

Preliminary Site Investigation

New Two Wells SAAS Ambulance Station, Old Port Wakefield and Wells Road

Grieve Gillett Architects

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Building exceptional
outcomes together



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Contents

**Project: Preliminary Site Investigation | New Two Wells SAAS Ambulance Station, Old Port
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1	Introduction	5
1.1	Background Information.....	5
1.2	Objectives.....	7
1.3	Scope of Works.....	7
1.4	Methodology.....	7
2	Site Characteristics	9
2.1	Site Identification.....	9
2.2	Site Inspection.....	9
3	Environmental Setting	11
4	Historical Review	13
4.1	Historical Ownership.....	13
4.2	Aerial Photograph Review.....	13
4.3	South Australian Environmental Protection Authority (SA EPA) Records.....	17
4.4	Waste Management and Liquid Fuel Facilities.....	17
4.5	Mining	18
5	Preliminary Conceptual Site Model	19
5.1	Background Information.....	19
5.2	Potential Receptors and Exposure Pathways	19
5.3	Potentially Contaminating Activities	20
5.4	Tabulated Conceptual Model	20
6	Conclusions and Recommendations	27
6.1	Recommendations.....	27
7	Statement of Limitations	28

Tables

Table 2.1	Site Details.....	9
Table 2.2	Site Inspection Findings.....	9
Table 3.1	Summary of Regional Conditions.....	11
Table 4.1	Summary of Owners Lot 51	13
Table 4.2	Summary of Owners Lot 53	13



Table 4.3 Summary of Aerial Photography	13
Table 4.4 Summary of Historical Maps	16
Table 4.5 EPA Authorisations and Applications	17
Table 4.6 National Waste Management Facilities Database	18
Table 5.1 Identified PCAs and Associated Contaminants of Concern	22

Figures

Figure 1.1 Site Location Plan – Regional Setting	8
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Appendices

Appendix A – Current Certificate of Title & South Australian Planning Property Report

Appendix B – Site Inspection Photographs

Appendix C - Lotsearch Report



1 Introduction

1.1 Background Information

Tonkin was commissioned by Grieve Gillett Architects (the client) to undertake a Preliminary Site Investigation (PSI) for a portion of land encompassing two allotments, identified as Lot 51 Old Port Wakefield Road and the northern portion of the neighbouring Lot 53 Wells Road, Two Wells, herein referred to as 'the site'. Lot 51 is located within the northern portion of the site and fronts Old Port Wakefield Road. Lot 53 is situated to the south of Lot 51, the northern portion of which is to be included within the development area and is located adjacent the existing metropolitan fire service (MFS) shed on Lot 52.

The site is currently zoned as township main street and currently contains Council facilities including a Service Centre and administration facilities and the Two Wells Scout Group building which are located within Lot 51. Lot 53 contains an area of undeveloped land and a small recreational area (Two Wells Dog Park) which consists of fencing and a small shelter area. It is understood however that the dog park is not proposed as a part of the development at this stage however has been included in historical discussion and review for reference and completion.

It is understood from the brief that the new ambulance station layout will be based on the recently constructed Birdwood Ambulance Station which includes:

- A three-bay garage
- Training room
- 10 external carparks
- Entry and existing crossovers
- Kitchen, offices, crew room, changeroom, storeroom, toilets and sleep rooms

The environmental investigations reported herein include a PSI as a first stage, involving a detailed site history review and site inspection. Environmental soil sampling works shall be undertaken following review of the site history information, concurrently with the geotechnical investigation works and shall be reported separately within a standalone site investigation report to be completed following.



A site location plan showing the site is presented as





Figure 1.1.

1.2 Objectives

A Preliminary Site Investigation (PSI) represents the first stage of the site assessment process, as defined in Schedule B2 of the National Environment Protection (*Assessment of Site Contamination*) Measure (NEPM 1999). The main objectives of the PSI are as follows:

- Identify potential sources of contamination and determine potential contaminants of concern;
- Identify areas of potential contamination;
- Identify potential human and ecological receptors, and
- Identify potentially affected media (soil, sediment, groundwater, surface water, indoor and ambient air)

1.3 Scope of Works

The general scope of works undertaken as part of the PSI included:

- A search for and review of historical Certificates of Title to summarise the ownership history back to the original land grant, where possible.
- Review of historical aerial imagery of the site in approximately ten-yearly intervals dating from 1935.
- Review of historical maps and building plans (if available).
- Review of geology, topography, soils and hydrogeology of the area
- Discussions with personnel with knowledge of the site that can be readily identified and contacted, such as past or current owners, operators and occupiers (if available)
- Development of a preliminary conceptual site model (CSM)
- A detailed site inspection to validate anecdotal or historical information and identify any additional evidence of site contamination

1.4 Methodology

The methodology implemented for the works is based on guidance within the following documents:

- National Environment Protection (*Assessment of Site Contamination*) Measure 1999 as amended 2013 (NEPM)
- SA EPA publication *Guidelines for the assessment and remediation of site contamination* November 2019 revision
- NSW EPA (2022), *Sampling Design Guidelines for Contaminated Land*, Environment Protection Authority, New South Wales, August 2022 (adopted in place of AS4482.5, which has recently been withdrawn as an industry standard)
- State Planning Commission's Practice Direction 14 - Site Contamination Assessment, Version 4 (October 2023)



Figure 1.1 Site Location Plan – Regional Setting



2 Site Characteristics

2.1 Site Identification

The land is currently zoned as Township Main Street within the suburb of Two Wells. The local government area (LGA) is described as Adelaide Plains Council. The current Certificate of Title and South Australian Property Planning report are provided as Appendix A.

Site identification details are provided following in Table 2.1.

Table 2.1 Site Details

Site Address	Corners of Wells Road and Old Port Wakefield Road, Two Wells
Current Owner(s)	Adelaide Plains Council
Current Certificate of Title(s)	CR 6215/365 and CR 5984/729
Lot/ Plan Number	Allotment 51 and 53 Deposited Plan 73399 in the area named Two Wells, Hundred of Port Gawler
Local Government Authority	Adelaide Plains Council
Council Zoning	Township Main Street - TMS
Current Land Use	Commercial (Council services, car parking, scout shed, vacant land)
Proposed Land Use	Commercial
Land Area	Excluding dog park area: approximately 4,500 m ²

2.2 Site Inspection

A site inspection was conducted on 13 December 2024 by a suitably qualified Engineer from Tonkin to visually inspect site conditions and to identify potential sources of contamination at (or near) the site. During the inspection, land uses and activities in the vicinity of the site were recorded as were other observations of topography, ground cover and surface hydrology. Photographs were taken during the site inspection, a selection of which are provided at the rear of this report in Appendix B. A summary of the site inspection findings is provided in Table 2.2 below:

Table 2.2 Site Inspection Findings

Item	Land Use
Site Description	The site is an irregular shaped parcel of land that is bound by Old Port Wakefield Road to the north, commercial and residential properties to the east and east, commercial and open land to the south and Wells Road and the Two Wells Metropolitan Fire Service (MFS) facility to the west.
Site Topography and surface water drainage	The site was observed as relatively level with a slight descending slope towards the west of the site from the eastern site portion. No surface water was observed during the inspection. Any surface water collected during high rainfall events is likely to flow towards the west of the site.



Item	Land Use
Observations	<ul style="list-style-type: none">• An “L shaped” building of brick and sandstone construction with a corrugated iron roof utilised as the Adelaide Plains Council Service Centre area is located within the northeast portion of the site.• A corrugated iron building utilised as a scout building is situated within the central western portion of the site.• A high voltage transformer is situated in the northwest site corner.• The southern portion of the site is utilised as a recreational facility encompassing a fully enclosed dog park area with a small open shelter area in the southwestern site corner.• There was evidence of a former septic soakage area along the western edge of the green lawn (and an old tank/slab) to the immediate south of the Adelaide Plains Council Service Centre area.• A new high voltage (HV) transformer was observed within the north-western corner of site• There was evidence of some construction and demolition waste within the eastern portion of the site that was marked by the presence of a concrete slab and some remnant bricks. This area was observed to be elevated in comparison to the western portion of the site indicating potential filling.

The surrounding land use is predominantly a mix of commercial and residential and is summarised in Table 2.3 below:

Table 2.3 Surrounding Land Use

Direction	Land Use
North	Immediately north of the site is Old Port Wakefield Road, beyond which lies a former medical centre, vacant land and a motel.
East	Immediately east of site are old brick and sandstone constructed commercial buildings and the Two Wells Resource Recovery Centre.
South	Immediately south of site is the Two Wells Resource Recovery Centre, including the main entrance.
West	Immediately west of site is Wells Road, beyond which lies recreational open space.



3 Environmental Setting

The local and site-specific geological and hydrogeological settings influence the fate and transport of potential contaminants, in the vicinity of and at the subject site.

The distributions of any contaminants across a site are influenced by the local geology and natural or humanmade/alterd drainage features in the area or at the site. Their distribution within the sub-surface is influenced by natural preferential pathways including geological structures, variations in the permeability of soil and rock, geochemical, biological and mineralogical variations. Preferential pathways may additionally exist due to the presence of human-made structures and infrastructure such as underground services utilities, human-made lake lagoons and wetlands and the presence of subsurface basements.

Certain sites may be in areas that are naturally enriched with mineral resources and can appear to contain elevated levels of metals and metalloids in soil, surface water or groundwater.

Consequently, it is essential to understand the background quality of these media and to evaluate potential contamination of this type in terms of the beneficial uses of the site and its water resources.

Information regarding the regional geology, hydrology and hydrogeological conditions of the site were predominantly sourced from the Lotsearch report (Appendix C) and are summarised in Table 3.1.

Table 3.1 Summary of Regional Conditions

Geology	<p>The natural soils underlying the site are typified by the Pleistocene aged calcretes, associated with the Pooraka Formation.</p> <p>The soil mapping type for the site is described as Rudsol (A2) Coastal dunes and plains with some swamps: dunes of calcareous sands and also siliceous sands; plains of various saline soils (unclassified) and lesser areas of brown calcareous earths.</p> <p>Local geology and soil maps are presented within the Lotsearch report in Appendix C.</p>
Acid Sulfate Soils	<p>According to the Atlas of Australian Acid Sulfate Soil, the site is classified as Class C, indicating an extremely low 1-5% susceptibility to the development of Acid Sulfate Soils.</p>
Hydrology	<p>The closest natural surface water body to the site is Salt Creek located approximately 1 kilometre (km) south of the site and 1.2 km east of the site.</p>
Hydrogeology	<p>The aquifer on site is described as being a porous extensive aquifer of low to moderate productivity. According to Location SA Viewer (Location SA Viewer) The shallow groundwater salinity beneath the site is stated as ranging between 3,500 – 4,500 mg/L and shallow standing water level is stated as ranging between 3 to 6 m bgl.</p>
Topography	<p>The site is located at an elevation of between 14 m and 15 m AHD. The site is marginally elevated on the eastern side and slopes gently towards Wells Road to the west.</p>
Ecological Constraints	<p>There are no native vegetation ecological constraints that exist for the site.</p> <p>Search results from CAPAD for protected marine environments showed that no results exist for the subject site.</p> <p>No groundwater dependant ecosystems exist for the site. Further information pertaining to ecological constraints in the surrounding area of the site is presented in the Lotsearch report in Appendix C.</p>



3.1.1 Local Groundwater Use

A summary from the Department of Environment, Land, Water and Planning's Water Measurement Information System of registered boreholes for the area (Appendix C) indicates that there are no registered bores that exist for the site. There were however 68 registered bores registered within a 2 km radius of the site.

In terms of the registered bore usage; four wells were installed for domestic purposes, two wells for drainage purposes, one well for industrial purposes, 17 wells were listed as investigation wells, 18 wells were listed as irrigation wells, four wells were noted as observation wells and five wells were identified as stock wells.

The nearest registered operational bore to the site (Bore ID: 6824-608:80348) which is located approximately 40 m southwest of the site and is listed as an investigation well. This bore was drilled to maximum depth of 10.5 m bgl and has a standing water level of 5.6 m bgl. There is no water chemistry data available for this well.

Based on knowledge of the site area and the regional locale, groundwater beneath the site is anticipated to flow to the west southwest towards St. Vincents Gulf.



4 Historical Review

4.1 Historical Ownership

The site is currently described by Crown References CR 6215/365 (Lot 51) and CR 5984/729 (Lot 53), Deposited Plan 73399, Hundred of Port Gawler.

A copy of the current Crown Records are included in Appendix A. The historical ownerships of the two allotment areas are presented in Table 4.1 and 4.2 below.

Table 4.1 Summary of Owners Lot 51

Date of Acquisition	Registered Proprietor (s) & Occupations	Reference to Title at Acquisition and sale
1/11/2018	Adelaide Plains Council	CR 6215/365
1/11/2018	Minister for Environment and Water	CR 6215/364
20/04/2007	Adelaide Plains Council and The District Council of Mallala	CR 5984/728
11/04/2000	Adelaide Plains Council and The District Council of Mallala	CR 5755/736

Table 4.2 Summary of Owners Lot 53

Date of Acquisition	Registered Proprietor (s) & Occupations	Reference to Title at Acquisition and sale
20/04/2007	Adelaide Plains Council	CR 5984/729
11/04/2000	Adelaide Plains Council and The District Council of Mallala	CR 5755/736

4.2 Aerial Photograph Review

Aerial photographs dating back from 1935 have been reviewed by Tonkin in order to assess land use changes over time in both the subject site and adjacent land. Copies of the historical aerial photographs are included within the Lotsearch report provided in Appendix C.

Details of the aerial photographs inspected during this investigation are summarised below in Table 4.3.

Table 4.3 Summary of Aerial Photography

Date	Comments
1935-1936	<p>The aerial photograph is black and white and of poor to moderate quality.</p> <p><i>Site:</i> An "L" shaped building is present in the northeast corner of the site fronting Old Port Wakefield Road, with a smaller detached rectangular shaped building adjacent the southwest building corner. The majority of the Lot 51 area is cleared of grass and appears to be gravel sheeted or exposed soil. There are sparse trees within the Lot 51 area and a small plantation marks the western boundary of Lot 51. Lot 53 to the south is undeveloped land, whilst two rows of trees demark the area to the north of the current day dog park.</p> <p><i>Surrounds:</i> Old Port Wakefield Road is visible to the north and it appears to be sealed. Further north are sparse residential buildings, with Gawler Road and Old Mallala Road visible, both of</p>



Date	Comments
	<p>which appear unsealed. To the northwest a triangular shaped building (the Two Wells Hotel) is visible on the intersections of Gawler Road and Old Port Wakefield Road. To the west lies the unsealed Wells Road, beyond which lies undeveloped land, whilst undeveloped land is additionally surrounding the site to the south and to the east. There are sparse buildings observed to the northeast of the site fronting Old Port Wakefield Road. An unsealed track connects the southwest corner of the existing dog park area to Wells Road.</p>
1949	<p>The aerial photograph is colour and of poor to moderate quality.</p> <p><i>Site:</i> The building observed in the northeast site corner is unchanged, however the cleared or sheeted area observed within the central portion of Lot 51 is now clearly demarked. The area to the east of this, directly south of the building now appears to be lawn or garden area. There are potentially two small square shaped structures in the southeast corner of this cleared area. The plantation of trees observed along the western boundary of Lot 51 have been removed, as have the two rows of trees to the north of the current day dog park. The remainder of the Lot 53 portion of the site appears unchanged.</p> <p><i>Surrounds:</i> With the exception of some minor infilling to the north of the site the surrounding land use is largely unchanged. There is an area of disturbed ground to the south of the site indicating potential clearing.</p>
1959	<p>The aerial photograph is colour and of poor to moderate quality.</p> <p><i>Site:</i> The original building within the northeast corner of the site remains, however there has been some modification, with additional construction to the south and an additional rectangular building constructed in the central portion of the Lot 51 area. The cleared or sheeted area to the west of this building remains unchanged from the previous photograph, as does the lawn area to the east and the Lot 53 area to the south.</p> <p><i>Surrounds:</i> With the exception of some additional buildings to the west of the site and some additional infilling to the north, the surrounding area is largely unchanged. An unsealed track from Wells road extends parallel to the southern boundary of Lot 53 in an east southeast direction to a large cleared area.</p>
1968-1969	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> The original building within the northeast corner of the site remains as per the previous photograph. The small building adjacent to the southwest corner of the original building is no longer visible and there has been an extension onto the central rectangular building identified firstly in the previous photograph, which now extends from the southwest corner of the original "L shaped" building some 40m to the south. The previously identified sheeted area may now be sealed. There appear to be several (approximately four) smaller rectangular ancillary buildings/structures to the south of this new large rectangular building. On the western boundary of Lot 51 a smaller rectangular building fronting Wells Road is visible. Within Lot 53 to the south, a cleared area resembling a tennis court is visible along the northern boundary of the now current dog park area.</p> <p><i>Surrounds:</i> A large rectangular building is now identified on Lot 52 on the central western site boundary on the site of the existing MFS building. To the north, south and to the east the</p>



Date	Comments
	surrounding land is largely unchanged. To the west beyond Wells Road the land may be being used as a recreational facility as a potential cricket pitch was identified.
1979	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> No significant changes are observed within the Lot 51 portion of the site. Within the Lot 53 area however there are several new buildings/ structures identified. A square building is identified on the central eastern site boundary, adjacent the four smaller ancillary buildings observed in the previous photograph. An additional two rectangular structures were identified along the southern boundary of Lot 53. The offsite building on Lot 52 now appears to extend south onto the Lot 53, within the current dog park area. Multiple small yellow structures/ objects were observed in the southeast site corner.</p> <p><i>Surrounds:</i> With the exception of some extension to the hotel located to the northwest of the site the northern surrounds are largely unchanged. There is some earthworks (potential quarrying) to the south of the site. The elongated building on the adjacent Lot 52 has extended onto Lot 53 to the south, whilst an additional rectangular structure has been constructed to the north. A horse trotting track has been constructed to the west of Wells Road as has a small elongated shed structure.</p>
1986-1989	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> The large, elongated building within the central portion of Lot 51 is now gone, as are the smaller ancillary buildings to the southeast of the building. The smaller building on the central western boundary of Lot 51 is also now gone. A new shed structure (current scout building) is located in the southwest corner of Lot 51. All buildings within Lot 53 have been removed and all Lot 53 and the southern portion of Lot 51 are now open undeveloped land.</p> <p><i>Surrounds:</i> The buildings identified on the adjacent Lot 52 have now been removed and this portion of land is currently undeveloped. There has been some additional development to the hotel to the northwest of the site and some general infilling to the north. The building located adjacent the northeast boundary has been extended to the west and now abuts the site 0</p>
1999	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> The original "L shaped" building and the existing scout building remain onsite, with some additional small structures observed to the south of the "L shaped" building. Lot 53 to the south remains vacant and undeveloped.</p> <p><i>Surrounds:</i> The existing MFS station is now constructed within Lot 52 adjacent the site. The surrounding area is largely unchanged to the north, east and west beyond Wells Road, however there appear to be some earthworks underway to the south of the site.</p>
2004	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> With the exception of the bituminisation of the carpark within Lot 51 the site is largely unchanged from the previous photograph.</p> <p><i>Surrounds:</i> Wells Road to the west of the site is now bituminised and there is a new building associated with the recreational area to the west of Wells Road. The waste transfer facility</p>



Date	Comments
	appears to be operational to the south of the site whilst the areas to the east, north and Lot 52 remain unchanged.
2014	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> With the exception of a shipping container observed adjacent the scout building and the establishment of the dog park with Lot 53, the site is essentially unchanged.</p> <p><i>Surrounds:</i> There has been some additional infilling to the north and east of the site whilst the remainder of the surrounding land remains essentially unchanged.</p>
2024	<p>The aerial photograph is colour and of good quality.</p> <p><i>Site:</i> The site is essentially unchanged from the previous image.</p> <p><i>Surrounds:</i> The surrounding land remains essentially unchanged from the previous image.</p>

4.2.1 Historical Maps

Historical maps obtained from the Lotsearch report for the broader Cape Jaffa area from 1976 was reviewed by Tonkin in order to assess land use changes over time in both the subject site and on adjacent land. A copy of the historical map is included in Appendix C.

Details of the historical maps inspected during this investigation are summarised below in Table 4.4.

Table 4.4 Summary of Historical Maps

Date	Comments
1937	The map shows the site fronting Old Port Wakefield Road to the north of the site as well as Wells Road/ Buckland Parks Road to the west of the site. The map identifies several buildings to the south of the site as well as scrub area further south and swamps further west.
1982	The map shows the site fronting Old Port Wakefield Road to the north of the site as well as Wells Road/ Buckland Parks Road to the west of the site. Several quarries are identified to the south of the site

4.2.2 Historical Business Directories

A search of the Universal Business Directory (UBD) and Sands & McDougall Directory was undertaken by Lotsearch to determine historical business and associated potentially contaminating activities on site and within 500 m of the site from years 1910 to 1991. The search found no records for businesses of note on the historical business directory searches.

A search of the Universal Business Directory (UBD) and Sands & McDougall Directory was also undertaken by Lotsearch to determine historical Dry Cleaners, Motor Garages & Service Stations within 500 m surrounding the site mapped to a premise or road intersection. The search found one historical record of interest for a former service station site located approximately 237m southwest of the site. The site formerly operated as the Amco and Mobil Oil Service Station in 1973.



4.3 South Australian Environmental Protection Authority (SA EPA) Records

4.3.1 EPA Site Contamination Index

A search of the SA EPA Site Contamination Index website for notifications relevant to the area within 1 km was completed by Lotsearch. The search results showed no sites of potential interest.

4.3.2 EPA Authorisations and Applications

A search of the SA EPA register was undertaken to determine EPA authorisations and/or authorisation applications within 1 km of the site. The search results identified one record pertaining to the waste recovery facility located immediately adjacent the sites southern boundary. The records have been summarised as per Table 4.5. below. Further details are provided in the Lotsearch report in Appendix C.

Table 4.5 EPA Authorisations and Applications

Record No.	Record Type	Record Status	Entity	Site Address	Activity	EPA Register Status	Location Confidence	Distance/ Direction
1704	LICENCE	Issued	Adelaide Plains Council	Section 715, Port Wakefield Road, TWO WELLS SA 5501	Waste Recovery Facility	Current EPA Register	Premise Match	0 m south

4.3.3 EPA Environment Protection and Clean Up Orders

A search of the SA EPA database identified one record for environment protection and clean up orders within 1 km of the site. The search results showed no sites of potential interest. Further information is provided within the Lotsearch report provided in Appendix C.

4.3.4 EPA contamination Assessment and Groundwater Prohibition Areas

A search of the SA EPA database for contamination assessment areas and groundwater prohibition areas within 1 km of the site was reviewed by Tonkin. The search identified no contamination assessment of groundwater prohibition areas exist for the site or within the 1km search buffer. Further information is provided within the Lotsearch report provided in Appendix C.

4.3.5 PFAS Investigation & Management Programs

A search of the SA EPA database and information provided by the Department of Defence and Airservices Australia for PFAS investigation and management areas within 1 km of the site was reviewed by Tonkin. The search identified no records exist for the site or within the 1km surrounding buffer area.

4.4 Waste Management and Liquid Fuel Facilities

4.4.1 National Waste Management Facilities Database

A search of the National Waste Management Facilities Database identified the following sites of interest within the 1 km surrounding buffer area.



Table 4.6 National Waste Management Facilities Database

Owner	Name	Address	Management Type	Facility Type	Status	Location Confidence	Distance/ Direction
Adelaide Plains Council	Two Wells Resource Recovery Centre	Wells Road, Two Wells	Drop off	E-Waste Drop off Facility	Operational	Premises Match	0m, South
Adelaide Plains Council	Two Wells Resource Recovery Centre	Wells Road, Two Wells	Drop off	Transfer station	Operational	Premises Match	0m, South

4.4.2 EPA Approved Container Collection Depots

A search of EPA Collection Depots identified no sites of interest within the 1 km surrounding buffer area.

4.4.3 National Liquid Fuel Facilities

A search of the National Liquid Fuel Facilities Database identified no records of interest within 1 km of the site.

4.5 Mining

4.5.1 Mines and Mineral Deposits

A search of mines and mineral deposits identified no records of interest within 1 km of the site.



5 Preliminary Conceptual Site Model

In accordance with, and as specified within Schedule B2 of the NEPM (1999), an important step in the site assessment process is the development of a Conceptual Site Model (CSM) that identifies the potential sources of contamination, the contaminants of concern, the likely media involved and the pathways by which exposure to any contamination at the site may occur.

For exposure to occur, a complete pathway must exist between the source of contamination and the receptor (i.e. the person or ecosystem components potentially affected). Where the exposure pathway is incomplete, there is no exposure and hence no risk via that pathway. An exposure pathway will typically consist of the following elements:

- Source of contamination (e.g. A spill)
- Release mechanism (e.g. Migration in soil, leaching to water, emission to air)
- Retention in the transport medium (e.g. Soil, groundwater, surface water, air)
- Exposure point (e.g. Where a person comes in contact with contaminated dust or soil, or contaminated groundwater from a well, or in a building overlying volatile contamination); and
- Exposure route (e.g. Inhalation, ingestion, absorption through the skin).

A preliminary CSM has been formulated utilising available information gathered as part of this preliminary site investigation. This is an iterative CSM and was prepared to determine the presence of plausible exposure pathways and hence the presence of significant risk to susceptible receptors such as humans, ecosystems and the built environment.

In the absence of a plausible exposure pathway there is negligible risk. Therefore, the presence of measurable concentrations of contaminants does not automatically imply that the site will cause harm. The nature and importance of both receptors and exposure routes, which are relevant to any particular site, will vary according to its characteristics, intended end-use and its environmental setting.

5.1 Background Information

Information regarding the site setting, layout and history has been detailed in Sections 2 and 3. Key points regarding site characteristics are as follows:

- Current land use: Commercial
- Proposed land use: Commercial
- Surrounding land use: Commercial (minor residential east and north)
- Regional setting: Township of Two Wells
- Distance to water body: 1 km to 1.2 km (Salt Creek)
- Soil type: Calcrete Sand
- Depth to groundwater: Likely between 3 – 6 m bgl
- Groundwater quality: Salinity ranges from 3,500 - 4,500 mg/L
- Groundwater flow direction: Likely west southwest

5.2 Potential Receptors and Exposure Pathways

The following potential receptors and exposure pathways are considered relevant and would depend on the types of contaminants (if any) identified as well as their depth, concentrations and likely behaviour:



5.2.1 Soil

- Future site users and ambulance staff workers: direct dermal contact, inhalation (dust, vapours), accidental ingestion (generally limited to surface soils).
- Construction and maintenance workers: direct dermal contact, inhalation (dust, vapours), accidental ingestion (surface and subsurface (excavated) soils).
- Buildings and structures: corrosion.
- Biota: particularly relevant to the upper 2 m of the soil profile.
- Local flora and fauna.
- Downward leaching/infiltration to groundwater.

5.2.2 Groundwater

- Future site users and ambulance staff workers: direct dermal contact, inhalation (vapours), ingestion.
- Construction and maintenance workers: inhalation (vapours) and, depending on whether groundwater is intercepted, direct dermal contact as well as accidental ingestion.
- Buildings and structures: corrosion – depending on depth of groundwater relative to infrastructure.

5.3 Potentially Contaminating Activities

Tonkin understands the site will remain as Commercial and that there is essentially no change in land use on this basis, therefore the completion of a statutory Site Contamination Declaration Form in accordance with the planning SA Document, Practice Direction 14 – Site Contamination Assessment (2021, Version 4) is not deemed to be required. As such, reference for potential contaminating activities onsite has been made against potential contaminating activities specified within the Environment Protection Regulations (2009).

Onsite:

- Importation of fill materials
- Treatment of termites beneath existing and former buildings
- Potential usage of asbestos construction materials within buildings

Offsite:

- Adjacent Waste transfer facility
- Adjacent MFS facility

5.4 Tabulated Conceptual Model

The conceptual model for the site identifies all of the potential pollutant linkages, based on the information collated in this PSI and an understanding of the way that the potential contaminants at the site are likely to behave in the local environment.

On the basis of the available information, the preliminary CSM in terms of present site conditions is provided following in Table 5.1

Not all potential contaminating activities (PCAs) have been included within the tabulated form of the conceptual model if they are not considered to be significant at this stage i.e. if a complete exposure pathway has not been identified.

The Key used within the table is as follows:



LOW – potential risks associated with the presence of the contaminant linkage are low and further assessment is not considered necessary.

MOD – potential risks associated with the presence of the contaminant linkage are moderate and further assessment should be considered.

HIGH – potential risks associated with the presence of the contaminant linkage are high and further assessment is considered necessary.

N/A – the contaminant has no potential to affect the receptor via this linkag



Table 5.1 Identified PCAs and Associated Contaminants of Concern

Identified PCA and Class of activity (as defined by PD14)	Location	Potential Contaminants	Potential Exposure Pathway	Potential Human and Ecological receptors	Risk Level to Proposed to Immediate Identified Receptors
<u>Onsite Activities</u>					
Importation of fill materials	Site wide, particularly within the northern central portion of Lot 51 (sealed area), within the western portion of the Lot 51 area which appears slightly elevated and beneath existing and former building areas.	Variable; heavy metals, asbestos, hydrocarbons, polycyclic aromatic hydrocarbons (PAH)	Inhalation, ingestion, dermal contact Dispersion of airborne particulates due to wind Downward migration and leaching of contaminants via infiltration of rainwater through the soil Migration of run-off to surface water	<u>Potential human receptors may include:</u> Current site maintenance workers and visitors Future occupants, construction and maintenance workers, site users and visitors Current and future site users on neighbouring properties <u>Potential ecological receptors may include:</u> Transient fauna or macroinvertebrates Vegetation Groundwater	LOW: In the context of the ongoing commercial usage of the site the risk posed from potential contamination within bituminous materials or other imported fill materials onsite is deemed to be low to both human and ecological receptors.
Potential (unconfirmed) use of asbestos cement sheeting (within construction materials)	Existing building within the northeast site corner and on the footprint of former building areas.	Asbestos	Dispersion of airborne particulates due to wind Inhalation, ingestion, dermal contact	<u>Potential human receptors may include:</u> Current site maintenance workers and visitors Future occupants, construction and maintenance workers, site users and visitors	MOD: Given the age of the building upgrades to the main building in the northeast site corner and the construction and demolition of numerous buildings across the site between 1959 and 1989, there is the possibility that asbestos



Identified PCA and Class of activity (as defined by PD14)	Location	Potential Contaminants	Potential Exposure Pathway	Potential Human and Ecological receptors	Risk Level to Proposed to Immediate Identified Receptors
Potential (unconfirmed) use of termiticides	Existing building within the northeast site corner and on the footprint of former building areas.	Organochlorine pesticides (OC), organo phosphate pesticides (OP), arsenic	Inhalation, ingestion, dermal contact Dispersion of airborne particulates due to wind Downward migration and leaching of contaminants via infiltration of rainwater through the soil Migration of run-off to surface water	<u>Potential human receptors may include:</u> Current site maintenance workers and visitors Future occupants, construction and maintenance workers, site users and visitors Current and future site users on neighbouring properties <u>Potential ecological receptors may include:</u> Transient fauna or macroinvertebrates Vegetation Groundwater	containing materials (ACM) have been utilised onsite historically. There is therefore deemed to be the potential that ACM fragments, asbestos fines (AF) or fibrous asbestos (FA) may be present onsite within surface materials. MOD: Any potential soil contamination resultant from historical termiticide usage onsite is likely to be restricted to surface soils and be isolated in areas of existing and former building footprints. There was no evidence revealed from the site history assessment and site inspection to suggest the application of termiticides, however given the area is high risk to termites there is a good possibility that termiticides were used. Given however the ongoing commercial usage of the site, the risk from an residual termiticide contamination is deemed to be negligible.



Identified PCA and Class of activity (as defined by PD14)	Location	Potential Contaminants	Potential Exposure Pathway	Potential Human and Ecological receptors	Risk Level to Proposed to Immediate Identified Receptors
Septic (potential soakage area)	Western edge of lawn area south of the of the Council buildings in the northeast site corner.	Heavy metals, <i>E.coli</i> , nutrients, hydrocarbons.	Inhalation, ingestion, dermal contact Dispersion of airborne particulates due to wind Downward migration and leaching of contaminants via infiltration of rainwater through the soil Migration of run-off to surface water	Future occupants, construction and maintenance workers, site users and visitors Current and future site users on neighbouring properties <u>Potential ecological receptors may include:</u> Transient fauna or macroinvertebrates Vegetation Groundwater	LOW: Although the soakage was not confirmed, rather it was suspected, should contamination have occurred resultant from this there are unlikely to be any significant impacts that would present a risk to the proposed development.
High voltage transformer	Northwest site corner	Polychlorinated biphenyls (PCBs) Hydrocarbons	Inhalation, ingestion, dermal contact Dispersion of airborne particulates due to wind Downward migration and leaching of contaminants via infiltration of rainwater through the soil Migration of run-off to surface water	Future occupants, construction and maintenance workers, site users and visitors Current and future site users on neighbouring properties <u>Potential ecological receptors may include:</u> Transient fauna or macroinvertebrates Vegetation Groundwater	LOW: Any contamination resultant from the transformer would be restricted to that location and therefore would be unlikely present any significant risk to the proposed development.



Identified PCA and Class of activity (as defined by PD14)	Location	Potential Contaminants	Potential Exposure Pathway	Potential Human and Ecological receptors	Risk Level to Proposed to Immediate Identified Receptors
<u>Offsite Activities</u>					
Metropolitan Fire Service Station	On Lot 52, offsite immediately adjacent to the west of Lot 53 and Lot 51	Per- and Polyfluoroalkyl substances (PFAS)	<p>Inhalation, ingestion, dermal contact</p> <p>Dispersion of airborne particulates due to wind</p> <p>Downward migration and leaching of contaminants via infiltration of rainwater through the soil</p> <p>Migration of run-off to surface water</p>	<p><u>Potential human receptors may include:</u></p> <p>Current site maintenance workers and visitors</p> <p>Future occupants, construction and maintenance workers, site users and visitors</p> <p>Current and future site users on neighbouring properties</p> <p><u>Potential ecological receptors may include:</u></p> <p>Transient fauna or macroinvertebrates</p> <p>Vegetation</p> <p>Groundwater</p> <p>Surface waters such as the Southern Ocean</p>	LOW: There is no evidence to suggest that fire-fighting foams were stored or used at the adjacent MFS facility and less evidence to suggest that they were used or stored on the investigation area. On this basis the risk to both human and ecological receptors onsite is deemed to be low.
Waste transfer facility	Immediately adjacent the southern boundary of the dog park area in Lot 53.	Variable: Heavy metals, hydrocarbons, PAH, OC/ OP	<p>Inhalation, ingestion, dermal contact</p> <p>Dispersion of airborne particulates due to wind</p> <p>Downward migration and leaching of contaminants via infiltration of rainwater through the soil</p>	<p><u>Potential human receptors may include:</u></p> <p>Current site maintenance workers and visitors</p> <p>Future occupants, construction and maintenance workers, site users and visitors</p> <p>Current and future site users on neighbouring properties</p>	LOW: There is no visual evidence to suggest that waste has historically been stored onsite and during the site inspection there was no windblown waste observed onsite. Given the use of skips and enclosed bays etc on the adjacent site, the potential



Identified PCA and Class of activity (as defined by PD14)	Location	Potential Contaminants	Potential Exposure Pathway	Potential Human and Ecological receptors	Risk Level to Proposed to Immediate Identified Receptors
			Migration of run-off to surface water	<u>Potential ecological receptors may include:</u> Transient fauna or macroinvertebrates Vegetation Groundwater Surface waters such as the Southern Ocean	impact from dust and windblown waste to the site is deemed to be low.



6 Conclusions and Recommendations

Tonkin was commissioned by Grieve Gillett Architects to undertake a Preliminary Site Investigation for a portion of land located identified as Lot 51 Old Port Wakefield Road and the northern portion of the neighbouring Lot 53 Wells Road, Two Wells, herein referred to as 'the site'. Lot 51 is located within the northern portion of the site and fronts Old Port Wakefield Road. Lot 53 is situated to the south of Lot 51, the northern portion of which is located adjacent the existing metropolitan fire service (MFS) shed on Lot 52.

The site is currently zoned as Township Main Street, however, has historically operated as a Council facility. The proposed development of the site as an ambulance station does not constitute a change in land use and therefor the source receptor pathway risks have been assessed on the basis of a continuing commercial land use.

Based on the findings of the PSI, site inspection and the Conceptual Site Model, several PCAs have been identified onsite or have been suspected to have occurred onsite based on experience. However, given the ongoing commercial land use and the unconfirmed nature of many of the identified PCAs, the risk to the proposed development is perceived to be low. It should be noted however that two PCAs were listed as potentially moderate, namely the potential use of asbestos containing building construction materials and the use of termiticides.

The PSI has additionally identified two offsite PCAs within close proximity to the western and southern site boundaries. The potential impact or risk of these two PCAs on the site and the proposed commercial development have also been perceived to be low.

6.1 Recommendations

Although the risk to the proposed development is perceived to be predominantly low, it is recommended that confirmation of the low-moderate risk status of the site should be sort through the collection of intrusive samples during the Geotechnical assessment. This would constitute a limited soil investigation and would effectively close out any existing source – receptor data gaps identified as a part of this PSI.



7 Statement of Limitations

Tonkin has prepared this Preliminary Site Investigation report to provide a preliminary potential site contamination assessment for the subject site.

The report is based on our interpretation of targeted information gathered during our investigations and has been undertaken in accordance with good professional practice and current requirements. The results of this process are set out in this report and any conclusions we have made must be considered in this light.

The scope of the investigations is in general accordance with current standards applied by the relevant authority at the date of the report. It must be recognised that standards for environmental performance are regularly reviewed and the results indicated in the report should therefore be reviewed in the light of changing standards.

A qualified person should always be contacted to advise on any matters involving the interpretation of the preliminary site investigation report.

This report was prepared for the client, on the basis of agreed parameters. Tonkin takes no responsibility for any reliance a third-party places on this report or any of its conclusions. If a third party wants to determine the environmental conditions of the site, the services of an appropriately qualified expert should be retained.



Appendix A – Current Certificate of Title & South Australian Planning Property Report

This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department for Environment and Water.

Crown Record - Volume 6215 Folio 365

Parent Title(s) CR 6215/364
Creating Dealing(s) CC 13005053
Title Issued 01/11/2018 **Edition** 2 **Edition Issued** 01/11/2018

Estate Type

CROWN LAND (ALIENATED)

Owner

THE CROWN

Custodian

ADELAIDE PLAINS COUNCIL
OF PO BOX 18 MALLALA SA 5502

Description of Land

ALLOTMENT 51 DEPOSITED PLAN 73399
IN THE AREA NAMED TWO WELLS
HUNDRED OF PORT GAWLER

TOTAL AREA: 3619M² (CALCULATED)

Easements

NIL

Schedule of Dealings

Dealing Number	Description
13005053	DEDICATED PURSUANT TO SECTION 18 OF CROWN LANDS MANAGEMENT ACT 2009
13005055	CUSTODIAN SUBJECT TO CONDITIONS PURSUANT TO SECTION 20 OF CROWN LAND MANAGEMENT ACT 2009

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

Crown Record

Title Reference: CR 6215/365

Status: CURRENT

Parent Title(s): CR 6215/364

Dealing(s) Creating Title: CC 13005053

Title Issued: 01/11/2018

Edition: 2

Dealings

Lodgement Date	Completion Date	Dealing Number	Dealing Type	Dealing Status	Details
16/10/2018	01/11/2018	13005055	CROWN CONDITIONS	REGISTERED	
16/10/2018	01/11/2018	13005054	TRANSFER	REGISTERED	ADELAIDE PLAINS COUNCIL
16/10/2018	01/11/2018	13005053	CROWN CONDITIONS	REGISTERED	

This Crown Record Register Search is a true and correct extract of the Register of Crown Records maintained by the Registrar-General. Crown Land is administered pursuant to the Crown Land Management Act 2009 by the Department for Environment and Water.

Crown Record - Volume 6215 Folio 365

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TOTAL AREA: 3619M² (CALCULATED)

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Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL



Appendix B – Site Inspection Photographs



Photograph 1 Facing east, Old Port Wakefield Rd Frontage



Photograph 2 Facing south, Wells Rd Frontage



Photograph 3 Lot 51 Car Park



Photograph 4 Rear of Scout Building Looking East



Photograph 5 Looking north from Lot 53 boundary



Photograph 6 Septic Soakage Pit



Appendix C - Lotsearch Report



LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 16 Dec 2024 09:57:33

Reference: LS069761 EP

Address: Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.

You should obtain independent advice before you make any decision based on the information within the report.

The detailed terms applicable to use of this report are set out at the end of this report.

Dataset Listing

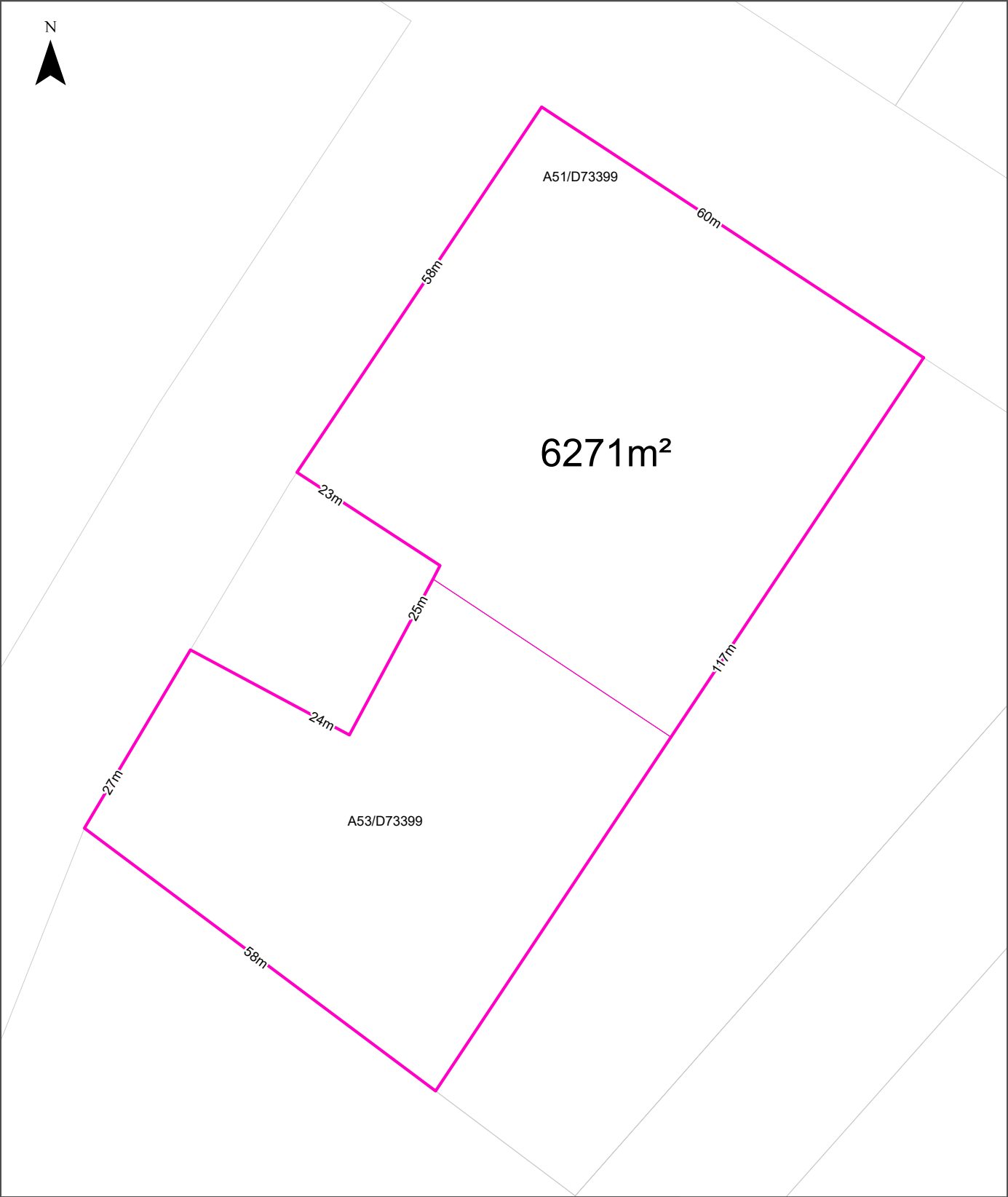
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
SA Cadastre	Land Services SA	27/11/2024	27/11/2024	Quarterly	-	-	-	-
EPA Site Contamination Index	Environment Protection Authority SA	19/11/2024	19/11/2024	Monthly	1000m	0	0	0
EPA Environmental Protection Orders	Environment Protection Authority SA	26/11/2024	26/11/2024	Monthly	1000m	0	0	0
EPA Environmental Authorisations	Environment Protection Authority SA	26/11/2024	26/11/2024	Monthly	1000m	0	1	1
Contamination Assessment Areas	Environment Protection Authority SA	09/09/2024	09/09/2024	Quarterly	1000m	0	0	0
EPA Groundwater Prohibition Areas	Environment Protection Authority SA	26/11/2024	07/11/2024	Monthly	1000m	0	0	0
EPA PFAS Site Investigations	Environment Protection Authority SA	18/11/2024	30/04/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	02/12/2024	28/10/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	02/12/2024	28/10/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	02/12/2024	02/12/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	22/10/2024	22/10/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	18/11/2024	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Australian Department of Defence	22/10/2024	22/10/2024	Quarterly	2000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	2	2
EPA Collection Depots	Environment Protection Authority SA	10/12/2024	20/08/2022	Quarterly	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	16/10/2024	07/09/2020	Annually	1000m	0	0	0
Historical Business Directories (Premise & Intersection Matches)	Hardie Grant, Sands & McDougall			Not required	150m	0	2	4
Historical Business Directories (Road & Area Matches)	Hardie Grant, Sands & McDougall			Not required	150m	-	7	7
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant, Sands & McDougall			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant, Sands & McDougall			Not required	500m	-	0	2
Mines and Mineral Deposits	SA Department for Energy and Mining	21/11/2024	21/11/2024	Quarterly	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	1	1	1
Drillholes	SA Department for Environment and Water	26/09/2024	24/05/2024	Quarterly	2000m	0	1	74
Surface Geology 1:100,000	SA Department for Energy and Mining	01/05/2024	12/12/2020	Annually	1000m	1	2	3
Geological Linear Structures 1:100,000	SA Department for Energy and Mining	01/05/2024	11/12/2020	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agricultural and Resource Economics and Sciences	12/01/2024	17/02/2011	Annually	1000m	1	1	2
Soil Types	SA Department for Environment and Water	30/04/2024	18/02/2020	Annually	1000m	2	2	4
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	1
Acid Sulfate Soil Potential	SA Department for Environment and Water	27/05/2024	18/02/2020	Annually	1000m	1	1	1

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Soil Salinity - Watertable Induced	SA Department for Environment and Water	06/12/2023	18/02/2020	Annually	1000m	1	1	3
Soil Salinity - Non-watertable	SA Department for Environment and Water	06/12/2023	18/02/2020	Annually	1000m	1	1	3
Soil Salinity - Non-watertable (magnesia patches)	SA Department for Environment and Water	06/12/2023	18/02/2020	Annually	1000m	1	1	1
Planning and Design Code - Zones	Attorney-General's Department	26/11/2024	24/10/2024	Monthly	1000m	1	3	7
Planning and Design Code - Subzones	Attorney-General's Department	26/11/2024	12/09/2024	Monthly	1000m	0	0	1
Land Use Generalised 2020	SA Department for Trade and Investment	04/12/2023	05/05/2023	Annually	1000m	2	8	14
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	23/10/2024	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	23/10/2024	13/04/2022	Annually	1000m	0	0	0
State Heritage Areas	SA Department for Environment and Water	28/05/2024	18/02/2020	Annually	1000m	0	0	0
SA Heritage Places	SA Department for Environment and Water	25/11/2024	01/02/2024	Quarterly	1000m	0	3	3
Aboriginal Land	SA Department for Energy and Mining	28/05/2024	26/09/2022	Annually	1000m	0	0	0
Planning and Design Code - Overlays - Bushfire	SA Department for Trade and Investment	26/11/2024	26/11/2024	Monthly	1000m	1	1	2
Bushfires and Prescribed Burns History	SA Department for Environment and Water	26/11/2024	02/08/2024	Monthly	1000m	0	0	0
Planning and Design Code - Overlays - Flooding	SA Department for Trade and Investment	26/11/2024	26/11/2024	Monthly	1000m	1	2	2
Native Vegetation Floristic Areas - NVIS - State-wide	SA Department for Environment and Water	19/04/2024	14/02/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, the Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, the Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems Atlas	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	0
Ramsar Wetland Areas	SA Department for Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0

Site Diagram

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Legend <div><div></div> Site Boundary</div> <div><div></div> Internal Parcel Boundaries</div>	Total Area: 6271m ² Total Perimeter: 393m	
	Scale: <div><div></div><div>01530</div><div>Meters</div></div>	
	Data Sources: Property Boundaries Sourced by Land Services SA ©Land Services SA	
Disclaimers: Measurements are approximate only and may have been simplified or smaller lengths removed for readability. Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.	<div><div>Coordinate System:</div>GDA 1994 MGA Zone 54</div> <div><div>Date:</div>16 December 2024</div>	

Topographic Features

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



EPA Contaminated Land

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

EPA Site Contamination Index

Sites on the EPA Contamination Index within the dataset buffer:

Map ID	Notification No	Type	Address	Activity	Status	LocConf	Dist	Dir
N/A	No records in buffer							

Site Contamination Index Data Source: EPA South Australia

EPA Public Register

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

EPA Environment Protection and Clean Up Orders

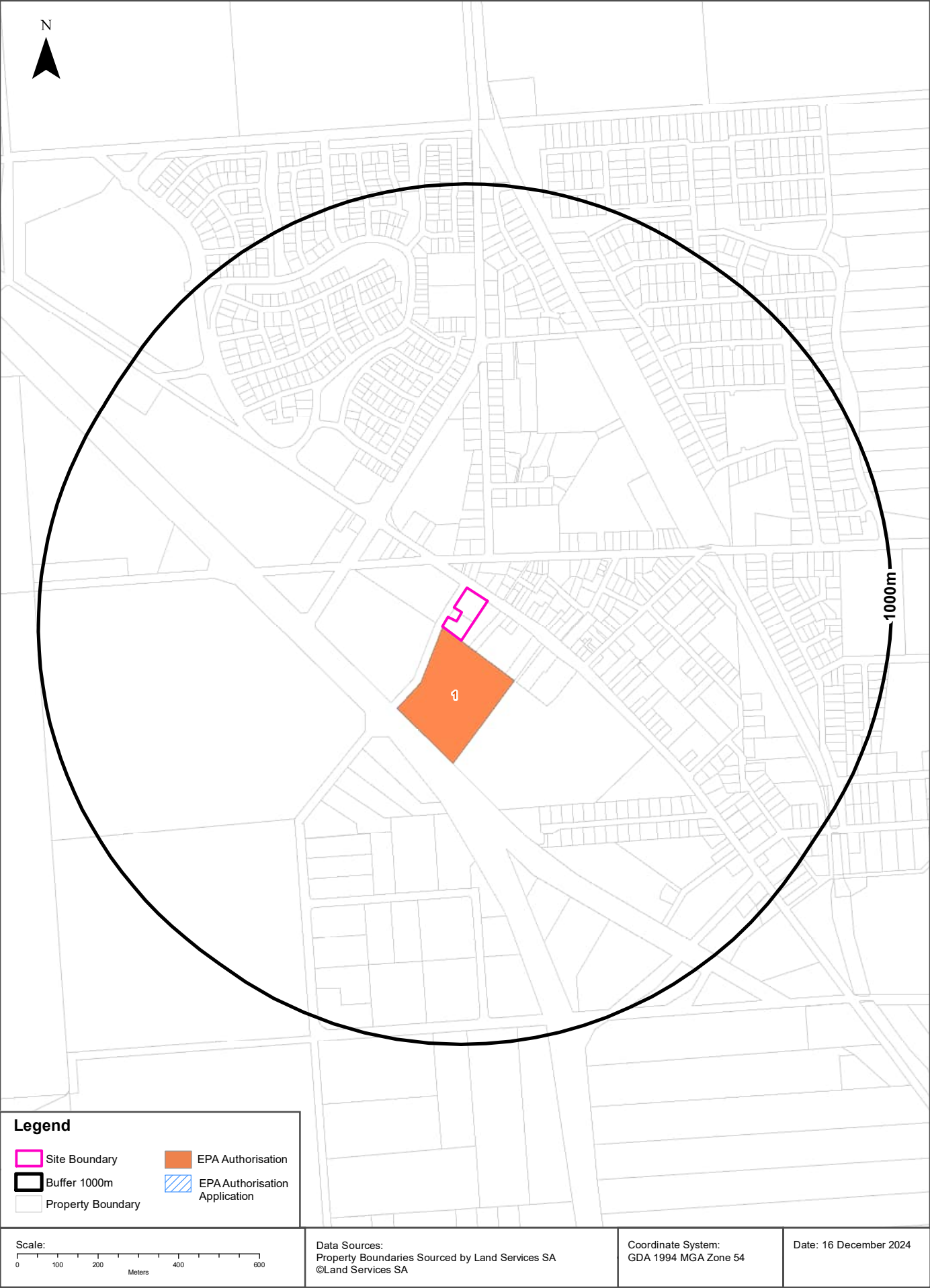
EPA Environment Protection and Clean Up Orders, within the dataset buffer:

Map ID	Record No.	Record Type	Record Status	Entity	Site Address	Activity	EPA Register Status	LocConf	Dist	Dir
N/A	No records in buffer									

Authorisations Data Source: EPA South Australia

EPA Authorisations and Applications

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



EPA Public Register

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

EPA Authorisations and Applications

EPA Authorisations and Authorisation Applications within the dataset buffer:

Map ID	Record No.	Record Type	Record Status	Entity	Site Address	Activity	EPA Register Status	LocConf	Dist	Dir
1	1704	LICENCE	Issued	ADELAIDE PLAINS COUNCIL	Section 715, Port Wakefield Road, TWO WELLS SA 5501	Waste Recovery Facility	Current EPA Register	Premise Match	0m	South

Authorisations Data Source: EPA South Australia

Contamination Assessment and Groundwater Prohibition Areas

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Contamination Assessment Areas

Contamination Assessment Areas published by the EPA within the dataset buffer:

Map Id	Area Name	Map Link	Status	Location Confidence	Distance	Direction
N/A	No records in buffer					

Assessment Areas Data Source: EPA South Australia

Contamination Assessment and Groundwater Prohibition Areas

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

EPA Groundwater Prohibition Areas

EPA Groundwater Prohibition Areas within the dataset buffer:

Map Id	Site Name	Location Confidence	Distance	Direction
N/A	No records in buffer			

Groundwater ProhibitionAreas Data Source: EPA South Australia

PFAS Investigation & Management Programs

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

EPA PFAS Site Investigations

Sites identified by the EPA as requiring PFAS contamination investigation within the dataset buffer:

Record ID	Site Name	Document Link	Location Confidence	Distance	Direction
N/A	No records in buffer				

EPA PFAS Site Investigations Custodian: EPA South Australia

Defence PFAS Investigation & Management Program Investigation Sites

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

Map ID	Base Name	Address	Location Confidence	Distance	Direction
N/A	No records in buffer				

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

Defence PFAS Investigation & Management Program Management Sites

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

Map ID	Base Name	Address	Location Confidence	Distance	Direction
N/A	No records in buffer				

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

Airservices Australia National PFAS Management Program

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

Map ID	Site Name	Impacts	Location Confidence	Distance	Direction
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites and Unexploded Ordnance

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Defence Controlled Areas (DCA)

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

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

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

Defence 3 Year Regional Contamination Investigation Program (RCIP)

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

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

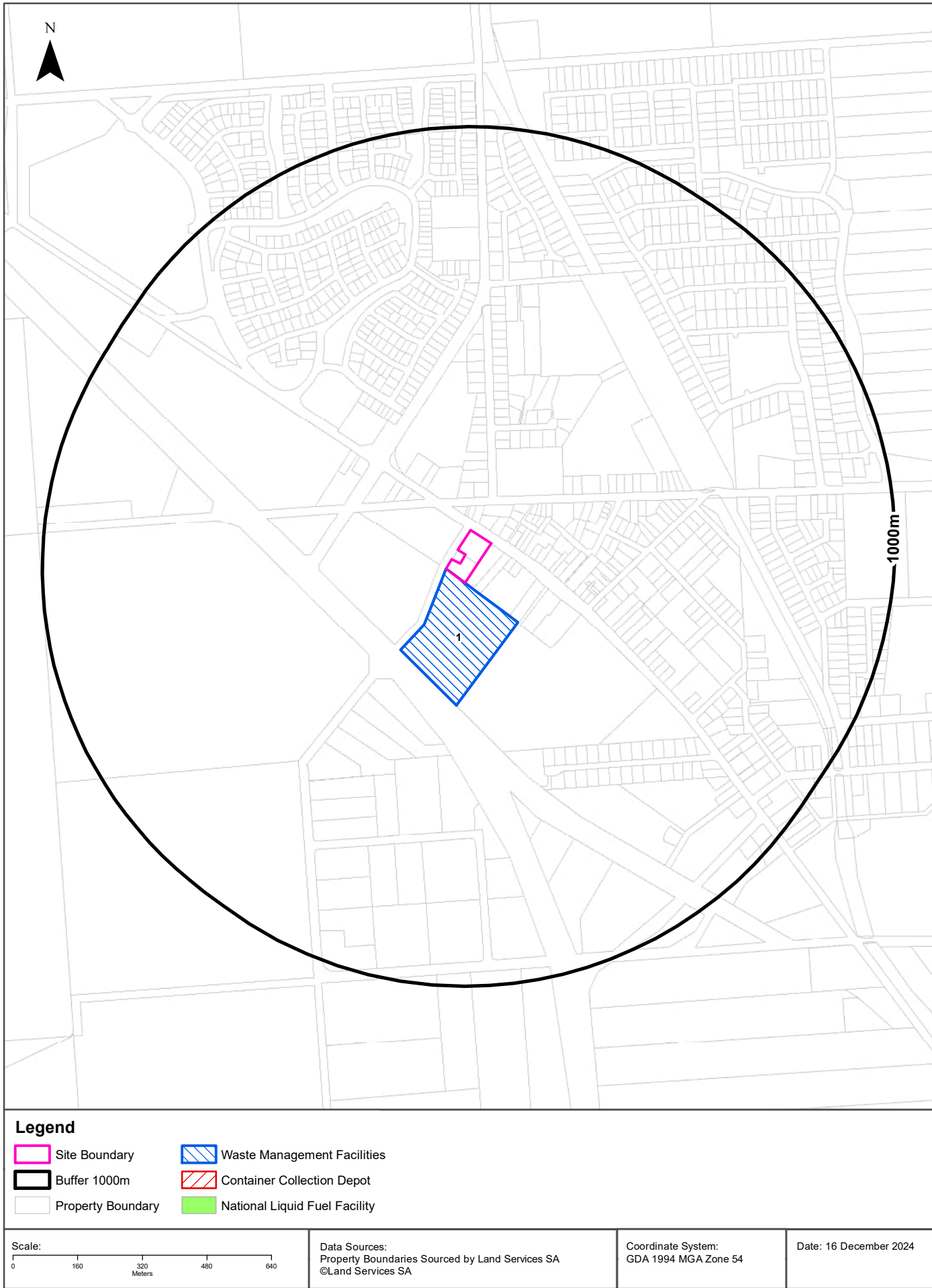
Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

National Unexploded Ordnance (UXO)

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

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

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



Waste Management and Liquid Fuel Facilities

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

National Waste Management Facilities Database

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

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
1	ADELAIDE PLAINS COUNCIL	TWO WELLS RESOURCE RECOVERY CENTRE	WELLS ROAD, TWO WELLS	DROP-OFF	E-WASTE DROP-OFF FACILITY	OPERATIONAL	Premise Match	0m	South
	ADELAIDE PLAINS COUNCIL	TWO WELLS RESOURCE RECOVERY CENTRE	WELLS ROAD, TWO WELLS	DROP-OFF	TRANSFER STATION	OPERATIONAL	Premise Match	0m	South

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

EPA Approved Container Collection Depots

EPA approved container collection depots within the dataset buffer:

MapId	Name	Address	Suburb	Loc Conf	Distance	Direction
N/A	No records in buffer					

Collection Depot Data Source: EPA South Australia

National Liquid Fuel Facilities

National Liquid Fuel Facilities within the dataset buffer:

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

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

Historical Business Directories

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Legend <ul style="list-style-type: none">Site BoundaryBuffer 150mProperty BoundaryBusiness directory records mapped to a specific premiseBusiness directory records mapped to a road intersectionBusiness directory records mapped to a road corridorBusiness directory records mapped to a general area	Scale: 0 30 60 90 120 Meters	Coordinate System: GDA 1994 MGA Zone 54
	Date: 16 December 2024	
Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018 Sands & McDougall's Directory - Digitised by State Library Victoria Property Boundaries Sourced by Land Services SA ©Land Services SA		

Historical Business Directories

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Business Directory Records 1910-1991 Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directory and Sands & McDougall Directory records, from years 1991, 1973, 1965, 1955, 1950, 1940, 1930, 1920 & 1910, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	Not Listed	Two Wells Pizza Restaurant & Bakery, 108 Old Port Wakefield Rd.. Two Wells	16867	1991	Premise Match	43m	East
2	Not Listed	Two Wells Take Away Foods & Deli, 100 Old Port Wakefield Rd.. Two Wells	16873	1991	Premise Match	98m	East
3	Not Listed	Two Wells Service Station & Fodder Store, 96 Old Port Wakefield Rd.. Two Wells	16871	1991	Premise Match	115m	East
4	Not Listed	Video Bizz, 96 Old Port Wakefield Rd.. Two Wells	16876	1991	Premise Match	133m	East

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Business Directory Records 1910-1991 Road or Area Matches

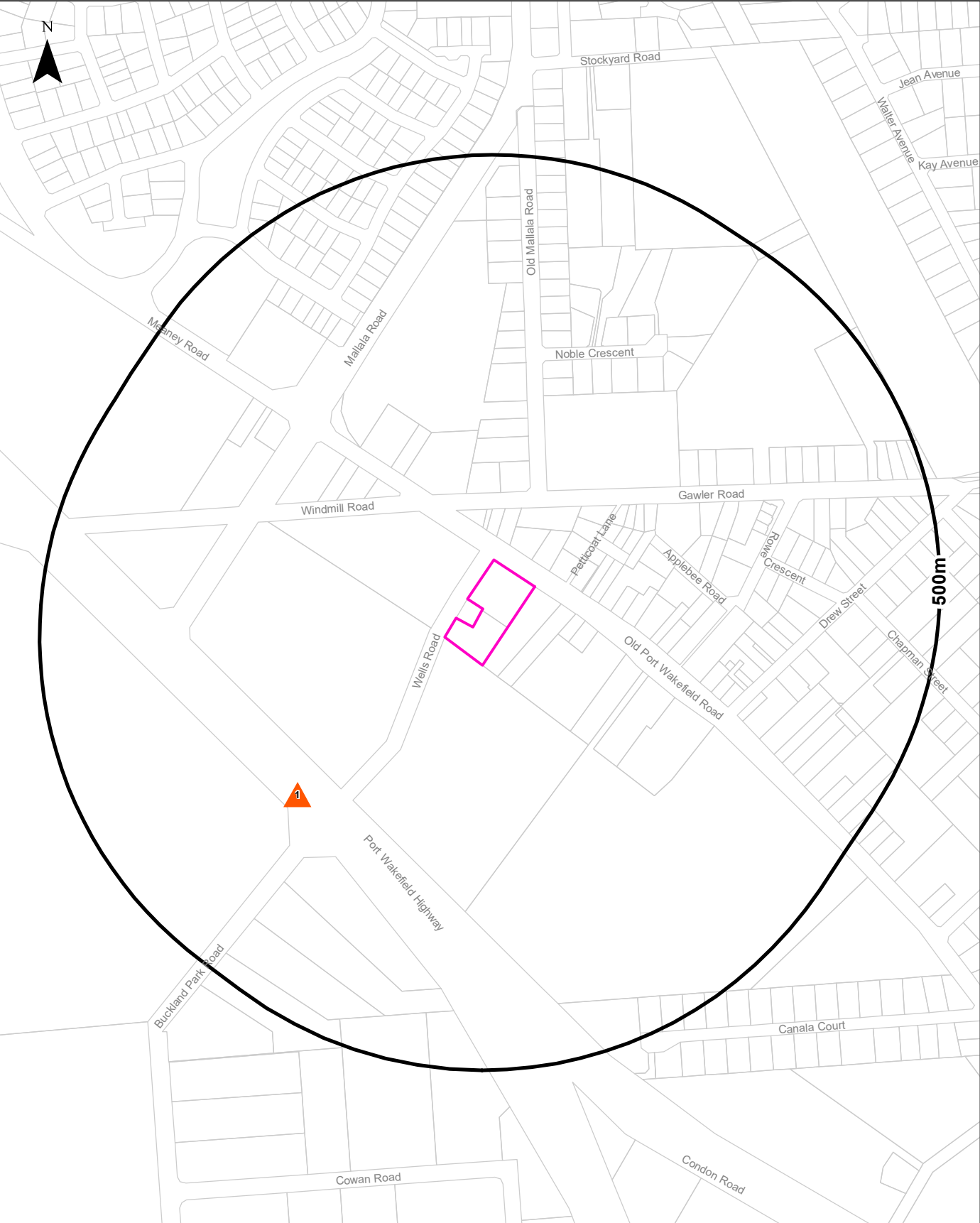
Potentially contaminative business activities extracted from Universal Business Directory and Sands & McDougall Directory records, from years 1991, 1973, 1965, 1955, 1950, 1940, 1930, 1920 & 1910, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:



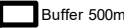

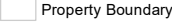


Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
5	Not Listed	ANZ Bank, Main St.. Two Wells	16821	1991	Road Match	11m
	Not Listed	Two WeHs Post Office, Main St.. Two Wells	16869	1991	Road Match	11m
	Not Listed	Two Wells Bowling Club, Main St.. Two Wells	16857	1991	Road Match	11m
6	Not Listed	Dunn. P. J. & J. A..Painter, Mallala Rd.. Two Wells	16834	1991	Road Match	92m
	Not Listed	Gameau. I. M.Plmbr, Mallala Rd.. Two Wells	16836	1991	Road Match	92m
	Not Listed	Salagaras. Stephen.Dr, Mallala Rd.. Two Wells	16856	1991	Road Match	92m
	Not Listed	Two Wells Nursery, Mallala Rd.. Two Wells	16866	1991	Road Match	92m

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Dry Cleaners, Motor Garages & Service Stations

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Legend		Scale: 0 90 180 270 360 Metres	Coordinate System: GDA 1994 MGA Zone 54
 Site Boundary	 Business directory records mapped to a specific premise		Date: 16 December 2024
 Buffer 500m	 Business directory records mapped to a road intersection	Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018 Sands & McDougall's Directory - Digitised by State Library Victoria Property Boundaries Sourced by Land Services SA ©Land Services SA	
 Property Boundary	 Business directory records mapped to a road corridor		
 Business directory records mapped to a general area			

Historical Business Directories

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Dry Cleaners, Motor Garages & Service Stations 1930-1991 Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories and Sands & McDougall's Directories, from years 1991, 1973, 1965, 1955, 1950, 1940 & 1930, mapped to a premise or road intersection, within the dataset buffer.

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

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Dry Cleaners, Motor Garages & Service Stations 1930-1991 Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories and Sands & McDougall's Directories, from years 1991, 1973, 1965, 1955, 1950, 1940 & 1930, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	MOTOR GARAGES & SERVICE STATIONS	Amoco Australia P/L Port Wakefield rd Two Wells	13433	1973	Road Match	237m
	MOTOR GARAGES & SERVICE STATIONS	Mobil Oil Aust Ltd Pt Wakefield rd Two Wells	16754	1973	Road Match	237m

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Aerial Imagery 2024

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Aerial Imagery 2014

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Scale: 0 25 50 75 100 Meters	Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 54	Date: 13 December 2024
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Aerial Imagery 2004

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Aerial Imagery 1999

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Legend

Site Boundary

Buffer 150m

<p>Scale:</p> <p>0 25 50 75 100</p> <p>Meters</p>	<p>Data Sources Aerial Imagery: © South Australia Department for Environment & Water</p>	<p>Coordinate System: GDA 1994 MGA Zone 54</p>	<p>Date: 13 December, 2024</p>
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Aerial Imagery 1986-1989

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Data Sources: Aerial Imagery:
© South Australia Department for Environment & Water

Coordinate System:
GDA 1994 MGA Zone 54

Aerial Imagery 1979

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Data Sources: Aerial Imagery: © South Australia Department for Environment & Water	Coordinate System: GDA 1994 MGA Zone 54	Date: 13 December 2024
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Aerial Imagery 1968-1969

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



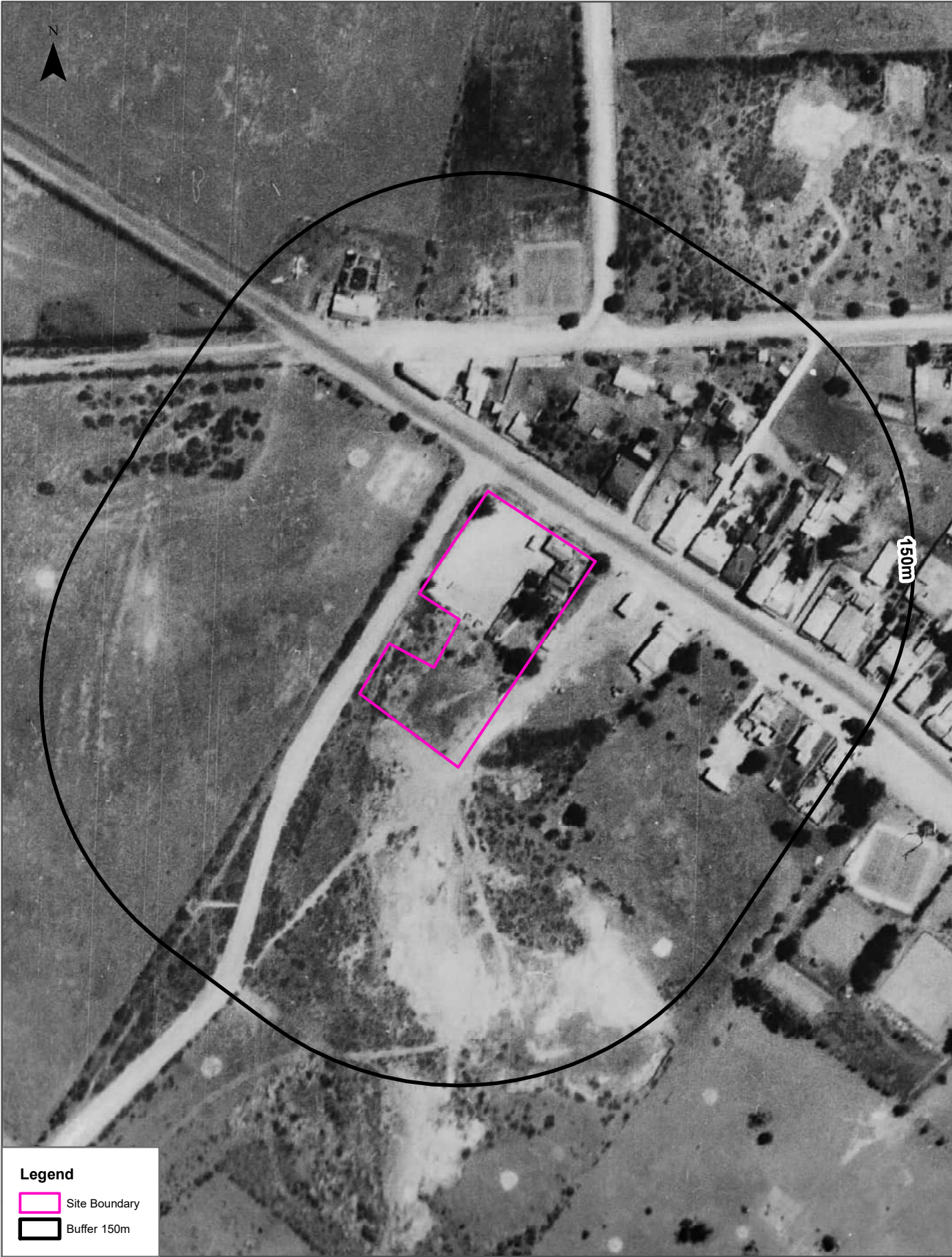
Aerial Imagery 1959

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Aerial Imagery 1949

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



<p>Scale:</p> <p>0 25 50 75 100</p> <p>Meters</p>	<p>Data Sources: Aerial Imagery:</p> <p>© South Australia Department for Environment & Water</p>	<p>Coordinate System:</p> <p>GDA 1994 MGA Zone 54</p>	<p>Date: 13 December 2024</p>
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Aerial Imagery 1935-36

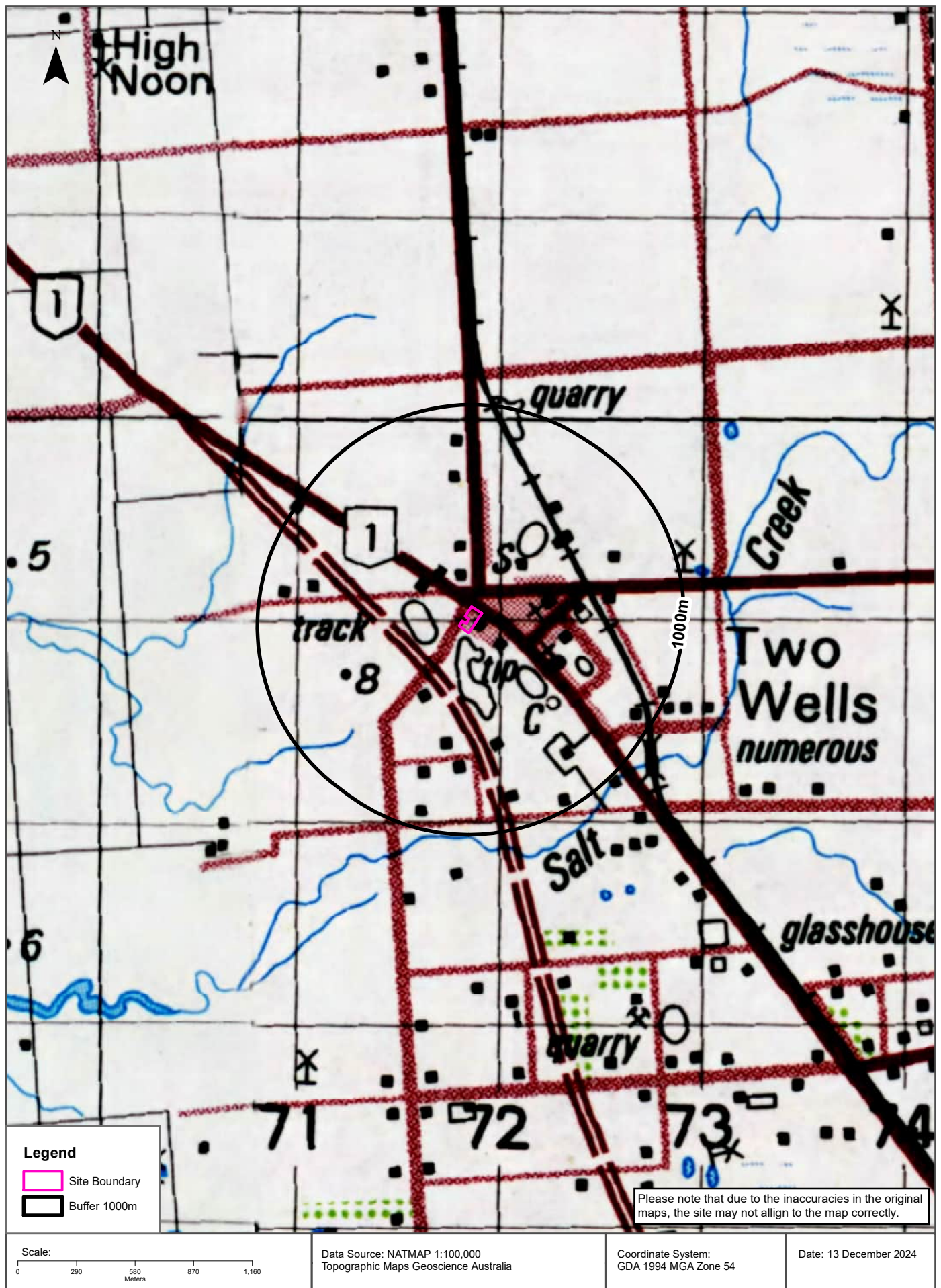
Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Scale: 0 25 50 75 100 Meters	Data Sources: Aerial Imagery: © 2023 Geoscience Australia & National Library of Australia	Coordinate System: GDA 1994 MGA Zone 54	Date: 13 December 2024
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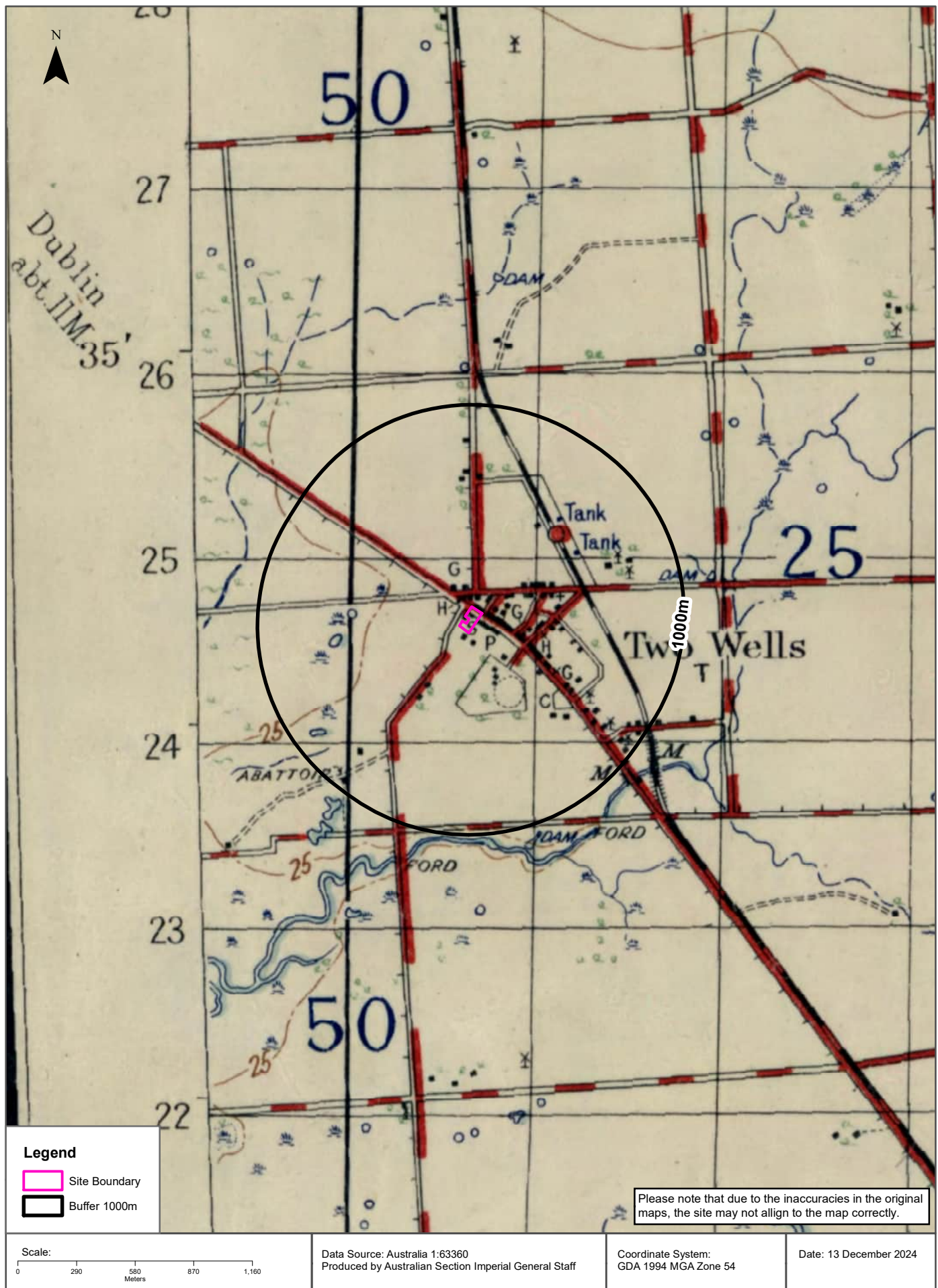
Historical Map 1982

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Historical Map c.1937

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Mining

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Mines and Mineral Deposits

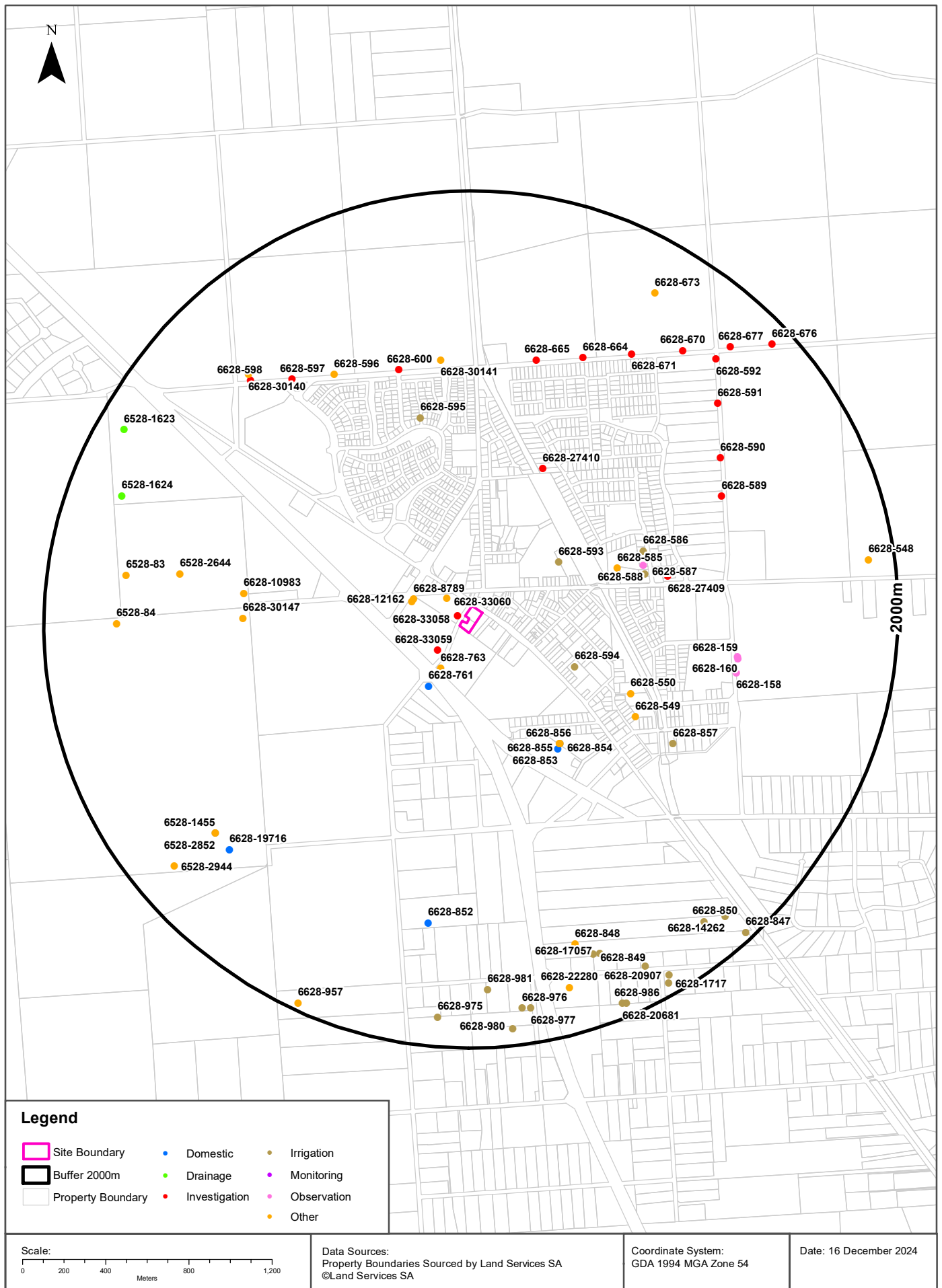
Mines and mineral deposits within the dataset buffer:

Deposit No.	Name	Class	Status	Commodity	Year	Description	Dist	Dir
N/A	No records in buffer							

All Mines and Mineral Deposits Data Source: Dept. of State Development, Resources and Energy - South Australia
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Drillholes

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Hydrogeology & Groundwater

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Hydrogeology

Description of aquifers within the dataset buffer:

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

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

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Drillholes

Drillholes within the dataset buffer:

Unit No	Drillhole No	Status	Purpose	Drill Date	Max Depth (m)	Ref Elev (m AHD)	Ground Elev (m)	pH	TDS (mg/L)	Yield (L/sec)	DTW (m)	SWL (m)	RSWL (m AHD)	Dist	Dir
6628-33058	387967		Investigation	2024-05-08	10.50						5.60	5.60		36m	West
		Aquifer Description			Class						Water Well				
6628-33060	387969			2024-05-08	8.00						3.20	3.20		121m	North West
		Aquifer Description			Class						Water Well				
6628-33059	387968		Investigation	2024-05-07	11.00						5.80	5.80		157m	South West
		Aquifer Description			Class						Water Well				
6628-763	47812	Not Located				9.00								218m	South West
		Aquifer Description			Class						Water Well				
6628-8789	55758	Operational		1982-11-05	6.00		13.50							255m	West
		Aquifer Description			Hindmarsh Clay [SU3642]						Class				
6628-12162	59131	Operational	Industrial	1983-01-14	27.50		13.50	7.50	4117	1.0000				258m	West
		Aquifer Description			Hindmarsh Clay - Q3 aquifer [SU3642]						Class				
6628-761	47810	Operational	Domestic; Stock		38.00	8.00		7.00	4500	0.1900				322m	South West
		Aquifer Description			Hindmarsh Clay [SU3642]						Class				
6628-593	47686	Abandoned	Irrigation; Stock	1949-01-21	29.26	12.00			3582	1.2600	2.74	2.74	9.26	440m	North East
		Aquifer Description			Hindmarsh Clay [SU3642]						Class				
6628-594	47687	Not Located	Irrigation; Stock	1949-01-21	3.05	11.00			3584	0.1300	1.22	1.22	9.78	513m	South East
		Aquifer Description			Hindmarsh Clay [SU3642]						Class				
6628-585	47682	Backfilled	Stock	1949-01-20	4.57	13.00			3099	0.1300	3.05	3.05	9.95	682m	East
		Aquifer Description			Hindmarsh Clay [SU3642]						Class				
6628-855	47889	Not Located				10.00			2230					689m	South East
		Aquifer Description			Class						Water Well				
6628-856	47890	Not Located	Stock			10.00			2744		0.00	0.00	10.00	689m	South East
		Aquifer Description			Port Willunga Formation - T1 aquifer [SU4791]						Class				
6628-854	47888	Not Located	Irrigation; Stock			10.00			2258		0.00	0.00	10.00	690m	South East
		Aquifer Description			Port Willunga Formation - T1 aquifer [SU4791]						Class				

Unit No	Drillhole No	Status	Purpose	Drill Date	Max Depth (m)	Ref Elev (m AHD)	Ground Elev (m)	pH	TDS (mg/L)	Yield (L/sec)	DTW (m)	SWL (m)	RSWL (m AHD)	Dist	Dir
6628-853	47887	Operational	Domestic; Irrigation	1967-05-30	36.58	9.00			7445	6.3200	8.23	8.23	0.77	702m	South East
		Aquifer Description		Hindmarsh Clay - Q4 aquifer [SU3642]						Class	Water Well				
6628-27410	280480		Investigation	2014-05-27	12.00		15.60				6.66	6.66	8.94	744m	North East
		Aquifer Description		Hindmarsh Clay [SU3642]						Class	Water Well				
6628-587	47684	Backfilled	Irrigation	1959-10-09	60.96	13.00			4585	0.6300				803m	East
		Aquifer Description		Port Willunga Formation - T1 aquifer [SU4791]						Class	Water Well				
6628-588	47685	Blocked	Observation; Stock	1959-10-01	60.96	12.57	12.23		2870	13.8909	8.31	7.97	4.26	806m	East
		Aquifer Description		Port Willunga Formation - T1 aquifer [SU4791]						Class	Water Well				
6628-550	47647	Not Located		1949-01-24	24.38	11.00			2285	0.3800	5.49	5.49	5.51	811m	South East
		Aquifer Description		Hindmarsh Clay [SU3642]						Class	Water Well				
6628-586	47683	Abandoned	Irrigation; Observation; Stock	1920-01-01	60.96	13.00			2970	0.6300	6.10	6.10	6.90	829m	East
		Aquifer Description		Port Willunga Formation - T1 aquifer [SU4791]						Class	Water Well				
6628-549	47646	Abandoned		1962-01-01	42.67	11.00								889m	South East
		Aquifer Description								Class	Water Well				
6628-27409	280479		Investigation		7.50		16.40				5.10	5.10	11.30	908m	East
		Aquifer Description		Hindmarsh Clay [SU3642]						Class	Water Well				
6628-595	47688	Operational	Irrigation	1968-02-12	19.51	11.00		7.00	7515	0.2500				940m	North
		Aquifer Description		Hindmarsh Clay [SU3642]						Class	Water Well				
6628-30147	315956	Backfilled			6.00		11.50		17906		3.10	3.10	8.40	1043m	West
		Aquifer Description								Class	Water Well				
6628-10983	57952	Operational	Stock	1972-01-01	7.00		11.50	4.90	13946		1.80	1.80	9.70	1050m	West
		Aquifer Description		Hindmarsh Clay [SU3642]						Class	Water Well				
6628-857	47891	Not Located	Irrigation; Stock	1949-01-22	8.53	10.00			3585		7.32	7.32	2.68	1112m	South East
		Aquifer Description		Hindmarsh Clay [SU3642]						Class	Water Well				
6628-600	149184	Backfilled	Investigation		33.53									1192m	North
		Aquifer Description								Class	Seismic Point				
6628-30141	315938	Backfilled			6.30		14.50				5.60	5.60	8.90	1194m	North
		Aquifer Description								Class	Water Well				
6628-665	149186	Backfilled	Investigation	1959-06-24	38.10									1225m	North
		Aquifer Description								Class	Seismic Point				
6628-160	47260	Operational	Observation	1966-05-03	106.85	11.73	10.93		772					1244m	East
		Aquifer Description		Port Willunga Formation - T1 aquifer [SU4791]						Class	Water Well				
6628-159	47259	Operational	Observation	1966-04-30	106.85	11.43	10.61	6.70	2681		7.62	6.80	3.81	1248m	East
		Aquifer Description		Port Willunga Formation - T1 aquifer [SU4791]						Class	Water Well				
6628-158	47258	Operational	Observation	1966-03-10	119.79	11.29	10.47	7.70	2280		7.16	6.34	4.13	1255m	East
		Aquifer Description		Port Willunga Formation - T1 aquifer [SU4791]						Class	Water Well				
6628-589	149177	Backfilled	Investigation	1959-07-30	36.58	13.00								1281m	North East
		Aquifer Description								Class	Seismic Point				
6628-596	149181	Backfilled												1298m	North West
		Aquifer Description								Class	Seismic Point				
6628-664	149185	Backfilled	Investigation	1959-06-24	38.10									1310m	North East
		Aquifer Description								Class	Seismic Point				

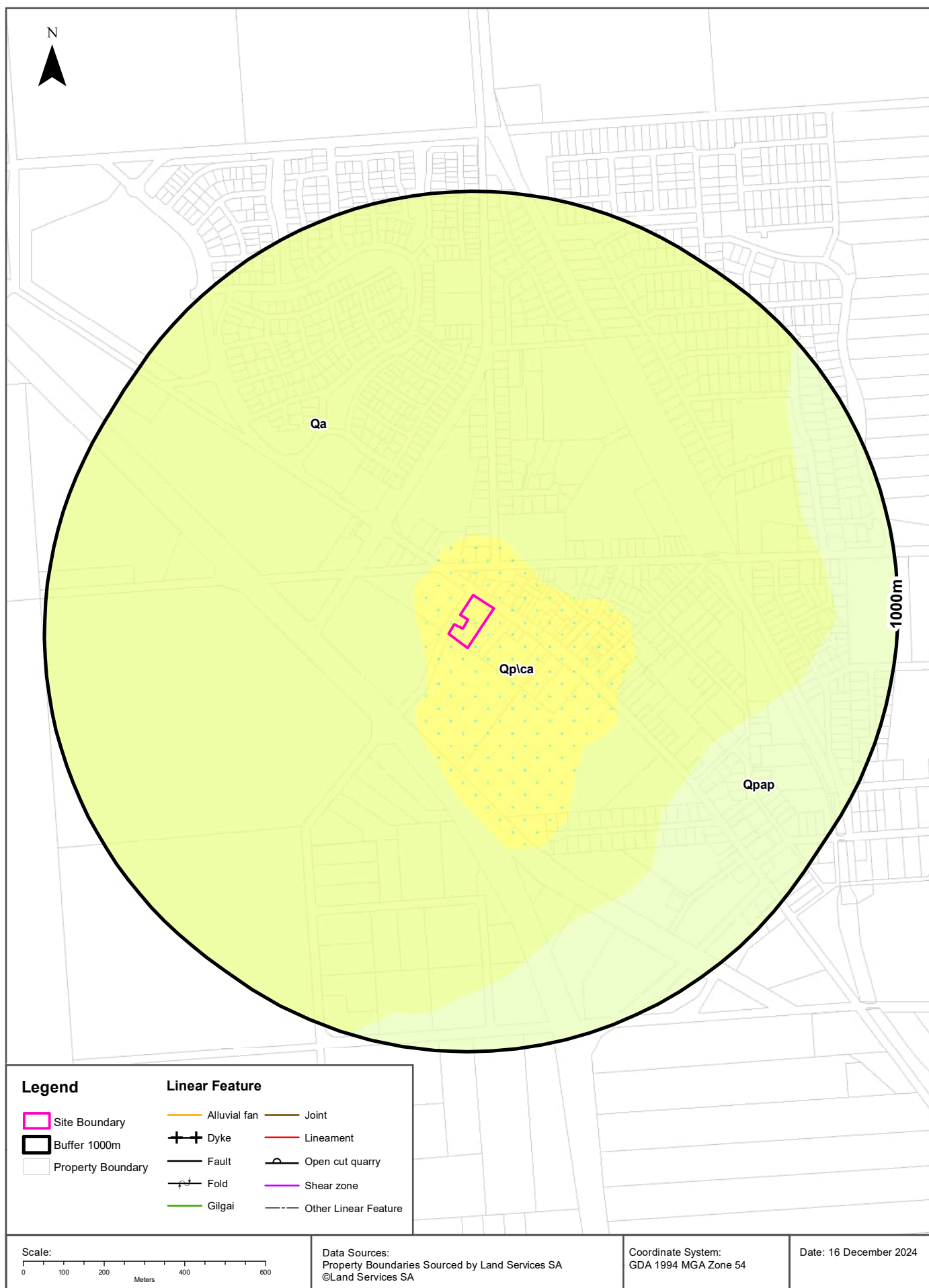
Unit No	Drillhole No	Status	Purpose	Drill Date	Max Depth (m)	Ref Elev (m AHD)	Ground Elev (m)	pH	TDS (mg/L)	Yield (L/sec)	DTW (m)	SWL (m)	RSWL (m AHD)	Dist	Dir
6628-590	149178	Backfilled	Investigation	1959-07-30	38.10	13.00								1366m	North East
		Aquifer Description					Class	Seismic Point							
6528-2644	237487	Backfilled		2008-04-28	45.00		11.50							1369m	West
		Aquifer Description				Hindmarsh Clay [SU3642]				Class	Water Well				
6628-597	149182	Backfilled	Investigation	1959-06-25	38.10									1395m	North West
		Aquifer Description					Class	Seismic Point							
6628-852	47886	Backfilled	Domestic; Irrigation	1956-08-30	91.44	9.92	9.92	7.30	3533	8.7500	6.10	6.10	3.82	1409m	South
		Aquifer Description				Port Willunga Formation - T1 aquifer [SU4791]				Class	Water Well				
6628-671	149190	Backfilled	Investigation	1959-06-24	38.10									1438m	North East
		Aquifer Description					Class	Seismic Point							
6628-591	149179	Backfilled	Investigation	1959-07-30	42.67	13.00								1516m	North East
		Aquifer Description					Class	Seismic Point							
6628-598	149183	Backfilled	Investigation	1959-07-17	42.67									1522m	North West
		Aquifer Description					Class	Seismic Point							
6528-1455	28583	Operational	Irrigation	1991-10-25	72.00		12.50	7.60	3454	20.0000				1543m	South West
		Aquifer Description				Port Willunga Formation - T1 aquifer [SU4791]				Class	Water Well				
6528-2852	290047			1981-04-14	102.00		12.50							1543m	South West
		Aquifer Description					Class	Water Well							
6628-19716	27229	Operational	Domestic; Stock	1960-01-01	38.10	8.00		7.00	2335	0.2526				1545m	South West
		Aquifer Description				Hindmarsh Clay - Q3 aquifer [SU3642]				Class	Water Well				
6628-30140	315937	Backfilled			6.30		12.10				4.40	4.40	7.70	1550m	North West
		Aquifer Description					Class	Water Well							
6628-848	47882	Operational		1960-02-29	73.15	11.00			1931					1582m	South
		Aquifer Description				Port Willunga Formation - T2 aquifer [SU4791]				Class	Water Well				
6628-670	149189	Backfilled	Investigation	1959-06-23	38.10									1589m	North East
		Aquifer Description					Class	Seismic Point							
6528-83	27211			1949-01-25		8.00			10470		0.30	0.30	7.70	1623m	West
		Aquifer Description				Hindmarsh Clay [SU3642]				Class	Water Well				
6528-84	27212	Operational	Stock	1973-11-22	99.06		10.30	7.50	6889	1.2628				1649m	West
		Aquifer Description				Port Willunga Formation - T2 aquifer [SU4791]				Class	Water Well				
6628-849	47883	Operational	Irrigation	1965-10-25	85.04	11.00		7.40	1883	2.0205	9.45	9.45	1.55	1657m	South
		Aquifer Description				Port Willunga Formation - T2 aquifer [SU4791]				Class	Water Well				
6628-592	149180	Backfilled	Investigation	1959-07-31	38.10	13.00								1660m	North East
		Aquifer Description					Class	Seismic Point							
6628-17057	148566	Operational	Irrigation	1995-03-14	93.00		15.70	7.20	1845	15.0000				1667m	South
		Aquifer Description				Port Willunga Formation - T2 aquifer [SU4791]				Class	Water Well				
6628-981	48015	Operational	Irrigation		85.34	9.00		7.10	1720	5.0500	15.24	15.24	-6.24	1719m	South
		Aquifer Description				Port Willunga Formation - T2 aquifer [SU4791]				Class	Water Well				
6528-1624	138384		Drainage	1993-11-01	109.70		12.40	7.50	10643	31.2500				1741m	West
		Aquifer Description				Port Willunga Formation - T2 aquifer [SU4791]				Class	Water Well				
6628-673	47755	Backfilled	Stock	1914-01-01	27.43		17.20		5284					1746m	North East
		Aquifer Description					Class	Water Well							

Unit No	Drillhole No	Status	Purpose	Drill Date	Max Depth (m)	Ref Elev (m AHD)	Ground Elev (m)	pH	TDS (mg/L)	Yield (L/sec)	DTW (m)	SWL (m)	RSWL (m AHD)	Dist	Dir
6628-677	149194	Backfilled	Investigation	1959-06-23	42.67									1749m	North East
		Aquifer Description			Class						Seismic Point				
6628-22280	206496	Operational		2005-06-30	80.00		11.40		1620	10.0000	11.00	11.00	0.40	1774m	South
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-850	47884	Backfilled	Irrigation	1969-02-20	37.19	12.00		6.50	9970					1791m	South East
		Aquifer Description			Hindmarsh Clay [SU3642]Class						Water Well				
6528-2944	315958	Backfilled			5.30		12.20				4.00	4.00	8.20	1795m	South West
		Aquifer Description			Class						Water Well				
6628-851	47885	Operational	Irrigation	1970-12-23	85.95	11.00		6.50	1647	16.4200				1815m	South East
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-976	48010	Operational	Irrigation	1959-05-13	67.06	11.00			1690	11.3652				1824m	South
		Aquifer Description			Port Willunga Formation - T1 aquifer [SU4791]; Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-977	48011	Operational	Irrigation; Stock	1959-05-20	67.06	10.00		6.70	2216	8.8400	18.29	18.29	-8.29	1830m	South
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-14262	61231	Operational	Irrigation	1988-08-19	91.50		15.60	7.30	2318	12.0000				1837m	South East
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-975	48009	Operational	Irrigation	1960-03-01	68.28	8.00			1690	8.8400	9.14	9.14	-1.14	1856m	South
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6528-1623	138383		Drainage	1993-11-06	109.70		12.30	7.60	10565	25.0000				1872m	North West
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-548	47645	Collapsed		1942-01-01	42.67	13.00			2756		0.00	0.00	13.00	1874m	East
		Aquifer Description			Port Willunga Formation - T1 aquifer [SU4791]Class						Water Well				
6628-676	149193	Backfilled	Investigation	1959-06-22	42.67									1902m	North East
		Aquifer Description			Class						Seismic Point				
6628-20907	192865	Operational	Irrigation	2002-07-25	72.00		11.30		1653	7.5000	10.60	10.60	0.70	1908m	South East
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-980	48014	Operational	Irrigation	1964-04-28	77.42	11.00		7.60	1720	5.0500	9.75	9.75	1.25	1918m	South
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-20681	187644	Operational	Irrigation	2001-09-27	72.00		11.80		1726	11.2500	10.00	10.00	1.80	1929m	South
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-986	48020	Backfilled	Irrigation	1959-01-01	67.06	11.00		7.00	2064	23.4882	13.72	13.72	-2.72	1936m	South
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-1717	48751	Backfilled	Irrigation	1977-07-08	77.00	11.00		7.50	11127		12.00	12.00	-1.00	1940m	South East
		Aquifer Description			Port Willunga Formation - T2 aquifer [SU4791]Class						Water Well				
6628-847	47881	Backfilled	Irrigation; Observation	1956-03-20	99.06	12.55		6.70	21150	10.1000	4.21	4.21	8.34	1962m	South East
		Aquifer Description			Port Willunga Formation - T1 aquifer [SU4791]Class						Water Well				
6628-957	47991	Operational	Stock		4.27	8.00		6.50	14464		3.66	3.66	4.34	1963m	South West
		Aquifer Description			Hindmarsh Clay [SU3642]Class						Water Well				

Drillholes Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Geology 1:100,000

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Geology

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Surface Geology 1:100,000

Surface Geology Units within the dataset buffer:

Map Unit Code	Name	Description	Parent Name	Province	Age	Min Age	Max Age	Dist	Dir
Qp\ca	Pleistocene calcrete	Undifferentiated Pleistocene calcrete.	Pleistocene rocks	UNKNOWN	PLEISTOCENE	Pleistocene	Pleistocene	0m	On-site
Qa	Quaternary alluvial/fluvial sediments	Undifferentiated Quaternary alluvial/fluvial sediments.	Quaternary rocks	UNKNOWN	PLEISTOCENE-HOLOCENE	Quaternary	Quaternary	68m	North West
Qpap	Pooraka Formation	Clay, sand and carbonate earth, silty, with gravel lenses.	Pleistocene alluvial/fluvial sediments	ST VINCENT BASIN	PLEISTOCENE	Pleistocene, Late	Pleistocene, Late	626m	South East

Geology Data Source: Dept of Environment, Water and Natural Resources - South Australia

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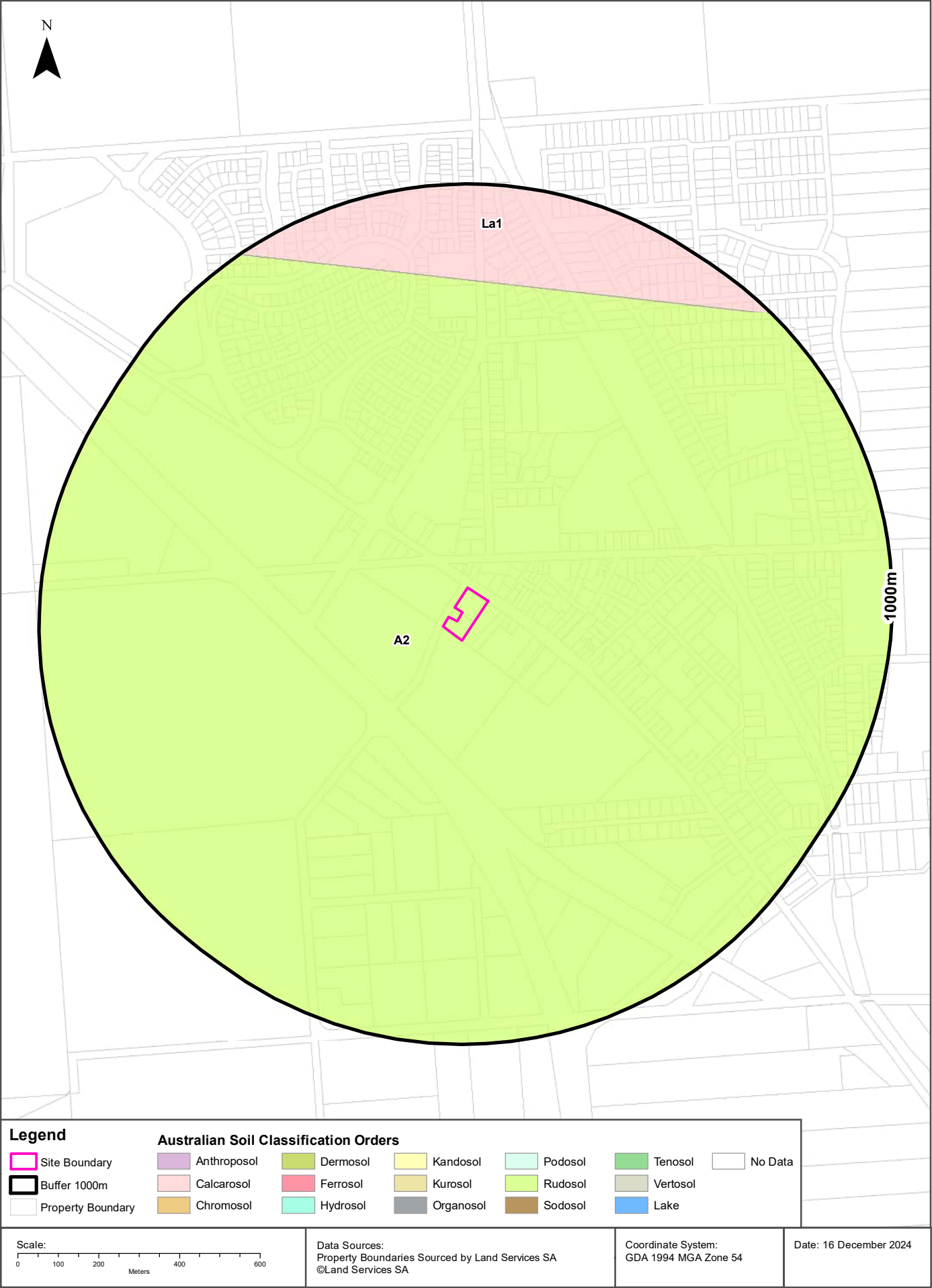
Linear Structures 1:100,000

Linear geological structures within the dataset buffer:

Map Code	Description	Distance	Direction
N/A	No records in buffer		

Geology Data Source: Dept of Environment, Water and Natural Resources - South Australia

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Soils

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Atlas of Australian Soils

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

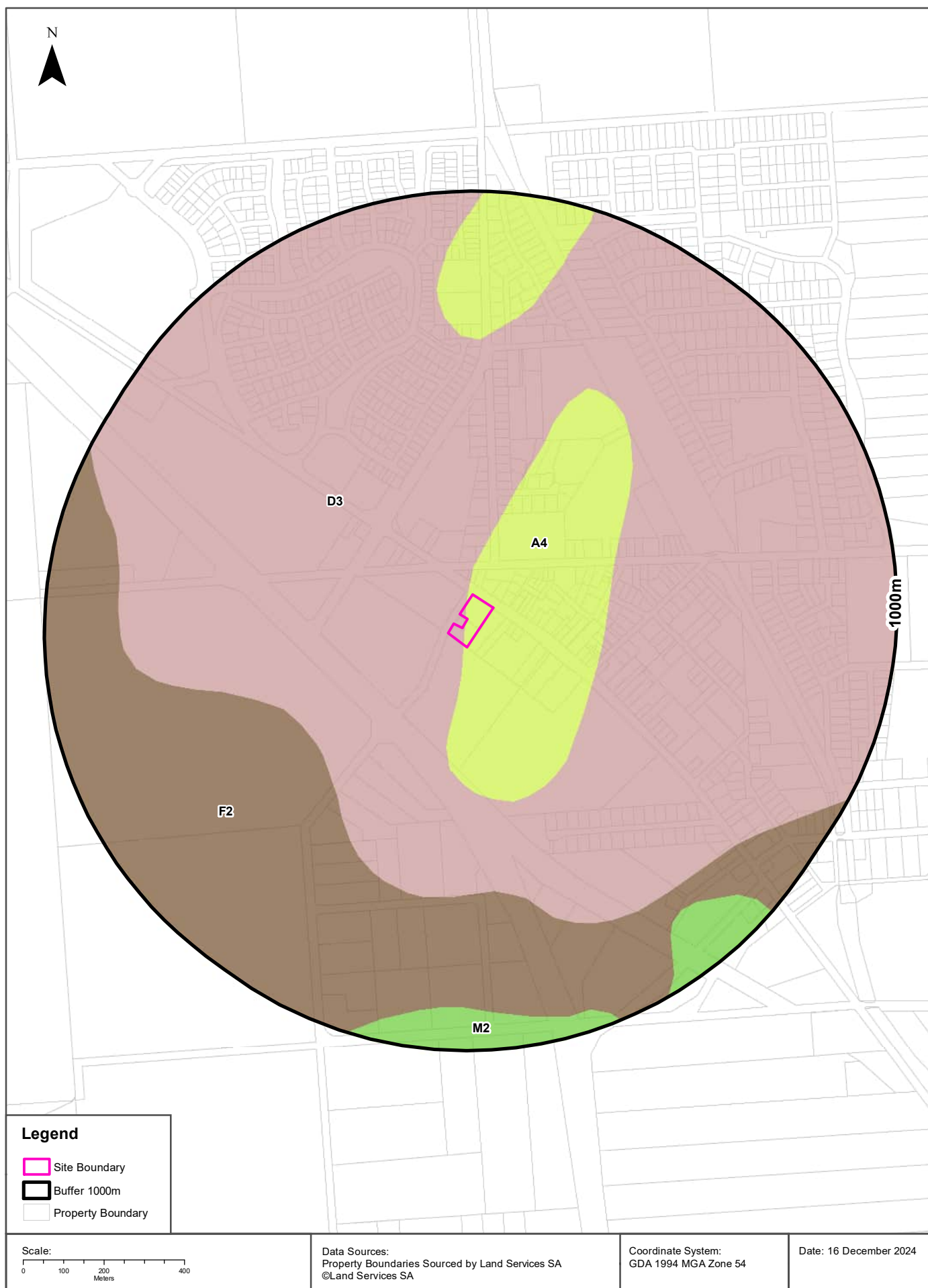
Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
A2	Rudosol	Coastal dunes and plains with some swamps: dunes of calcareous sands (Uc1.11) and also siliceous sands (Uc1.22); plains of various saline soils (unclassified) and lesser areas of brown calcareous earths (Gc1.1 and Gc1.2).	0m	On-site
La1	Calcarosol	Plain with tracts of dunes: plains of dark highly calcareous loamy earths (Gc1.11) with shallow forms of hard alkaline red soils (Dr2.23) and small areas of cracking brown clays (Ug5.3) interspersed with dune tracts of brown calcareous earths (Gc1.21) and brown sands (Uc5.11).	760m	North

Atlas of Australian Soils Data Source: CSIRO

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Soil Types

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Soils

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Soil Types

Soil types within the dataset buffer:

Map category code	Soil type description	Distance	Direction
A4	Calcareous loam	0m	On-site
D3	Loam over poorly structured red clay	0m	On-site
F2	Sandy loam over poorly structured brown or dark clay	426m	South West
M2	Deep friable gradational clay loam	839m	South

Soil Types Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Acid Sulfate Soils

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO

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Acid Sulfate Soils Potential

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Acid Sulfate Soils

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

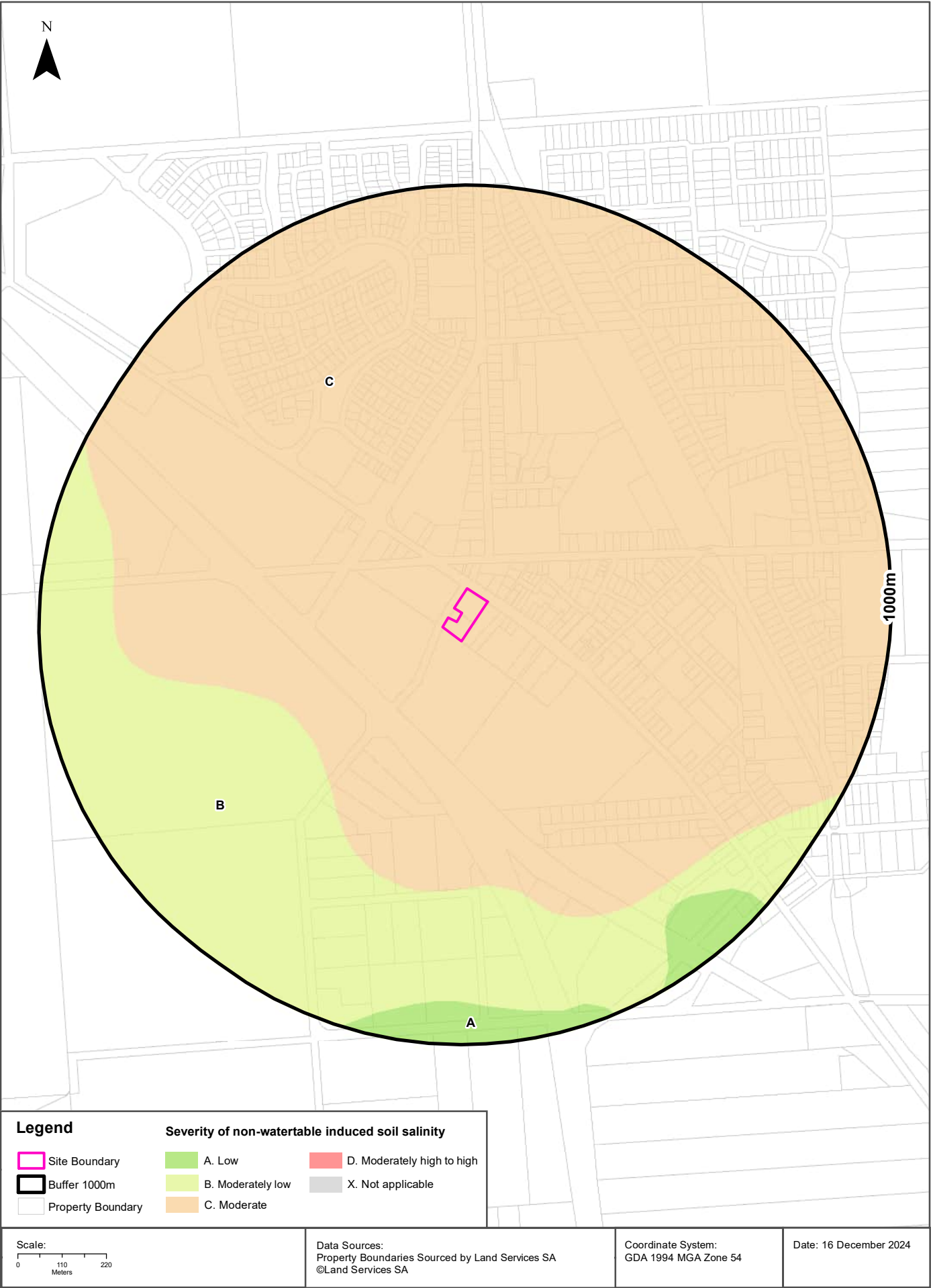
Acid Sulfate Soil Potential

Acid sulfate soil potential within the dataset buffer:

Map category code	Proportion of land susceptible to the development of acid sulfate soils	Distance	Direction
A	Negligible	0m	On-site

Acid Sulfate Soils Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Soil Salinity - Non-watertable (Magnesia Patches)

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Soil Salinity

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Soil Salinity - Watertable Induced

Watertable induced soil salinity within the dataset buffer:

Map category code	Severity description	Distance	Direction
A	Negligible	0m	On-site
C	Moderate salinity, or 2-10% of land affected by highly saline seepage	426m	South West
D	Moderately high salinity, or 10-30% of land affected by highly saline seepage	839m	South

Salinity Watertable Induced Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Soil Salinity - Non-Watertable

Non-watertable soil salinity within the dataset buffer:

Map category code	Severity description	Surface ECe (dS/m)	Subsoil ECe (dS/m)	Distance	Direction
C	Moderate	4-8	8-16	0m	On-site
B	Moderately low	2-4	4-8	426m	South West
A	Low	<2	<4	839m	South

Salinity Non-Watertable Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Soil Salinity - Non-Watertable (Magnesia Patches)

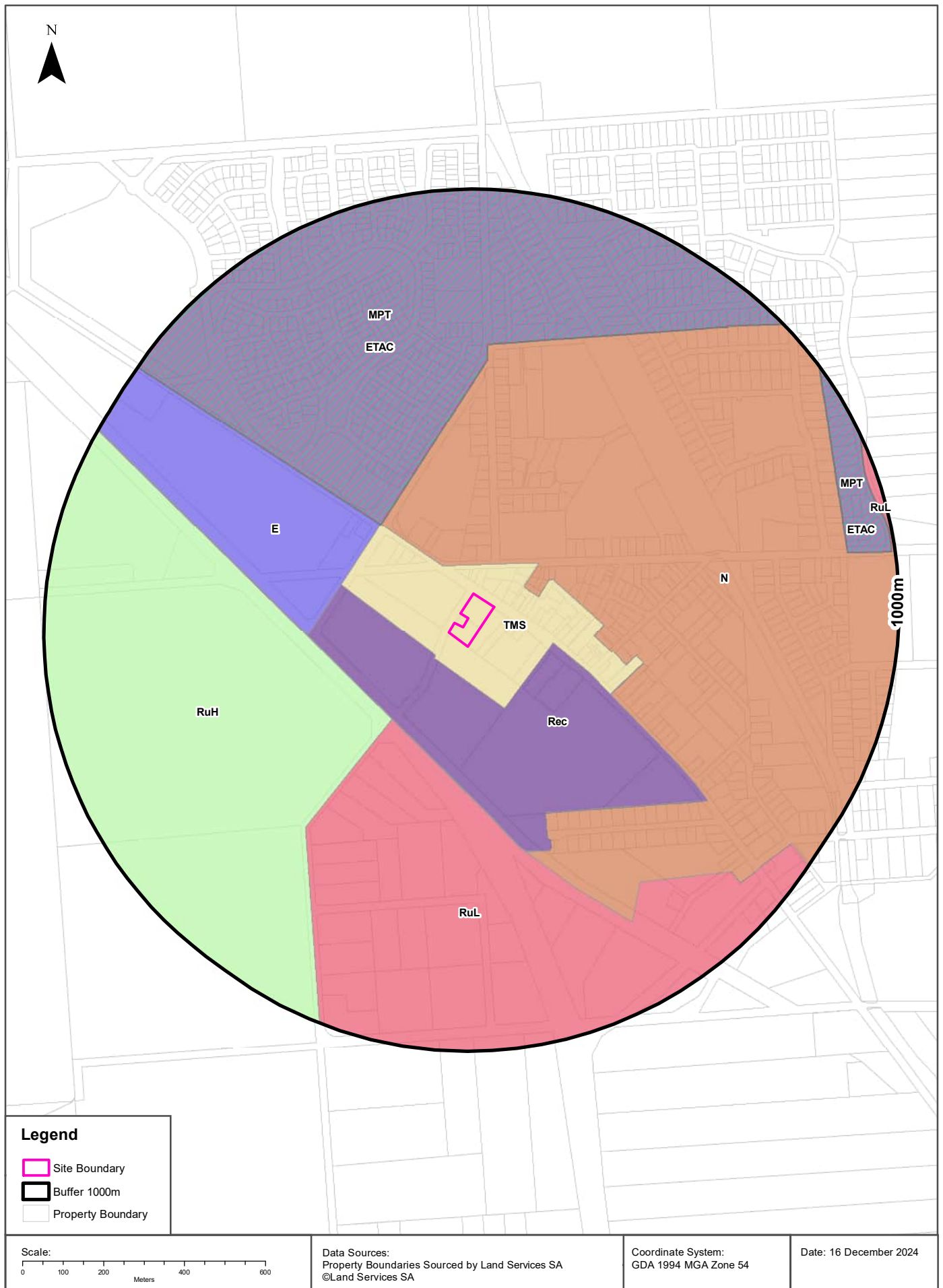
Magnesia patches within the dataset buffer:

Map category code	Proportion of land affected by magnesia patches	Distance	Direction
A	Negligible	0m	On-site

Salinity Non-Watertable (Magnesia Patches) Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Planning and Design Code Zones

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Planning

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Planning and Design Code - Zones

Planning and Design Code zones within the dataset buffer:

Map Id	Zone Code	Zone Name	Legal Start Date	Status	Distance	Direction
TMS	Z6003	Township Main Street	19/03/2021	0	0m	On-site
Rec	Z5401	Recreation	19/03/2021	0	64m	South
N	Z4201	Neighbourhood	19/03/2021	0	71m	East
RuH	Z5412	Rural Horticulture	19/03/2021	0	251m	West
RuL	Z5405	Rural Living	19/03/2021	0	255m	South
E	Z1501	Employment	19/03/2021	0	287m	North West
MPT	Z3906	Master Planned Township	19/03/2021	0	287m	North

Planning and Design Code Zones Data Source: Attorney-General's Department - South Australia
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Planning and Design Code - Subzones

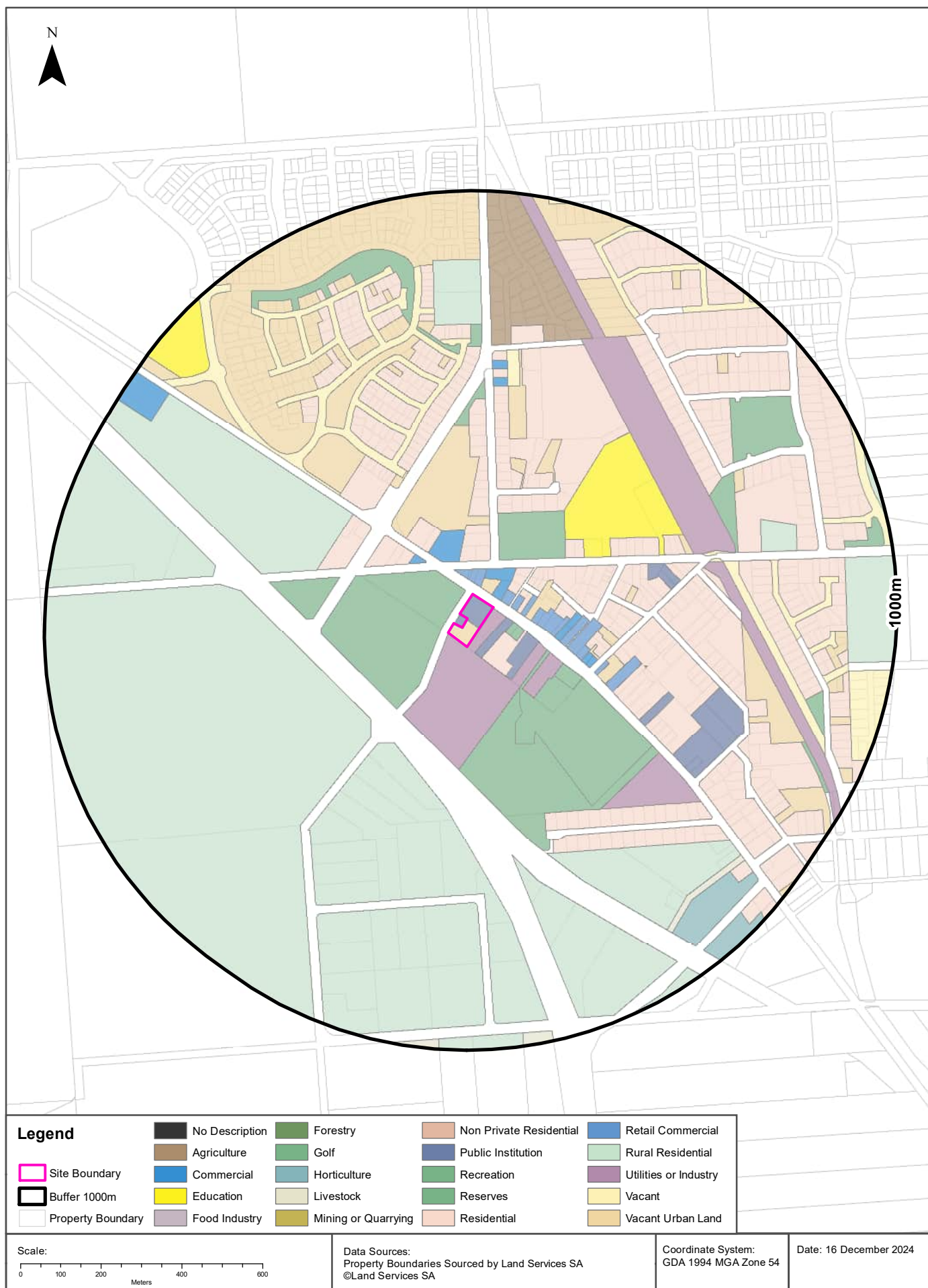
Planning and Design Code subzones within the dataset buffer:

Map Id	Subzone Code	Subzone Name	Legal Start Date	Status	Distance	Direction
ETAC	S1506	Emerging Township Activity Centre	19/03/2021	0	287m	North

Planning and Design Code Subzones Data Source: Attorney-General's Department - South Australia
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Land Use Generalised

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Planning

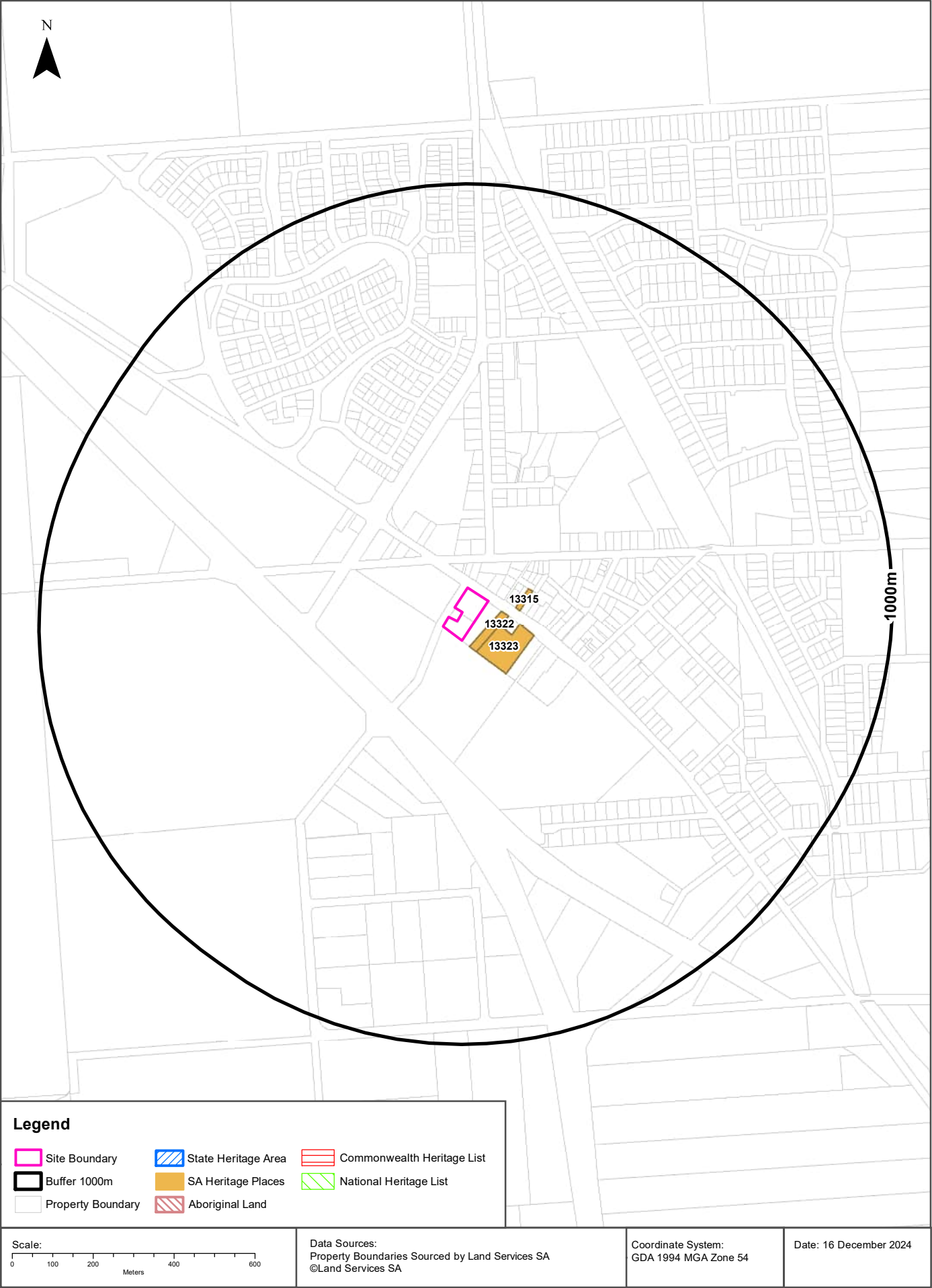
Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Land Use Generalised

Land use classes within the dataset buffer:

Description	Distance	Direction
Public Institution	0m	On-site
Vacant Urban Land	0m	On-site
Utilities or Industry	0m	South
Recreation	0m	South
Commercial	26m	North East
Retail Commercial	26m	North
Residential	44m	South East
Reserves	56m	East
Education	245m	North East
Rural Residential	286m	South West
Vacant	339m	North West
Agriculture	619m	North
Livestock	821m	South East
Horticulture	837m	South East

Land Use Generalised Data Source: Dept of Planning, Transport and Infrastructure - South Australia
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Heritage

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Commonwealth Heritage List

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

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

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

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

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

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

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

State Heritage Areas within the dataset buffer:

Heritage Id	Name	Distance	Direction
N/A	No records in buffer		

Heritage Areas Data Source: Dept of Environment, Water and Natural Resources - South Australia
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SA Heritage Places

SA Heritage Places within the dataset buffer:

Heritage No	Location	Heritage Class	Australian Class	Details	Auth Date	Distance	Direction
13322	61 Old Port Wakefield Road TWO WELLS	State	Hall	Two Wells Public Library (former Two Wells Institute)		23m	South East
13323	Old Port Wakefield Road TWO WELLS	State	Law Courts	Two Wells Courthouse		44m	South East
13315	104 Old Port Wakefield Road TWO WELLS	State	Business: Commercial/Retail	Shop		69m	East

Heritage Places Data Source: Dept of Environment, Water and Natural Resources - South Australia
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Aboriginal Land

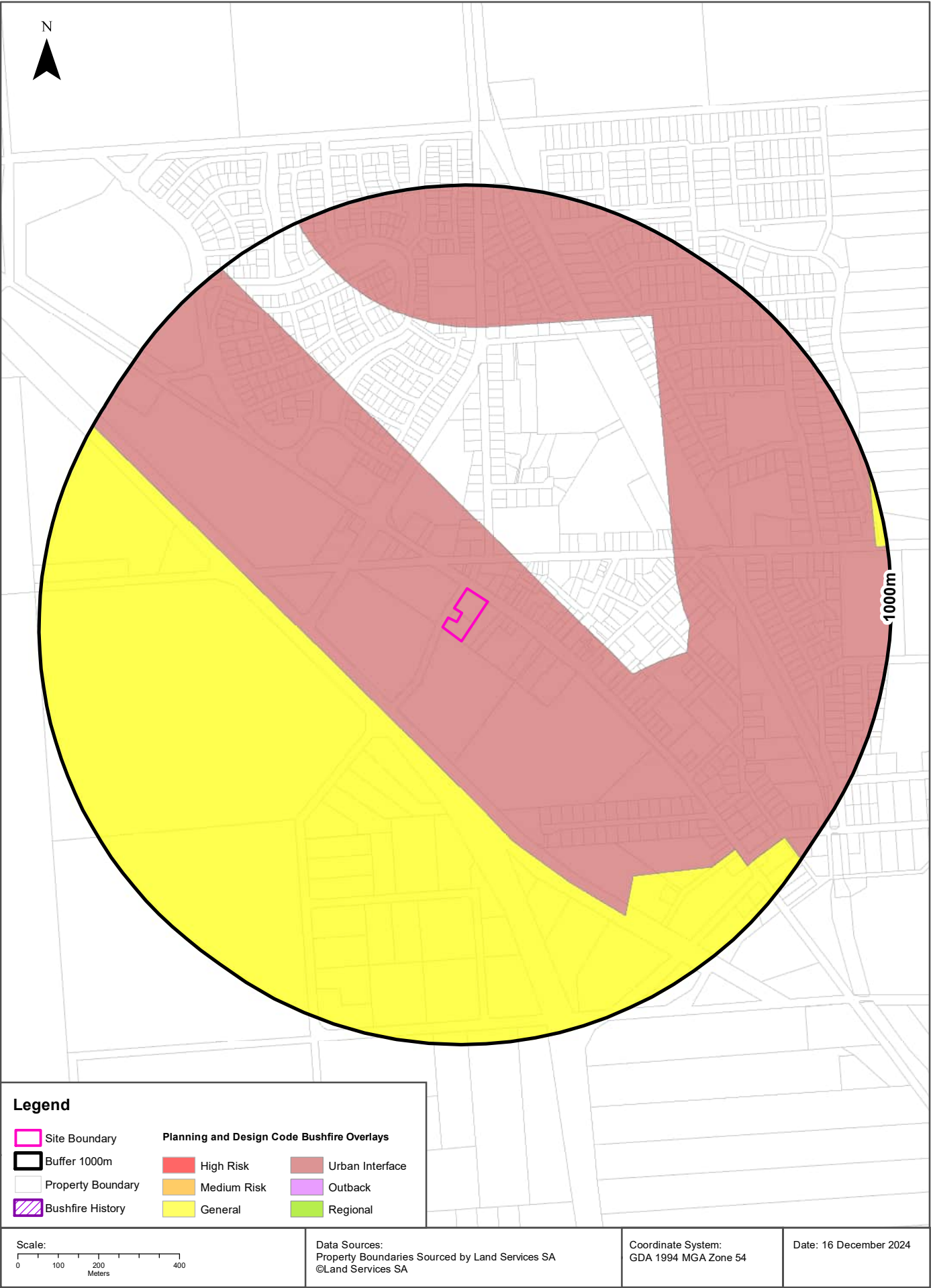
Aboriginal Land within the dataset buffer:

Map Id	Grant Date	Address	Locality	Description	Title	Distance	Direction
N/A	No records in buffer						

Aboriginal Land Data Source: Department of State Development, Resources and Energy - South Australia

Natural Hazards - Bushfire

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Natural Hazards

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Bushfire Overlays

Bushfire Overlays from the Planning and Design Code within the dataset buffer:

Overlay Id	Name	Description	Legal Start Date	Legal End Date	Distance	Direction
O2408	Hazards (Bushfire - Urban Interface)	The Hazards (Bushfire - Urban Interface) Overlay seeks to ensure urban neighbourhoods adjoining bushfire risk areas allow access through to bushfire risk areas, are designed to protect life and property from the threat of bushfire and facilitate evacuati	19/03/2021		0m	On-site
O2408	Hazards (Bushfire - General)	The Hazards (Bushfire - General) Overlay seeks to ensure development responds to the general level of bushfire risk by siting and designed buildings to mitigate threat and impact of bushfires on life and property and facilitate access for emergency servi	19/03/2021		251m	South West

Bushfire Overlays Data Source: Attorney-General's Department - South Australia

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Bushfires and Prescribed Burns History

Bushfires and prescribed burns within the dataset buffer:

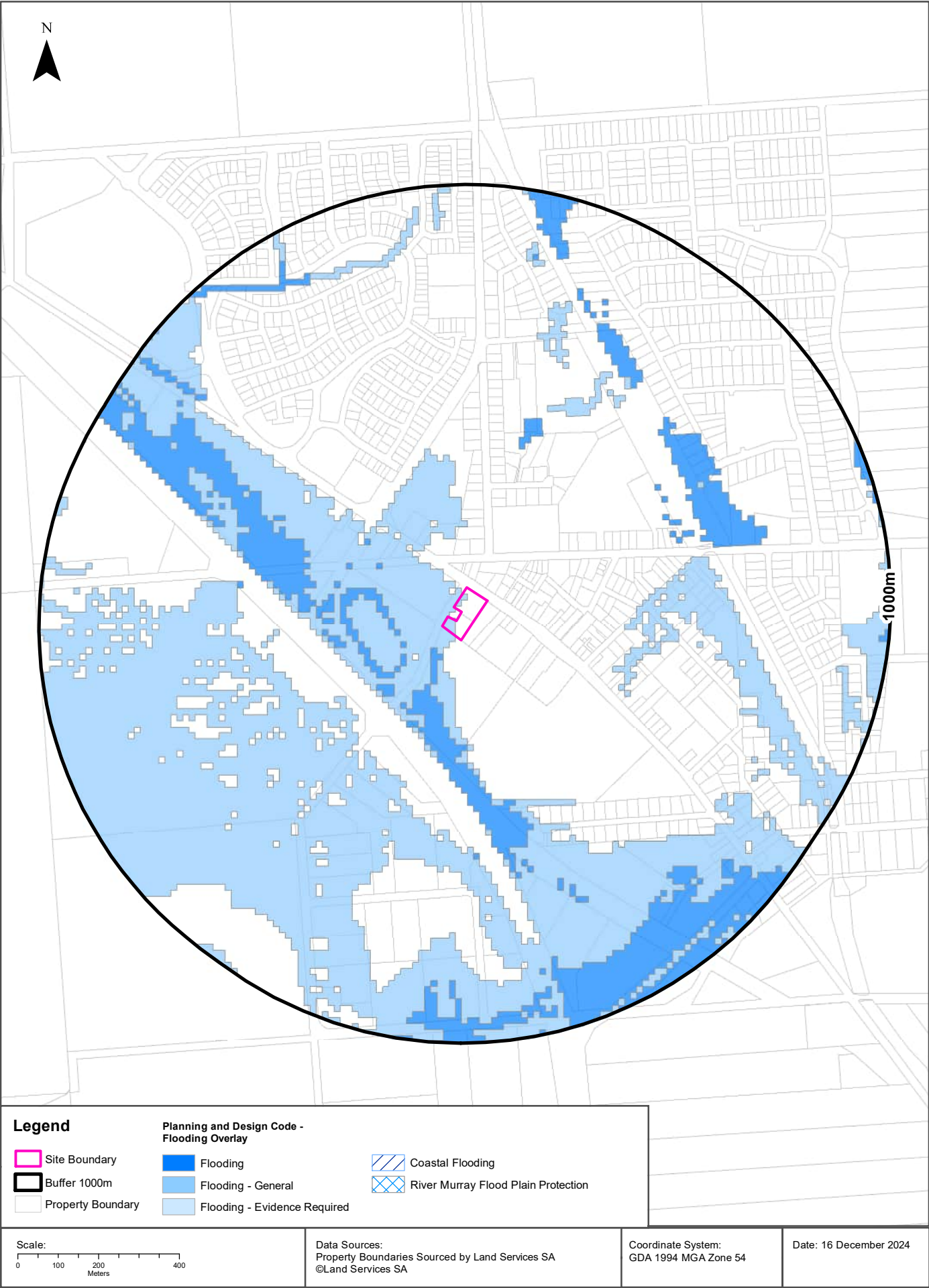
Map Id	Incident No.	Incident Name	Incident Type	Date of Fire	Area of Fire (ha)	Distance	Direction
N/A	No records in buffer						

Bushfires and Prescribed Burns History Data Source: Dept of Environment, Water and Natural Resources - South Australia

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Natural Hazards - Flood

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501



Natural Hazards

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Flooding Overlays

Flooding Overlays from the Planning and Design Code within the dataset buffer:

Overlay Id	Name	Description	Legal Start	Legal End	Distance	Direction
O2414	Hazards (Flooding - General)	The Hazards (Flooding - General) Overlay seeks to minimise impacts of general flood risk through appropriate siting and design of development.	29/02/2024		0m	On-site
O2403	Hazards (Flooding)	The Hazards (Flooding) Overlay seeks to minimise flood hazard risk to people, property, infrastructure and the environment.	29/02/2024		51m	South West

Flooding Overlays Data Source: Attorney-General's Department - South Australia

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Ecological Constraints

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Native Vegetation

Record ID	Vegetation Group	Vegetation Group Percentage	Structural Formation Description	Species and Stratum Details	Description of the Environment	Ground Truth Methodology	Capture Scale	Distance	Direction
N/A	No records within the buffer								

Department for Environment and Water Data Source: Native Vegetation Floristic Areas - NVIS - State-wide
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Ecological Constraints

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Collaborative Australian Protected Areas Database - Terrestrial

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

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

Collaborative Australian Protected Areas Database - Marine

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

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

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

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Groundwater Dependent Ecosystems Atlas

Type	Name	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer						

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

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Inflow Dependent Ecosystems Likelihood

Type	Name	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer						

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

Lot 51 Old Port Wakefield Rd and Lot 53 Wells Road, Two Wells, SA 5501

Ramsar Wetlands

What Ramsar wetland areas exist within the dataset buffer?

Wetland	Distance	Direction
No records in buffer		

Ramsar Wetlands Data Source: Dept of Environment, Water and Natural Resources - South Australia
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LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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