearing 118m-134m Clay grey 118m-134m Coal 134m-142.5m Sand coarse water bearing 142.5m-161.5m Coal black waddy 161.5m-171m Sand coarse water bearing 171m-174m Coal black sandy 174m-192m Clay soft sandy		0.0	Onsite
GW050184	0m-0.9m Clay 0.9m-3.7m Clay grey 3.7m-6.1m Clay grey sandy 6.1m-7.6m Clay grey 7.6m-12.2m Clay sandy 12.2m-14m Clay grey very sandy 14m-16.1m Clay grey sandy 16.1m-18.3m Sand medium-coarse 18.3m-19.2m Clay sandy some stones 19.2m-22.5m Clay grey		0.0	Onsite

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
	22.5m-28m Clay grey hard 28m-31.1m Clay grey sandy 31.1m-32.3m Clay grey 32.3m-34.8m Clay sandy 34.8m-37.2m Clay hard 37.2m-38.7m Clay grey 38.7m-39.6m Clay grey sandy 39.6m-41.1m Clay grey 41.1m-42.7m Clay sandy 42.7m-43.6m Clay grey hard 43.6m-48.8m Clay grey 48.8m-51.5m Clay 51.5m-69m Clay grey hard 69m-69.8m Clay grey sandy firm 69.8m-72m Clay grey sandy 72m-73.2m Clay grey 73.2m-75m Clay grey very sandy 75m-76.2m Clay grey 76.2m-77.7m Clay grey 77.7m-77.71m Sand grey medium			
GW012861	Null		0.0	Onsite
GW069056	Null		0.0	Onsite
GW065059	0m-1.8m Brown silty clay 1.8m-5.18m Brown sand & gravel 5.18m-27.44m Brown yellow & white clay 27.44m-28.96m Brown sand medium grain 28.96m-58.23m Heavy brown/white clay 58.23m-59.45m Sandy yellow/white clay 59.45m-60.06m Yellow sand/medium grain 60.06m-61.89m White sandy clay 61.89m-64.32m Lighter yellow sand some gravel 64.32m-64.93m White sandy clay some mica 64.93m-69.2m Yellow sand medium to coarse 69.2m-76.22m Very sticky brown/white clay 76.22m-82.01m White sand. fine to coarse 82.01m-84.14m White claybound sand 84.14m-103.04m Fine white sand becoming coarse 103.04m-104.26m White sandy clay 104.26m-112.19m White sand. fine to medium grain 112.19m-123.17m Brown clay & lignite 123.17m-138.72m Brown/grey clay. some sandy layers		0.0	Onsite
GW005707	0m-12.19m Clay 12.19m-24.38m Clay sandy soak 24.38m-43.28m Clay		0.0	Onsite
GW063851	0m-10m Clay grey very heavy 10m-12.5m Sand yellow gravel 12.5m-30m Clay grey yellow very heavy water supply 30m-32m Sand yellow coarse water supply 32m-32.05m Clay red white		0.0	Onsite
GW047145	Null		0.0	Onsite
GW505524	Null		0.0	Onsite
GW405800	0m-0.61m Clay, heavy 0.61m-0.914m Clay, medium 0.91m-1.524m Sandy clay, fine 1.52m-2.438m Loam, fine sandy 2.44m-4.877m Clay, heavy 4.88m-5.486m Clay, medium 5.49m-7.62m Sandy clay 7.62m-9.449m Sand, coarse 9.45m-10.973m Sandy clay, fine 10.97m-12.497m Sandy clay, fine to medium 12.5m-13.411m Sandy clay loam, fine 13.41m-14.63m Loam, fine sandy 14.63m-17.069m Clayey sand, coarse 17.07m-18.898m Clay, medium 18.9m-21.031m Sandy clay, fine 21.03m-24.079m Sandy clay		0.8	South

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
GW403747.3	Null		3.0	South-west
GW403747.3.3	Null		3.0	South-west
GW403747	0m-1m Brown slightly sandy clay. 0m-1m Topsoil 1m-2m Brown slightly sandy clay with minor fine gravel. 1m-7m Clay, brown 2m-3m Light brown sandy clay with minor fine gravel. 3m-4m Light brown to brown sandy clay with some fine gravel. 4m-5m Light brown to brown sandy clay with minor fine gravel. 5m-6m Light brown to brown sandy clay with minor fine gravel. 6m-7m Light brown to brown sandy clay with minor fine gravel. 7m-8m Light brown to brown sandy clay with minor fine gravel. 7m-10m Sandy clay 8m-9m Light brown to brown sandy clay with minor fine gravel. 9m-10m Light brown sandy clay with coarse sand and gravel. 10m-11m Brown coarse sand and light brown clay. 10m-13m Clay, coarse 11m-12m Brown very coarse sand and light brown clay. 12m-13m Brown coarse sand and light brown clay. 13m-22m Clay, brown 13m-14m Light brown clay with very coarse sand. 14m-15m Light brown clay with very coarse sand. 15m-16m Light brown clay with very coarse sand. 16m-17m Light brown clay with very coarse sand. 17m-18m Light brown clay with some coarse sand. 18m-19m Light brown clay with some coarse sand. 19m-20m Light brown to brown clay with some coarse sand. 20m-21m Light brown to brown clay with some coarse sand. 21m-22m Light brown to brown clay with some coarse sand. 22m-23m Brown coarse sand with some clay. 22m-25m Clay, coarse 23m-24m Brown coarse sand with some clay. 24m-25m Brown coarse sand with some clay. 25m-33m Clay, brown 25m-26m Light brown clay with very coarse sand. 26m-27m Light brown clay with very coarse sand. 27m-28m Light brown clay with very coarse sand and fine gravel. 28m-29m Brown clay. 29m-30m Brown clay. 30m-31m Brown clay. 31m-32m Light brown to brown clay with coarse sand. 32m-33m Very coarse sand with some brown clay. 33m-37m Clay, coarse 33m-34m Very coarse sand with some brown clay. 34m-35m Brown very coarse sand. 35m-36m Brown very coarse sand with some clay. 36m-37m Brown very coarse sand with some clay. 37m-38m Brown to red brown sandy clay with gravel. 37m-55m Clay, brown 38m-39m Brown to red brown sandy clay with gravel. 39m-40m Brown to red brown sandy clay with gravel. 40m-41m Brown to red brown sandy clay with gravel. 41m-42m Brown clay. 42m-43m Brown clay with some gravel. 43m-44m Brown to red brown sandy clay with some gravel. 44m-45m Brown clay with some gravel. 45m-46m Brown clay with some gravel. 46m-47m Brown clay with some gravel. 47m-48m Red brown clay with minor gravel. 48m-49m Red brown clay with minor gravel. 49m-50m Red brown clay with minor gravel. 50m-51m Red brown clay with minor gravel. 51m-52m Brown to red brown clay with some sand and gravel. 52m-53m Brown to red brown clay with some sand and gravel. 53m-54m Brown to red brown clay with some sand and gravel. 54m-55m Brown fine to medium sand. 55m-56m Brown fine to medium sand. 55m-69m Clay, dark brown	16.7	South-west	

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	56m-57m	Brown clay with minor sand and gravel.		
	57m-58m	Brown clay with minor sand and gravel.		
	58m-59m	Brown clay with gravel.		
	59m-60m	Brown clay with some gravel.		
	60m-61m	Brown clay with minor gravel.		
	61m-62m	Brown clay with minor gravel.		
	62m-63m	Brown clay.		
	63m-64m	Brown clay.		
	64m-65m	Brown clay.		
	65m-66m	Brown clay with some gravel.		
	66m-67m	Brown clay with some gravel.		
	67m-68m	Brown clay with coarse sand and gravel.		
	68m-69m	Brown clay with coarse sand and gravel.		
	69m-70m	Brown clay with coarse sand and gravel.		
	69m-72m	Clay, dar brown, quartz content		
	70m-71m	Brown clay.		
	71m-72m	Brown clay.		
	72m-73m	Brown clay.		
	72m-77m	Clay, dark brown		
	73m-74m	Brown clay.		
	74m-75m	Brown clay.		
	75m-76m	Brown to rusty brown fine to medium sand.		
	76m-77m	Brown to rusty brown fine to medium sand.		
	77m-78m	Brown to rusty brown fine to medium sand.		
	77m-81m	Sand, fine, brown		
	78m-79m	Brown to rusty brown fine to medium sand.		
	79m-80m	Brown clay with minor sand.		
	80m-81m	Brown clay with minor sand.		
	81m-82m	Brown clay with minor sand.		
	81m-92m	Clay, brown		
	82m-83m	Brown clay with minor sand.		
	83m-84m	Brown clay with minor sand.		
	84m-85m	Brown clay with minor sand.		
	85m-86m	Brown clay with minor sand.		
	86m-87m	Brown to yellow brown clay with minor sand.		
	87m-88m	Brown to yellow brown clay with minor sand.		
	88m-89m	Grey fine sand (top of calivil formation).		
	89m-90m	Grey fine sand.		
	90m-91m	Grey fine to medium sand.		
	91m-92m	Grey fine to medium sand.		
	92m-93m	Grey fine to medium sand.		
	92m-139m	Sand, light grey		
	93m-94m	Grey fine to coarse sand.		
	94m-95m	Grey coarse sand.		
	95m-96m	Grey coarse sand.		
	96m-97m	Light brown and grey clay with coarse sand.		
	97m-98m	Grey coarse sand.		
	98m-99m	Grey clay with fine to coarse sand.		
	99m-100m	Grey clay with fine to coarse sand.		
	100m-101m	Grey clay with fine to coarse sand.		
	101m-102m	Grey fine to medium sand.		
	102m-103m	Grey fine to coarse sand.		
	103m-104m	Grey fine to coarse sand.		
	104m-105m	Grey fine to coarse sand.		
	105m-106m	Grey fine to medium sand.		
	106m-107m	Grey fine to medium sand.		
	107m-108m	Grey fine to medium sand.		
	108m-109m	Grey fine to medium sand.		
	109m-110m	Grey fine to medium sand.		
	110m-111m	Grey fine to medium sand.		
	111m-112m	Grey fine to medium sand.		
	112m-113m	Grey fine to medium sand.		
	113m-114m	Dark grey coarse sand.		
	114m-115m	Dark grey coarse sand.		
	115m-116m	Dark grey coarse sand.		
	116m-117m	Dark grey coarse sand.		
	117m-118m	Dark grey coarse sand with some clay.		
	118m-119m	Dark grey coarse sand.		
	119m-120m	Dark grey fine to medium sand.		

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	120m-121m	Dark grey fine to medium sand.		
	121m-122m	Dark grey fine to medium sand.		
	122m-123m	Dark grey fine to medium sand.		
	123m-124m	Dark grey fine to medium sand.		
	124m-125m	Dark grey fine to medium sand.		
	125m-126m	Dark grey fine to medium sand.		
	126m-127m	Grey medium sand.		
	127m-128m	Grey medium sand.		
	128m-129m	Grey medium to coarse sand.		
	129m-130m	Grey medium to coarse sand.		
	130m-131m	Grey medium to coarse sand.		
	131m-132m	Grey medium to coarse sand.		
	132m-133m	Grey medium to coarse sand.		
	133m-134m	Grey medium to coarse sand.		
	134m-135m	Dark grey very coarse sand.		
	135m-136m	Dark grey very coarse sand.		
	136m-137m	Dark grey very coarse sand.		
	137m-138m	Dark grey very coarse sand.		
	138m-139m	Dark grey very coarse sand.		
	139m-140m	Dark brown/black lignite with clay (upper renmark?)		
	139m-154m	Lignite		
	140m-141m	Dark brown/black lignite with clay and some coarse sand.		
	141m-142m	Dark brown/black lignite with clay and some coarse sand.		
	142m-143m	Dark brown/black lignite with clay and some coarse sand.		
	143m-144m	Grey fine-medium sand.		
	144m-145m	Dark brown/black lignite with clay with some coarse sand.		
	145m-146m	Dark brown/black lignite with clay with some coarse sand.		
	146m-147m	Dark brown/black lignite with clay with some coarse sand.		
	147m-148m	Dark brown/black lignite with clay with some coarse sand.		
	148m-149m	Dark brown/black lignite with clay with some coarse sand.		
	149m-150m	Dark brown/black lignite with clay with some coarse sand.		
	150m-151m	Dark brown/black lignite with clay with some coarse sand.		
	151m-152m	Dark brown/black lignite with clay with some coarse sand.		
	152m-153m	Dark brown/black lignite with clay with some coarse sand.		
	153m-154m	Dark brown/black lignite with clay with some coarse sand.		
	154m-155m	Grey fine sand.		
	154m-161m	Sand & lignite bands		
	155m-156m	Grey fine sand.		
	156m-157m	Grey fine sand.		
	157m-158m	Grey fine sand.		
	158m-159m	Grey fine sand.		
	159m-160m	Grey fine sand with dark brown/black lignite.		
	160m-161m	Grey fine sand with dark brown/black lignite.		
	161m-162m	Grey fine sand with dark brown/black lignite.		
	161m-204m	Sand, dark grey		
	162m-163m	Grey fine sand with dark brown/black lignite.		
	163m-164m	Grey fine sand with dark brown/black lignite.		
	164m-165m	Grey fine-medium sand with dark brown/black lignite.		
	165m-166m	Grey fine-medium sand with dark brown/black lignite.		
	166m-167m	Grey fine-medium sand with dark brown/black lignite.		
	167m-168m	Grey fine-medium sand with dark brown/black lignite.		
	168m-169m	Grey fine-medium sand with dark brown/black lignite.		
	169m-170m	Dark brown/black lignite with clay.		
	170m-171m	Dark brown/black lignite with clay.		
	171m-172m	Dark brown/black lignite with clay.		
	172m-173m	Grey fine sand.		
	173m-174m	Grey fine sand.		
	174m-175m	Grey fine sand.		
	175m-176m	Grey fine sand.		
	176m-177m	Grey fine sand.		
	177m-178m	Grey fine sand with dark brown/black lignite.		
	178m-179m	Grey fine sand with dark brown/black lignite.		
	179m-180m	Dark brown black lignite with clay.		
	180m-181m	Dark brown black lignite with clay.		
	181m-182m	Dark brown black lignite with clay.		
	182m-183m	Dark brown black lignite with clay and occasional gravel.		
	183m-184m	Dark brown black lignite with clay and occasional gravel.		
	184m-185m	Dark brown black lignite with clay with some (minor) sand and gravel.		
	185m-186m	Dark brown black lignite with clay and occasional gravel.		

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	186m-187m	Dark brown black lignite with clay and occasional gravel.		
	187m-188m	Dark brown black lignite with clay and occasional gravel.		
	188m-189m	Dark brown black lignite with clay and occasional gravel.		
	189m-190m	Dark brown black lignite with clay and occasional gravel.		
	190m-191m	Dark brown black lignite with clay and occasional gravel.		
	191m-192m	Dark brown black lignite with clay and occasional gravel.		
	192m-193m	Dark brown black lignite with clay and occasional gravel.		
	193m-194m	Dark brown black lignite with clay with some (minor) sand and gravel.		
	194m-195m	Dark brown black lignite with clay with some (minor) sand and gravel.		
	195m-196m	Dark brown black lignite with clay with some (minor) sand and gravel.		
	196m-197m	Dark brown black lignite with clay with some (minor) sand and gravel.		
	197m-198m	Dark brown black lignite with clay with some (minor) sand and gravel.		
	198m-199m	Dark brown black lignite with clay with some sand and gravel.		
	199m-200m	Dark grey medium sand.		
	200m-201m	Dark grey medium sand, some coarse sand.		
	201m-202m	Dark grey medium sand, some coarse sand.		
	202m-203m	Dark grey medium sand, some coarse sand.		
	203m-204m	Dark grey medium sand, some coarse sand.		
	204m-216m	Clay		
	204m-205m	Dark brown/black lignite with clay and some sand.		
	205m-206m	Dark brown/black lignite with clay and some sand.		
	206m-207m	Dark brown/black lignite with clay and some sand.		
	207m-208m	Dark brown/black lignite with clay and some (minor) sand.		
	208m-209m	Dark brown/black lignite with clay and some (minor) sand.		
	209m-210m	Dark brown/black lignite with clay and some (minor) sand.		
	210m-211m	Dark brown/black lignite with clay and some (minor) coarse sand.		
	211m-212m	Dark brown/black lignite with clay and some (minor) coarse sand.		
	212m-213m	Dark brown/black lignite with clay and some (minor) coarse sand.		
	213m-214m	Dark brown/black lignite with clay and some (minor) coarse sand.		
	214m-215m	Grey medium sand with dark brown/black lignite and some coarse sand.		
	215m-216m	Grey medium sand with dark brown/black lignite and some coarse sand.		
	216m-217m	Dark grey/black medium-coarse sand.		
	216m-229m	Sand, coarse, grey		
	217m-218m	Dark grey/black medium-coarse sand.		
	218m-219m	Dark grey/black medium-very coarse sand.		
	219m-220m	Dark grey/black medium-very coarse sand.		
	220m-221m	Dark grey/black medium-very coarse sand.		
	221m-222m	Dark grey/black medium-very coarse sand.		
	222m-223m	Dark grey/black medium-very coarse sand.		
	223m-224m	Dark grey/black medium-very coarse sand.		
	224m-225m	Dark grey/black medium-very coarse sand.		
	225m-226m	Dark grey/black medium-very coarse sand.		
	226m-227m	Dark grey/black medium-very coarse sand.		
	227m-228m	Dark grey/black medium-very coarse sand.		
	228m-229m	Dark grey/black medium-very coarse sand.		
GW504922	Null		20.1	North
GW405644	0m-6.096m Clay, heavy 6.1m-6.401m Clay, medium 6.4m-7.62m Clay, heavy 7.62m-9.449m Clay, medium 9.45m-14.021m Clay, heavy 14.02m-17.069m Clay, medium 17.07m-20.422m Clay, heavy 20.42m-24.994m Clay, medium 24.99m-25.908m Clayey sand 25.91m-27.432m Sand, coarse		37.9	North
GW405642	0m-0.61m Sand, loamy 0.61m-0.914m Sandy clay 0.91m-2.134m Clay, light 2.13m-3.048m Clay, medium 3.05m-3.962m Sandy clay, fine 3.96m-6.1m Sandy clay loam, fine 6.1m-6.401m Clayey sand, coarse 6.4m-9.144m Sand, coarse 9.14m-24.994m Clay, heavy 24.99m-25.908m Sandy clay, medium 25.91m-27.127m Clayey sand, coarse		37.9	North

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
GW405643	0m-3.353m Clay, heavy 3.35m-6.401m Sandy clay, fine to medium 6.4m-9.144m Clay, heavy 9.14m-10.058m Clay, gravelly medium 10.06m-14.021m Clay, gravelly 14.02m-14.935m Clay, medium 14.94m-17.374m Sandy clay, fine to medium 17.37m-18.898m Sandy clay, medium 18.9m-21.031m Clay, heavy 21.03m-24.079m Clay, medium		42.0	North
110220	Null		68.4	West
110219	Null		68.4	West
110221	Null		68.4	West
GW400379	0m-9.45m Red & grey clay 9.45m-13.4m Dry sand 13.4m-24.6m Grey brown clay 24.6m-27.7m Slurry sand 27.7m-33.2m Grey brown clay 33.2m-35.6m Fine brown sand 35.6m-38.4m Sandy clay 38.4m-40.8m Silt 40.8m-46.6m Silty clay 46.6m-49.2m Brown clay 49.2m-49.3m Brown sand 49.3m-50.3m Brown clay 50.3m-50.4m Brown gravel 50.4m-67.6m Hard brown clay 67.6m-68.9m Red & grey silty clay 68.9m-71.6m Brown water bearing sand		75.8	South
GW405638	0m-4.877m Clay, heavy 4.88m-6.096m Clay, medium 6.1m-6.706m Clay, light 6.71m-8.839m Clay, heavy 8.84m-9.449m Clay, medium 9.45m-10.668m Clay, light 10.67m-13.716m Clay, heavy 13.72m-15.24m Clay, medium 15.24m-15.85m Clay, light 15.85m-16.459m Clay, medium 16.46m-18.898m Clay, heavy 18.9m-20.726m Clay, medium 20.73m-21.336m Clay, light 21.34m-21.946m Sandy clay, fine 21.95m-22.86m Sandy clay 22.86m-24.689m Clayey sand		77.7	North
41010228	Null		86.0	West
GW400859	0m-1m Clay, red 1m-4m Clay, brown 4m-15m Sand, brown 15m-32m Clay, light brown 32m-34m Sand, dirty brown 34m-37m Clay, light brown 37m-73m Clay, dark brown 73m-86m Clay & sand light brown 86m-92m Clay & grit white 92m-108m Clay, light brown 108m-115m Sand, grey 115m-129m Clay, white & brown specks 129m-198m Clay & coal ligneous 198m-199m Clay, coal & sand 199m-209m Sand, grey 209m-216m Coal & grit		97.0	South
GW400990	0m-1m Clay dark grey 1m-4m Clay light grey 4m-5m Clay soft grey brown 5m-6m Clay silt sandy brown 6m-19m Clay soft grey brown		116.2	West

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
	19m-20m Clay gritty with stones 20m-43m Clay grey brown 43m-44.9m Sand coarse brown 44.9m-48m Clay grey brown 48m-54m Clay firm brown 54m-55m Sand coarse brown 55m-72.8m Clay tough grey brown 72.8m-73.4m Limestone cemented 73.4m-84.5m Clay soft grey 84.5m-92.5m Clay firm 92.5m-96m Clay soft silt grey 96m-98m Silt grey 98m-100m Sand medium brown 100m-101m Clay brown 101m-102m Clay grey 102m-103m Clay softer 103m-105m Silt sandy 105m-106m Sand fine grey 106m-108m Silt sandy 108m-109m Sand clean grey 109m-113m Clay dark ligneous 113m-114m Sand tight grey 114m-115m Sand fine grey 115m-118.3m Clay silty 118.3m-124m Clay firm ligneous 124m-125m Decayed timber 125m-127m Sand fine grey 127m-128m Clay ligneous 128m-130m Silty softer 130m-131m Sand coarse grey 131m-132m Clay light grey 132m-134m Sand medium grey fine 134m-135m Sand grey finer 135m-137m Sand finer grey 137m-147m Sand grey coarser 147m-148m Clay sandy cemented 148m-150m Sand bound lignite 150m-153m Clay ligneous 153m-155m Silty softer 155m-155.5m Silty firmer 155.5m-156m Sand fine & medium coarse 156m-158m Sand mainly fine 158m-159m Clay silty coaly 159m-160m Sand silty ligneous 160m-163m Clay ligneous 163m-164m Sand medium fine 164m-166m Silts dark 166m-167m Sand medium coarse 167m-168m Sand evenly sorted clean 168m-173m Sand coarser 173m-175m Silt 175m-176m Clays silty 176m-177m Sand fine grey 177m-180m Sand medium fine grey 180m-181m Coal 181m-182m Clay dark brown silty coal 182m-183m Clay coaly 183m-183m Coal tough dry			
GW414753	Null		133.1	South
GW030325	0m-4.58m Clay - light grey. 0m-3m Clay grey 3m-7.6m Clay yellow 4.58m-6.1m Clay - light grey and light brown. 6.1m-10.68m Clay - light brown trace of light grey. 7.6m-10.6m Clay grey 10.6m-15.2m Gravel fine-coarse 10.68m-12.2m Sand - 90% most 1 - 1.5mm, quartz, clay 10%, light grey. 12.2m-13.73m Sand - 80% clay 20% then as for 10.68 - 12.20. 13.73m-15.25m Clay - 30% sand 70% then as for 10.68 - 12.20.		171.0	West

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	15.2m-27.4m Clay multicoloured 15.25m-18.3m Clay - light grey and light brown. 18.3m-24.4m Clay - light grey. 24.4m-27.45m Clay - light grey and light brown. 27.4m-28.9m Sand white 27.45m-28.98m Clay - 60% light grey, sand 40% most fine to 1 mm. 28.9m-33.5m Clay yellow sand 28.98m-30.5m Clay - light grey, slightly sandy (coarse). 30.5m-32.03m Sand - fine to 2.5 mm, mainly quartz, light brown. 32.03m-33.55m Clay - light brown. 33.5m-47.2m Clay multicoloured 33.55m-35.08m Clay - brown, trace of light grey. 35.08m-42.7m Clay - light brown. 42.7m-44.23m Clay - light brown trace of red and light grey. 44.23m-45.75m Clay - light brown and light grey. 45.75m-47.28m Clay - light brown. 47.2m-50.2m Clay grey 47.28m-50.33m Clay - light brown, slightly sandy (coarse). 50.2m-51.8m Clay red 50.33m-51.85m Clay - light brown, trace of light grey. 51.8m-59.4m Clay red sand 51.85m-53.38m Clay - light brown trace of light grey, slightly sandy (fine). 53.38m-54.9m Clay - brown, sandy (coarse). 54.9m-56.43m Clay - 70% light brown, sand 30% up to 2 mm. 56.43m-57.95m Clay - 40% light brown, sand 60% most 1 - 1.5 mm. 57.95m-59.48m Clay - 70, sand 30% as for 54.90 - 56.43. 59.4m-65.5m Clay multicoloured 59.48m-61m Clay - light brown trace of light grey, trace of sand (coarse). 61m-68.63m Clay - light brown trace of light grey. 65.5m-67m Clay red sand 67m-74.6m Clay grey 68.63m-71.68m Clay - light brown and light grey. 71.68m-73.2m Clay - light grey and light brown, sand (fine). 73.2m-74.73m Missing. 74.6m-90.5m Clay white sand 74.73m-76.25m Clay - 40% light grey and light brown, sand 60% fine to 2 mm. 76.25m-79.3m Clay - 30, sand 70% then as for 74.73 - 76.25. 79.3m-82.35m Clay - 60% light grey and light brown, sand 40% fine to 2 mm. 82.35m-83.88m Clay - light grey, sandy (fine). 83.88m-85.4m Clay - light grey and light brown, sandy (fine to coarse). 85.4m-88.45m Clay - light grey, very sandy (medium). 88.45m-91.5m Clay - light grey some light brown, sandy (medium). 90.5m-94.7m Sandstone 91.5m-93.03m Clay - light brown and light grey, sandy (medium). 93.03m-94.55m Clay - 70% light brown, sand 30% around 2 mm. 94.55m-96.08m Sand - 95% most 1.5 - 2 mm. clay 5% light brown. 94.7m-112.7m Clay white sand 96.08m-105.23m Clay - light brown sandy (coarse), trace of light grey. 105.23m-108.28m Clay - light brown, slightly sandy (coarse). 108.28m-109.8m Clay - 20% light, brown sand 80% most 1 - 2 mm, quartz. 109.8m-111.33m Clay - 70% light grey, sand 30% up to 2 mm. 111.33m-112.85m Clay - 60% light brown, sand 20% up to 2 mm, black carbonaceous material 20%. 112.7m-120.3m Clay black sand 112.85m-114.38m Clay - as for 109.80 - 111.33. 114.38m-115.9m Clay - 70% light grey, sand 30% up to 2 mm, trace of black carbonaceous material. 115.9m-117.43m Clay - 80% dark grey, sand 20% up to 2 mm, some black carbonaceous material. 117.43m-118.95m Clay - light brown, sandy (medium).			
GW504920	Null		171.5	South
GW500504	0m-1m Topsoil red sandy 1m-6m Clay brown crumbly 6m-8m Sand fine light brown 8m-11m Clay sandy 11m-14m Clay various structures 14m-16m Sand cemented 16m-24m Clay firm light brown 24m-30m Clay firm reddish brown		186.0	South

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
	30m-42m Clay mustard brown and grey 42m-44m Sand brown medium 44m-60m Clay mustardy brown and grey 60m-70m Clay brown dds 70m-71.5m Clay silty grey and brown 71.5m-72.8m Sand 72.8m-82m Clay gritty grey and brown 82m-85m Sand 85m-86m Clay gritty 86m-89m Clay dds 89m-99m Sand 99m-100m Clay gritty 100m-101m Clay chalky 101m-102m Sand 102m-107m Clay mustard grey 107m-116m Sand 116m-117m Sand dirty 117m-120m Sand 120m-123m Sand dirty 123m-126m Clay 126m-128m Silt 128m-134m Clay dark grey to light grey 134m-151m Sand 151m-152m Sand softer 152m-160m Sand 160m-160m Coal			
GW504919	Null		215.0	West
GW400022	0m-1m Topsoil and red /brown clay 1m-2m Clay brown 2m-5m Clay grey 5m-9m Sand & gravel 9m-11m Clay grey / brown 11m-13m Clay grey 13m-16m Clay grey very sandy 16m-18m Sand white 18m-23m Clay grey / yellow/ brown soft 23m-26m Clay grey 26m-28m Clay grey/brown 28m-31m Clay brown/red 31m-35m Clay grey / brown sandy 35m-38m Clay lt brown sticky 38m-42m Clay red / brown sticky 42m-44m Sand brown / yellow 44m-45m Clay grey / yellow 45m-47m Clay grey / brown /black streaks 47m-48m Clay grey / yellow 48m-51m Clay grey / brown 51m-53m Clay red / brown 53m-55m Clay grey / brown / black streaks 55m-57m Clay red / brown & clay layers 57m-58m Clay light brown 58m-60m Clay brown 60m-62m Clay brown / grey sandy 62m-63m Sand & gravel 63m-68m Clay grey / brown / dk grey 68m-70m Clay sandy brown / grey 70m-71m Sand brown / yellow 71m-77m Clay grey / green 77m-78m Sand 78m-80m Sand 80m-82m Clay dk brown / grey / green 82m-85m Sand 85m-87m Sand 87m-88m Sand 88m-90m Sand 90m-96m Sand 96m-98m Sand 98m-101m Sand 101m-103m Sand		223.2	West

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	103m-105m Sand 105m-106m Sand 106m-109m Sand 109m-112m Sand 112m-115m Sand 115m-118m Sand 118m-121m Clay dark grey / blue 121m-125m Clay dark brown 125m-129m Clay soft grey / dark brown 129m-131m Sand 131m-133m Sand 133m-134m Sand & clay layer 134m-136m Sand 136m-138m Sand 138m-142m Sand & coal trace 142m-144m Clay grey 144m-150m Clay dark brown 150m-154m Clay dark brown / black 154m-163m Clay dark brown / black coal 163m-173m Clay black soft			
GW500469	0m-1m Topsoil red sandy 1m-6m Clay brown crumbly 6m-8m Sand fine light brown 8m-11m Clay sandy 11m-14m Clay various structures 14m-16m Sand cemented 16m-24m Clay firm light brown 24m-30m Clay firm reddish brown 30m-42m Clay mustard brown and grey 42m-43m Sand brown medium 43m-44m Sand brown medium 44m-60m Clay mustardy brown and grey 60m-70m Clay brown dds 70m-71.5m Clay silty grey and brown 71.5m-72.8m Sand 72.8m-82m Clay gritty grey and brown 82m-85m Sand 85m-86m Clay gritty 86m-89m Clay dds 89m-99m Sand 99m-100m Clay gritty 100m-101m Clay chalky 101m-102m Sand 102m-107m Clay mustard grey 107m-116m Sand 116m-117m Sand dirty 117m-120m Sand 120m-123m Sand dirty 123m-126m Clay 126m-128m Silt 128m-134m Clay dark grey to light grey 134m-151m Sand 151m-152m Sand softer 152m-160m Sand/coal	224.5	South	
GW416577	Null		229.0	South-east
GW008878	0m-1.52m Clay grey 1.52m-4.57m Clay yellow 4.57m-7.32m Sand soak 7.32m-14.02m Clay yellow 14.02m-15.54m Sand dry 15.54m-21.95m Sand clay 21.95m-24.99m Sand drift water supply 24.99m-34.75m Clay yellow sand 34.75m-35.36m Sand drift water supply 35.36m-45.72m Clay yellow 45.72m-48.77m Drift water supply 48.77m-56.69m Clay yellow 56.69m-57.3m Sand drift water supply		259.9	South

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
GW045236	0m-0.3m Clay white 0.3m-1.52m Clay red white 1.52m-6.71m Clay red 6.71m-14.63m Sand white 14.63m-14.94m Clay red white 14.94m-18.59m Sand red 18.59m-20.73m Clay sandy 20.73m-23.16m Clay white 23.16m-28.65m Clay white 28.65m-31.09m Clay red 31.09m-44.5m Clay white 44.5m-44.52m Sand white water supply		274.3	North
GW050925	Null		289.1	South
GW017804	0m-1.22m Clay grey 1.22m-8.84m Clay black 8.84m-17.68m Clay grey 17.68m-19.81m Clay red 19.81m-28.35m Clay black 28.35m-28.96m Sand slurry 28.96m-43.89m Clay black 43.89m-46.02m Clay red 46.02m-48.46m Clay red sandy 48.46m-64.92m Clay black 64.92m-66.45m Clay grey 66.45m-66.46m Sand water supply		384.7	North
GW405772	0m-2.438m Clay, heavy 2.44m-6.401m Clay, medium 6.4m-9.144m Sandy clay, medium 9.14m-10.973m Clay, medium 10.97m-14.021m Sand, coarse and gravel 14.02m-18.898m Clay, medium 18.9m-21.946m Sandy clay, fine to medium		454.4	North
GW039270	0m-1m Topsoil geologist 1m-2m Clay geologist 1m-2m Sand yellow very clayey geologist 1m-2m Sub rounded fine geologist 2m-4m Clay light brown sandy geologist 4m-8m Clay white sandy geologist 8m-16m Clay light grey sandy polymict geologist 16m-18m Clay orange grey sandy geologist 18m-22m Clay grey sandy polymict geologist 22m-26m Clay light brown very silty geologist 26m-28m Clay light brown geologist 28m-30m Clay white very silty geologist 30m-34m Orthoclase very clayey geologist 30m-34m Sand orange fine sub angular geologist 34m-38m Clay black grey red geologist 38m-44m Clay very silty geologist 44m-46m Clay black grey red geologist 46m-52m Clay yellow very sandy fine-medium geologist 46m-52m Micaceous geologist 52m-59.5m Clay yellow silty geologist 59.5m-60.5m Sand fine-medium sub angular water supply geologist 59.5m-60.5m Very silty rounded geologist 60.5m-61m Clay cream sand water supply geologist 60.5m-61m Fine-medium sub rounded geologist 61m-62.5m Claybound geologist 61m-62.5m Sand cream fine-coarse sub angular water supply geologist 62.5m-63.5m Sand yellow coarse sub angular water supply geologist 62.5m-63.5m Very clayey geologist 63.5m-65m Rounded very clayey geologist 63.5m-65m Sand yellow medium-coarse sub angular water supply geologist 65m-67.5m Sand yellow medium-coarse water supply geologist 65m-67.5m Some clay geologist 67.5m-69.5m Clay yellow very sandy fine-medium water supply geologist 69.5m-69.6m Clay black yellow geologist		469.1	North-east
GW030946	0m-0.6m Topsoil sand 0.6m-1.5m Clay hard sandy 1.5m-8m Clay dark brown grey		546.7	North-east

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	8m-9m Clay light brown grey 9m-19m Clay grey waddy 19m-20m Clay dark brown grey 20m-23m Clay grey sandy 23m-28m Clay grey waddy 28m-29.5m Clay dark brown grey waddy 29.5m-32m Clay grey sandy 32m-33m Clay dark brown grey 33m-36m Clay red grey 36m-44m Clay grey sticky 44m-49m Clay grey sandy 49m-53m Clay grey gravel 53m-54m Clay grey silty 54m-57m Clay grey sticky 57m-58m Clay grey waddy 58m-67m Clay grey sticky 67m-68m Clay grey sandy 68m-69m Clay grey silty 69m-70m Clay sandy 70m-74.5m Clay grey sticky 74.5m-78.5m Clay grey silty 78.5m-83m Clay grey sandy 83m-85m Sand grey fine-medium 85m-93m Sand grey fine silty clay bands 93m-103m Clay grey sandy 103m-104m Clay 103m-104m Gravel fine cemented 104m-105m Clay 104m-105m Gravel fine-medium sand 105m-107m Gravel grey medium-coarse sand 107m-108m Gravel grey coarse clay bands 108m-112m Clay grey 112m-114m Lignite black 114m-118m Clay grey 118m-121m Clay grey sandy silty 121m-129m Clay dark grey 129m-130m Clay grey gritty lignite 130m-137m Clay multicoloured			
GW404542	0m-2m Sand - brown 2m-24m Clay - brown 24m-25m Sand - brown 25m-42m Clay - brown 42m-43m Clay and sand - brown 43m-48m Clay - brown 48m-49m Sand - brown 49m-54m Clay - brown 54m-59m Sand - brown 59m-65m Clay - brown 65m-85m Clay and sand - brown 85m-97m Clay and sand - white 97m-104m Sand - white 104m-108m Sand and clay - white		553.3	North
GW007207	0m-18.29m Clay hard 18.29m-21.34m Sand fine 21.34m-38.4m Sand clay 38.4m-50.6m Clay hard stones small 50.6m-53.95m Red soft sandy mixture		574.4	North
GW016841	0m-0.91m Clay red 0.91m-7.32m Clay grey 7.32m-9.14m Clay black red 9.14m-15.54m Clay grey 15.54m-21.34m Clay coarse sandy 21.34m-23.77m Clay black stiff 23.77m-26.82m Clay grey stiff 26.82m-28.04m Clay soft sandy 28.04m-28.65m Sand coarse water supply 28.65m-32m Clay grey stiff water supply 32m-35.36m Clay stiff sandy 35.36m-35.51m Sand water supply		595.9	South

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	35.51m-41.15m Clay red medium 41.15m-46.33m Clay grey stiff 46.33m-47.55m Water supply 47.55m-47.85m Clay grey stiff			
GW416527	Null		614.2	East
GW012859	Null		626.2	South
GW059225	0m-3m Clay red 3m-7.6m Sand clay 7.6m-35m Clay 35m-36.5m Sand silty water bearing 36.5m-68.5m Clay 68.5m-69.5m Sand water bearing 69.5m-71.6m Clay water bearing 71.6m-76.8m Sand silty water bearing 76.8m-91.4m Clay 91.4m-97.5m Clay silty 97.5m-101.5m Clay white 101.5m-103.6m Soil silty clay 103.6m-107.6m Clay white 107.6m-121.9m Sand clean water bearing 121.9m-132.6m Clay silty lignite 132.6m-138.7m Sand some water bearing clay 138.7m-144.8m Clay white		682.9	South
GW416255	Null		726.7	South
GW416768	Null		816.2	North
GW012863	Null		833.5	South-west
GW021876	0m-0.91m Clay dark 0.91m-3.35m Clay grey 3.35m-8.53m Clay grey sandy 8.53m-9.75m Clay grey 9.75m-18.29m Clay grey yellow 18.29m-23.47m Sand dry 23.47m-25.91m Clay grey stiff stones 25.91m-28.04m Clay grey yellow 28.04m-31.39m Clay stiff 31.39m-32.92m Clay yellow grey sandy 32.92m-35.36m Clay yellow grey 35.36m-39.01m Clay grey sandy 39.01m-39.03m Sand water supply		837.4	South-west
GW012881	Null		847.9	North
GW019474	0m-4.88m Clay grey 4.88m-5.18m Clay sandy 5.18m-6.4m Sand dry 6.4m-13.41m Clay black 13.41m-17.68m Clay grey 17.68m-23.16m Clay black 23.16m-27.74m Sand slurry 27.74m-35.36m Clay black 35.36m-35.97m Clay soak 35.97m-39.62m Clay black 39.62m-41.76m Sand medium water supply		847.9	North
GW500973	0m-1m Topsoil and brown clay 1m-6m Clay brown 6m-9m Sand yellow brown 9m-26m Clay brown grey 26m-31m Sand white yellow 31m-32m Clay brown 32m-35m Sand yellow 35m-45m Clay grey brown 45m-52m Clay brown 52m-58m Sand yellow 58m-63m Sand yellow white 63m-81m Clay grey 81m-91m Sand grey 91m-101m Sand grey 101m-110m Sand grey		865.3	West

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	110m-117m Clay dark grey 117m-124m Ligneous clay 124m-134m Ligneous clay sand layers 134m-165m Sand grey 165m-175m Clay grey sand layers 175m-205m Sand grey			
GW403632	Null		870.2	North-west
GW067953	6.4m-8.5m Dry brown sand 8.5m-20.4m Brown clay 20.4m-22.6m Brown clayey sand 22.6m-28.4m Silty clay 28.4m-29.6m Brown sand 29.6m-40.2m Grey brown clay 40.2m-40.4m Sand and gravel 40.4m-67.1m Stiff brown clay 67.1m-67m Sand		901.9	East
GW012520	Null		913.5	South
GW030959	0m-1m Clay red 1m-2m Clay grey 2m-6m Clay grey sandy 6m-8m Clay grey 8m-9m Clay grey sandy 9m-10m Clay grey 10m-12m Clay grey 12m-14.5m Clay grey sandy 14.5m-15m Clay grey 15m-17m Clay grey waddy 17m-22m Clay light brown grey waddy 22m-24m Gravel medium 22m-24m Sand coarse clay bands water bearing 24m-28m Clay grey gritty 28m-29.5m Sand coarse water bearing 29.5m-32m Clay grey 32m-34m Clay dark brown grey 34m-37m Clay reddish grey 37m-38m Clay grey 38m-40m Clay grey khaki 40m-46m Clay grey gritty 46m-50m Clay khaki sticky 50m-52m Clay grey sticky 52m-60m Clay sticky 60m-63.5m Clay grey sticky 63.5m-65.5m Clay gravel 65.5m-67m Clay dark brown gritty 67m-82.5m Clay grey 82.5m-84.5m Clay grey silty 84.5m-86m Clay grey sticky 86m-88m Clay grey gritty water bearing 88m-90m Sand fine-medium claybound 90m-90.5m Clay khaki sticky 90.5m-99.3m Sand clayey 99.3m-102m Grey 102m-123m Clay grey 123m-130m Clay grey sandy 130m-130.5m Clay khaki 130.5m-133m Lignite 133m-135m Clay grey 135m-139m Clay grey 139m-171m Lignite 171m-174m Clay grey 174m-178m Lignite 178m-180m Clay grey 180m-184m Lignite black		915.8	North-east
GW020151	0m-0.61m Soil 0.61m-4.27m Clay grey stiff 4.27m-5.49m Clay medium sandy 5.49m-7.92m Sand yellow coarse 7.92m-10.67m Clay grey hard		925.8	South

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	10.67m-14.94m Clay stiff 14.94m-15.54m Clay grey soft sandy 15.54m-17.68m Clay stiff 17.68m-19.51m Clay soft 19.51m-20.73m Clay stiff gravel 20.73m-25.91m Sand coarse slurry 25.91m-29.57m Clay red hard 29.57m-36.88m Clay medium sandy 36.88m-38.1m Clay soft sandy 38.1m-38.12m Sand fine water supply			
GW012878	Null		963.7	South
GW416911	Null		967.0	South
GW012891	Null		981.3	South
GW050923	Null		1004.4	South
GW050924	Null		1015.6	South
GW012880	Null		1024.8	North-east
GW505577	0m-5m Sand, Red 5m-9m Clay, Grey 9m-13m Sand, Grey 13m-18m Sand, Brown 18m-25m Clay, Grey 25m-29m Clay, Sticky, Brown 29m-30m Sand, Brown 30m-64m Clay, Sticky, Brown 64m-74m Sand, Brown 74m-81m Clay, Puggy/Sandy, Brown 81m-93m Sand, Grey		1117.6	North-east
110339	Null		1145.1	South
110338	Null		1145.1	South
GW014027	0m-0.91m Clay red 0.91m-11.58m Clay grey 11.58m-13.11m Sand dry 13.11m-23.16m Clay black 23.16m-28.35m Sand slurry 28.35m-42.98m Clay black 42.98m-53.34m Sand medium water supply		1163.5	East
GW011206	0m-7.32m Clay black 7.32m-18.9m Clay very sandy 18.9m-20.73m Clay grey stiff 20.73m-22.25m Clay yellow soft 22.25m-24.69m Clay grey stiff 24.69m-25.3m Sand fine soak 25.3m-27.43m Clay soft sandy 27.43m-34.75m Sand coarse clay 34.75m-38.71m Clay grey stiff 38.71m-40.23m Sand coarse water supply		1169.5	South
GW415887	Null		1204.2	South
GW030323.1.1	Null		1228.1	South
GW030323.1	Null		1228.1	South
GW030323	0m-3.05m Clay - light grey. 0m-3m Clay geologist 3m-4.25m Clay sandy geologist 3.05m-4.58m Clay - light brown, extremely sandy (fine). 4.25m-12m Clay grey geologist 4.58m-10.68m Clay - light grey. 10.68m-12.2m Clay - light grey and light brown, sandy (fine) 12m-13.5m Clay very sandy geologist 12.2m-13.73m Clay - light brown, extremely sandy (fine). 13.5m-14.5m Clay sandy geologist 13.73m-14.64m Clay - 70% light grey some brown, sand 30% around 2 mm, quartz, trace of mica. 14.5m-16m Sand geologist 14.64m-16.17m Sand - most 1.5 - 3 mm, quartz, light grey.		1240.3	South

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	16m-20m Clay geologist 16.17m-19.83m Clay - light grey. 19.83m-22.88m Clay - light grey and light brown, sandy (fine). 20m-23m Clay sandy geologist 22.88m-25.93m Clay - light grey. 23m-26m Clay geologist 25.93m-27.45m Clay - light grey and light brown, sandy fine to coarse. 26m-27.5m Clay sandy geologist 27.45m-35.08m Clay - light grey some brown. 27.5m-35m Clay geologist 35m-38m Clay silty geologist 35.08m-38.13m Clay - brown some light grey, silty. 38m-42.7m Clay sandy geologist 38.13m-39.65m Clay - 50% brown, trace of light grey, sand 50% around 2 mm quartz. 39.65m-41.18m Clay - 40% light grey, gravel 60% up to 4 mm quartz. 41.18m-42.7m Clay - 80% light brown, gravel 20% up to 4 mm quartz. 42.7m-45.75m Clay - light grey and light brown. 42.7m-47.3m Clay geologist 45.75m-47.28m Clay - red brown some light grey. 47.28m-48.8m Sand - 70% around 2 mm quartz, clay 30% red brown and light grey, overall colour brown with red tinge. 47.3m-48.7m Sand clayey geologist 48.7m-50.3m Clay sandy geologist 48.8m-50.33m Clay - 80% light grey, sand 20% around 2 mm. 50.3m-65.2m Clay geologist 50.33m-53.38m Clay - light grey and light brown. 53.38m-59.48m Clay - light brown 59.48m-65.58m Clay - light grey and light brown 65.2m-67m Clay sandy geologist 65.58m-67.1m Clay - 70% light grey and light brown, sand 30% up to 2 mm quartz. 67m-71m Sand geologist 67.1m-71.07m Sand - most 1 - 2 mm quartz, light brown. 71m-73m Clay geologist 71.07m-73.2m Clay - red brown and light grey. 73m-100.5m Sand gravel geologist 73.2m-74.73m Sand - most 1 - 2 mm, quartz, trace of red brown clay, overall colour light brown. 74.73m-80.83m Sand - most 1 - 2 mm, quartz, light brown. 80.83m-82.35m Sand - 95% 1 - 2 mm, quartz, clay 5% brown. 82.35m-88.45m Gravel - most 1.5 - 3 mm, quartz, light grey. 88.45m-89.98m Sand - most 1 - 2 mm, trace of clay, light grey. 89.98m-94.55m Sand - 90% most 1 - 2 mm quartz, clay 10% light grey. 94.55m-97.6m Sand - 80% most 1 - 2 mm, quartz, clay 20% light grey. 97.6m-100.65m Sand - as for 89.98 - 94.55. 100.5m-108m Clay sandy geologist 100.65m-102.18m Clay - 30% light grey, sand 70% up to 1.5 mm. 102.18m-106.75m Clay - light grey slightly sandy (coarse) 106.75m-108.28m Clay - 50% light grey, sand 50% up to 1.5 mm. 108m-125m Sand geologist 108.28m-125.05m Sand - most 1 - 2 mm, light grey, quartz, trace of light grey clay as above. 125m-126.5m Clay sandy geologist 125.05m-126.58m Clay - 70% grey, sand 30% around 2 mm, trace of black carbonaceous material. 126.5m-137m Carbonaceous geologist, clay black some sand geologist 126.58m-128.1m Carbonaceous material - black, trace of sand 2 mm. 128.1m-129.63m Clay - as above for 125.05 - 126.58. 129.63m-131.15m Clay - dark grey trace of black carbonaceous material plus some sand. 131.15m-135.73m Carbonaceous material - black with brown tinge. 135.73m-137.25m Clay - as for 129.63 - 131.15. 137m-140m Clay dark sandy geologist 137.25m-138.78m Clay - 50% dark grey, sand 50% around 2 mm quartz. 138.78m-140.3m Clay - 30% dark grey sand 70% around 2 mm, quartz. 140m-141.5m Sand dark clayey geologist 140.3m-141.83m Sand - 80% around 1.5 mm clay 20% overall colour very dark brown, nearly black.			

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	141.5m-144.5m	Clay carbonaceous sandy geologist		
	141.83m-143.35m	Clay - black, slightly sandy (coarse).		
	143.35m-144.88m	Clay - carbonaceous black.		
	144.5m-149.2m	Sand geologist, clay black geologist		
	144.88m-146.4m	Sand - 95% 1 - 2 mm, clay 5% black.		
	146.4m-147.95m	Sand - most 1 - 2 mm, quartz, grey.		
	147.95m-149.45m	Sand - 95% most 1.5 - 2.5 mm, quartz, clay 5% black.		
	149.2m-152.2m	Clay black geologist		
	149.45m-150.98m	Clay - 60% black, sand 40% 1 - 2 mm.		
	150.98m-152.5m	Clay - 50% very dark brown black, very high carbonaceous contents, sand 50% 1 - 2 mm.		
	152.2m-165.8m	Carbonaceous geologist, clay some silt geologist		
	152.5m-154.03m	Carbonaceous material - black with brown tinge, trace of sand up to 2 mm.		
	154.03m-157.08m	Carbonaceous material - black to dark brown.		
	157.08m-160.13m	Clay - grey, very silty, trace of carbonaceous material.		
	160.13m-166.23m	Carbonaceous material - as for 154.03 to 157.08.		
	165.8m-167.3m	Clay sandy geologist		
	166.23m-167.25m	Clay - grey, very sandy fine to coarse, some black carbonaceous material, sample could be contaminated as drill rods pulled out 3 day break at 166.23.		
	167.25m-193.68m	Carbonaceous material - black to dark brown.		
	167.3m-193.4m	Carbonaceous geologist		
	193.4m-201m	Sand geologist		
	193.68m-195.2m	Sand - 90% around 1 mm, quartz, clay 10% dark grey.		
	195.2m-196.73m	Sand - 1 - 1.5 mm, quartz, grey.		
	196.73m-198.25m	Sand - 70% 1 - 1.5 mm, quartz 30% black, carbonized wood.		
	198.25m-201.3m	Sand - as for 195.20 - 196.73.		
	201m-205.5m	Gravel clayey geologist		
	201.3m-205.88m	Clay - 30% black carbonaceous, gravel 70% up to 3 mm quartz.		
	205.5m-211.8m	Lignite geologist		
	205.88m-211.98m	No sample recovered, easy drilling took 3 minutes to drill 1.53 m.		
	211.8m-225.5m	Clay carbonaceous geologist		
	211.98m-225.7m	Carbonaceous material - black to dark brown.		
	225.5m-230m	Carbonised wood geologist		
	225.7m-230.28m	Carbonized wood? - poor sample recovered, some carbonized wood black with some sand 1/2 - 1mm.		
	230m-234.7m	Sand some wood geologist		
	230.28m-234.85m	Sand - around 1 mm, quartz, some black carbonized wood.		
	234.7m-239m	Carbonised wood geologist		
	234.85m-239.43m	Carbonized wood - 70% black, sand 30% around 1 mm, quartz.		
	239m-248m	Sand geologist		
	239.43m-244m	Sand - around 1 mm, some grey clay, trace of carbonized wood.		
	244m-248.58m	Sandstone - silty, extremely soft, fine grained, very small percentage of grains up to 1 mm across, light grey.		
	248m-312.2m	Sandstone siltstone geologist		
	248.58m-276.03m	Sandstone - silty, soft, light grey.		
	276.03m-278.92m	This interval was cored, recovery about .46 m. the upper part of the core consists of a pale grey sandy clay. the lower section is composed of a very friable pale grey laminated fine grained silty sandstone with a dip of about 5 degrees to the axis of		
	278.92m-312.63m	Sandstone - as for 248.58 - 276.03		
	312.2m-329m	Sand geologist		
	312.63m-329.1m	Sandstone - as for 248.58 - 276.03 plus a small percentage of grains up to 1 mm across, quartz.		
	329m-331m	Coal geologist		
	329.1m-330.93m	Coal - black, dull.		
	330.93m-333.82m	This interval was cored, recovery about 0.61 m. the recovered core consists of a pale grey silty sandstone with a 5.8 cm band of black coal at the bottom of the recovered interval.		
	331m-337m	Siltstone geologist		
	333.82m-337.33m	Sandstone - as for 312.63 - 329.10.		
	337m-340m	Coal geologist		
	337.33m-349.53m	Coal - black, dull, hard bands at 342.21 m and 343.43 m.		
	340m-344m	Coal soft geologist		
	344m-353.5m	Coal some soft some hard geologist		
	349.53m-353.8m	Sandstone - silty soft fine grained but with a small percentage of quartz grains up to 1 mm across, probably with thin coal bands.		

Groundwater Bore ID	From Depth - To Depth (m)	Lithology	Distance (m)	Direction
	353.5m-358m Coal clay geologist 353.8m-358.38m Sandstone - silty soft fine grained with some sub-angular light brown quartz grains up to 3 mm across, some light brown clay, thin coal bands (more than for 349.53 - 353.80. 358m-362.7m Sand some coal geologist 358.38m-362.95m Sandstone - silty, soft, fine grained, small percentage of grains up to 1 mm, quartz, probably with thin coal bands (about 20% of interval).			
GW404502	0m-1m Topsoil 1m-7m Clay - grey 7m-32m Clay - grey and orange 32m-42m Clay - red/orange 42m-44m Sand - orange 44m-65m Clay - orange/grey 65m-68m Sand - orange/grey pml 68m-70m Clay and sand - silty - claybound 70m-74m Sand gml 74m-78m Sand - claybound - dirty		1241.3	East
GW011853	Null		1305.3	South
GW019899	0m-0.61m Subsoil 0.61m-3.66m Clay dry 3.66m-17.98m Clay grey tough 17.98m-26.21m Clay black 26.21m-31.7m Sand slurry water supply 31.7m-37.8m Clay black 37.8m-39.01m Sand coarse water supply 39.01m-42.67m Clay black 42.67m-44.2m Sand fine silty water supply 44.2m-63.4m Clay grey tough limestone 63.4m-65.53m Clay black water supply		1311.3	South
GW404956	0m-20m Clay 20m-24m Sand 24m-53m Clay 53m-55m Sand 55m-63m Clay 63m-68m Sand 68m-104m Clay 104m-109m Sand		1330.4	East
GW273215	0m-1m Topsoil 0m-1m Topsoil, brown, red 1m-3m Clay, grey 1m-12m Clay, grey brown 3m-5m Clay, grey with minor sand 5m-6m Clay, grey 6m-9m Clay, grey with orange, brown mottles 9m-10m Clay, grey with orange, brown mottles with some sand 10m-11m Clay, grey 11m-13m Clay, grey, yellow 12m-17m Sandy clay 13m-16m Sandy clay, grey, orange 16m-17m Clay, grey, yellow, orange 17m-37m Clay, brown 17m-19m Clay, grey, orange 19m-20m Clay, grey 20m-23m Clay, grey with minor fine sand 23m-27m Clay, grey with some silt 27m-29m Clay, grey, yellow with some silt 29m-30m Clay, grey, orange with some silt 30m-32m Clay, grey, orange with minor sand 32m-33m Clay, grey, orange 33m-34m Clay, grey, orange with minor sand 34m-35m Clay, grey, yellow with minor sand 35m-38m Clay, grey, orange 37m-41m Clay, red brown 38m-39m Clay, red, grey with some sand 39m-41m Clayey coarse sand, red, grey 41m-42m Coarse sand, red, grey, white 41m-42m Gravel, claybound 42m-43m Sand, dirty, gravel 42m-43m Sandy clay, red, grey		1349.7	South

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	43m-46m	Clay, grey, yellow		
	43m-44m	Gravel, claybound		
	44m-66m	Clay, brown		
	46m-50m	Clay, light brown, red		
	50m-51m	Coarse sandy clay, red, light brown		
	51m-52m	Clay, red, light brown		
	52m-53m	Clay, yellow, light brown		
	53m-59m	Clay, yellow, light brown with minor silt		
	59m-61m	Clay, yellow, light brown		
	61m-62m	Clay, yellow, light brown with grey mottles		
	62m-63m	Clay, yellow, light brown		
	63m-64m	Clay, yellow, light brown with some silt		
	64m-65m	Clay, yellow, light brown, orange with some silt		
	65m-66m	Clay, yellow, light brown, orange		
	66m-68m	Clay, brown grey		
	66m-67m	Clay, yellow, light brown, orange with some sand		
	67m-70m	Coarse sandy clay, red, light brown, grey		
	68m-69m	Gravel, claybound		
	69m-72m	Sand, coarse, gravel with clay		
	70m-71m	Coarse sand, light brown, yellow, white		
	71m-75m	Clay, yellow, light brown		
	72m-75m	Clay, brown		
	75m-77m	Clay, brown and sand		
	75m-76m	Coarse sandy clay, yellow, light brown		
	76m-77m	Coarse sandy clay, light brown, yellow		
	77m-82m	Clay, brown		
	77m-79m	Clay, light brown, orange		
	79m-80m	Clay, light brown, orange with grey mottles		
	80m-82m	Clay, light brown, yellow with grey mottles		
	82m-85m	Coarse sand, light brown, orange		
	82m-85m	Sand, gravel, clay		
	85m-89m	Coarse sand, grey, white, yellow		
	85m-96m	Sand, coarse		
	89m-90m	Clayey medium grained sand, yellow, orange, grey		
	90m-91m	Medium grained sand, yellow, grey, orange		
	91m-95m	Clayey medium grained sand, orange, grey		
	95m-98m	Clayey medium grained sand, white, grey, yellow		
	96m-107m	Sand, coarse and gravel		
	98m-99m	Sandy clay, yellow, light brown		
	99m-100m	Clayey sand, yellow, orange, light brown		
	100m-101m	Clayey coarse sand, white, grey, yellow		
	101m-102m	Clay, grey with orange mottles with some fine sand		
	102m-107m	Clay, grey with orange mottles with some various sized sand		
	107m-108m	Sand, 50% fine white sand; 50% orange, light brown, grey medium grained sand		
	107m-130m	Sand, and gravel		
	108m-109m	Sand, 30% fine white sand; 70% orange, light brown, grey medium grained sand		
	109m-110m	Sand, 10% fine white sand; 90% orange, light brown, grey medium grained sand		
	110m-111m	Sand, 40% fine white sand; 60% orange, light brown, grey medium grained sand		
	111m-112m	Sand, 30% fine white sand; 70% orange, light brown, grey medium grained sand		
	112m-114m	Sand, 20% fine white sand; 80% orange, light brown, grey medium grained sand		
	114m-117m	Sand, 50% fine white sand; 50% orange, light brown, grey medium grained sand		
	117m-120m	Medium grained sand, grey, orange		
	120m-126m	Coarse grained sand, grey, orange		
	126m-130m	Clayey medium grained sand, grey with black carbonaceous material		
	130m-134m	Clay,		
	130m-131m	Medium-coarse sandy clay, grey		
	131m-132m	Clay, grey with minor fine sand		
	132m-134m	Clay, grey with minor medium grained sand		
	134m-150m	Clay, carbonaceous		
	134m-137m	Clay, dark brown, black with some fine sand		
	137m-138m	Medium grained sand, brown, grey with some clay		
	138m-140m	Clay, dark brown with minor medium grained sand		

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	140m-143m Clay, dark brown, black with minor medium grained sand 143m-148m Clay, dark brown, grey with minor medium grained sand 148m-149m Clay, black, grey with minor coarse sand 149m-150m Clay, black with minor coarse sand 150m-151m Coarse sand, black, grey with minor clay 150m-159m Sand, carbonaceous 151m-156m Coarse sand, black, grey 156m-157m Coarse sand, black, grey with some clay 157m-160m Clay, black, grey with some medium grained sand 159m-163m Clay, carbonaceous 160m-163m Clay, black, dark brown with some medium grained sand 163m-167m Clay, black, dark brown with some fine sand 163m-192m Lignite clay 167m-177m Clay, black, dark brown with some medium grained sand 177m-180m Coarse sand and black, dark brown carbonaceous clay 180m-183m Carbonaceous black dark brown clay with some coarse sand 183m-189m Carbonaceous black, dark brown clay with some medium to coarse sand 189m-192m Carbonaceous black, dark brown clay with minor sand 192m-204m Grey coarse sand 192m-207m Sand, coarse and gravel 204m-207m Grey coarse sand with some dark brown, black carbonaceous clay			
GW063047	0m-19m Clay grey 19m-21m Sand dry 21m-27m Clay limestone 27m-39m Clay grey 39m-40m Clay red soft silty 40m-47.5m Clay firm 47.5m-52m Sand claybound 52m-78m Clay 78m-84m Sand coarse 84m-95m Clay grey 95m-112m Sand very coarse fine 112m-120m Clay grey silty fine 120m-123.5m Sand coarse fine 123.5m-135m Clay grey silty coal 135m-142m Sand fine 142m-152m Clay lignite 152m-154m Sand fine 154m-157m Coal tight 157m-159m Sand fine 159m-176m Clay silty coal fine	1405.3	South-west	
GW007406	0m-0.91m Sand 0.91m-3.96m Clay red 3.96m-9.14m Sand dry 9.14m-15.24m Sand wet 15.24m-52.73m Clay red solid 52.73m-52.75m Sand coarse water supply	1413.3	North	
GW012874	Null	1443.4	East	
GW004986	0m-46.33m Clay soak sand	1553.8	West	
GW401077	0m-1m Topsoil 1m-2m Clay, grey 2m-7m Silty clay 7m-14m Sand 14m-21m Clay, grey 21m-28m Clay, grey brown 28m-37m Clay, orange grey 37m-40m Clay, red 40m-44m Clayed sand, red orange 44m-57m Clay, red grey 57m-66m Sand 66m-69m Clayed sand 69m-72m Sand, white orange 72m-82m Sandy clays 82m-89m Sand mml 89m-106m Sand 106m-109m Sandy clay	1572.4	South-west	

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	109m-132.5m Silts and lignite 132.5m-182m Lignite and clays			
GW500964	0m-1m Topsoil red 1m-3m Clay grey 3m-6m Sand brown 6m-12m Clay brown and grey 12m-15m Clay sandy grey 15m-19m Clay brown grey 19m-22m Sand brown 22m-30m Clay brown grey 30m-31m Sand brown 31m-32m Clay with sand grey 32m-43m Clay gritty brown and grey 43m-64m Clay brown grey 64m-66m Sand fine to medium grey 66m-69m Clay and sand 69m-72m Sand fine 72m-75m Sand dirty silty 75m-76m Clay 76m-79.5m Clay firm grey brown 79.5m-83m Clay softer grey brown 83m-85.75m Sand medium fine grey 85.75m-87.5m Clay grey 87.5m-90.9m Sand medium coarse grey 90.9m-95m Clay grey brown 95m-96m Sand dirty brown 96m-100m Sand dirty grey brown 100m-101m Clay grey brown 101m-104m Sand medium fine brown dirty 104m-105.5m Sand medium fine brown dirty cleaner 105.5m-106m Clay grey 106m-107m Sand coarse grey and gravel very dirty 107m-113m Sand coarse grey and gravel very dirty cleaner 113m-120m Sand medium coarse grey 120m-124.5m Lignites and pyrites 124.5m-130m Clay grey ligneous 130m-134m Silt 134m-136m Coal ligneous and clay 136m-139m Clay light grey 139m-145m Sand fine grey 145m-146m Clay dark grey ligneous and coal 146m-148m Coal sticky woody 148m-152m Clay ligneous 152m-157m Coal dry woody and clay 157m-160m Silt 160m-163m Sand dirty medium fine 163m-164m Clay soft silty 164m-166m Sand dirty medium fine 166m-169.75m Sand medium fine cleaner 169.75m-170m Wood 170m-176m Sand clean medium grey 176m-189m Silt 189m-190m Sand dirty silty 190m-198m Sand clean medium grey 198m-199m Silt 199m-207.5m Sand medium coarse dirty 207.5m-208.5m Coal dry	1612.6	South	
GW401592	0m-10m Clay, brown 10m-13m Sand, brown 13m-20m Clay, brown 20m-22m Sand, brown 22m-54m Clay, brown 54m-62m Sand, brown 62m-67m Clay, brown 67m-71m Sand, brown 71m-74m Clay, brown 74m-86m Sand & clay brown 86m-107m Sand, white 107m-127m Sand & clay. grey		1627.6	South-west

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	127m-139m Clay, ligneous 139m-145m Sand, grey 145m-147m Clay, ligneous 147m-148m Sand, grey 148m-171m Clay, ligneous 171m-182m Coal 182m-193m Sand, grey 193m-208m Coal 208m-209m Sand, dark grey 209m-213m Coal 213m-220m Sand 220m-223m Bedrock			
GW407165	0m-3.962m Clay, heavy 3.96m-4.877m Sandy clay, fine to medium 4.88m-6.096m Sandy clay, fine 6.1m-7.62m Sandy clay 7.62m-12.192m Clay, heavy 12.19m-12.497m Sandy clay, fine to medium 12.5m-14.63m Sandy clay loam 14.63m-17.983m Sand, coarse 17.98m-24.079m Clay, medium		1663.3	North
GW411659	0m-0.914m Clay, medium 0.91m-2.438m Clay, heavy 2.44m-4.267m Clay, medium 4.27m-4.877m Sandy clay, fine 4.88m-5.486m Clayey sand 5.49m-12.192m Clay, medium		1679.5	South
GW405761	0m-2.134m Clay, heavy 2.13m-4.572m Clay, medium 4.57m-4.877m Sandy clay 4.88m-6.096m Sandy clay loam 6.1m-6.401m Clayey sand 6.4m-7.925m Clay, medium 7.92m-10.973m Clay, heavy 10.97m-12.497m Clay, medium 12.5m-13.106m Sandy clay, medium 13.11m-15.548m Sandy clay, fine 15.55m-17.069m Sandy clay, fine to medium 17.07m-21.031m Clay, medium 21.03m-23.47m Sandy clay, fine to medium		1695.1	South
GW411648	0m-0.914m Clay, medium 0.91m-9.754m Clay, heavy		1717.0	North
GW047719	0m-0.6m Soil red 0.6m-3.3m Clay 3.3m-7.8m Sand dry 7.8m-25.2m Clay grey 25.2m-26.1m Sand slurry 26.1m-33.1m Clay grey stiff 33.1m-34.1m Sand slurry 34.1m-37.8m Clay stiff 37.8m-40.8m Sand fine 40.8m-53.6m Clay grey 53.6m-54.2m Sand 54.2m-66.4m Clay grey sticky 66.4m-68.2m Clay water supply 68.2m-70.1m Sand clayey 70.1m-71.9m Clay sandy 71.9m-75.4m Clay stiff 75.4m-76.5m Clay grey 76.5m-77.7m Clay silty 77.7m-78.3m Sand silty 78.3m-82.9m Clay gravel 82.9m-89m Clay grey stiff 89m-90.2m Sand 90.2m-92m Sand white coarse 92m-96.9m Clay gravel 96.9m-98.7m Sand white 98.7m-99m Clay gravel 99m-104.2m Gravel grey		1722.5	West

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
GW417234	Null		1722.8	North
GW012858	Null		1757.4	South
GW017308	0m-1.22m Clay red 1.22m-5.18m Clay grey 5.18m-8.53m Clay black 8.53m-8.84m Sand dry 8.84m-11.58m Clay grey 11.58m-16.15m Sand dry 16.15m-19.81m Clay grey 19.81m-25.6m Clay sandy 25.6m-28.65m Sand water supply 28.65m-34.44m Clay grey 34.44m-39.93m Clay black soak 39.93m-41.15m Clay sandy 41.15m-48.46m Clay grey 48.46m-55.47m Clay sandy soak 55.47m-55.49m Sand water supply		1760.3	South
GW017783	0m-6.71m Clay grey 6.71m-28.65m Clay black 28.65m-34.75m Clay sandy 34.75m-35.05m Sand very fine 35.05m-47.85m Clay black 47.85m-50.29m Clay sandy 50.29m-50.31m Sand coarse water supply		1765.2	East
GW414700	Null		1782.1	South
410108	Null		1786.3	South
GW021975	0m-0.3m Subsoil red 0.3m-0.91m Clay red 0.91m-2.13m Clay grey 2.13m-4.88m Clay grey stiff 4.88m-7.62m Clay grey yellow 7.62m-9.75m Clay yellow grey sandy 9.75m-13.72m Sand yellow dry 13.72m-15.85m Clay grey stiff 15.85m-25.3m Clay grey yellow stiff 25.3m-27.43m Clay grey yellow stones 27.43m-29.87m Clay grey yellow stiff 29.87m-30.18m Clay yellow grey sandy 30.18m-31.39m Sand medium water bearing 31.39m-34.75m Clay yellow 34.75m-40.54m Clay yellow sandy 40.54m-40.55m Sand coarse water supply		1821.9	North
GW012875	Null		1833.6	North
GW416583	Null		1838.0	North
GW054830	0m-0.2m Clay 0m-0.2m Topsoil 0.2m-1m Clay reddish 1m-1.5m Clay grey stoney limestone 1.5m-2.5m Clay grey 2.5m-3m Clay grey brown streaks 3m-4m Sand fine 4m-5m Clay grey silty brown streaks 4m-5m Sand very fine 5m-6m Limestone fine 5m-6m Sand clay bands 6m-7.5m Clay grey brown streaks 7.5m-9m Sand fine-medium clay bands 9m-10m Clay grey brown bands 10m-12.5m Clay grey 12.5m-14m Sand fine-medium clay bands 14m-17m Clay grey brown streaks 17m-19m Clay grey brown bands 19m-20m Clay grey brown streaks 20m-21.5m Clay grey brown bands 21.5m-24m Sand medium-coarse clay bands 24m-25.5m Clay grey silty brown bands		1842.7	West

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	25.5m-26.5m Clay grey silty sand bands 26.5m-29m Sand fine-medium 29m-31m Clay grey streaks 31m-32.5m Clay grey black streaks 32.5m-33m Clay grey 33m-34m Clay reddish grey bands 34m-35.5m Clay reddish grey streaks 35.5m-36.5m Clay grey streaks silty 36.5m-39m Clay grey streaks 39m-40m Clay grey some brown bands black streaks 40m-41m Clay grey black streaks 41m-43m Clay grey brown bands 43m-44m Clay grey sandy 44m-45m Clay grey 45m-55.5m Clay grey streaks 55.5m-57m Clay grey 57m-67.5m Clay grey silty brown streaks 67.5m-68m Sand fine silty grey clay bands 68m-72m Clay grey bands 72m-76m Clay grey dry 76m-81m Clay grey streaks 81m-82m Sand fine medium-coarse clayey 82m-85m Clay grey silty 85m-87m Sand white fine medium-coarse 87m-90m Sand medium-coarse large nodular 90m-91m Sand medium-coarse clay bands 91m-120m Clayey 91m-120m Unconsolidated very sandy			
GW011298	0m-8.23m Clay black 8.23m-10.06m Clay very sandy 10.06m-16.76m Clay grey very stiff 16.76m-17.68m Sand coarse dry 17.68m-21.34m Clay red grey 21.34m-24.69m Clay yellow soft sandy 24.69m-30.78m Clay very sandy soak 30.78m-40.23m Clay red 40.23m-44.2m Clay soft sandy 44.2m-53.34m Clay grey very stiff 53.34m-55.17m Sand coarse clean water supply 55.17m-55.18m Clay grey	1874.0	South-east	
GW411647	0m-5.791m Clay, heavy 5.79m-7.62m Clay, medium 7.62m-9.144m Clay, heavy	1885.8	East	
GW407174	0m-1.524m Clay, medium 1.52m-4.877m Clay, heavy 4.88m-6.096m Clay, medium 6.1m-7.925m Sandy clay, fine 7.92m-9.144m Sandy clay, fine loamy	1898.6	South	
GW011053	0m-0.3m Loam sandy 0.3m-7.62m Clay black 7.62m-10.67m Sand fine dry 10.67m-11.58m Clay grey stiff 11.58m-14.63m Sand fine dry 14.63m-15.85m Clay black stiff 15.85m-21.03m Clay soft sandy 21.03m-27.43m Sand soak 27.43m-29.57m Clay grey soft 29.57m-29.87m Sand soak 29.87m-32.61m Clay soft 32.61m-34.14m Clay soft sandy 34.14m-35.05m Sand fine-medium water supply 35.05m-35.07m Clay sandy	1925.2	South-west	
GW405799	0m-0.61m Clay, heavy 0.61m-1.524m Sandy clay, fine 1.52m-4.572m Clay, medium 4.57m-6.096m Sandy clay, fine to medium 6.1m-7.62m Sandy clay loam, fine 7.62m-7.925m Clayey sand, coarse 7.92m-8.534m Sandy clay, fine	1945.1	South	

Groundwater Bore ID	From Depth – To Depth (m)	Lithology	Distance (m)	Direction
	8.53m-10.058m	Sandy clay loam, fine		
	10.06m-11.582m	Sandy clay, fine		
	11.58m-13.106m	Sand, coarse		
	13.11m-14.63m	Silty clay, medium		
GW039266	0m-1m	Topsoil	1967.3	South-east
	1m-8m	Clay grey		
	8m-10m	Clay grey silty		
	10m-27.5m	Clay grey		
	27.5m-29m	Clay grey sandy		
	29m-43m	Clay grey		
	43m-44m	Silt sand water supply		

Note: The use of the symbol "-" or "Null" indicates that no records were found.

2.2 GROUNDWATER AND OTHER BORES

Map 2.2 (2000m Buffer)

Groundwater Restricted Use Zones

Name / Number	Address	Site History	Description	Distance (m)	Direction
Not identified	-	-	-	-	-

Groundwater Salinity

Class	Salinity Value	Source	Distance (m)	Direction
Non-Saline (<3000mg/L)	< 500	Office of Water, New South Wales	0.0	Onsite

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
027463	Mineral Exploration	CADELL	Department Of Mineral Resources	01/01/1980	277.0	0.0	Onsite
COAL_DMCADLC1	Mineral Exploration	DPI Minerals Borehole Register - Department Of Mineral Resources,	Department Of Mineral Resources,	01/01/1980	277.0	0.0	Onsite
000859	Mineral Exploration	Yanko South	Department of Mineral Resources - DMR	01/01/1980	395.5	0.8	North
Yanko-South-1-1181	Borehole	Dataset of the 2019 Geological Survey of NSW Geoscience catalogue held in the DIGS (Digital Imaging of Geological Systems) Database.	R00048620, R00056504	01/01/1980	395.5	0.8	North
PET_YANKOS-1	Mineral Exploration	DPI Minerals Borehole Register	Dmr #2,	01/01/1980	395.5	1.2	North

Note: The use of the symbol "-" or "Null" indicates that no records were found.



Section 3 Environmental Registers, Licences and Incidents



3.1 CONTAMINATED LAND PUBLIC REGISTER

Map 3.1 (1000m Buffer)

Contaminated Sites

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
Not identified	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Table 3.1.1 Contaminated Land Public Register		
State	Regulatory Body	Information included in this search (by state)
ACT	EPA (Environment Protection Authority)	Contaminated Land Search Register of Contaminated Sites * (on request)
NSW	EPA (Environment Protection Authority)	Sites Notified as Contaminated Records of Notices
NT	EPA (Environment Protection Authority)	Contaminated Land Audit Pollution Abatement Notice
QLD	DES (Department of Environment and Science)	Contaminated Land Search (Environmental Management and Contaminated Land Registers) * (per lot)
SA	EPA (Environment Protection Authority)	Site Contamination Index Assessment Areas
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises Lutana and Parts of Hobarts Eastern Shore
VIC	EPA (Environment Protection Authority)	Priority Sites Register Pollution Abatement Notice

Table 3.1.1 Contaminated Land Public Register		
WA	DWER (Department of Water and Environmental Regulation)	Contaminated Sites Database

This search contains information retrieved from the relevant state authority, agency/department, or government authority that notifies and identifies contaminated land. The list only contains contaminated sites that the regulatory body is aware of or that have been notified by owners or occupiers as contaminated land. The sites are recorded on the register at various stages of the assessment and/or remediation process. If a site is not on the list, it does not necessarily mean the site is not contaminated.

3.2 LICENCES, APPROVALS & ASSESSMENTS

Map 3.2 (1000m Buffer)

Licences

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
13419	No longer in force	FORESTRY CORPORATION OF NEW SOUTH WALES	IFOA AREA "SOUTH-WESTERN CYPRESS REGION"	STATE FORESTS AND OTHER CROWN-TIMBER LANDS WITHIN THE SOUTH-WESTERN AREA , NSW 2830	Logging operations	Not mapped	Not mapped

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

* Not mapped - Licences that are applied to larger areas and/or without specific definition; such as waterways, forests etc will still be identified in the search results but will not be show within the map.

Audits, PRSA

N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direction
Not identified	-	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Clean Up, Penalty Notices and Orders

N°	Type	Licence holder	Location Name	Premise Address	Details	Dist. (m)*	Direction
Not identified	-	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Table 3.2.1 Licences, Approvals & Assessments		
State	Regulatory Body	Information included in this search (by state)
ACT	EPA (Environment Protection Authority)	Environment Protection Authorisation Search Environment Protection Agreement Search
NSW	EPA (Environment Protection Authority)	POEO Public Register (Environment Protection licences, Applications, Notices, Audits or Pollution studies and Reduction Programs)
NT	EPA (Environment Protection Authority)	Environment Protection Licences and Approvals
QLD	DES (Department of Environment and Science)	Environmental Authorities

Table 3.2.1 Licences, Approvals & Assessments		
SA	EPA (Environment Protection Authority)	Licences or Authorisations (Licences, Exemptions and Works Approvals) Environment Protection Orders (EPO) and Clean Up Orders (CUO)
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises
VIC	EPA (Environment Protection Authority)	Permissions Register (Operating Licence, Permit and Registration) Audit Reports
WA	DWER (Department of Water and Environmental Regulation)	Licences and Works Approvals

3.3a SITES REGULATED BY OTHER JURISDICTIONAL BODY

Map 3.3a (2000m Buffer)

Contaminated Legacy Areas

Site Name	Description	Distance (m)	Direction
Not identified	-	-	-

Includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.

Defence, Military Sites and UXO Areas

Site name	Type*	Details	Distance (m)	Direction
Not identified	-	-	-	-

**RCIP (Regional Contamination Investigation Program). UXO (Unexploded Ordnance Areas)*

Former Gasworks Sites

Site name	Description	Distance (m)	Direction
Not identified	-	-	-

PFAS Sites

Site name	Type	Details	Distance (m) *	Direction
Not identified	-	-	-	-

3.3b OTHER POTENTIAL HAZARD SOURCES

Map 3.3b (500m Buffer)

Mines and Quarries (current and historical)

Site name	Description	Status	Distance (m)	Direction
Not identified	-	-	-	-

Landfills (current and historical)

Site name	Description	Status	Distance (m)	Direction
Not identified	-	-	-	-

National Pollutant Inventory (NPI)

Facility name	Address	Primary ANZSIC Class	Latest report	Distance (m)	Direction
Not identified	-	-	-	-	-



Section 4 Potentially Contaminated Areas



4.1 POTENTIALLY CONTAMINATING ACTIVITIES

Map 4.1 (200m Buffer)

Industries, businesses and activities that may cause contamination

Map ID	Site name	Category	Description	Address	Status*	Dist. (m)*	Direction
Not identified	-	-	-	-	-	-	-

***Status:** Information is current as when this report was created.

The operational status of the business is determined using the available data sources and does not indicate real-time conditions at the site.

Current: business is operating on the day this report was issued.

Former: business that have been closed or discontinued within 2 years from the date of this report.

Categories included in this search. (Notifiable activities)

Abattoirs	Explosives and Dangerous Goods	Paint Industries
Abrasive Blasting	Extractive Industries	Petrol Stations
Agriculture / Horticulture	Fire and Rescue	Pharmaceuticals
Airports	Food Manufacturing	Port and Marina Operations
Asbestos	Foundry, Smelting or Refining	Power Plants
Asphalt or Bitumen	Fuel Terminals & Depots	Printing and Photography
Batteries	Glass, Ceramics and Plastic	Rail Industry and Associated Activities
Breweries / Distilleries	Gun, Pistol or Rifle Ranges	Rubber and Tyre
Cement, Concrete or Lime	Hospitals and Research Facilities	Storage Tanks
Cemeteries	Landfill Sites	Substations and Switching Stations
Chemicals	Livestock Dips	Textiles and Tannery
Coal Yards	Mechanical and Automotive	Timber, Pulp and Paper Works
Depots and Storage Yards	Metal Fabrication and Treatments	Waste and Recycling Facilities
Dry Cleaners	Oil and Gas	Wastewater Treatment Facilities
Electrical or Electrical Components	Other Infrastructure Facilities	-

Industries, businesses, and activities identified as having an increased likelihood of causing contamination.

The industries and business activities listed above have been identified as having an increased likelihood of causing contamination and have been identified through published state and national guidelines and regulations. These industries are noted due to their potential to store or use substances that could cause contamination to the surrounding environment if not managed appropriately. The identification of these activities does not imply the presence of contamination at the site.

The records identified are based on the reported business activity and have not been assessed based on any current or previous site inspection. Please note that records not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

4.2 HISTORICAL BUSINESS DIRECTORIES

(not mapped)

YEAR	Activity	Name	Address	Positional accuracy	Distance (m)	Direction
Not identified	-	-	-	-	-	-

Land Insight uses a number of address geocoding techniques and has characterised them based on completeness (match rates) and positional accuracy. When a historical street address is incomplete or a match is not found, a record identified as being in the surrounding area will be included for reference and the accuracy of the data is approximate only. An explanation of the positional accuracy records is defined in the table below.

Historical data positional accuracy and georeferencing results explanation		
Positional accuracy	Georeferenced	Description
Address	Located to the address level	<i>When street address and names fully match.</i>
Street	Located to the street centroid	<i>When street names match but no exact address was found. Location is approximate.</i>
Place	Located to the structure, building or complex	<i>When building, residential complex or structure name match but no exact address was found. Location is approximate.</i>
Suburb	Located to the suburb area	<i>When suburb name match but no exact address was found. Location is approximate.</i>

The data used in this section was extracted from range of historical commercial trade directories and business listings. The business addresses were geocoded using historical information and the accuracy of the data may vary due to changes to the physical address at a given locality over time or the quality of the original records. From 2005, the historical business records in this section are considered more accurate as information was extracted from digital directories with geographic coordinate location information available. On this basis, reliance on the historic listing data should be considered when assessing the risk of contamination from an activity at the site. The presence of a business listing does not definitively confirm the actual activity that has occurred at the site. For more information on how these records were geocoded and the methodology used by Land Insight, contact us at info@landinsight.co.

Historical business directory listings have been filtered to match activities and industries identified as PCAs in Section 4.1. Please note that any record not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.



Section 5 Natural Hazards



5.1 Fire Hazard

Map 5.1 (500m Buffer)

Bushfire Prone Areas

Category	Type	Details	Distance (m)	Direction
Bushfire Prone Area	Vegetation Buffer	Vegetation Buffer - Bush Fire Prone is an area of land that can support a bush fire or is likely to be subject to bush fire attack. Bush Fire Prone Land areas becomes the trigger for planning for bush fire protection.	0.0	Onsite
Bushfire Prone Area	Vegetation Category 3	Bushfire Prone Area - Vegetation Category 3 is considered to be medium bush fire risk vegetation. Bush Fire Prone Areas becomes the trigger for planning for bush fire protection.	0.0	Onsite

Bushfire History

Type	Season	Details	Distance (m)	Direction
Wildfire	1986-87	Wanganella	0.0	Onsite
Wildfire	1990-91	Glencoia	24.9	North

5.2 Flood Hazard

Map 5.2 (500m Buffer)

Flood Planning Area

Type	Name	Details	Distance (m)	Direction
Not identified	-	-	-	-

Other Flood Studies

Type	Name	Details	Distance (m)	Direction
Not identified	-	-	-	-

Flood History

Type	Season	Details	Distance (m)	Direction
Not identified	-	-	-	-

The list provided is not comprehensive and does not consider all flood history. It only includes the information that is currently available.

5.3 Erosion Hazard

Map 5.3 (500m Buffer)

Erosion Hazard

Category	Type	Details	Distance (m)	Direction
Landslip Erosion Risk	Very slight to negligible limitations	Very Low	0.0	Onsite
Water Erosion Risk	Slight but significant limitations	Low	0.0	Onsite
	Moderate limitations	Moderate	0.0	Onsite
	Moderate to severe limitations	Moderate	0.0	Onsite
	Very slight to negligible limitations	Very Low	0.0	Onsite
Wind Erosion Risk	Slight but significant limitations	Low	0.0	Onsite
	Moderate to severe limitations	Moderate	0.0	Onsite
	Very severe limitations	Very High	0.0	Onsite



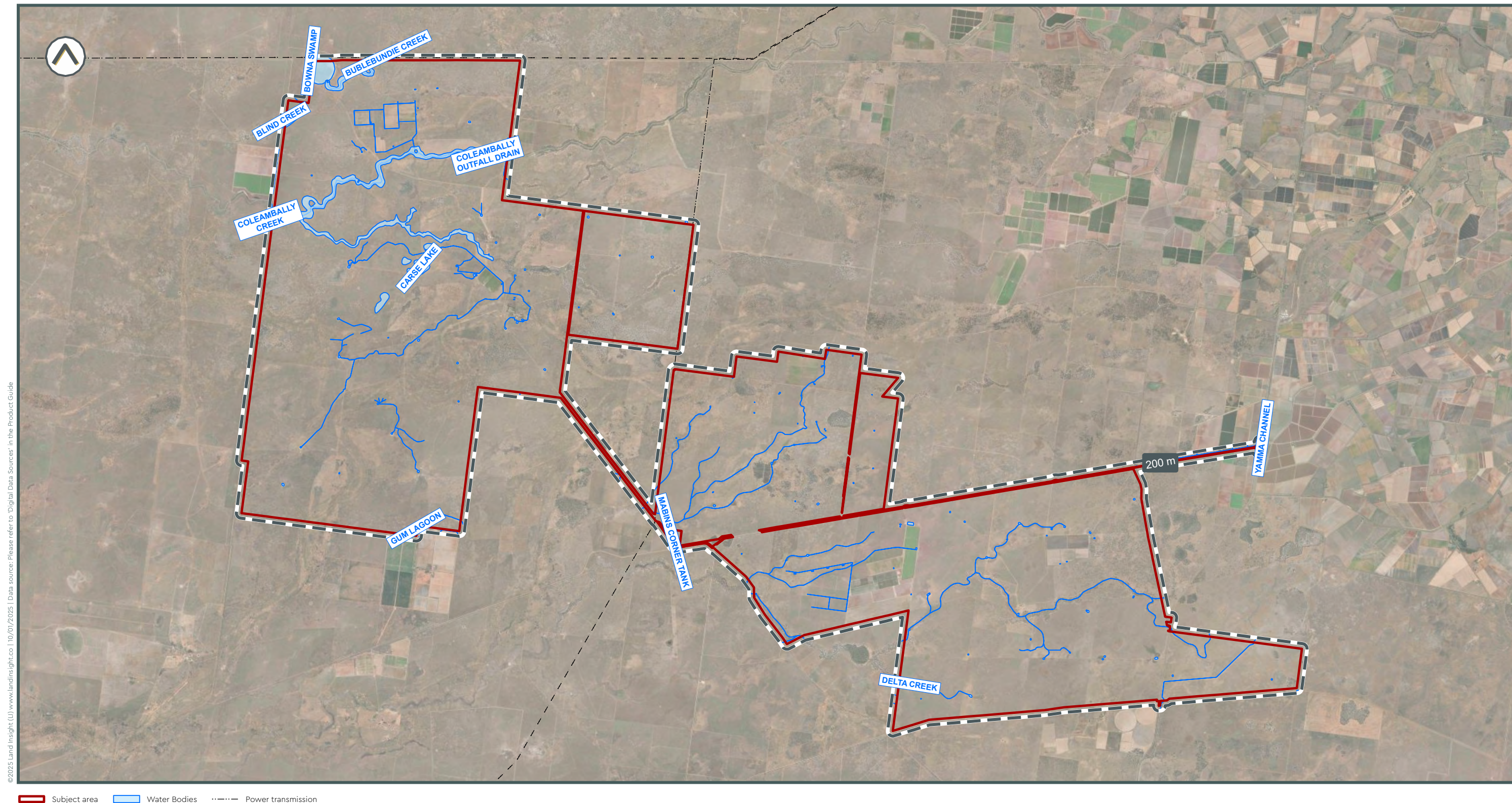
The Commons
388 George Street
Sydney NSW 2000 Australia
info@landinsight.co
www.landinsight.co

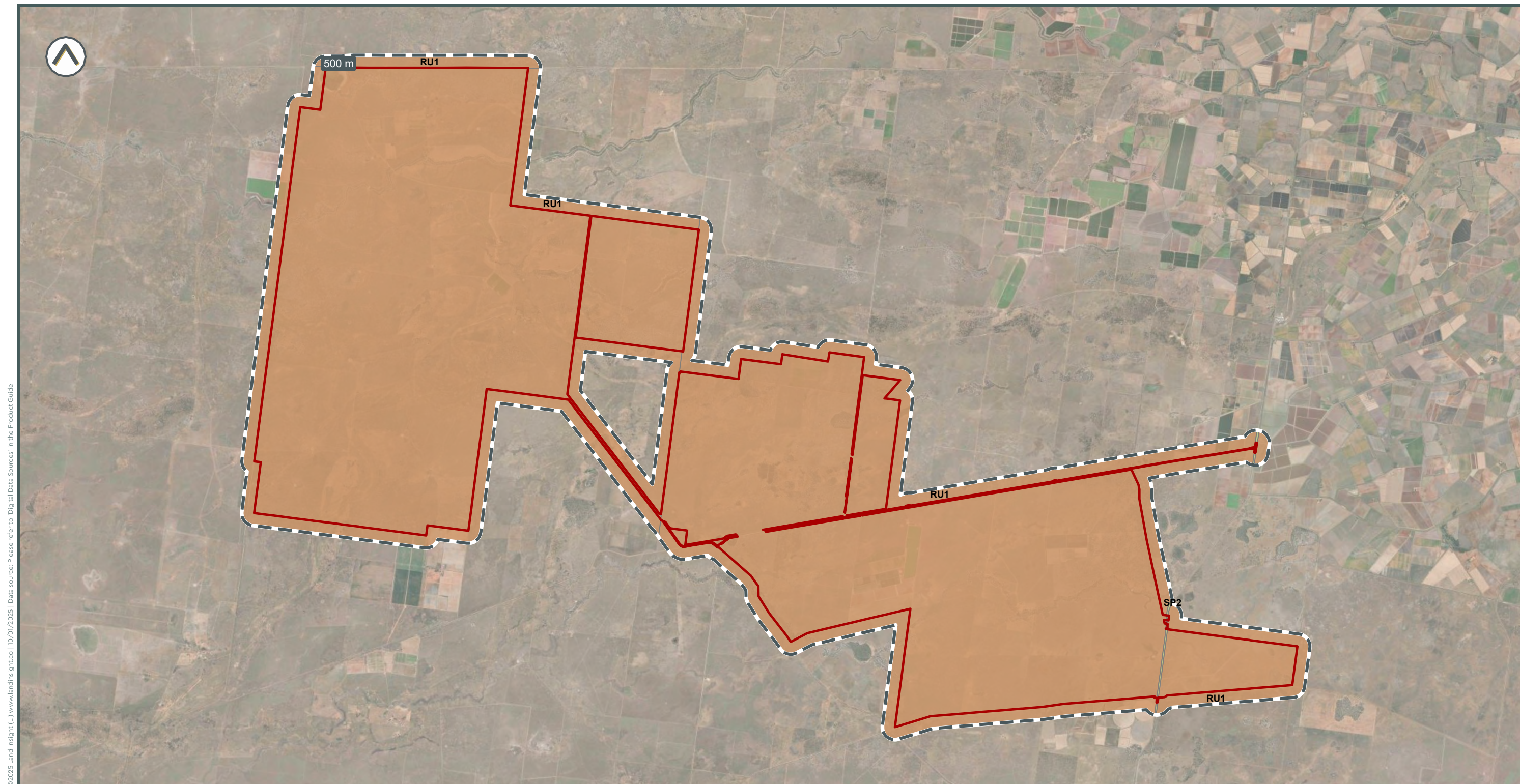
A low-angle, upward-looking photograph of a suspension bridge at dusk. The bridge's steel lattice structure and suspension cables are silhouetted against a deep blue twilight sky. In the background, a modern multi-story building with some lit windows is visible. The overall mood is architectural and serene.

Appendix A

REPORT MAPS

Dinawan
Bundure, NSW





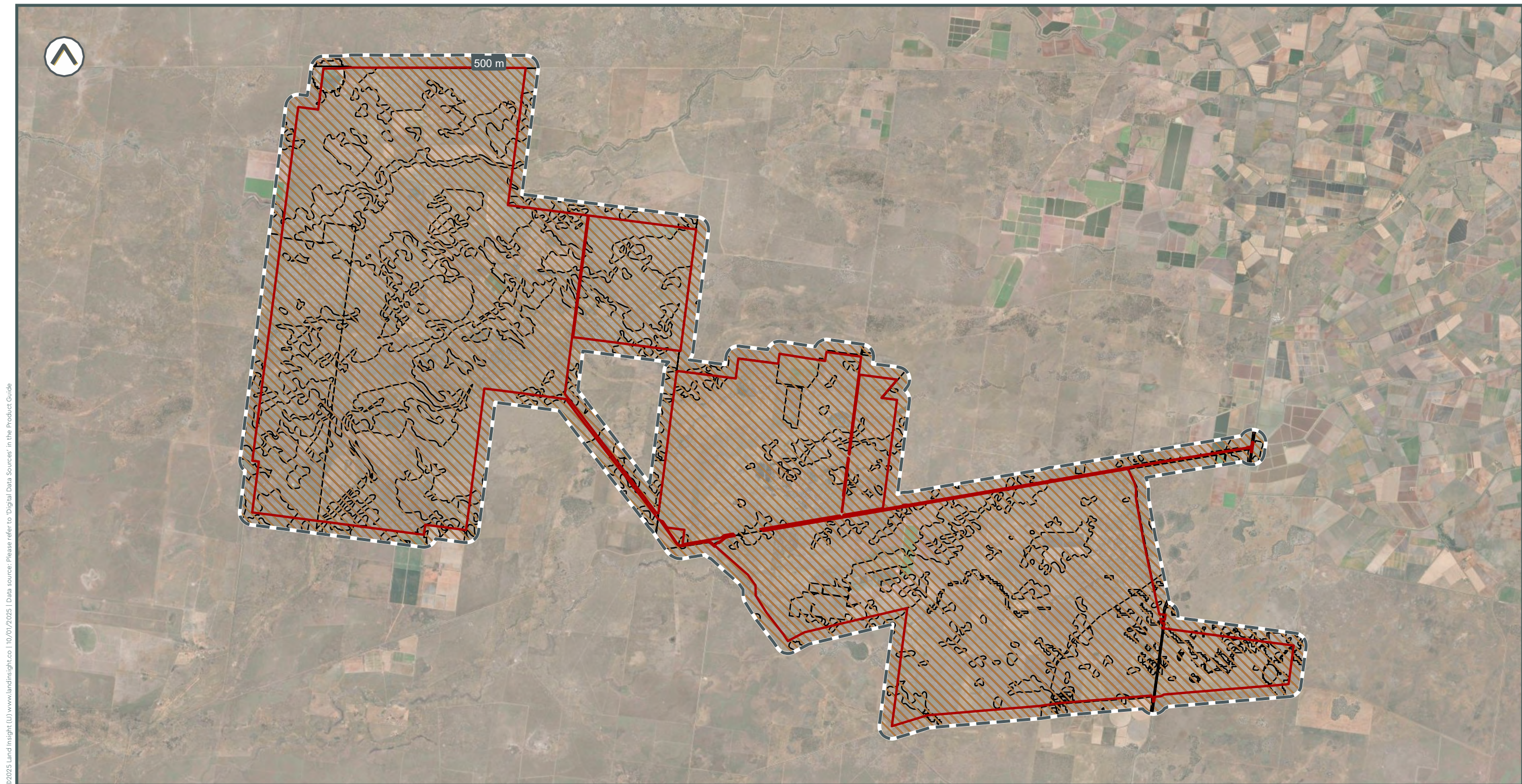
©2025 Land Insight (U) www.landinsight.co | 10/01/2025 | Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area
Construction Footprint

Zoning
RU1 Primary Production

SP2 Infrastructure

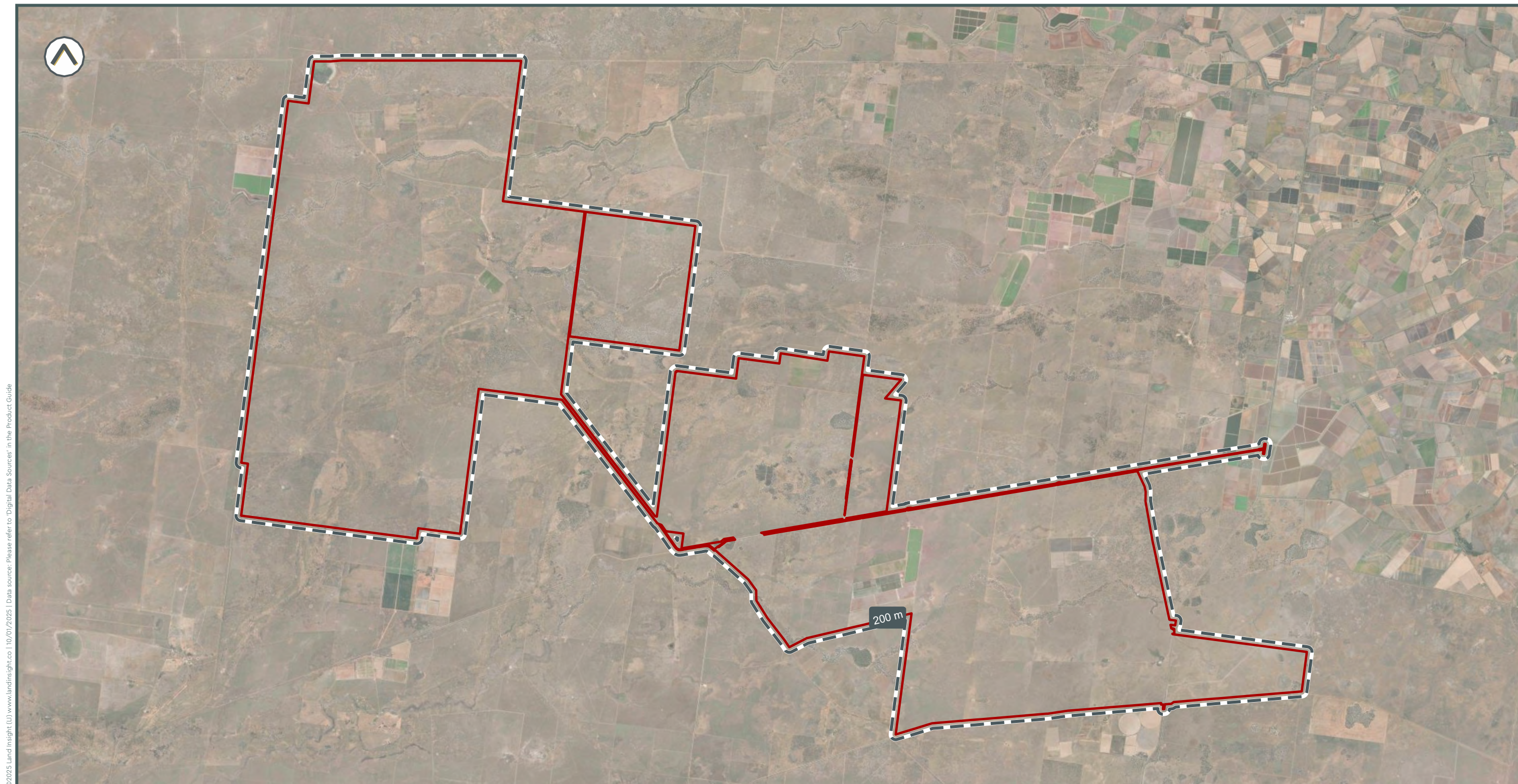
0 1,000 2,000 3,000 4,000 5,000m



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	Subject area	Type		Land Application		Refer to Clause 4.2B		Wetlands
			Allowable Clearing		Minimum Lot Size (sq m)		SEPP Land Application	
			Biodiversity		Minimum Water Use Standard (%)		Vulnerable	

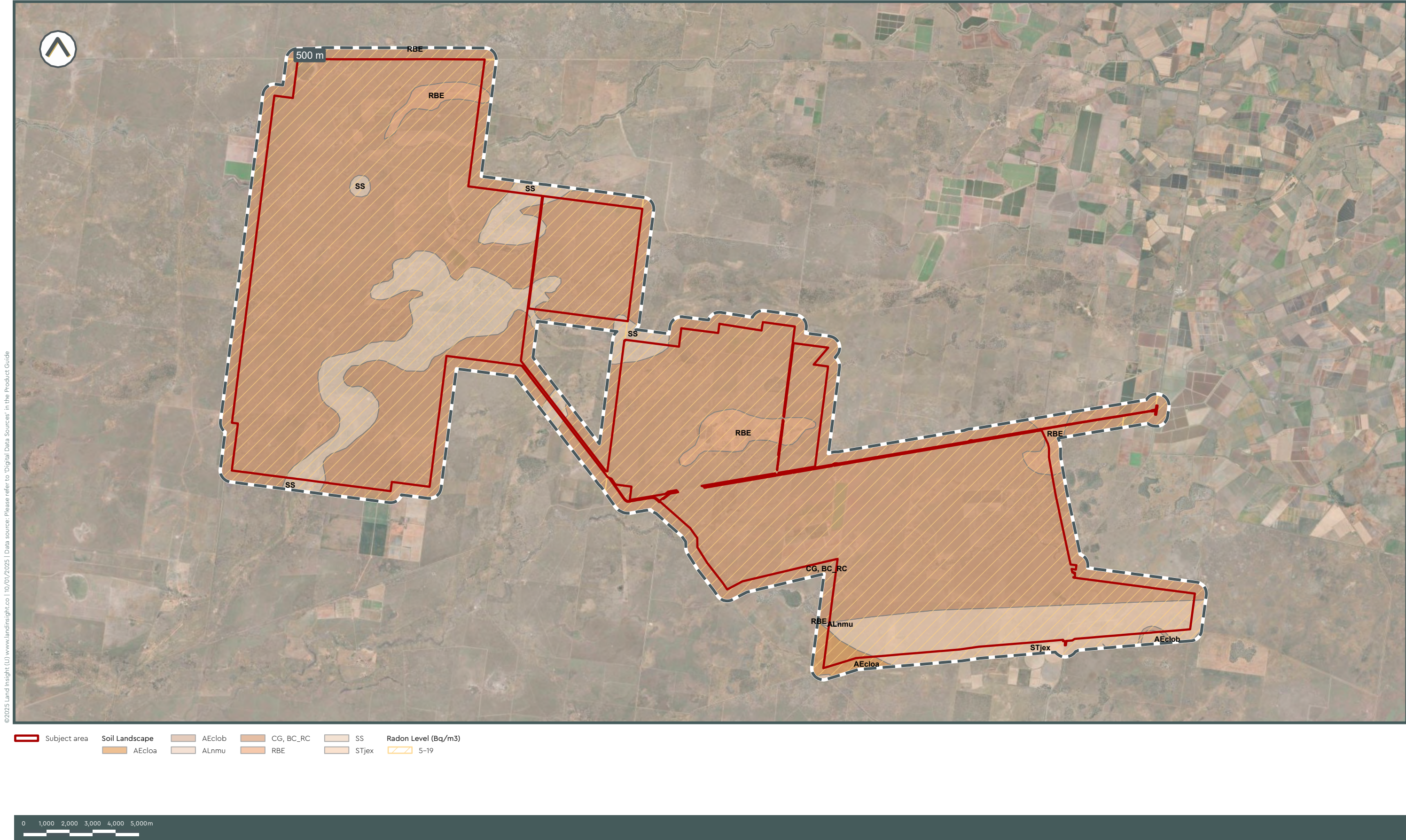
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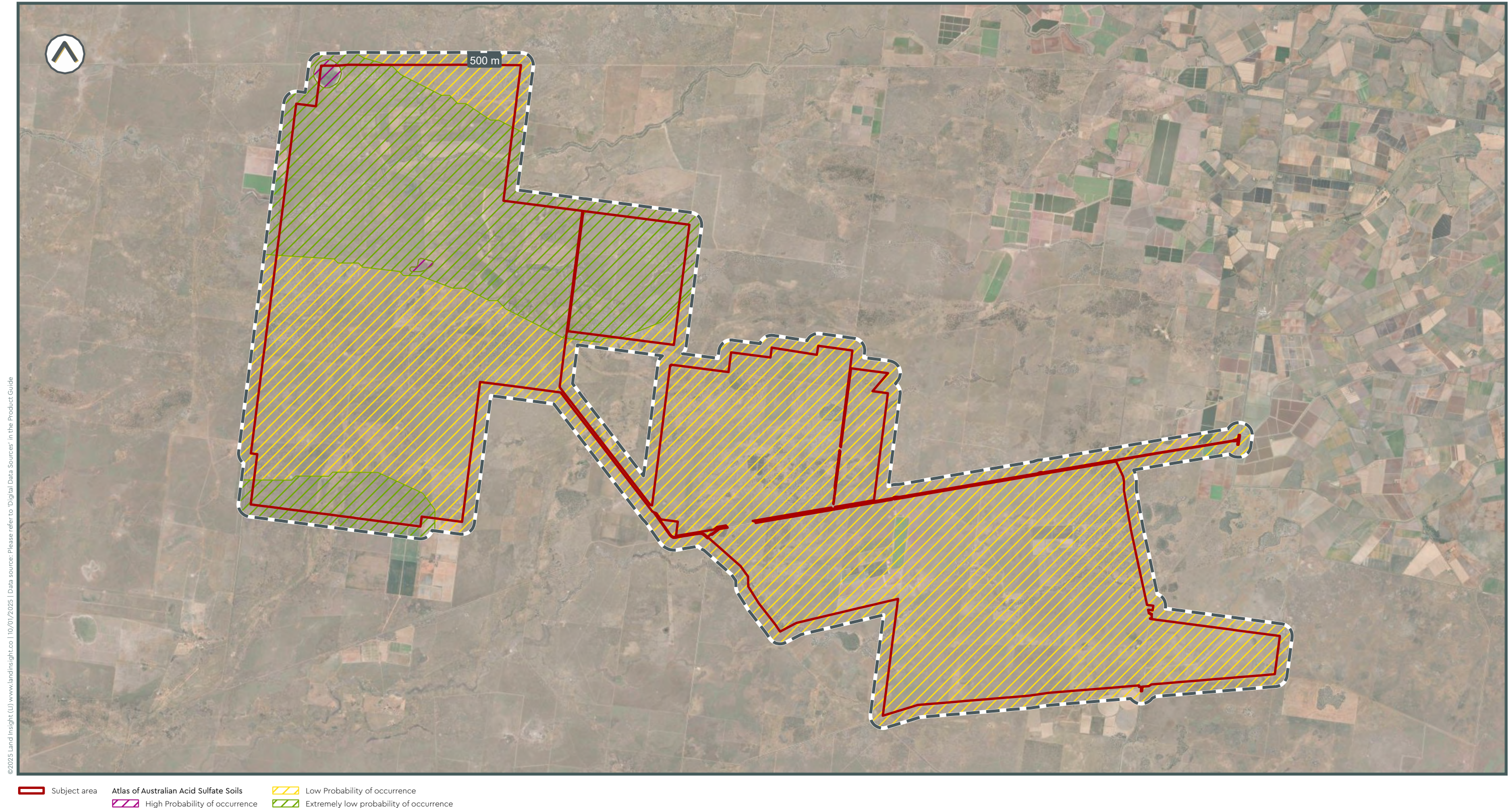


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Subject area

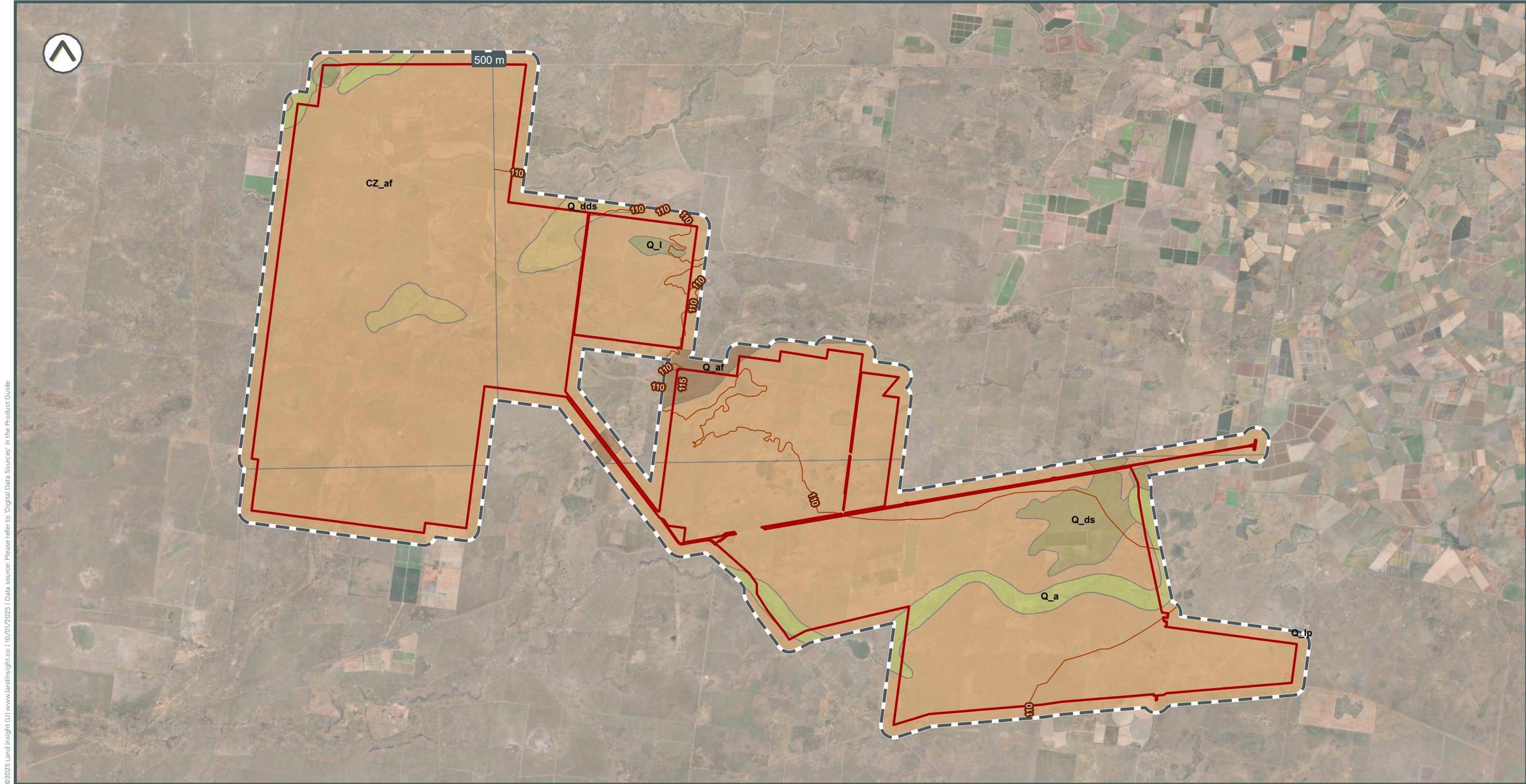
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©2025 Land Insight (U) www.landinsight.co | 10/01/2025 | Data source: Please refer to 'Digital Data Sources' in the Product Guide

0 1,000 2,000 3,000 4,000 5,000m



©2025 Land Insight (U) www.landinsight.co | 10/01/2025 | Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area Topographic contour (m) Geology Unit

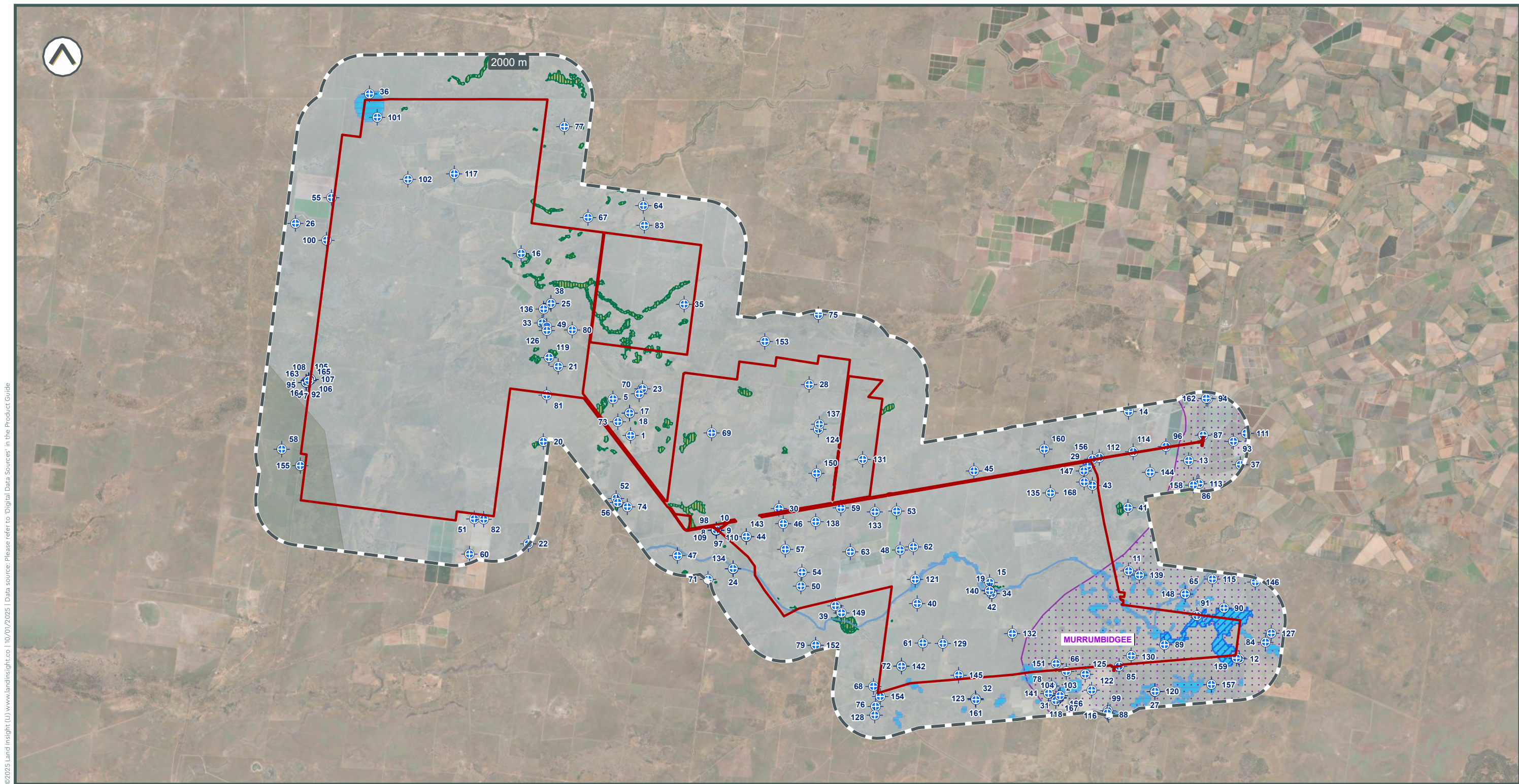
CZ_af	Q_a	Q_dds	Q_l
Q_af	Q_ds	Q_lp	

0 1,000 2,000 3,000 4,000 5,000m





Groundwater Dependent Ecosystems & Hydrogeology Constraints



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- Subject area

Groundwater bores
- Ecosystems that rely on the Surface expression of Groundwater

Moderate potential GDE – from national assessment

Low potential GDE – from national assessment
- Ecosystems that rely on Subsurface presence of Groundwater

High potential GDE – from regional studies

Groundwater Protection Areas

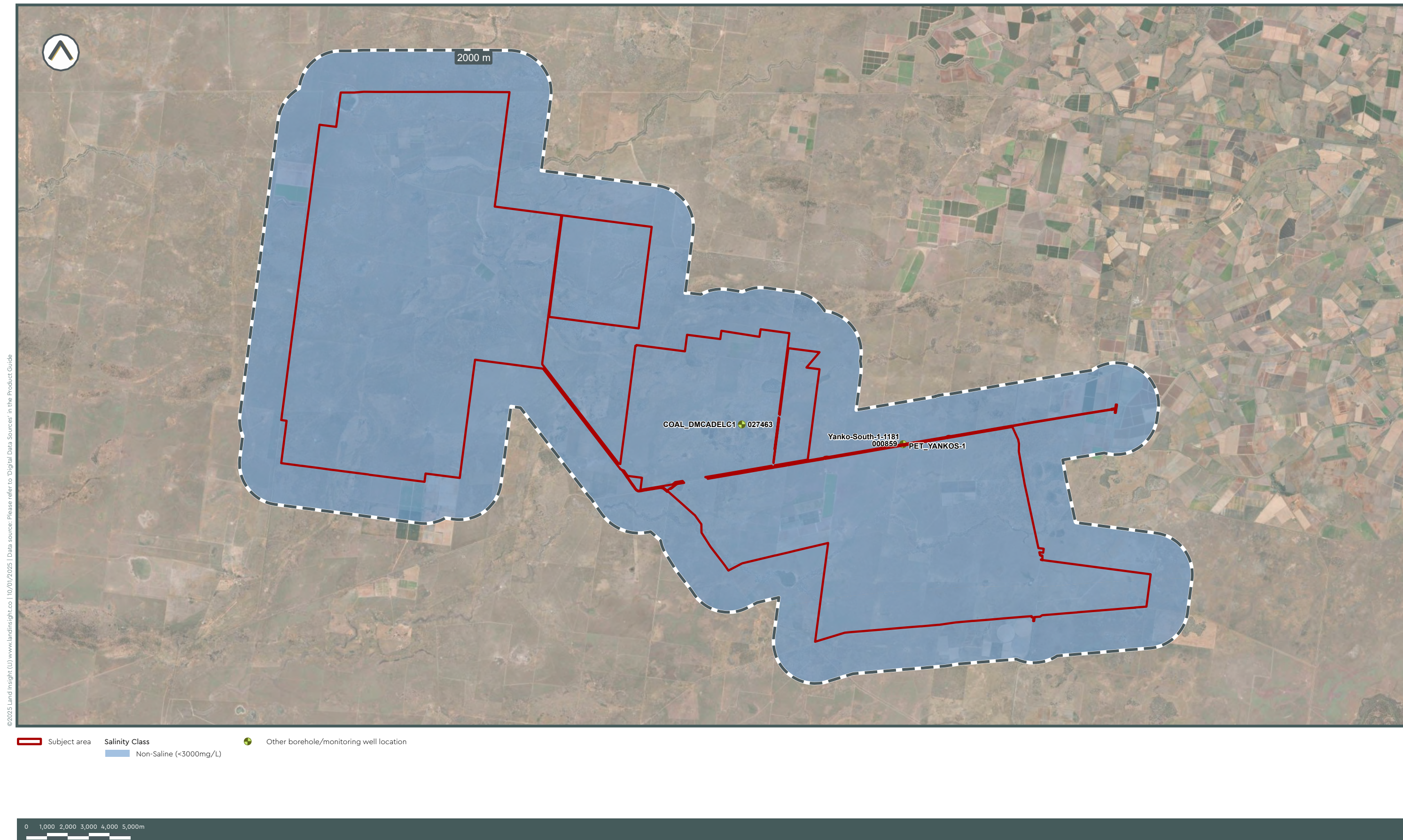
Wetlands
- Aquifer type

Porous, extensive aquifers of low to moderate productivity

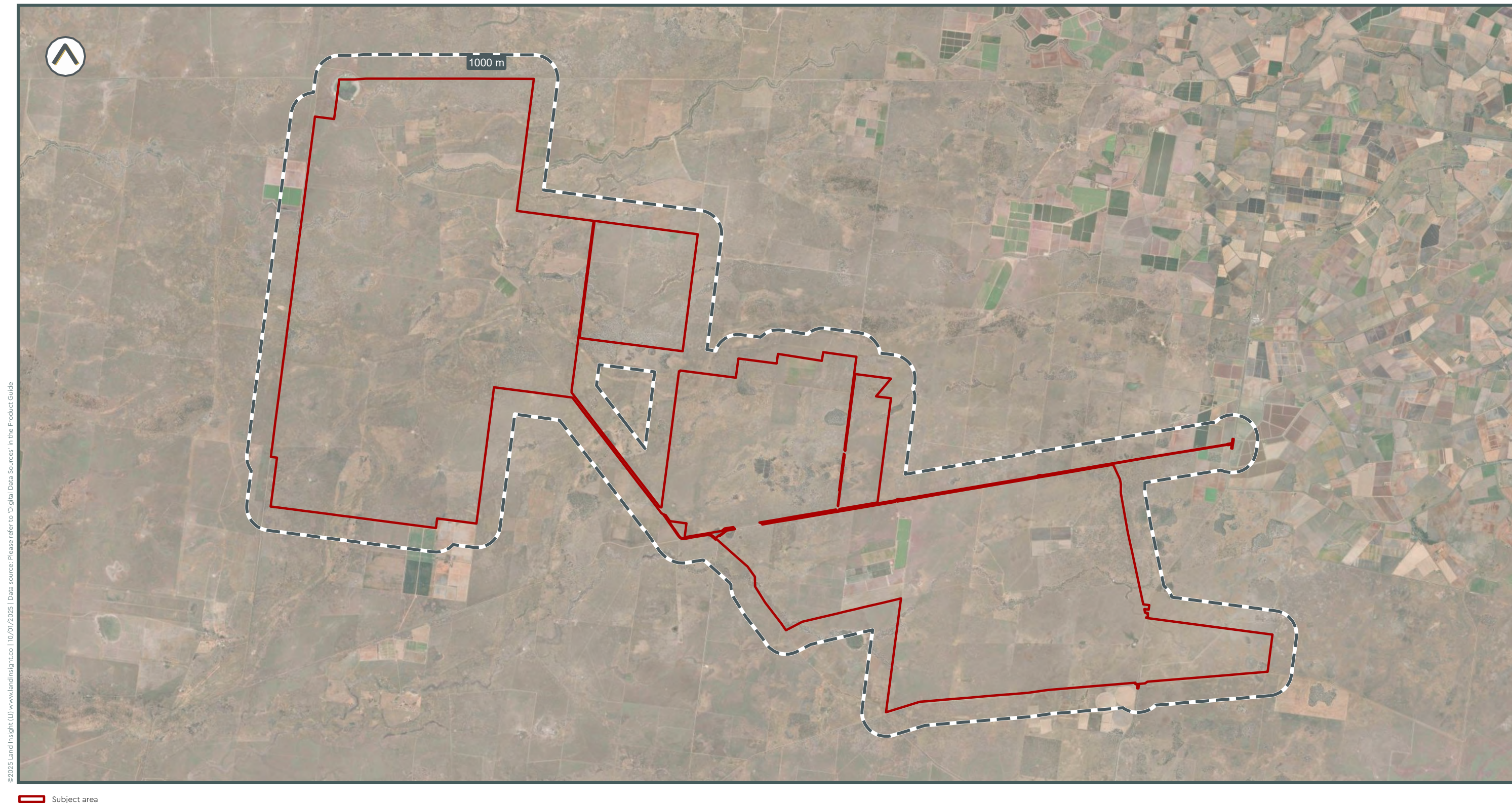
Porous, extensive highly productive aquifers

0 1,000 2,000 3,000 4,000 5,000m





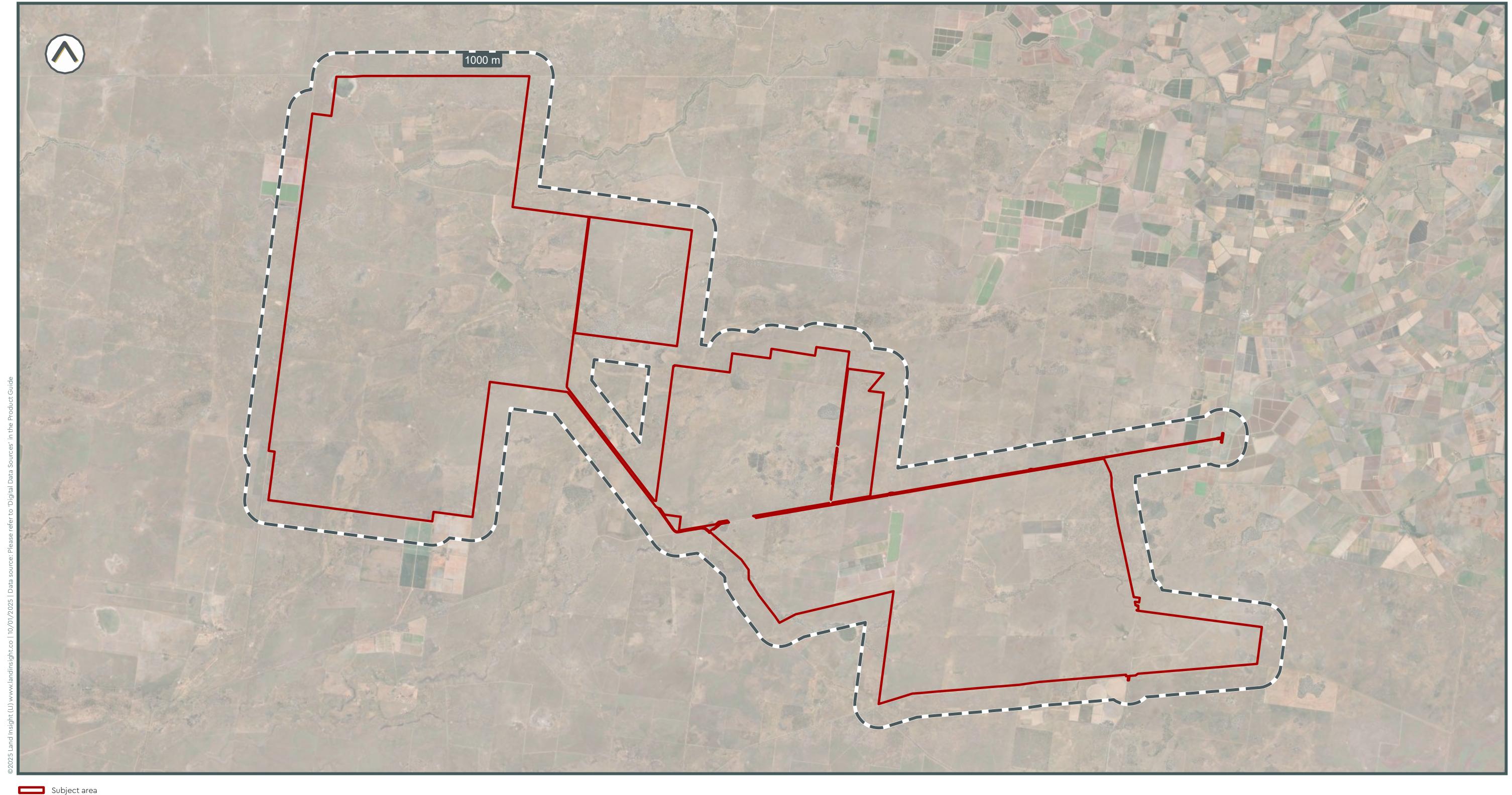
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Subject area

0 1,000 2,000 3,000 4,000 5,000m



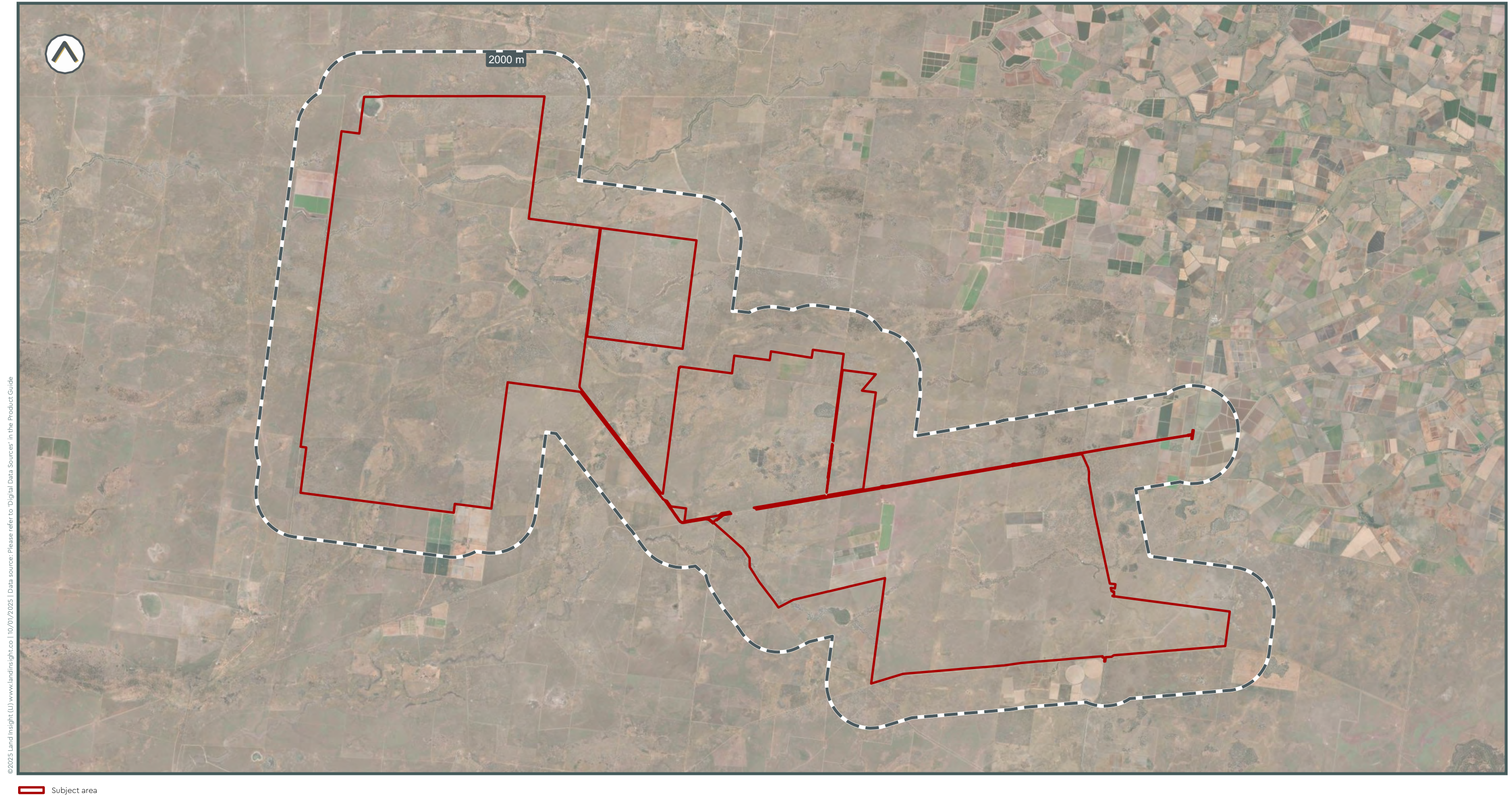
©2025 Land Insight (UK) www.landinsight.co.uk 10/01/2025 | Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 1,000 2,000 3,000 4,000 5,000m



Sites Regulated by Other Jurisdictional Body



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Subject area

0 1,000 2,000 3,000 4,000 5,000m



Other Potential Hazard Sources

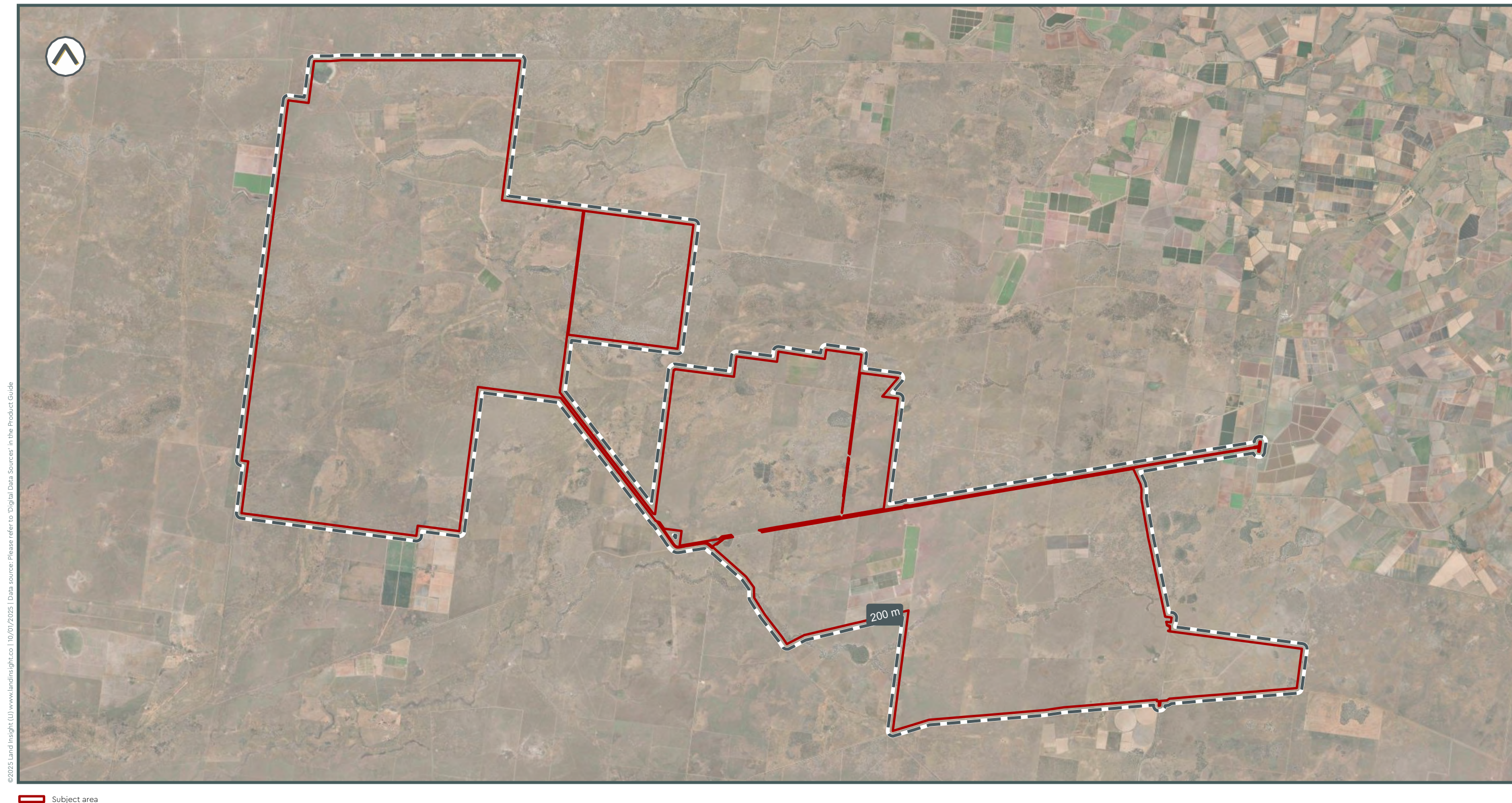




POTENTIALLY CONTAMINATED AREAS

Current Potentially Contaminating Activities (PCAs)

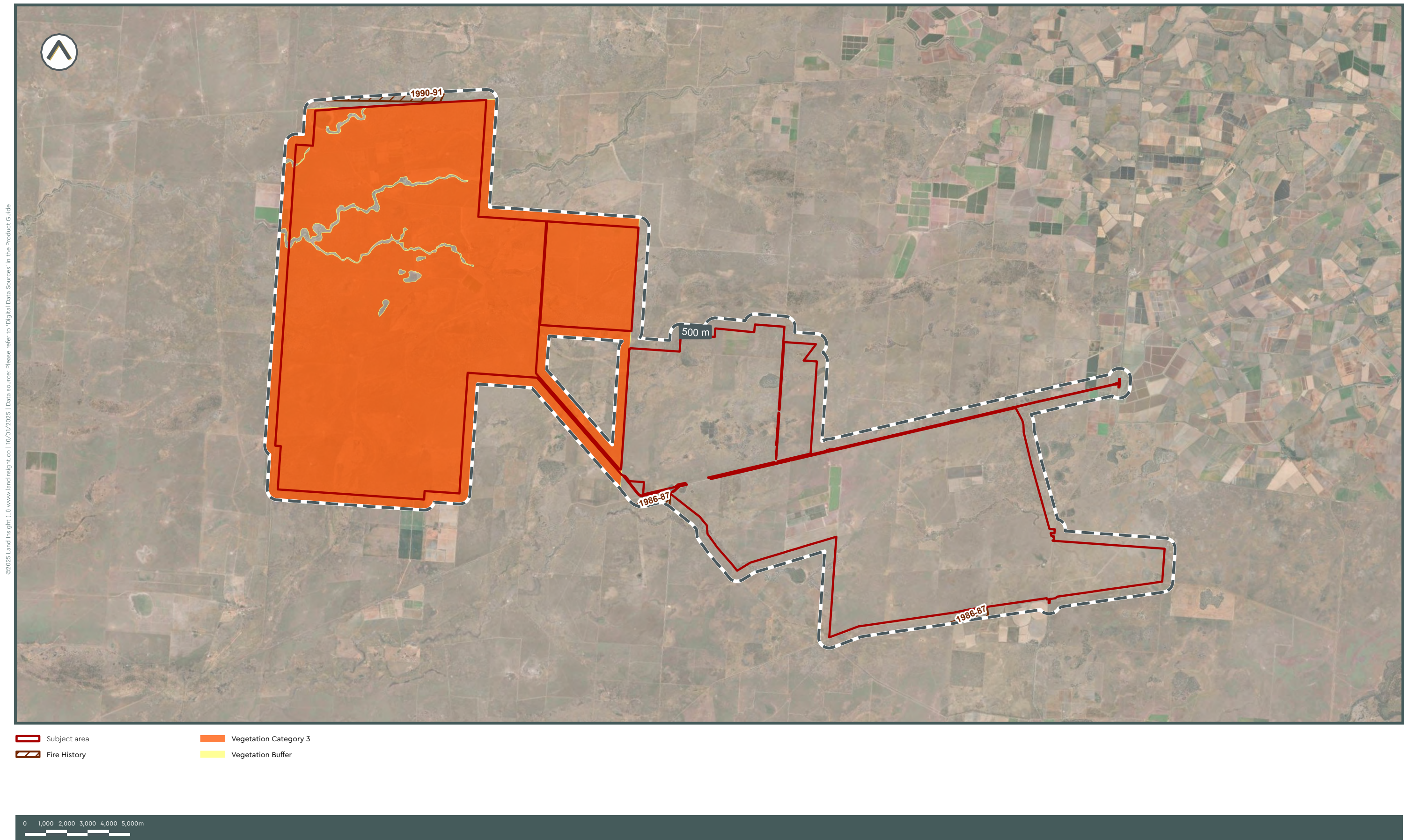
MAP 4.1



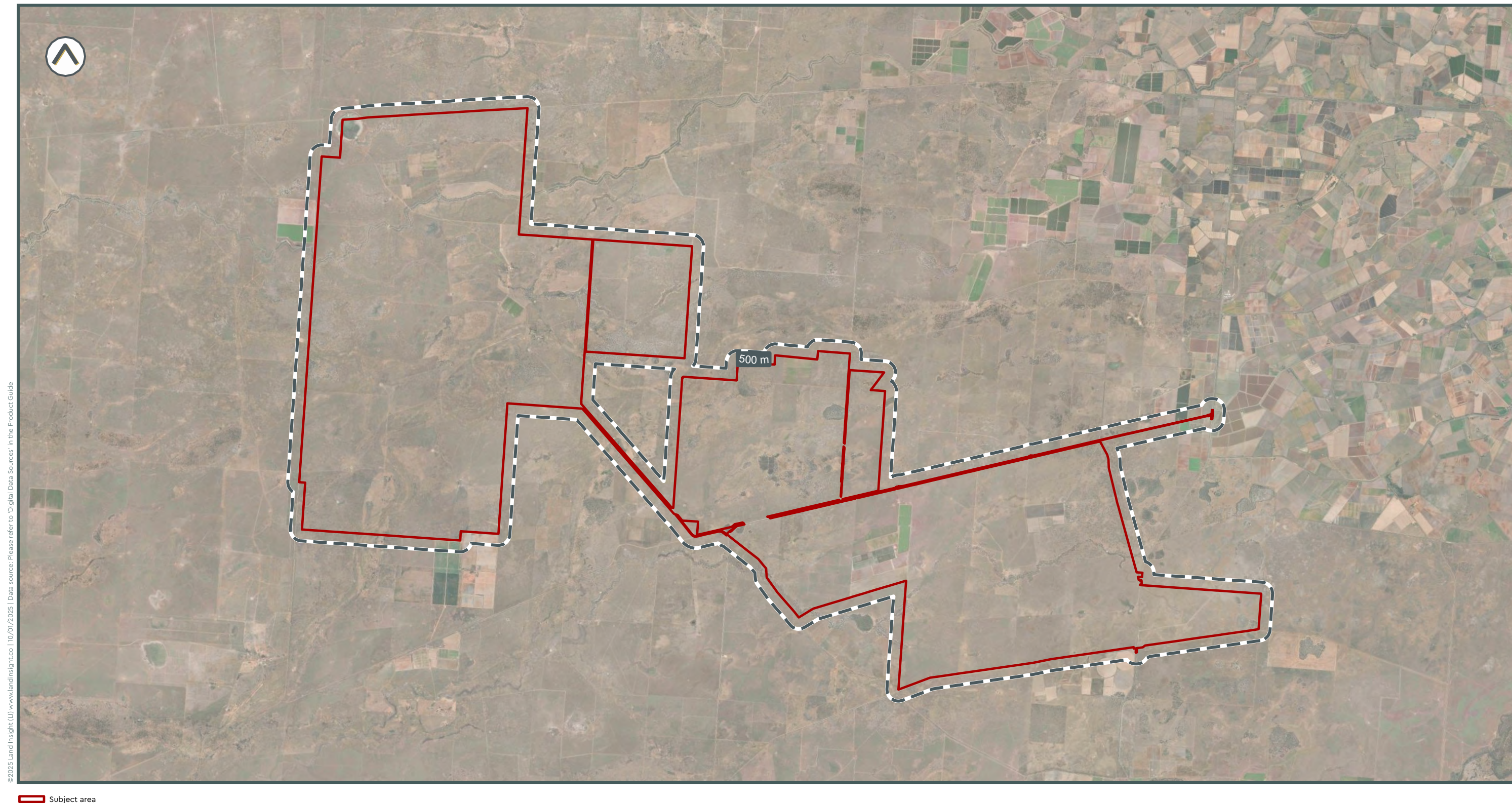
0 1,000 2,000 3,000 4,000 5,000m



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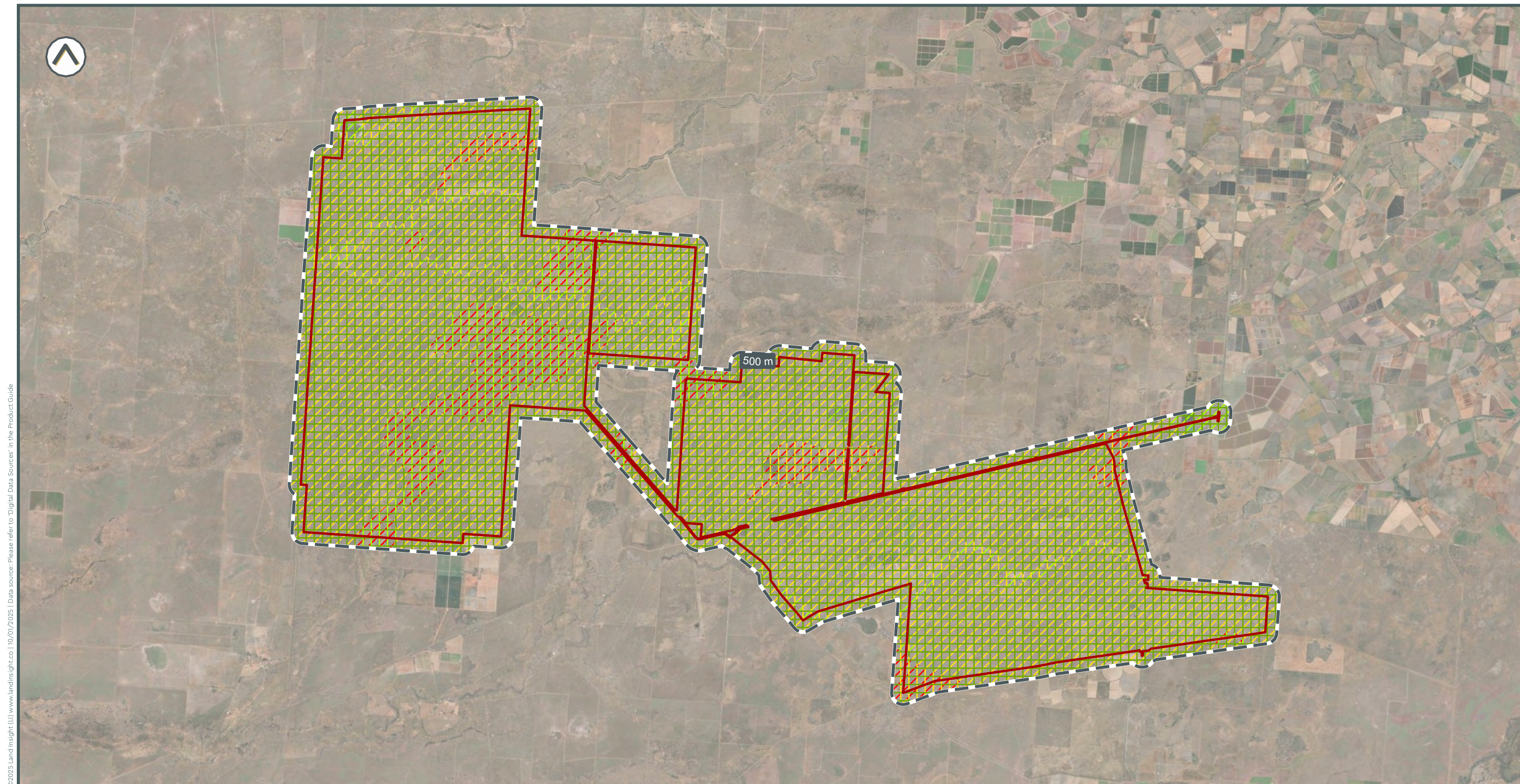
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Subject area

0 1,000 2,000 3,000 4,000 5,000m



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0 1,000 2,000 3,000 4,000 5,000m

Appendix C

Historical aerial images

An aerial photograph of a vibrant turquoise river winding through a rugged landscape. The river is flanked by steep, rocky banks covered in dense, green and yellowish vegetation. The water's color is a striking contrast to the surrounding earthy tones. A yellow rectangular box is overlaid on the right side of the image, containing the title and location information.

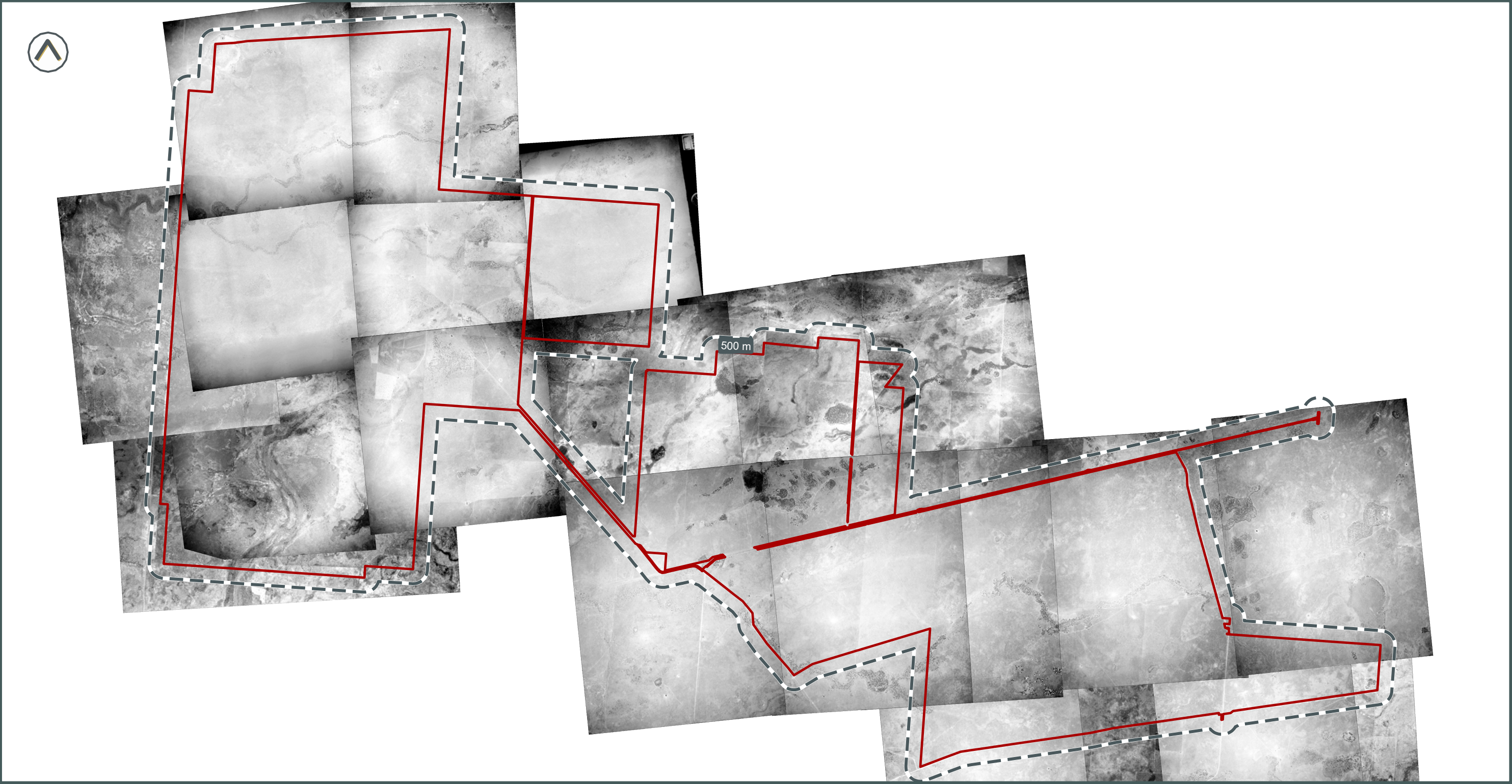
Appendix B

HISTORIC IMAGERY

Dinawan

Bundure, NSW

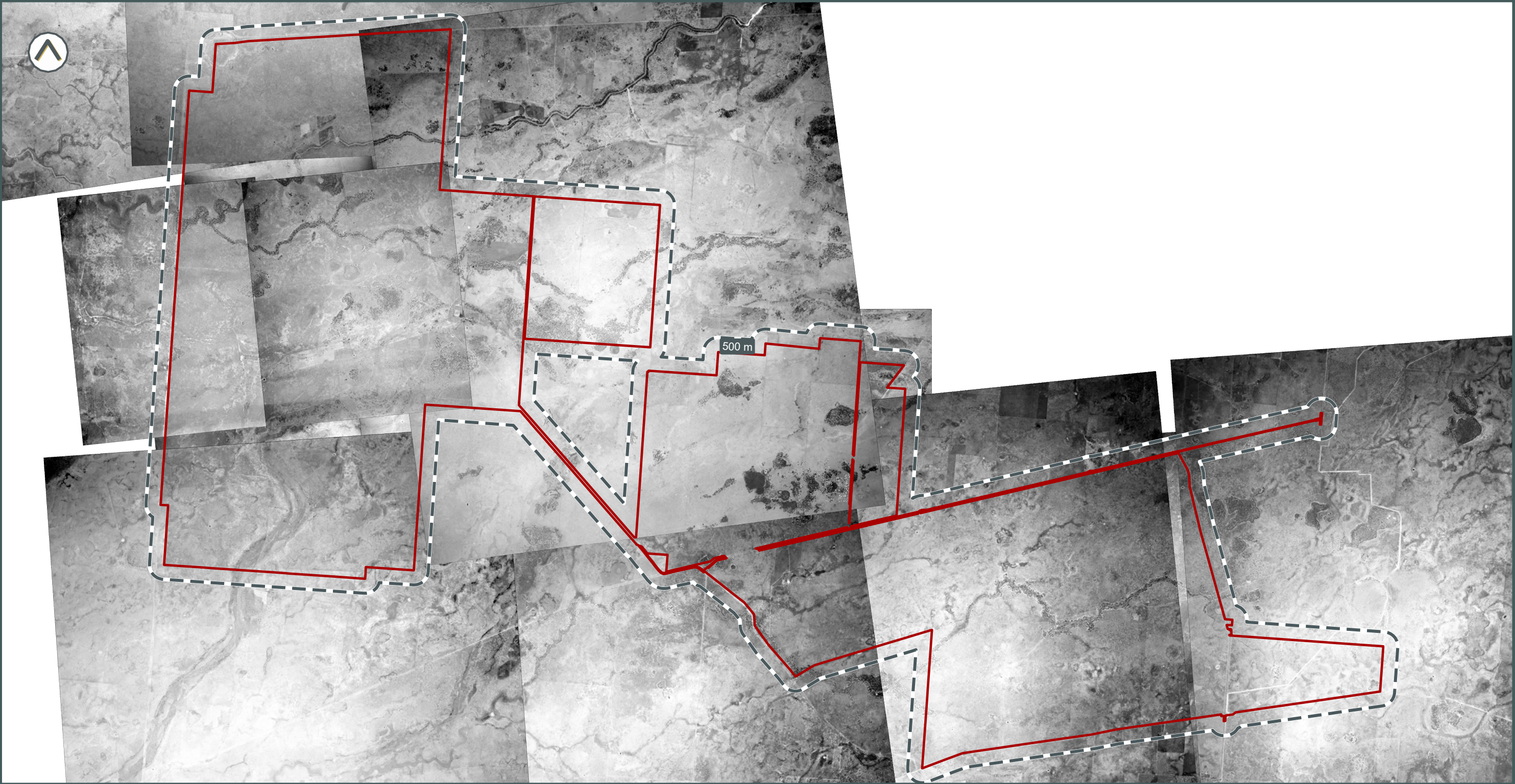
Historic Aerial Photograph - 1954 - 1958



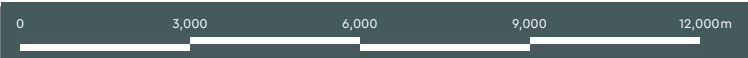
Subject area



Historic Aerial Photograph - 1962 - 1968

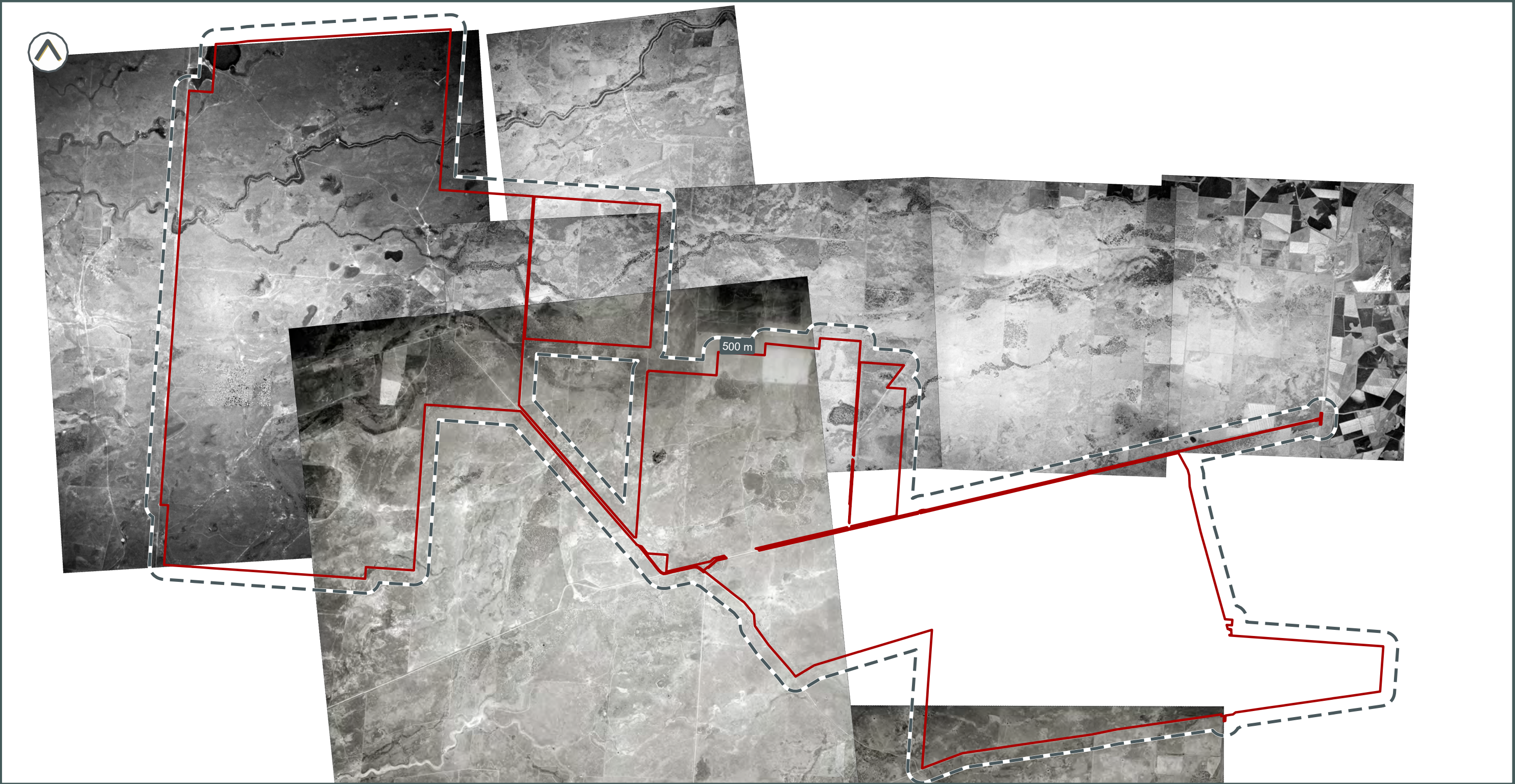


Subject area



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Historic Aerial Photograph – 1970 – 1979

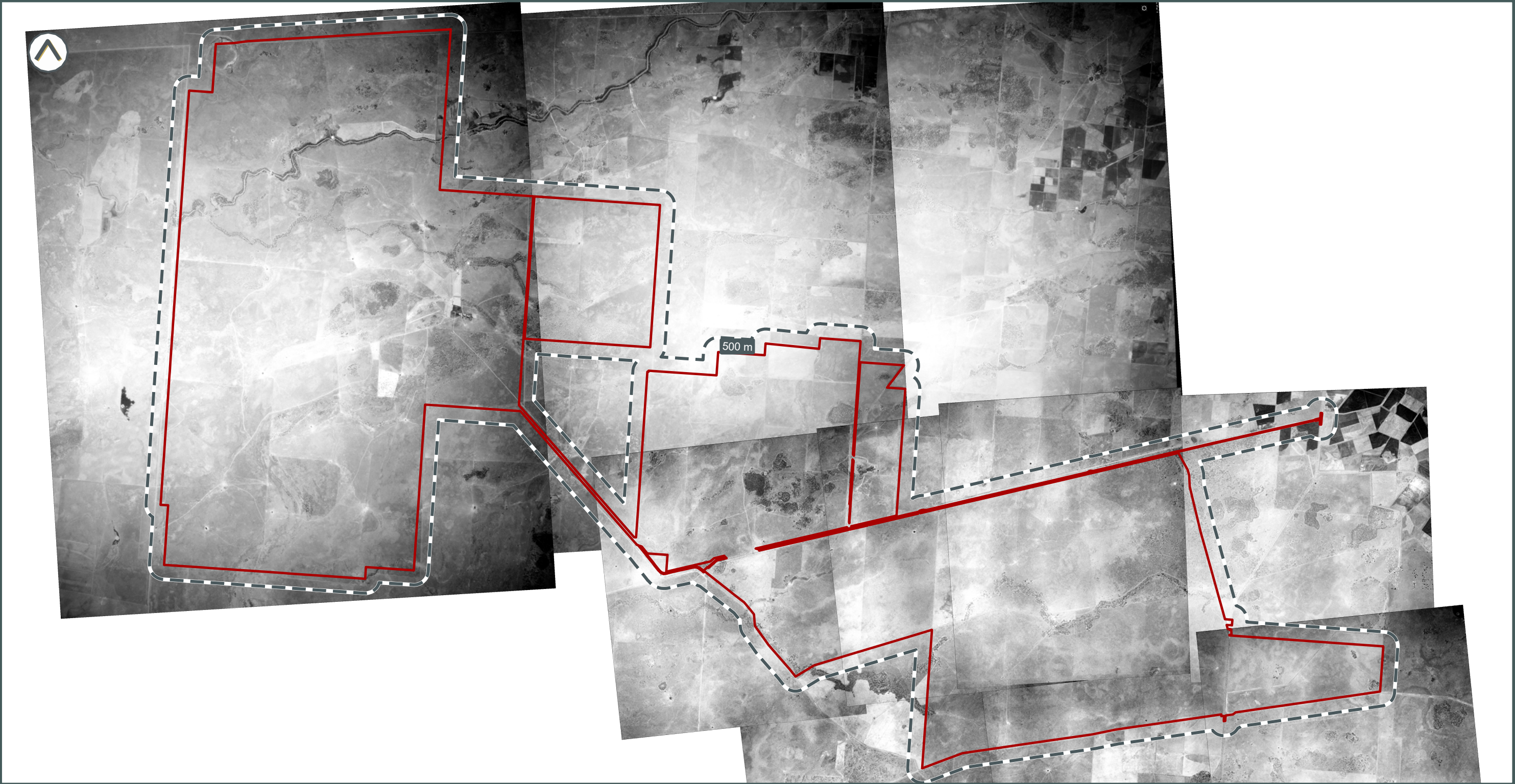


Subject area



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Historic Aerial Photograph – 1980 – 1986

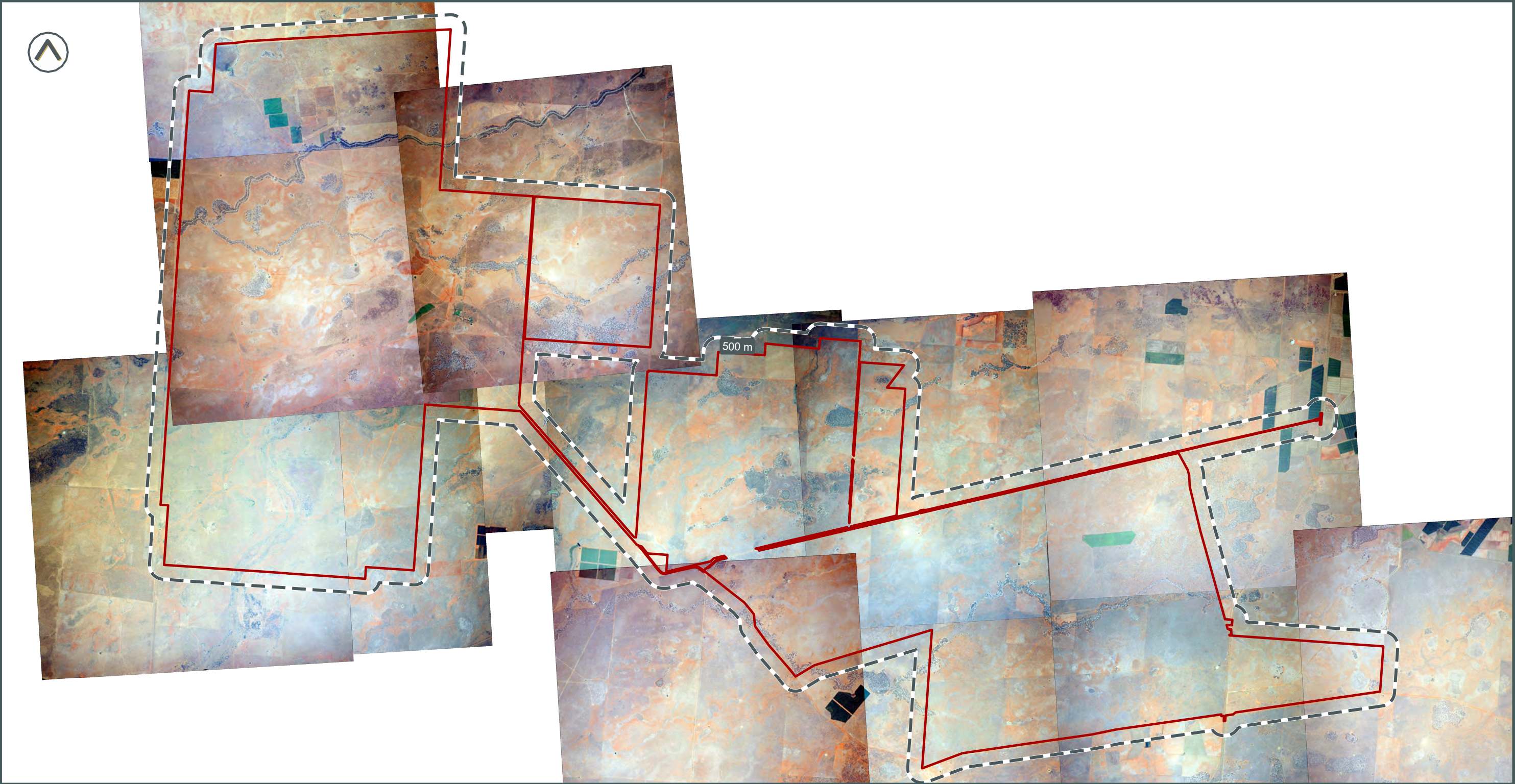


Subject area

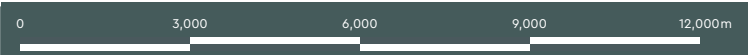


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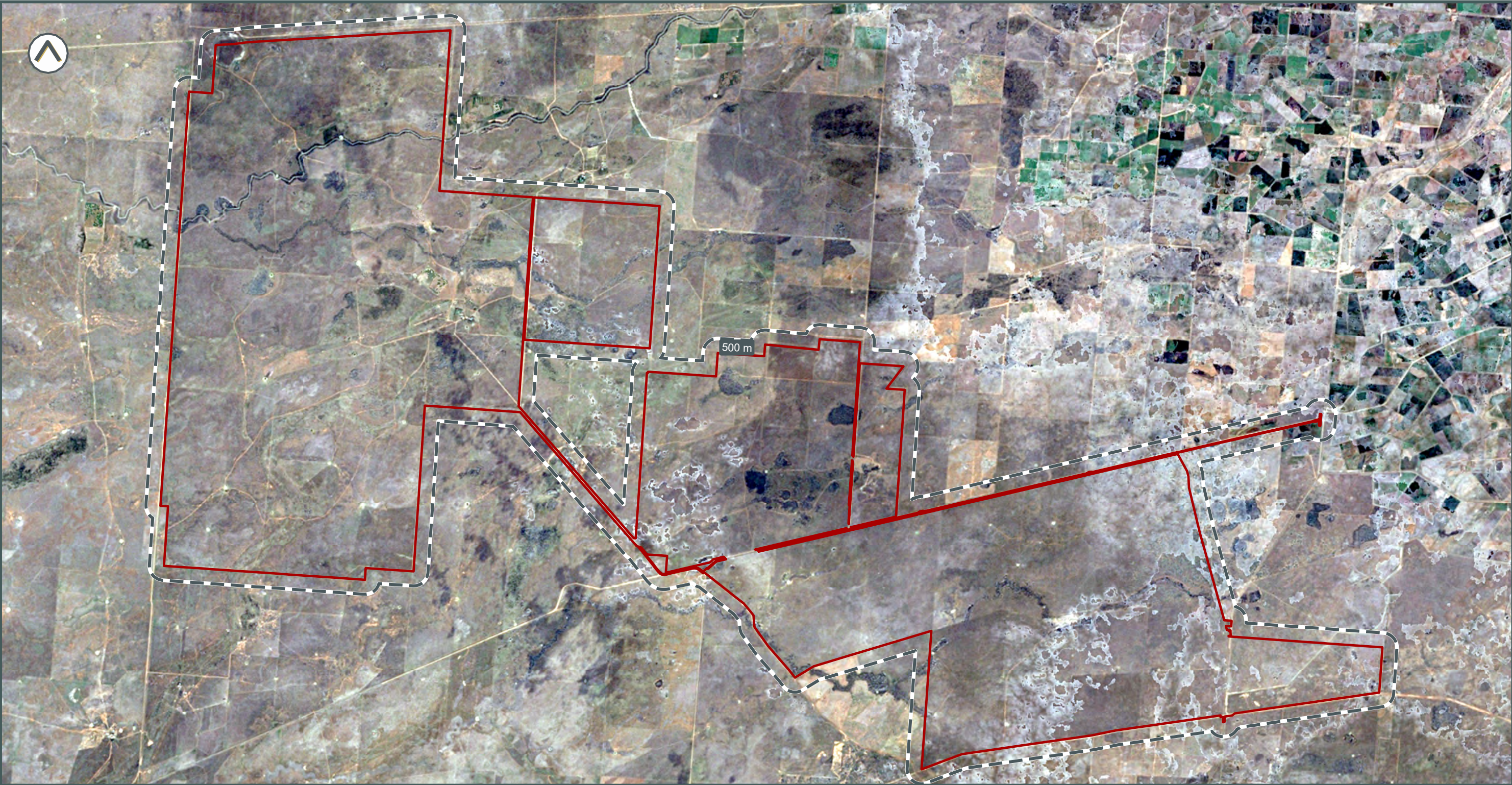
Historic Aerial Photograph – 1996 – 1997



Subject area



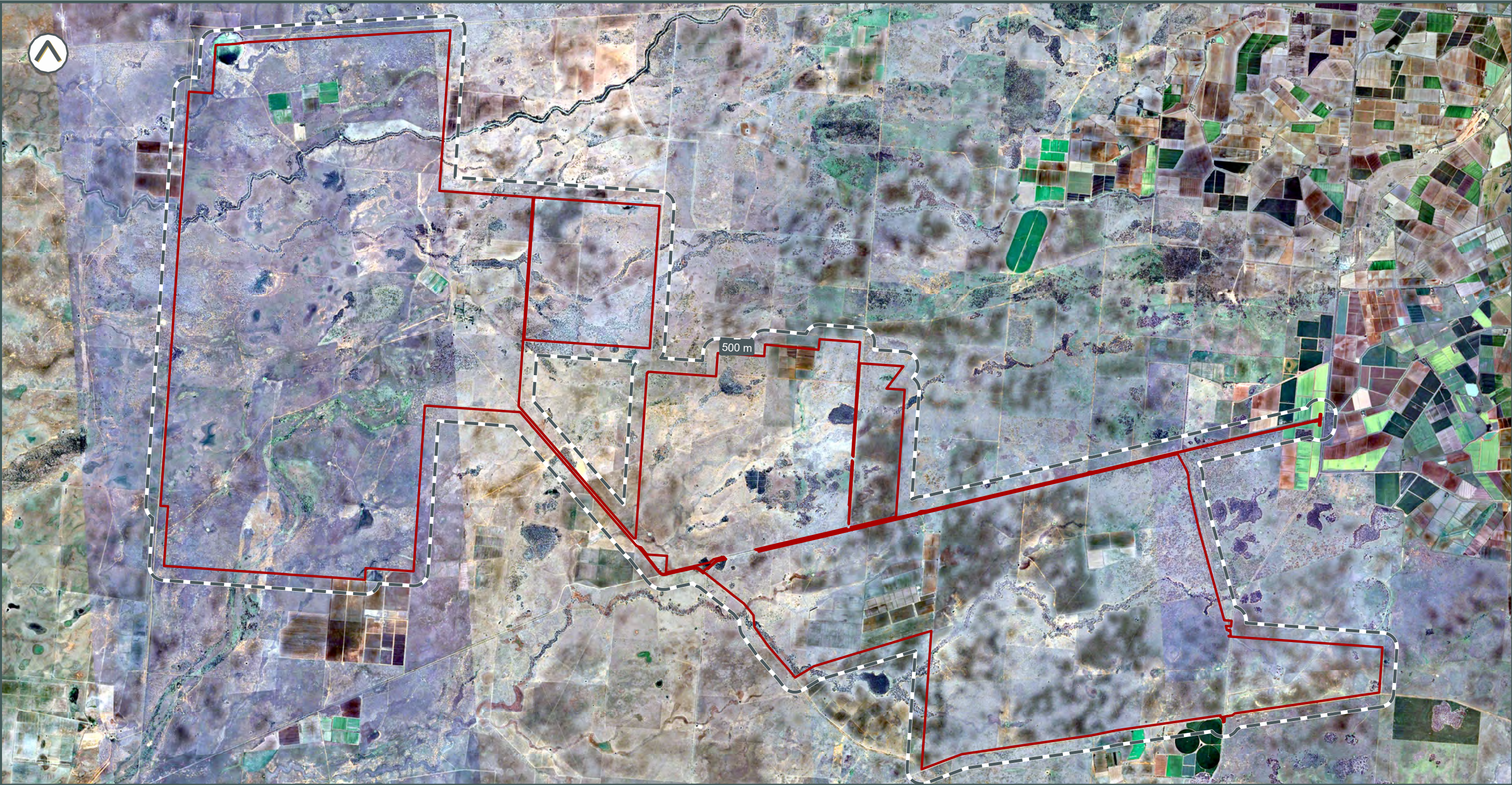
Historic Aerial Photograph – 2003



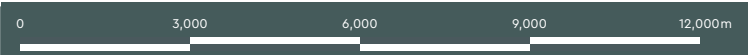
Subject area



Historic Aerial Photograph – 2024

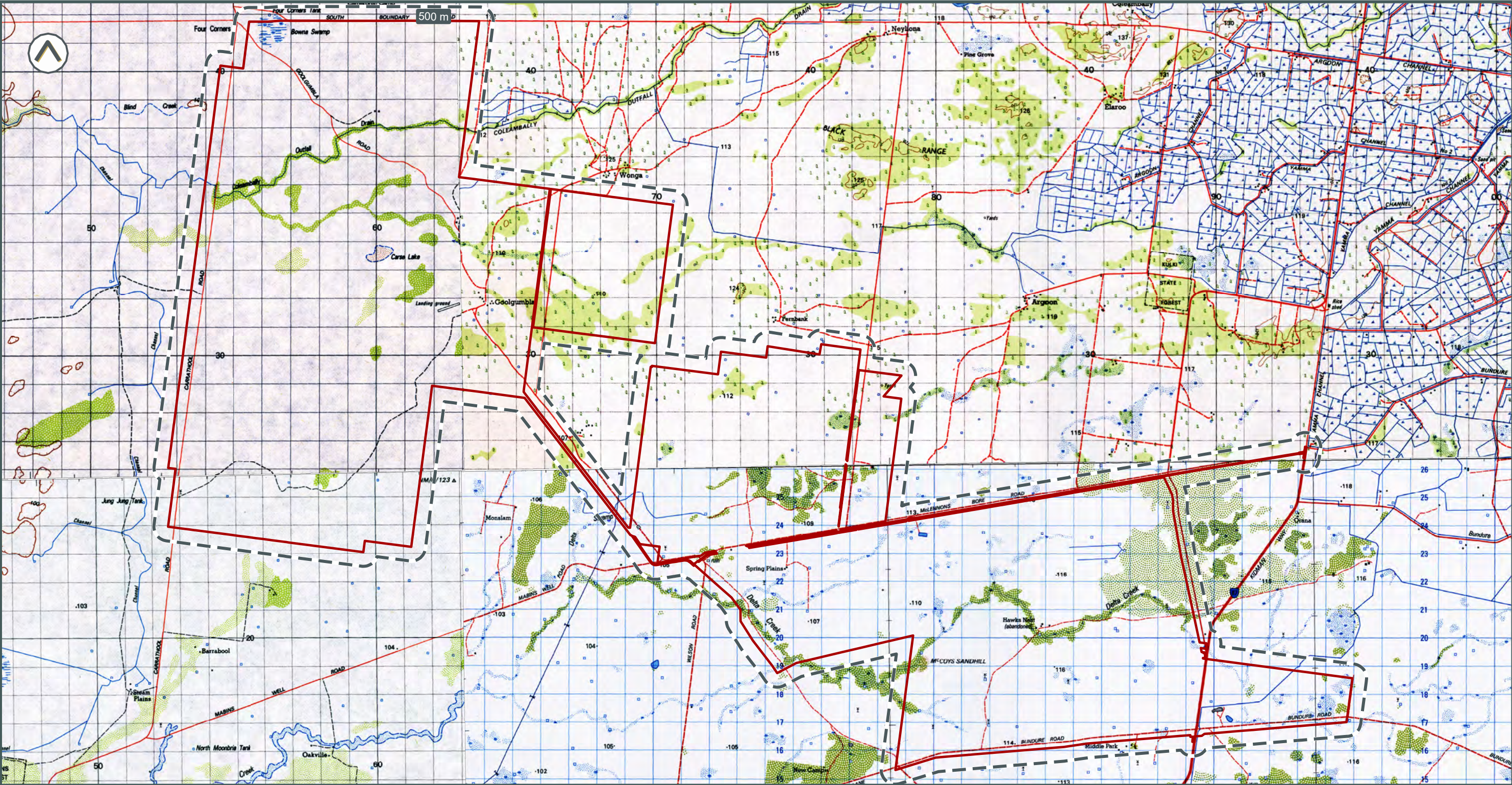


Subject area



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Topographic Map – (Jerilderie 1:100 000, Coleambally 1:100 000, Moggumbill 1:100 000, Conargo 1:100 000)



Subject area



Appendix D

Photographic log

Photographic log

Project	Dinawan Energy Hub		
Client	Spark Renewables	Job number	E220305
EMM field staff	Aislinn Smeallie	Date:	25/06/2025



Photo 1

AOI11: Embankment, irrigation line, bore and pumping station

Location: -35.07924219/ 145.78833747

Direction: 182.45° clockwise from north



Photo 2

AOI11: Irrigation bore and pumping configuration

Location: -35.07940447/ 145.78810452

Direction: 239.08° clockwise from north



Photo 3

AOI11: Exterior of pumping station, Kidman Way

Location: -35.07939436/ 145.78806794

Direction: 171.75° clockwise from north



Photo 4

AOI11: Dumped building material outside pumping station

Location: -35.07907953/ 145.78818995

Direction: 159.81° clockwise from north



Photo 5

AOI12: Fencing material stockpile

Location: -35.02229044/ 145.63223383

Direction: 206.84° clockwise from north



Photo 6

AOI1: Active diesel AST, irrigation bore and pumping station

Location: -34.88505935/ 145.46902465

Direction: 239.63° clockwise from north



Photo 7

AOI1: Active (left) and abandoned (right) diesel ASTs

Location: -34.88491278/ 145.46889581

Direction: 202.55° clockwise from north



Photo 8

AOI1: Irrigation bore, infrastructure and active diesel AST

Location: -34.88505935/ 145.46902465

Direction: 294.12° clockwise from north



Photo 9

AOI1: Hydrocarbon staining coming from pump engine on unbunded concrete slab and potentially in adjacent soil

Location: -34.88514667/ 145.46879028

Direction: 57.58° clockwise from north



Photo 10

AOI5: Active irrigation bore, pumping station, chemical storage and diesel AST

Location: -35.02261465/ 145.68142128

Direction: 134.2° clockwise from north



Photo 11

AOI5: Active irrigation bore, pumping station and chemical storage

Location: -35.02265294/ 145.68136225

Direction: 161.92° clockwise from north



Photo 12

AOI5: Batteries and chemical containers including coolant and engine oil

Location: -35.02257157/ 145.68145753

Direction: 188.49° clockwise from north



Photo 13

AOI5: Hydrocarbon leak coming from pump engine on unbundled concrete slab and potentially in adjacent soil

Location: -35.02257157/ 145.68145753

Direction: 248.6° clockwise from north



Photo 14

AOI5: Full and opened herbicide drum in the vicinity of pumping station

Location: -35.02257157/ 145.68145753

Direction: 187.2° clockwise from north



Photo 15

AOI5: Household and agricultural waste

Location: -35.02280375/ 145.68172297

Direction: 97.55° clockwise from north



Photo 16

AOI6: Storage shed containing agricultural equipment, various chemical containers and IBCs

Location: -35.02187347/ 145.67831422

Direction: 304.51° clockwise from north



Photo 17

AO17: Abandoned irrigation bore and pumping station

Location: -35.02247821/ 145.67828894

Direction: 86.67° clockwise from north



Photo 18

AO17: Abandoned diesel AST

Location: -35.02244256/ 145.67849206

Direction: 202.15° clockwise from north



Photo 19

AOI8: Active irrigation bore and pumping station.
Minor hydrocarbon staining coming from pump station on unbunded concrete slab.

Location: -35.03850233/ 145.62602744

Direction: 33.87° clockwise from north



Photo 20

AOI8: Estimated 6,000 litres, assumed diesel AST.

Location: -35.03838869/ 145.62614553

Direction: 119.91° clockwise from north



Photo 21

AOI9: Large waste area, abandoned vehicles, scrap metals, plastic containers. Some contents appear burnt.

Location: -35.03936256/ 145.61973661

Direction: 209.73° clockwise from north



Photo 22

AOI9: Abandoned vehicles and scrap metals

Location: -35.03916647/ 145.61968251

Direction: 107.51° clockwise from north



Photo 23

AOI2: Abandoned irrigation bore and remaining pump station infrastructure.

Location: -34.94123717/ 145.51100532

Direction: 324.45° clockwise from north



Photo 24

AOI2: Abandoned concrete slabs at irrigation bore.

Location: -34.94128581/ 145.51112461

Direction: 324.71° clockwise from north

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