13 January 2023

Project# NE1295
Letter Reference# NE1295_Letter13January2023

Bathla Group
137 Gilba Road
Girraween, NSW 2145

Addendum Letter - contamination status of the small precinct of land for rezoning to R1

Attn.: Mr Paul Solomon / Ms Shoilee Iqbal

Planning Proposal (refer to Appendix A) seeks to amend Dubbo Regional Local Environmental Plan 2022 (LEP) to rezone a small precinct of land (Figure 1) from R2 Low Density Residential to R1 General Residential within proposed Lot 222 approved under D2022-11 at Lot 22, DP 1038924, 13L Narromine Road and Lot 7, DP 223428 Jannali Road, Dubbo, NSW. This letter aims to address and conclude the contamination status of the small precinct of land.

The small precinct of land (centrally located at GPS Coordinates: -32.236740, 148.564726), which is in the process of being rezoned from R2 Low Density Residential to R1 General Residential was formally assessed in a Contamination Site Investigation *"Preliminary Site Investigation Report, Ref# NE1295, Site Contamination Investigation Report, 13L Narromine Road (LOT 22, DP 1038924) and Lot 7 DP223428 Jannali Rd, Dubbo NSW 2830, Ref# NE1295, Rev (0) 16 June 2022"* for two (2) property titles, 13L Narromine Road (LOT 22, DP 1038924) and Lot 7 DP223428 Jannali Road, Dubbo NSW 2830, refer to Appendix B.

The conducted Preliminary Site Investigation's soil sampling and analysis program within the small precinct of land indicated a low risk of soil contamination, with all contaminants of interest within the Site Assessment Criteria (SAC). Heavy metal exceedances (copper, nickel and zinc) were encountered within the two (2) dam water samples within the small precinct of land.

It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed residential development and usage and the dam decommissioning can be performed once the Dam Decommissioning Reports have been issued as part of future development applications.

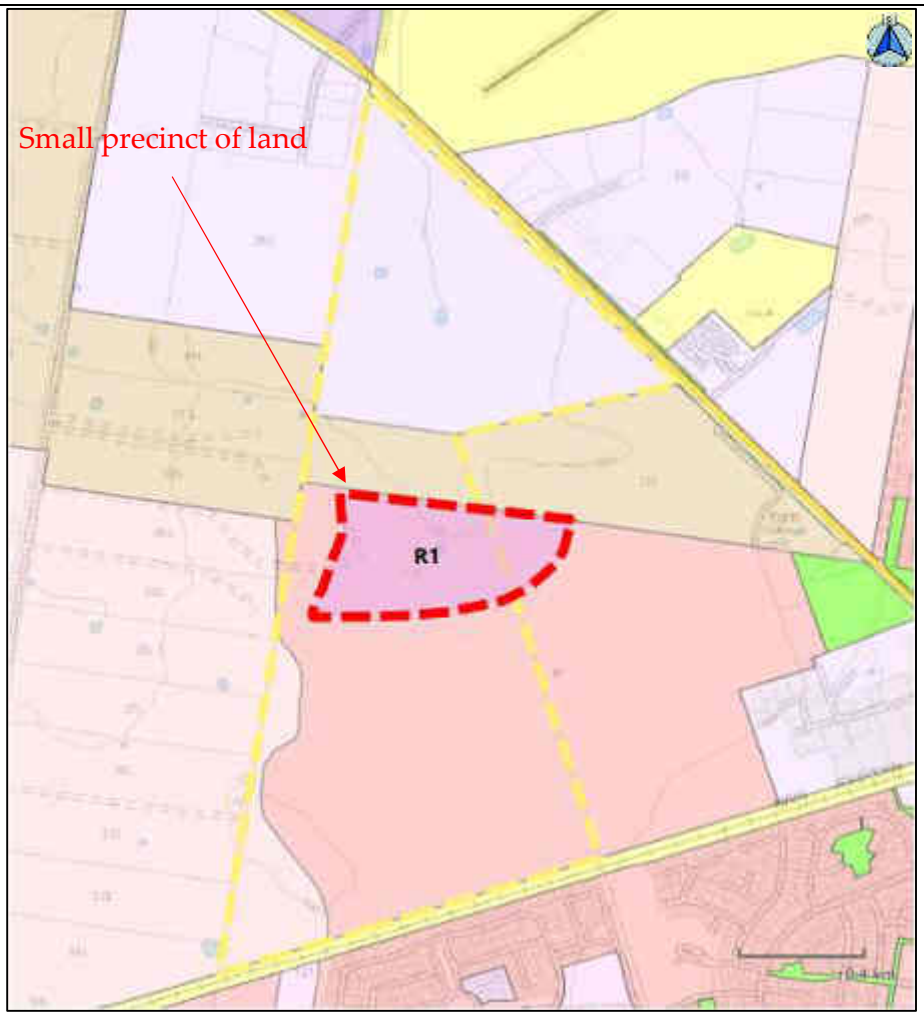

Figure 1 - Small precinct of land

For and behalf of

Geotesta Pty Ltd

Yours faithfully

Victor Kirpichnikov
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Member of the Australasian Land and Groundwater Association (ALGA)
Senior Environmental Consultant

Appendix A

Planning Proposal

Planning Proposal

R2 Low Density Residential to R1 General Residential (Small Lots) at Lot 22, DP 1038924, 13L Narromine Road and Lot 7 DP 223428, Jannali Road, Dubbo

Prepared for

The Bathla Group

By

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Acknowledgement of Country

GLN Planning Pty Ltd. respectfully acknowledges the Traditional Custodians of Country throughout Australia and recognises and respects their continuing cultural heritage, beliefs and connection to land, sea and community. We pay our respects to their Elders past, present and emerging. This land always was and always will be traditional Aboriginal Land.

Date of final issue:	9/09/2022
File Path:	C:\Users\PipHyde\GLN Planning Dropbox\Pip Hyde\Public\Projects\Active\11666 13L Narromine Road Dubbo\Planning Proposals\Planning Proposal R2 to R1-small lot\Planning Proposal FINAL.docx
Project Manager:	Peter Lawrence
Client:	Bathla
Project Number:	11666

Document History and Status

Version	Issue To	Qty	Date	Prepared by	Reviewed by
V1 Draft	Bathla (P.Solomon)	1-e	2.9.2022	P.Hyde	P.Lawrence
V2 Final	Lodgement	1-e	9.09.2022	P.Hyde	P.Lawrence

Table of Contents

Tables

Figures

Appendices

Executive Summary

This Planning Proposal seeks to amend Dubbo Regional Local Environmental Plan 2022 (**LEP**) to rezone a small precinct from R2 Low Density Residential to R1 General Residential within proposed Lot 222 approved under D2022-11 at Lot 22, DP 1038924, 13L Narromine Road and Lot 7, DP 223428 Jannali Road, Dubbo.

The rezoning will facilitate more housing diversity within the future residential estate with lots down to 300m^2 proposed within the R1 zoned land. The area to be rezoned is well connected being close to playing fields and linear parks, shops, TAFE and a potential future school site. The total area of R2 Low Density Residential land to be rezoned is approximately 23.3ha This includes all internal roads but excludes the external roads (arterial and sub-arterial) bordering the site.

As a nominated 'urban release area', Clause 6.3 of *Dubbo Regional Local Environmental Plan 2022* requires a DCP that includes measures to encourage higher density living around transport, open space and service nodes. This would not occur under the current R2 Low Density Residential Zoning without this Planning Proposal. This Planning Proposal applies to a small well located precinct to implement the outcomes expressed in Clause 6.3 of the LEP which are reinforced through the Local Strategic Planning Statement and broader Strategic Planning documents.

In addition to addressing the strategic framework to support the Planning Proposal, this report has also been informed by several technical studies that address the physical and urban capability of the land as a whole. They include:

- Aboriginal Heritage Assessment prepared by Apex Archaeology
- Environmental Noise Impact Assessment prepared by Acoustic Logic
- Biodiversity Development Assessment Report prepared by AEP
- Bushfire Constraints and Opportunities Assessment prepared by Building Code and Bushfire Hazard Solutions Pty Ltd
- Geotechnical Site Investigation Report prepared by Geotesta
- Preliminary Site Investigation Report prepared by Geotesta
- Water Cycle Management Strategy prepared by Maker Eng
- Traffic Assessment prepared by Amber
- Structure Plan prepared by Sitios
- Acoustic Report prepared by Acoustic Logic

Introduction

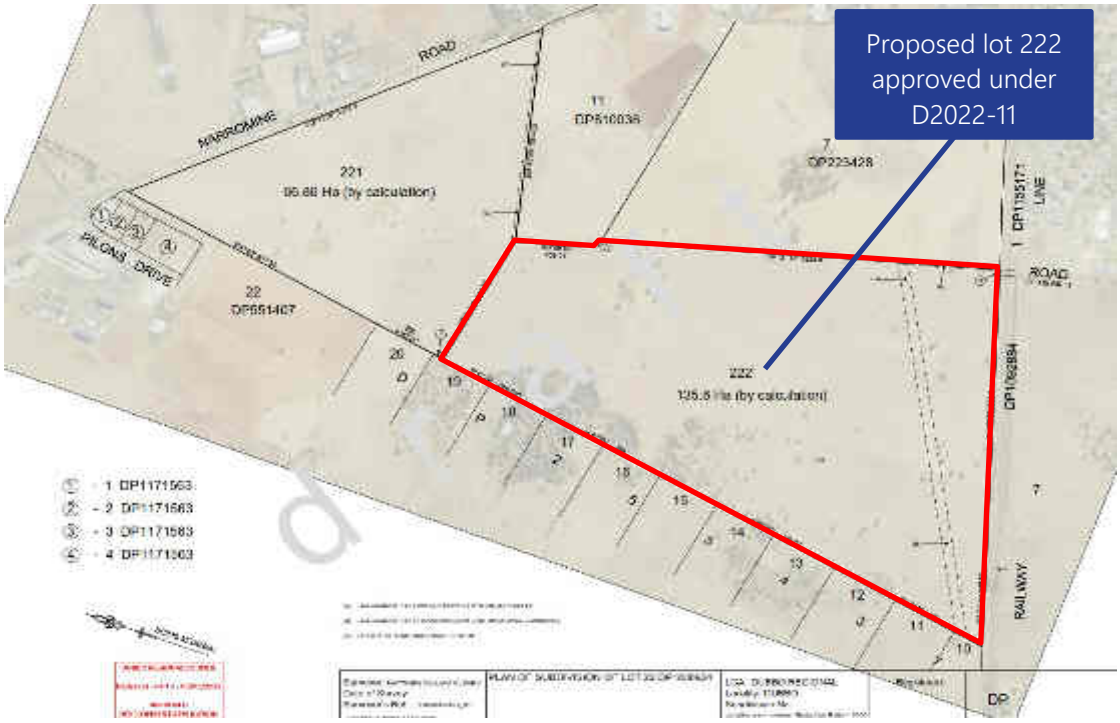
This Planning Proposal (**PP**) seeks to amend Dubbo Regional Local Environmental Plan 2022 (**LEP**) to rezone a small precinct from R2 Low Density Residential to R1 General Residential within proposed Lot 222 approved under D2022-11 at Lot 22, DP 1038924, 13L Narromine Road and Lot 7, DP 223428 Jannali Road, Dubbo. The rezoning will facilitate more housing diversity within the Estate with lots down to 300m^2. The area to be rezoned is well connected being close to playing fields and linear parks, shops, TAFE and a potential future school site. The total area of R2 Low Density Residential land to be rezoned is approximately 23.3ha This includes all internal roads but excludes the external roads (arterial and sub-arterial) bordering the site. Excluding the linear park which traverses centrally through the site, the area to be rezoned is approximately 22.4ha.

This PP has been prepared by GLN Planning for the Bathla Group (**Bathla**) as a proponent initiated PP for submission to Dubbo Regional Council (**Council**).

Background

Bathla has secured a significant parcel of land which will create a new urban area including both residential development and employment land uses. Council's Dubbo Transportation Strategy 2020 identifies future roads that will traverse through the site providing options for traffic to bypass the centre.

Lot 22 will be split into two properties under Development Consent D2022-11 granted by Council on 5 May 2022. This includes proposed lot 221 and proposed lot 222. A copy of the approved subdivision plan is illustrated within **Figure 1**. This rezoning relates to land within proposed Lot 222 and existing Lot 7 in DP 223428.



Source – ePlanning Spatial Viewer

Figure 1 Approved Subdivision Plan showing future Lot 222

The entire site will be progressively developed by the applicant under a range of applications to facilitate the delivery of works generally in accordance with the Structure Plan. The PP and other applications to be lodged with Council over the site include:

- This PP to rezone an area of R2 Low Density Residential to R1 General Residential to permit smaller and more diverse housing in a small precinct well located to the district park, shops, TAFE and potential future school site.
- A PP over proposed lot 222 for a minor zone boundary adjustment between the R2 Low Density Residential Zone and R5 Large Lot Residential Zone.
- A PP to rezone proposed Lot 221 from IN2 Light Industrial to B2 Local Centre and B5 Business Development Zones.
- A Development Application for subdivision of the land zoned IN2 Light Industrial (i.e., Proposed Lot 221) into superlots that could also serve a future Business Development and Local Centre Zoning including provision of roads and drainage.
- A Development Application for the Stage 1 residential subdivision of the R2 Low Density Residential Zone including parts of the arterial and sub arterial works and local park.
- Development Applications for subsequent stages including sports fields, local parks and extensions of roads as required.

Technical input and consultation

A formal pre-lodgement meeting was held on 3 August 2022 with preliminary comments provided from certain sections via email at **Appendix A**.

In addition to the pre-lodgement meeting, a memorandum was prepared on 8 April 2022 which outlined the strategy and planning pathways to deliver housing diversity. This document was submitted to Council for consideration and is attached at **Appendix B**.

This report has also been informed by several technical studies that address the physical and urban capability of the land. They include:

- Aboriginal Heritage Assessment prepared by Apex Archaeology
- Environmental Noise Impact Assessment prepared by Acoustic Logic
- Biodiversity Development Assessment Report prepared by AEP
- Bushfire Constraints and Opportunities Assessment prepared by Building Code and Bushfire Hazard Solutions Pty Ltd
- Geotechnical Site Investigation Report prepared by Geotesta
- Preliminary Site Investigation Report prepared by Geotesta

- Water Cycle Management Strategy prepared by Maker Eng
- Traffic Assessment prepared by Amber
- Structure Plan prepared by Sitios
- Acoustic Report prepared by Acoustic Logic

Structure of the Planning Proposal report

The DPE's *Local Environmental Plan Making Guideline* (2021) outlines the steps in progressing a PP through to finalisation as summarised in **Table 1**.

Table 1 Local Environmental Plan Making Guideline 2021 - Steps

No	Step	Explanation
1	Pre-lodgement	Early analysis of the development potential of the relevant land including key environmental or site constraints, review of the strategic planning framework, obtaining advice and consultation with authorities and government agencies and identification of study requirements to underpin a planning proposal.
2	Planning Proposal	Where the planning proposal has been initiated by a proponent, council is to review and assess the planning proposal and decide whether to support and submit it to the Department for a Gateway determination.
3	Gateway Determination	Department assesses the strategic and site-specific merit of a planning proposal and issues a Gateway determination specifying if the planning proposal should proceed and whether consultation with authorities and government agencies is required
4	Post Gateway	Actioning Gateway determination conditions PPA reviews the Gateway determination and actions any required conditions prior to public exhibition.
5	Public Exhibition and Assessment	Consultation with the community, key authorities and government agencies (as required). Review of the planning proposal to address conditions of Gateway determination and submissions.
6	Finalisation	Final assessment of the planning proposal and if supported, preparation of the draft LEP, review and finalisation. Once finalised, the LEP may be made, notified and come into effect.

A PP must also include the following components as set out within Section 3.33(2) of the *Environmental Planning and Assessment Act 1979:*

- Part 1 – Objectives and intended outcomes which should include a statement of the objectives of the proposed LEP
- Part 2 – Explanation of provisions which should provide an explanation of the provisions that are to be included in the proposed LEP
- Part 3 – Justification of strategic and site-specific merit which must provide justification of strategic and potential site-specific merit, outcomes, and the process for implementation

- Part 4 – Maps which are to identify the effect of the PP and the area to which it applies
- Part 5 – Community consultation which details the community consultation that is to be undertaken on the PP
- Part 6 – Project timeline which details the anticipated timeframe for the LEP making process in accordance with the benchmarks in this guideline

The following sections of this Report address this structure.

The Site and Locality

Site Location

This PP relates to a future precinct within proposed Lot 222 approved under D2022-11 at Lot 22, DP 1038924, 13L Narromine Road and Lot 7, DP 223428, Jannali Road Dubbo (**Figure 2**).

The site is located approximately 3.5km from Dubbo City Centre and is accessed by Narromine Road which runs along the north-eastern boundary of the site.

Source: Six Maps

Figure 2 Subject site

Site Description

The site has an overall area of 202.46ha with future lot 222 under D2022-11 having an area of 135.6ha. The frontage to Narromine Road measures 1.37km with the site also sharing a boundary to the south with the railway line measuring 1.24km.

The site currently contains a dwelling and several outbuildings which are located midway along the western boundary within a group of trees. Topographically the land is relatively flat with about half

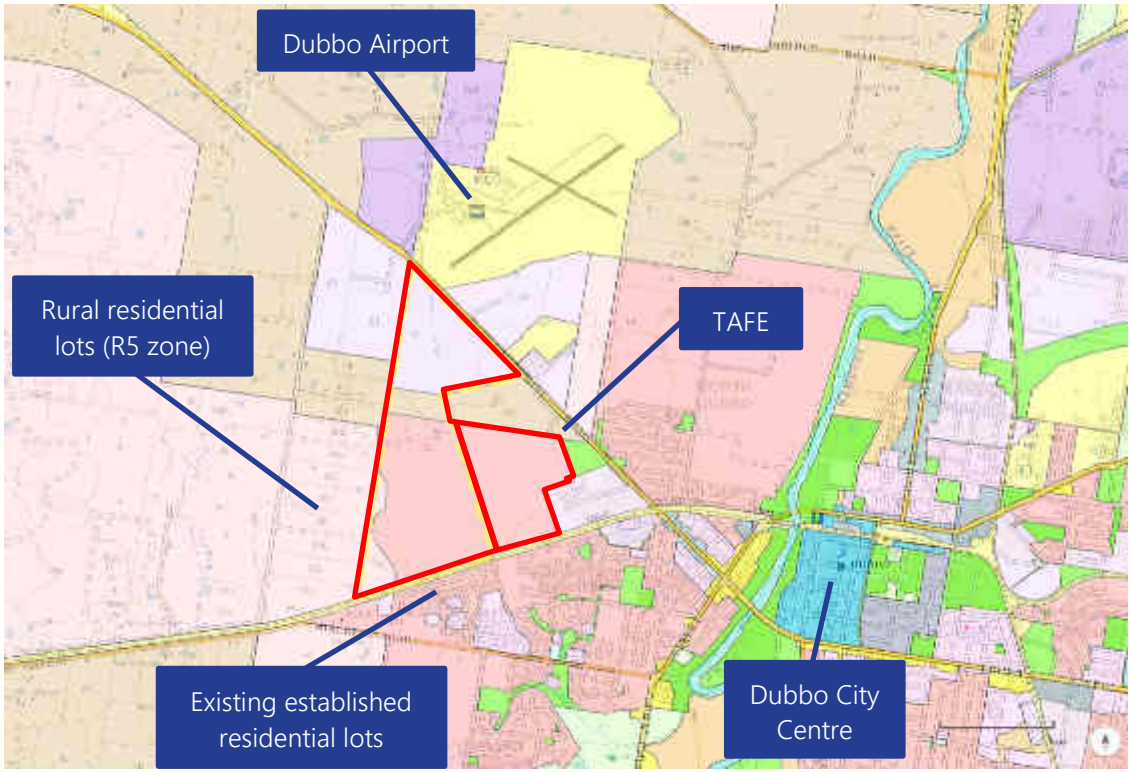
the drainage from the site being conveyed toward the north west corner at Narromine Road while the other half drains to the south.

The site is predominantly comprised of open grassland. There is an existing group of trees along the western boundary with other isolated trees located within the site. The biodiversity values of the grassland are discussed later in Part 3 of this report.

Surrounding Locality

Surrounding the site are a number of different land uses (**Figure 3**). These include:

- Dubbo TAFE (Narromine Road) to the east
- Future sports field site to the north of the area to be rezoned
- Dubbo Airport which is located further north on the opposite side of Narromine Road
- Light industrial zoning at the northern end of the site which is to be subject to a separate PP to amend this zoning from IN2 Light Industrial to part B2 Local Centre Zone and part B5 Business Development
- Existing residential lots to the south of the site on the southern side of the railway line
- Rural residential properties to the west currently zoned R5 Large Lot Residential.



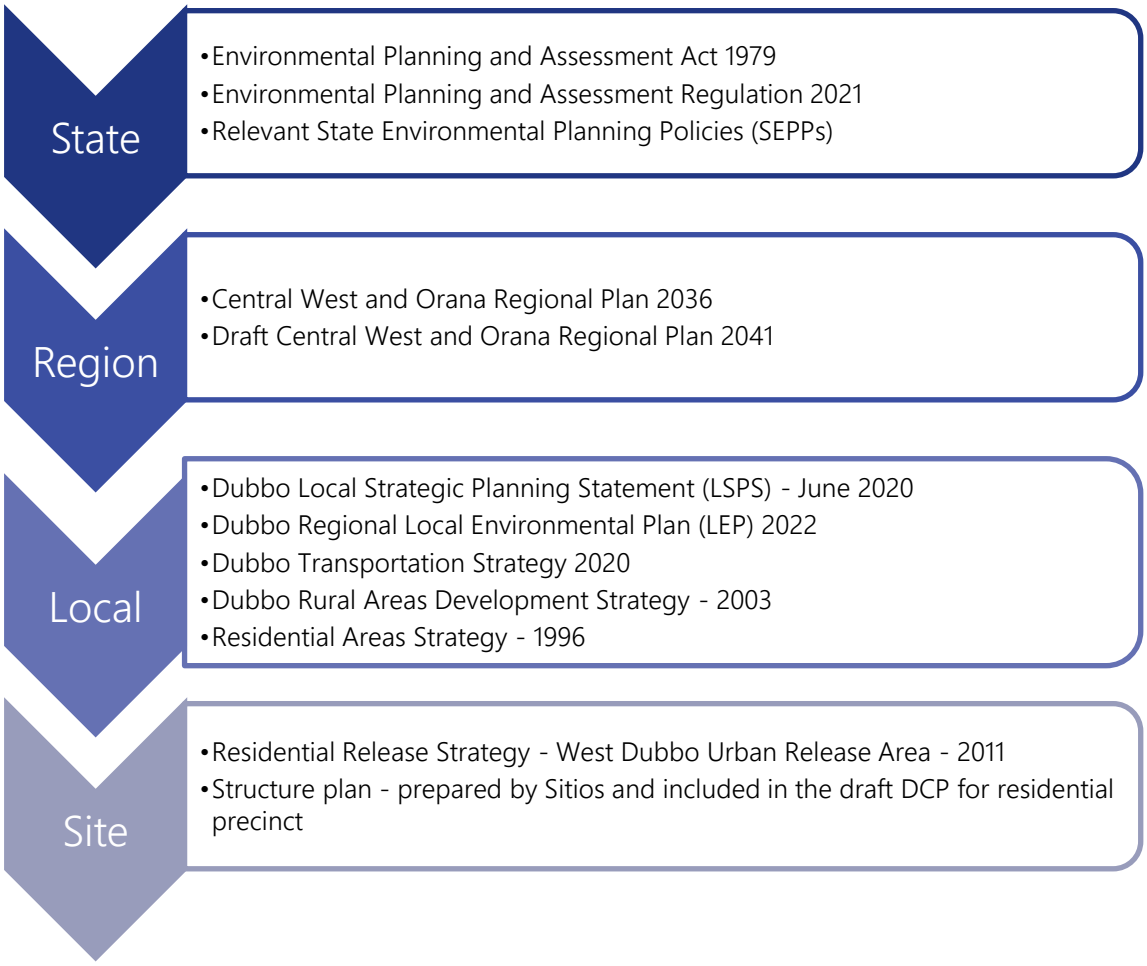
Source: ePlanning Viewer

Figure 3 Surrounding locality

Planning context

Strategic planning background

An overview of the relevant strategic planning documents applying to the site and this rezoning is outlined within **Figure 4**.

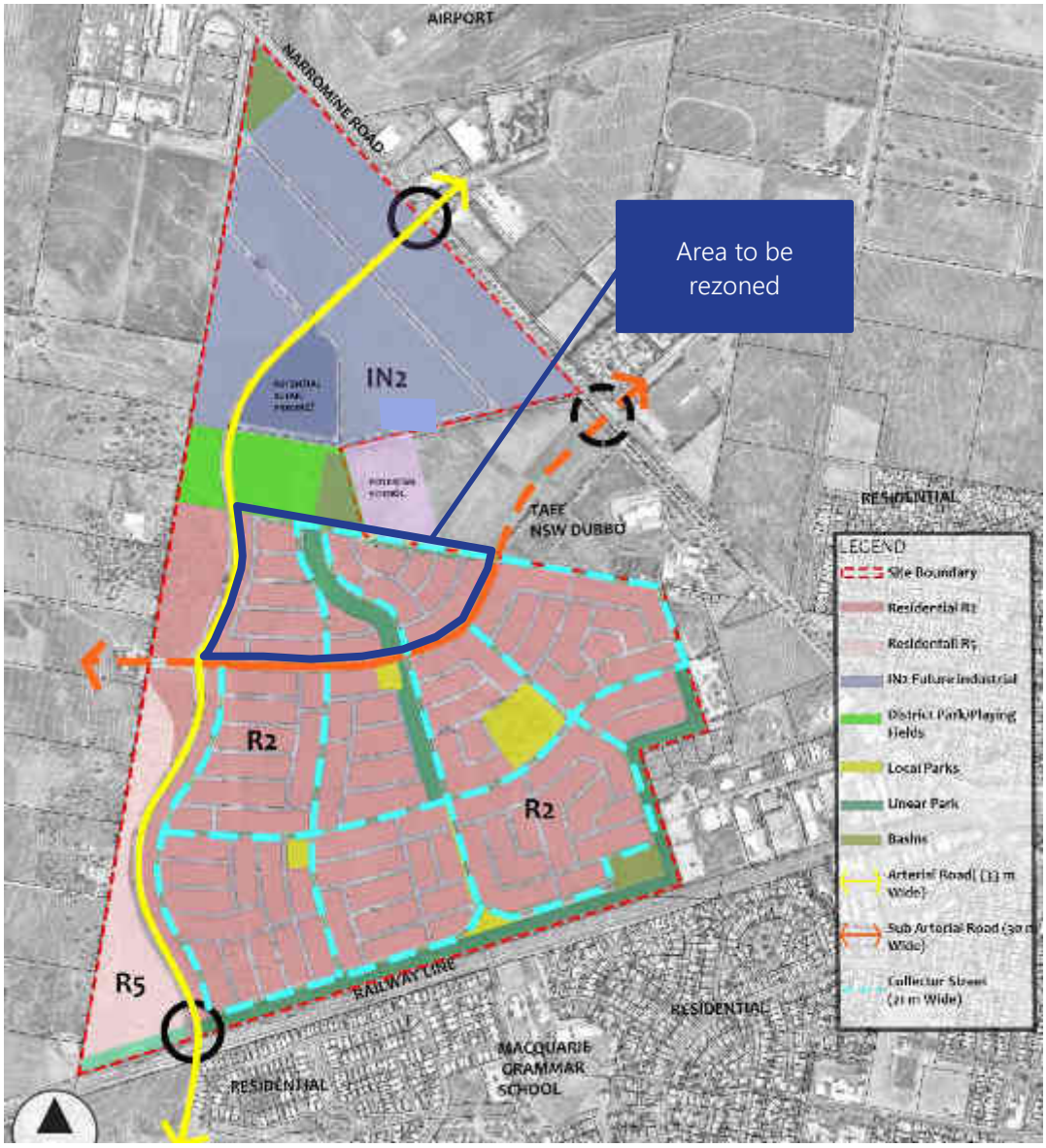


Source: GLN Planning

Figure 4 Overview of strategic Planning Policies applying to this rezoning

The site is located within the West Dubbo Urban Release Area (**WDURA**). The West Dubbo Residential Release Strategy was adopted by Council in March 2011. This Strategy informed the basis of the land use zoning and planning controls adopted under Dubbo Regional LEP 2022.

The Structure Plan, prepared by Sitios, for the Bathla site in relation to the R2 Low Density Residential Zone is illustrated at **Figure 5**. It shows the urban release of land including low density residential at the southern end of the site, employment type uses to the north and a new district sports field adjacent to Dubbo TAFE (Narromine Road site) which also has potential for a future school site.



Source – Sitios

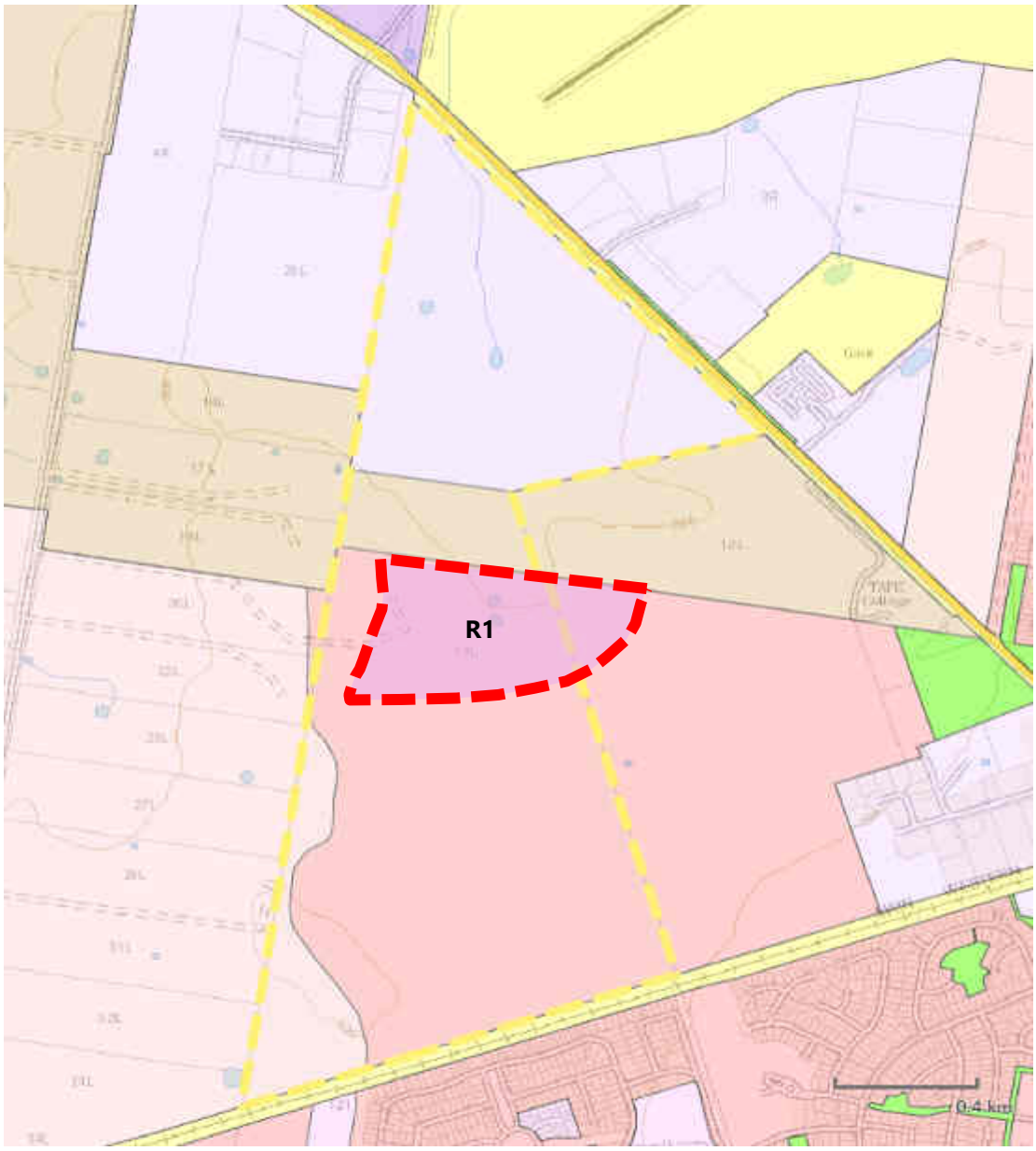
Figure 5 Structure Plan

As illustrated within the Structure Plan, the area subject to this Planning Proposal is located at the northern end of the residential zoned land adjacent to key infrastructure including open space and linear parks, a potential school, future employment uses and Dubbo TAFE. The site is contained and separated from the remaining residential land by the strategic road along the western boundary that diverts to traverse through the centre of the residential land and then northwards through the TAFE site towards Narromine Road.

An opportunity was identified within this urban release area to increase housing diversity and deliver a wider range of lots throughout the Precinct. This includes providing smaller lots, down to 300m^2, which allows people to downsize in areas that are well connected. It also better reflects the need for smaller housing with the 2021 census data identifying the average number of people per household

within the Dubbo LGA is 2.5 persons. Despite this, 41.7%[1] of people occupy a 4+ bedroom house within the LGA with 27.2% of households occupied by single (lone) persons.

The area subject to this rezoning is identified within **Figure 6**. It relates to a total area of 23.3ha of R2 Low Density Residential zone which is proposed to be rezoned to R1 General Residential with a minimum lot size of 300m^2. This includes all internal roads but excludes the external roads (arterial and sub-arterial) bordering the site.



Source: NSW Planning viewer

Figure 6 Proposed rezoning

[1] ABS Census 2021. https://abs.gov.au/census/find-census-data/quickstats/2021/SED10026

This PP is submitted following further investigations which have identified an opportunity for smaller lots to be created within a well-connected area in close proximity to the playing fields and linear spaces which provides active transport links to other areas and parks, shops, TAFE and potential future school. The intent is to provide housing diversity as part of this new residential estate to facilitate a range of lot sizes to accommodate different housing product to attract buyers at different price points.

As the land is in a nominated 'urban release area', Clause 6.3 of the LEP requires a DCP that includes measures 'to encourage higher density living around transport, open space and service nodes'. This would not occur under the current R2 Low Density Residential Zoning without this Planning Proposal. This Planning Proposal applies to a small well-located precinct to implement the outcomes expressed in Clause 6.3 of the LEP which are reinforced through the Local Strategic Planning Statement and broader Strategic Planning documents. This area has been deferred from the DCP relating to the remaining residential lands with a view that appropriate standards will be added to the DCP when this Planning Proposal is finalised.

Part 1 – Objectives of the Planning Proposal

The objective and intended outcomes of this Planning Proposal are as follows:

Objective

The objective of this PP is to amend Dubbo Regional LEP 2022 to rezone a precinct of land from R2 Low Density Residential to R1 General Residential. The precinct is bound by the proposed strategic north-south road in the west, the east west connection through the residential areas in the south, and the playing fields park, TAFE and potential future school in the north. The precinct is located partly within proposed Lot 222 approved under D2022-11 at Lot 22, DP 1038924, 13L Narromine Road and part Lot 7, DP 223428, Jannali Road, Dubbo.

The rezoning relates to a total area of 23.3ha which is currently zoned R2 Low Density Residential and is proposed to be rezoned to R1 General Residential. This includes all internal roads but excludes the external roads (arterial and sub-arterial). The rezoning would provide more opportunities for housing diversity through either smaller built form and/or the introduction of a new minimum lot size within the R1 zone down to 300m^2 per lot.

Intended Outcomes

- To rezone the precinct from R2 Low Density Housing to R1 General Residential.
- To provide appropriate planning controls to guide future development including a minimum lot size of 300m^2.
- To provide site specific controls for developing future residential lots within the precinct subject to this rezoning

Part 2 – Explanation of provisions

This section provides a detailed statement of how the objectives or intended outcomes will be achieved by amending an existing LEP.

Intended Provisions

The objectives can be achieved by amending the Land Zoning Map (Tile LZN_001A and LZN_002A) for Dubbo Regional LEP 2022 to show the land currently zoned R2 Low Density as R1 General Residential. It also requires an amendment to the Lot Size Map (Tile LZN_001A and LZN_002A) so that the minimum lot size relating to the land to be rezoned is shown with a minimum lot size of 300m^2.

The existing and proposed changes to Dubbo Regional LEP 2022 are shown within **Figure 7** to **Figure 10**

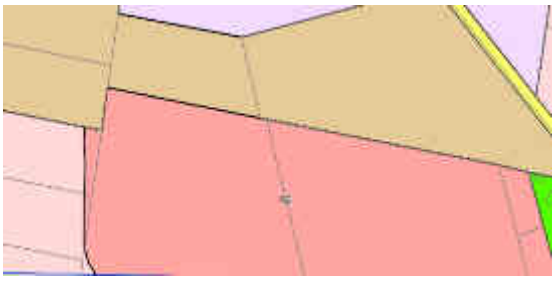


Figure 7 Existing land use zoning

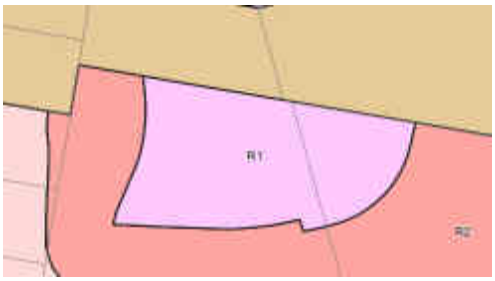


Figure 8 Proposed land use zoning

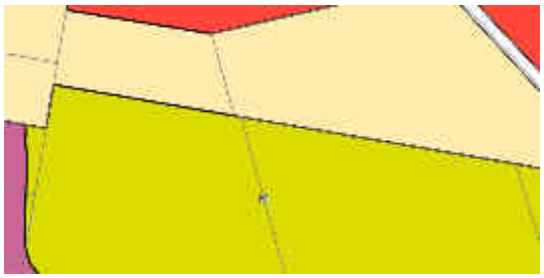


Figure 9 Existing lot size map

Figure 10 Proposed lot size map

The site is not subject to a FSR or maximum height of buildings. Therefore, no other provisions of Dubbo Regional LEP 2022 require amending. The LEP already includes the R1 General Residential land use zone within the Land Use Table. The land use objectives along with permitted and prohibited development are outlined within **Table 2** which would apply to the site to be rezoned.

Table 2 R1 Land Use Table

R1 Land Use Table	
1. Objectives of the R1 zone	○ To provide for the housing needs of the community. ○ To provide for a variety of housing types and densities. ○ To enable other land uses that provide facilities or services to meet the day to day needs of residents. ○ To ensure development is consistent with the character of the immediate locality.
2. Permitted without consent	Environmental protection works; Home-based child care; Home occupations; Roads
3. Permitted with consent	Attached dwellings; Boarding houses; Centre-based child care facilities; Community facilities; Dwelling houses; Group homes; Home industries; Hostels; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Residential flat buildings; Respite day care centres; Restaurants or cafes; Semi-detached dwellings; Seniors housing; Sewage reticulation systems; Shop top housing; Tank-based aquaculture; Water reticulation systems; Any other development not specified in item 2 or 4
4. Prohibited	Advertising structures; Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Extractive industries; Farm buildings; Farm stay accommodation; Flood mitigation works; Forestry; Freight transport facilities; Function centres; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Jetties; Local distribution premises; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sewerage systems; Sex services premises; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities; Wholesale supplies

It is intended that any new controls for this land will be incorporated into the draft Clearmont Rise DCP already submitted to Council for the remainder for the land to apply to this area once rezoned. The key planning controls to guide development on blocks down to 300m^2 is provided at **Appendix C**.

Part 3 – Justification

This section provides a detailed assessment of the proposal's strategic and site-specific merit to determine whether the PP should be supported.

The following sections discuss the considerations within the Department's *Local Environmental Plan Making Guidelines* for determining the strategic merit.

Section A – Need for the Planning Proposal

Is the Planning Proposal a result of an endorsed LSPS, strategic study or report?

Yes, the PP is consistent with the Dubbo Local Strategic Planning Strategy (**LSPS**) which was adopted by Council in 2020, the Residential Release Strategy – West Dubbo Urban Release Area adopted by Council on 28 March 2011 and the Dubbo Transportation Strategy 2020 adopted 25 October 2021.

The *Residential Release Strategy – West Dubbo Urban Release Area* was adopted by Council in 2011. It identifies the southern end of the site, generally consisting of future Lot 222, as forming part of the 'south west district' which is identified to assist in contributing to the future housing supply and zoned residential areas.

Since the Residential Release Strategy was prepared, planning for the area has progressed with the area having now been rezoned. While this Strategy informed the initial base justification for the rezoning, more detailed and up to date Policies have been released including the Dubbo LSPS.

As illustrated within **Figure 11**, the rezoning is consistent with the LSPS with the rezoning located within the boundaries of the identified Urban Release Area (**URA**).

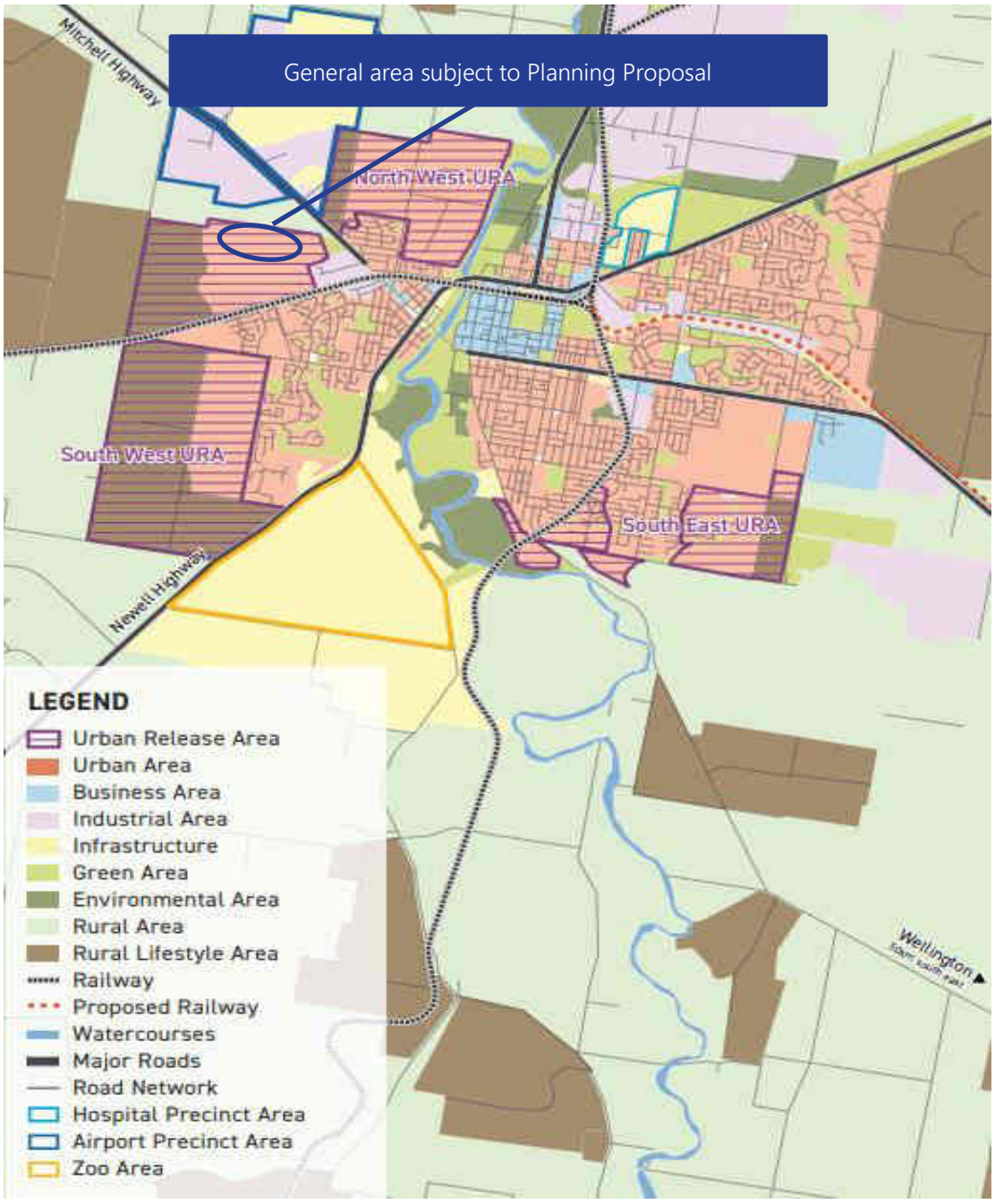
Dubbo LSPS identifies that '*there is a need to cater for shifting demographic trends, and respond to increased demand for smaller lots and dwelling sizes to ease rental and mortgage stress, particularly for families, lone person households, seniors, students, workers and those in need of housing.*'

Planning Priority 12 'Create sustainable and well-designed neighbourhoods', Action 12.3 requires the preparation of a Structure Plan for the North West Urban Release Area. This Structure Plan is to consider the key planning objectives as outlined within the LSPS as detailed below:

- Providing a range of lot sizes to cater for the different demographics and changing needs of the community and to encourage diversity
- Planning for new housing with high accessibility to pedestrian, cycling and transport links.
- Provide active transport options in new residential areas.
- Prepare local design guidelines for housing that mitigates and adapts to climate change impacts.
- Limit urban sprawl by directing new residential development to established residential zones and urban expansion areas.
- Ensure functional open space is provided for increased housing and population growth.

This PP is consistent with the Structure Plan prepared by Sitios and the LSPS objectives detailed above.

It will provide for housing diversity within the URA which aims to create smaller lots (300m^2+) around key areas with good connections to the local shops, parks, Dubbo TAFE, employment uses and a potential future school. This better utilises this infrastructure and provides more variety in lot sizes throughout the URA which can target different price points in the housing market to suit more potential buyers.



Source: Dubbo LSPS

Figure 11 Dubbo LSPS – Urban Release Areas

In addition, the provision of smaller lots within the market better reflects the 2021 Census data which identifies:

- the average number of people per household is 2.5.
- the average number of bedrooms per dwelling is 3.3.
- up to 27.2%[2] of households are occupied by single (lone) persons
- 40.5% of coupled families have no children at home

This data demonstrates that larger dwellings are not necessary required with an oversupply of larger houses (determined by the number of bedrooms) in comparison with the average number of people per household. Further, a large portion of dwellings within Dubbo are either occupied by single (lone) persons or a couple with no children at home and therefore do not necessarily require large houses on big lots to accommodate their needs.

Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes, the PP is the only way of achieving the objectives and intended outcome. The proposed amendments are required to update the Land Zoning Map and Minimum Lot Size Map to apply the relevant planning controls and guide future development.

It is intended that the DCP for the remainder of this release include a section providing key controls to guide development within this area and specifically on smaller lots sizes as outlined within **Appendix C**.

While dual occupancies are permissible and enable the only other form of housing diversity within the Precinct on lots potentially down to 300m^2, they are considered to have limited impact on housing diversity. This is due to this type of housing needing to construct housing products prior to subdivision occurring with built form typically designed to mirror the housing product which can be incompatible with other dwellings within the street. As such it can deter both developers and residents from this type of housing in contrast to single dwellings on smaller lots.

Section B – Relationship to the strategic planning process

Will the planning proposal give effect to the objectives and actions of the applicable regional or district plan or strategy (including any exhibited draft plans or strategies)?

Yes. The PP supports the intended outcomes within both the existing Central West and Orana Regional Plan 2036 and draft Central West and Orana Regional Plan 2041 (**draft CWORP**).

- **Objective 7** of the draft CWORP aims to provide well located housing options to meet demand. This includes an adequate supply of affordable, well-designed housing in places where people want to live.

[2] ABS Census 2021 - https://abs.gov.au/census/find-census-data/quickstats/2021/SED10026

The site is located around 3.5km from Dubbo town centre and is a planned expansion of the city forming part of the West Dubbo URA. The site, once developed, will be well connected, and be supported by employment opportunities to the north of the site and will be well connected to open space, linear parks and a potential future school site.

This PP will provide for additional housing opportunities in a well-connected area with good connectivity to future planned infrastructure. By reducing the minimum lot size down to 300m^2 in this area, it will increase the housing diversity within the Precinct and attract different purchasers at different price points in the market to accommodate a larger pool of purchasers. This is considered to provide a benefit to the availability of housing choice within Dubbo.

- **Objective 8** of the draft CWORP aims to plan for diverse, affordable, resilient and inclusive housing. This relates to aspects such as lot sizes, the type of dwelling, number of bedrooms and suitability of accommodation for different people within the community.

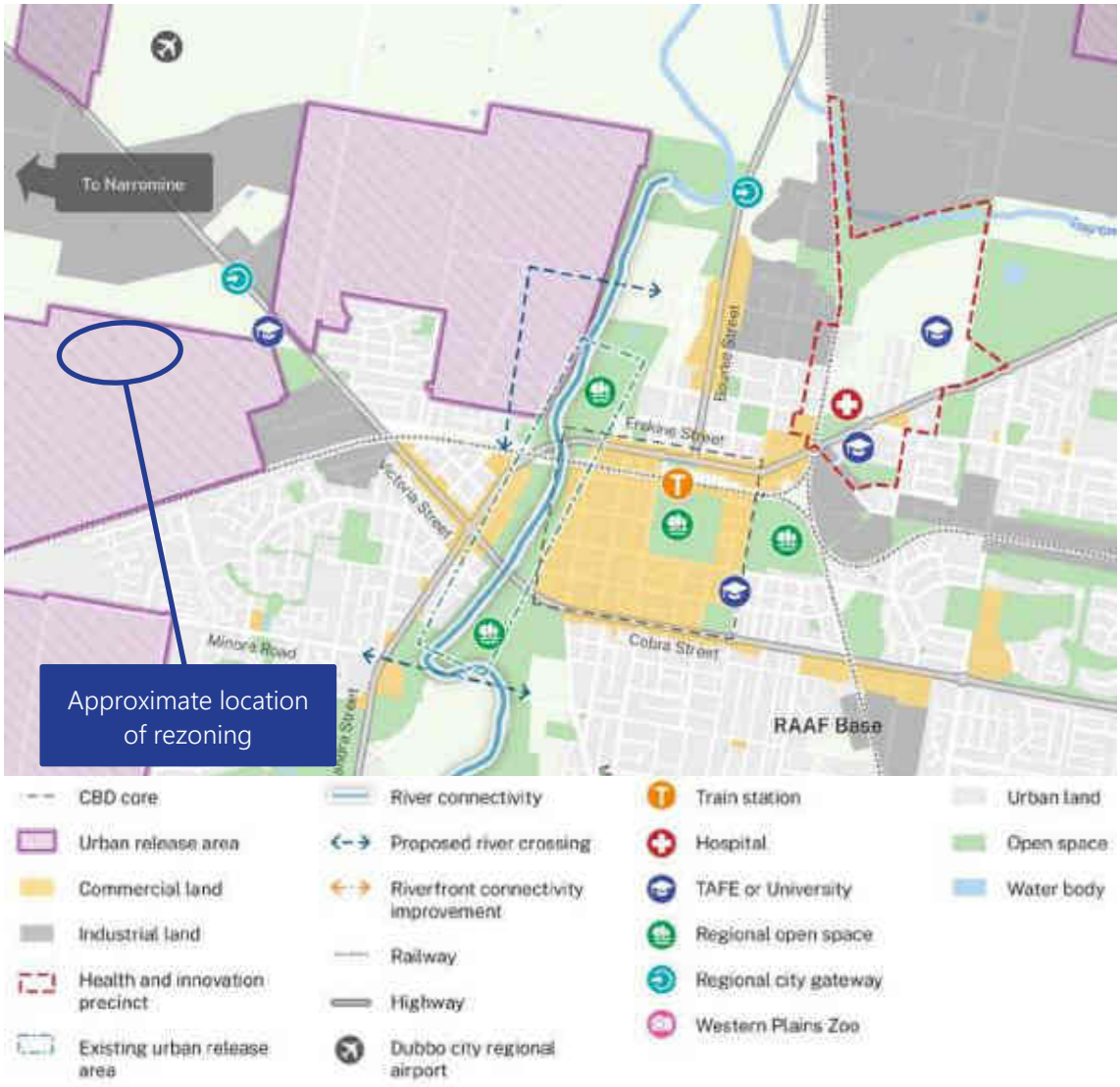
  This PP will introduce a new lot size within the area to provide for properties with a minimum lot size down to 300m^2. While this lot size is not uncommon in new greenfield subdivisions, the majority of Dubbo town centre has a minimum lot size of 600m^2. Although there are small isolated pockets within Dubbo that have a minimum lot size of 300m^2, these areas are limited.

  This PP provides an opportunity to introduce a new area with smaller lots sizes in an appropriate setting to provide residents with more choice in the housing market. The introduction of new lot sizes also brings new dwelling designs and housing options which can attract a larger range of purchasers for reasons including but not limited to downsizers, first home buyers trying to get on the property ladder and residents living in single (lone) households. As such, this PP is considered achieve the intent of Objective 8.

- **Objective 19** of the draft CWORP aims to strengthen Bathurst, Dubbo and Orange as innovative and progressive regional cities. This includes focusing on the provision of new residential development in and around CBDs which will support population growth. Relevant to this PP is the strategic focus for Dubbo to '*facilitate new residential development in the existing urban release area and new development areas in Dubbo's north west, south west and south east.*'[3]

  As illustrated within **Figure 12** the rezoning is located within the identified URA and will provide for increased density through the introduction of a new minimum lot size down to 300m^2 around planned infrastructure including shops, open space and education uses. This is consistent with objective 19 for the planned expansion of new residential development within Dubbo.

[3] Draft Central West and Orana Regional Plan 2041, Page 81



Source: DPE - draft Central West and Orana Regional Plan 2041

Figure 12 Dubbo City Centre Plan

Is the planning proposal consistent with a council LSPS that has been endorsed by the Planning Secretary or GSC, or another endorsed local strategy or strategic plan?

Yes, this PP is consistent with the Dubbo LSPS and will assist in the delivery of housing as part of the West Dubbo URA – refer to Section A '*Is the Planning Proposal a result of an endorsed LSPS, strategic study or report'* on Page 14.

Is the planning proposal consistent with any other applicable State and regional studies or strategies?

The PP is broadly consistent with Future Transport Strategy 2056 which seeks greater consideration of providing social and physical infrastructure required by future residents in release areas without relying on cars. The co-location of this infrastructure, as proposed in the Structure Plan, will provide for good active transport links and opportunities for public transport noting the site is bound by the

future arterial road and sub-arterial road. Additionally, future residents of this area will be within walking distance of future district and linear parks, employment uses and a potential future school site which will assist to reduce the reliance on private vehicles.

Is the planning proposal consistent with applicable SEPPs?

The PP has been reviewed against the provisions of relevant State Environmental Planning Policies (**SEPP**s) to confirm the outcomes would be consistent and not compromise future applications once rezoned – refer to **Table 3** .

Table 3 Assessment against relevant SEPPs

SEPP Title	Comment
State Environmental Planning Policy (Biodiversity and Conservation) 2021	The Planning Proposal does not include any provisions which impede the operation of this SEPP over the subject land.
Ch 2 Vegetation in non-rural areas	This chapter is applicable to the PP as involves a change from R2 Low Density Residential to R1 General Residential zone which is captured within the relevant non-rural zones identified under s2.3(1)(b) of the Biodiversity Conservation SEPP. The development and rezoning of the site aligns with the West Dubbo Urban Release Area and Structure plan prepared for the Precinct albeit with a reduced lot size down to 300m^2. No additional impacts are proposed from that previously considered when the site was rezoned to R2 Low Density Residential which would necessitate the clearing of some native vegetation in order to develop the site in the future. The proposed clearing required over the site for roads or subdivision may exceed the biodiversity offset scheme threshold. Therefore, as part of any future development application over the site, Bathla will engage an accredited assessor to prepare a Biodiversity Development Assessment Report (**BDAR**) who will apply the biodiversity assessment method (**BAM**) to assess the impacts of the proposal on the biodiversity. This will be further addressed as part of the DA process as it relates to a wider site context and will confirm the off-sets required in association with the required impacts to this existing native vegetation.
State Environmental Planning Policy (Resilience and Hazards) 2021	The Planning Proposal does not include any provisions which impede the operation of this SEPP over the subject land.
Ch 4 Remediation of land	Preliminary Investigations identify minor potential for contaminants associated with the former agricultural use of the land. However, this is not identified to prevent the proposed rezoning of the area from R2 to R1.
State Environmental Planning Policy (Transport and Infrastructure) 2021	The Planning Proposal does not include any provisions which impede the operation of this SEPP over the subject land.
Ch 2 Infrastructure	The Mitchell Highway (Narromine Road) is a classified road. Any development with frontage to a classified road must consider safe access to and operation of the classified road. Development listed in Schedule 2 of the SEPP is required to be assessed as 'Traffic Generating Development'. Further, future development would also need to consider

SEPP Title	Comment
	safety, noise and vibration impacts from the railway line located along the southern boundary of the site. These provisions would apply to the future development of the land under the DA process and do not impact this rezoning application. An Acoustic Report has been prepared to investigate the potential noise impacts with appropriate recommendations provided to mitigate noise from the arterial and sub-arterial road on the subject area to be rezoned.
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008	Exempt and complying development under this SEPP will continue to apply as relevant to the individual site.

Is the planning proposal consistent with applicable Ministerial Directions (section 9.1 Directions)

The Minister for Planning and Environment issues Local Planning Directions that Councils must follow when preparing a PP. This PP is generally consistent with the Section 9.1 directions. **Appendix D** provides a statement of consistency against each of the directions.

Section C – Environmental, social and economic impact

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected because of the proposal?

The area subject to this rezoning is already zoned R2 Low Density Residential and the Planning Proposal seeks to rezone a well located definable precinct within this area to R1 General Residential.

Preliminary ecological investigations for the Precinct identify the following species may be impacted as a result of future development works:

- PCT 511 – Queensland Bluegrass - Redleg Grass - Rats Tail Grass - spear grass - panic grass derived grassland of the Nandewar Bioregion and Brigalow Belt South Bioregion.
- PCT 458 – White Cypress Pine - Buloke - White Box shrubby open forest on hills in the Liverpool Plains – Dubbo region, Brigalow Belt South Bioregion.

The affected areas are generally located within the southern half of the site covering parts of future Lot 222 including areas already zoned R2 Low Density Residential under Dubbo Regional LEP and forming part of the West Dubbo URA. A BDAR is being finalised in accordance with the *Biodiversity Conservation Regulation 2017*. This will identify the impacted areas and anticipated ecosystem credits required for the precinct to offset the impacts as part of future development.

The removal of vegetation and finalisation of the BDAR to identify the offsets will be submitted as part of the initial development application lodged to develop the area.

Are there any other likely environmental effects of the planning proposal and how are they proposed to be managed?

No.

- **Geotechnical and Contamination**

Preliminary site investigations concluded that there is low risk of soil contamination.

Following the demolition of existing structures/dwellings on site, a data gap contamination assessment is required to be undertaken. This is to confirm whether there are any 'areas of environmental concern' within the footprint of these existing buildings. However, the buildings are not located in the part of the site and it is not a matter for consideration under the PP.. (See **Appendix E**).

- **Aboriginal Heritage**

An Aboriginal Heritage Assessment was prepared by Apex Archaeology. This report found that there was no registered Aboriginal sites and no sub surface archaeological potential within the subject site. It also identified that no further Aboriginal archaeological assessment is required prior to the commencement of development works as described within the Report (see **Appendix F**).

- **Traffic**

A Traffic and Transport Assessment was completed by Amber. This report assessed the potential development of the site as a result of this PP which increases the number of lots within Stage 3 (i.e. area subject to this PP).

The report concludes that the increase in lots associated with Stage 3 is expected to result in similar operating conditions to that of the current scenario with the land being zoned R2. The internal road is expected to continue to operate with a good level of service and acceptable delays and queue lengths. The intersections of the Mitchell Highway with the Bypass Road and Western Boulevard are expected to operate near capacity but with acceptable conditions.

Notwithstanding the above, the development of the site will result in some intersections reaching capacity which will require upgrades as part of the proposed future development works. These upgrade works have been outlined within the Traffic Report and will be staged in line with the delivery of the project to accommodate the growth. This can be conditioned appropriately as part of the subdivision of the site to deliver the precinct roads.

- **Water Cycle Management Strategy**

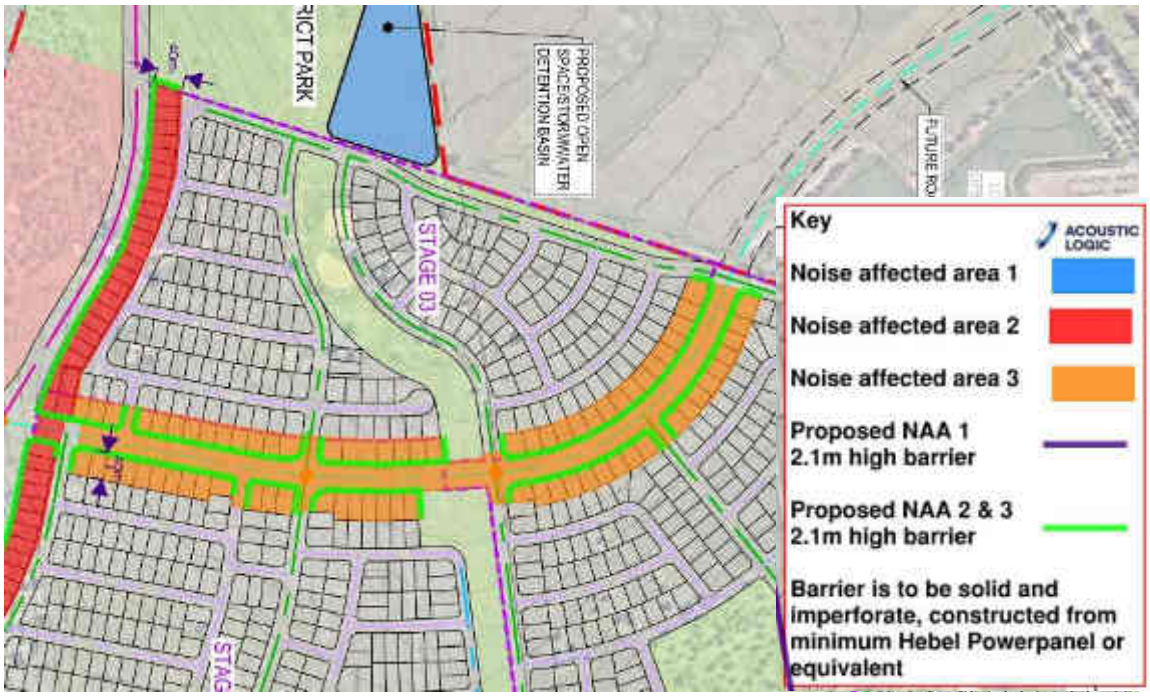
The site will convey water from the residential subdivision once constructed through the employment lands to the north under Narromine Road. This will be achieved through a combination of pits and pipes that will be integrated with the road network. Importantly the Water Cycle Management process designed by Maker Engineering will utilise dry basins to deter birds from creating habitats or gathering in close proximity to the airport.

- **Acoustic**

An Environmental Noise Impact Assessment was prepared by Acoutic Logic. This report investigated the potential impacts from traffic, rail, aircraft and industrial noise sources within the surrounding area to the site.

The site forming part of this rezoning is located away from the railway line but is bound by the future north south strategic road which is likely to convey heavy vehicles up to and through the Employment Land as well as the Western Boulevard that links the north south Strategic Road through the site and TAFE land to Narromine Road. This Precinct is also located outside of the flight path and ANEF contours required to be considered in relation to Dubbo City Regional Airport.

Traffic noise was considered on the subject site from both of the nominated strategic roads bordering the precinct on a worst case scenario. As a result, the report recommended a 2.1m high acoustic barrier to be constructed to the rear of lots on the north-south road and that façade upgrades or acoustic fencing could be used along the front of properties along the Western Boulevard to mitigate noise impacts.



Source: Acoustic Logic (Appendix 1)

Figure 13 Acoustic Recommendations relating to site

A copy of the Acoustic Report is provided at **Appendix G.**

- **Dark Sky Planning**

Under the EP&A Regulations, any development application located within 200km of the Siding Spring Observatory where the application is state significant, designated development or development specified within *State Environmental Planning Policy (Planning Systems) 2021*, Schedule 6 (i.e. regionally significant), is required to consider the Dark Sky Planning Guideline prepared by DPE.

Additional planning considerations are provided under clause 5.14 'Siding Spring Observatory – maintaining dark sky' within Dubbo Regional LEP that must be considered as part of any development consent issued.

While not necessary as part of this rezoning, any future DA will consider these requirements for dark sky planning, as necessary.

Has the planning proposal adequately addressed any social and economic effects?

There are not considered to be any negative social or economic effects as a result of the rezoning which is intended to enable more diverse and affordable housing in locations where there is key infrastructure to benefit the community. The location of the lots proposed to be rezoned with a minimum lot size of 300m^2 are positioned within close proximity to open space, future employment and shops to the north as well as Dubbo TAFE and a potential new school. The change in housing density will provide more diversity in the housing stock and better maximise the infrastructure required to be installed for the Precinct ultimately providing an economic benefit.

Section D – Infrastructure (Local, State and Commonwealth)

Is there adequate public infrastructure for the planning proposal?

The Precinct provides for adequate public infrastructure including public utilities and servicing which will cater for these lots. The lots are already zoned part R2 Low Density Residential and were catered for as part of the initial public infrastructure arrangements.

As a result of this PP, the number of lots is anticipated to increase from approximately 1,650 lots to around 1,750 within the area proposed to be rezoned. This results in an increase of around 100 lots as a result of this PP to reduce a minimum lot size down to 300m^2.

Open Space

Cred Consulting undertook a review of open space to consider the planned increase in the number of lots. In this regard it considered that based on an anticipated population of up to 5,400[4] or 1750 lots, it would generate the need for around 15.19ha of open space. This includes local, district and regional open space.

The CRED report references the draft Greener Places Design Guide standards, being more contemporary standards for the design and provision of open space in comparison to the standards adopted by Council in 2019. These standards sit alongside the Independent Pricing and Regulatory Tribunal (**IPART**) that has adopted the more traditional and widely accepted standard of 2.83ha/1,000 for the greenfield release areas in the Sydney Growth Centre Contribution Plan reviews. Council's adopted rate of 7.8ha/1,000 is therefore well above the standard commonly used within other new release areas.

The report concludes that the structure plan meets the established benchmark of 2.83ha of open space per 1000 people, as well as the proximity benchmarks set by the draft Green Places Design

[4] Based on an average household size of 3.1 persons per dwelling

Guide. It will ultimately deliver 15.022ha of open space with most residents living within 400m of an open space area having a minimum size of 0.5ha.

Servicing

Servicing considerations will be reviewed by Dubbo Council in relation to wastewater and potable water. Initial investigations identified that there was existing capacity available in the immediate vicinity to service the site for potable water with a new pumping station likely to be required for wastewater. The design of this infrastructure will consider the additional 100 lots anticipated to be delivered within the R1 zone.

Section E – State and Commonwealth Interests

What are the views of state and federal public authorities and government agencies consulted in order to inform the Gateway determination

Preliminary consultation has been undertaken with Transport for NSW and DPE relating to the delivery of the residential urban release area in addition to the PP located to the north seeking to rezone the land from IN2 to part B2 Local Centre and part B5 Business Development zone.

No specific feedback has been provided that would impact the determination of this PP.

Part 4 – Maps

The following map tiles are proposed to be amended as part of the PP.

Map	Tile Number
Land Zoning	Sheet LZN_001A and Sheet LZN_002A
Lot Size	Sheet LSZ_001A and Sheet LSZ_002A

The existing and proposed land zoning and lot size maps relevant to this PP under Dubbo Regional LEP 2022 are attached at **Appendix H.**

Part 5 – Community consultation approach

Schedule 1, clause 4 of the EP&A Act requires the relevant planning authority to consult with the community for PPs to amend an LEP in accordance with the Gateway determination.

The Dubbo Regional Council Community Participation Plan identifies that PPs are required to be notified for a minimum period of 28 days (unless this timeframe is modified as part of the Gateway Determination process). Community consultation is required to be undertaken by written notice and on the website. However, this will be a process for Council and DPE to undertake.

The key steps in relation to the PP are outlined below showing when community consultation occurs in the process.

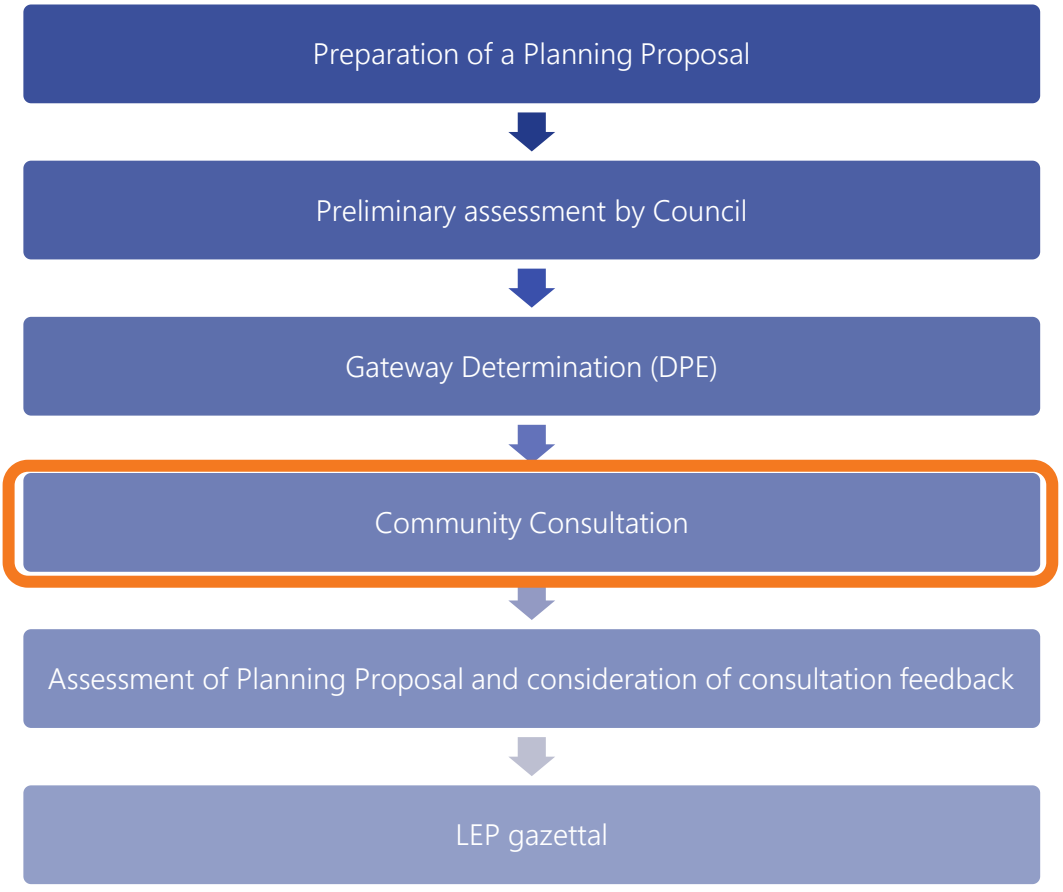


Figure 14 Key steps in Planning Proposal process

Part 6 – Project timeframe

The project timeline provides a mechanism to monitor and resource the various steps required to progress the PP through the plan making process. **Table 4** Project Timeline provides estimated timeframes for the various steps of the process. Council will need to review these to ensure they align with resourcing and meeting agendas.

Table 4 Project Timeline

Step	Anticipated Date
Consideration by Council	4th October 2022
Council Decision	21st October 2022
Gateway Determination	8th November
Pre-Exhibition	15th November
Public exhibition period	22nd November – 20th December 2022
Consideration of submissions	21st January 2023
Post-exhibition review and additional studies	24th March 2023
Submission to the Department for finalisation (where applicable)	3rd April 2023
Gazettal of the LEP amendment	28th April 2023

Conclusion

This Planning Proposal seeks to amend Dubbo Regional LEP 2022 to rezone a small precinct within the West Dubbo urban release area from R2 Low Density Residential to R1 General Residential. The site is located within proposed Lot 222 approved under D2022-11 at Lot 22, DP 1038924, 13L Narromine Road and Lot 7, DP 223428 Jannali Road, Dubbo.

The rezoning will facilitate more housing diversity within the future residential estate with lots down to 300m^2 proposed within an R1 zone. The total area of R2 Low Density Residential land to be rezoned is approximately 23.3ha (including the linear park traversing centrally through the site). The delivery of these lots will provide greater choice for potential purchasers and target different price points in the market compared with other lots in the wider area. The area subject to this Planning Proposal is well connected being close to district and linear parks, future shops, TAFE and a potential school site which maximise the infrastructure to be constructed.

The rezoning is consistent with the Structure Plan for the West Dubbo Urban Release Area and will facilitate the development of this land for residential uses. It is also consistent with relevant Local and State Strategic Plans including the LSPS which will facilitate the intended built form outcome for this urban release area.

Glossary

Abbreviation	
Bathla	Bathla Group
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
Council	Dubbo Regional Council
DA	Development Application
DP	Deposited Plan
DPE	Department of Planning and Environment
Draft CWORP	draft Central West and Orana Regional Plan 2041
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
LEP	Local Environmental Plan
LGA	Local Government Area
LSPS	Local Strategic Planning Strategy
PP	Planning Proposal
SEE	Statement of Environmental Effects
SEPP	State Environmental Planning Policy
URA	Urban Release Area
WDURA	West Dubbo Urban Release Area

APPENDIX A: PRE-LODGEMENT MEETING MINUTES

Pip Hyde

From: Pip Hyde
Sent: Friday, 9 September 2022 1:17 PM
To: Pip Hyde
Subject: FW: 13L Narromine Road, Dubbo - Delay in Scoping Report

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From: Tim Howlett <Tim.Howlett@dubbo.nsw.gov.au>
Sent: Thursday, 25 August 2022 3:21 PM
To: Paul Solomon <paul.solomon@bathla.com.au>; Peter Lawrence <peter@glnplanning.com.au>
Cc: Steven Jennings <Steven.Jennings@dubbo.nsw.gov.au>; Shoilee Iqbal <Shoilee.Iqbal@dubbo.nsw.gov.au>
Subject: 13L Narromine Road, Dubbo - Delay in Scoping Report

Hi Paul and Peter,

Unfortunately I'll have to delay providing comments on the traffic study, utilities report and wastewater strategy as Council's Manager Infrastructure, Strategy and Design has recently changed positions. I can provide the following preliminary comments on the other strategies though:

General comments

Both planning proposals appear to have strategic merit, and nothing at a high-level would prevent them from progressing

The Australian Bureau of Statistics (ABS) released the 2021 census data on 28 June 2022, with additional employment and location-based variables being released on 12 October 2012. The background studies will need to be updated to reflect the latest census figures.

The 2022 census identifies the average number of people per household for the local government area to be 2.5 people, with 2.8 people per household for the Southlakes Estate. Council acknowledges the Southlakes Estate had 3.1 people per household in 2016, and it is requested that population projections in all background studies reference both 2.5 and 3.1 people per household.

The number of lots and population projections are inconsistent throughout the background studies. For example, the traffic study indicates 1845 lots, and the social infrastructure study indicates 1750 lots

Market potential report

Council adopted the Employment Lands Strategy on 11 March 2019. The Strategy aims to ensure the City of Dubbo has an appropriate level of commercial, industrial and tourist zoned land to meet the long-term requirements of Dubbo and the Region.

The Preliminary Market Potential Report prepared by Location IQ will need to be updated to ensure it appropriately considers Council's Employment Lands Strategy. The following sections of the Strategy are relevant:

- Section 4 of the Strategy provides commentary on the five levels within the employment land hierarchy.
    - The Dubbo CBD attracts a significant portion of the north-western region of NSW and should remain at the centre of the city.

- Orana Mall comprises of a B2 local centre, B6 enterprise corridor and SP3 tourist zone, and includes a self-contained shopping centre. It is the second largest commercial centre in Dubbo, and should complement rather than undermine the CBD's character and role

- Section 12.3.9 of the Strategy includes commentary about the North West Urban Release Area Neighbourhood Centre. Given the trend of smaller supermarkets being located in residential fringe areas to provide convenience shopping, the north west catchment will include a neighbourhood shopping centre and B1 zone within a suitable location.
- Section 12.8 of the Strategy provides commentary about the Airport Precinct. The rezoning of the industrial precinct would have minimal impact on the supply of industrial land, noting that the current Dubbo Regional LEP 2022 permits several light industrial uses within the B5 Business Development Zone. The anticipated phasing for a commercial zone in West Dubbo is medium to long term though.
- Section 2.10 of the Strategy provides commentary on Blueridge Business Park. This precinct has become a growth area for light industrial and larger format commercial uses, and a similar format is anticipated for west Dubbo.

The Report refers to the Narromine Urban Release Area, but this area is colloquially referred to as the Central West Urban Release Area.

Council would undertake an independent assessment of any Market Potential Report to ensure its impact on the employment land hierarchy (including the north west urban release area) is not significantly affected.

<u>Social infrastructure and open space report</u>

Council adopted the Open Space Master Plan on 13 May 2019. The Master Plan sets the framework, strategic directions and actions in the delivery of open spaces, and identifies cycle/pedestrian/recreation trail network gaps (the green web network) and the street tree network requirements.

The Social Infrastructure and Open Space Needs Assessment prepared by Cred Consulting will need to be updated to ensure it appropriately considers Council's Open Space Master Plan. The following sections of the Master Plan are relevant:

- Page 40 of the Master Plan identifies the desired level of service for local, district and regional parks, and the average hectare of open space required per 1,000 residents. The current standards are:

Park category	**Desired level of service (ha/1000 people)**
Local	1.5
District	3.0
Regional	0.5
Sporting	2.8
Total	7.8

Based on these standards and 2.5 and 3.1 people per household, the following open space may be required:

	1650 lots		**1750 lots**	
	4125 people	**5115 people**	**4375 people**	**5425 people**
Local	6.19	7.67	6.56	8.14

District	12.38	15.35	13.13	16.28
Regional	2.06	2.56	2.19	2.71
Sporting	11.55	14.32	12.25	15.19
Total	32.18	39.90	34.13	42.32

- Drainage corridors provide an opportunity to provide pedestrian and cycle links that are generally off-road. The Study will need to identify the areas of open space included in the calculations, noting drainage corridors should only be used for pedestrian and cycle links, and not open space.

Acoustic report

It is requested that clarification be provided on why a receiver wasn't located close to the Jannali Road industrial precinct

Traffic and transport assessment (preliminary comments)

Council adopted the Dubbo Transportation Strategy 2020 on 25 October 2021. The Traffic and Transport Assessment prepared by Amber Organisation will need to be updated to ensure it appropriately considers Council's Transportation Strategy.

The Traffic and Transport Assessment indicates that turning movement count surveys were conducted on Thursday 12 May from 7:30am to 9:30am and 4:30pm to 6:30pm. Traffic volumes vary between hours of the day, days of the week, and between weeks/months of the year, and this count may not adequately establish existing traffic flows in the area. Additional traffic counts may therefore be required to more accurately reflect traffic movements

The road widths in the traffic study appear different to those mentioned in the Dubbo Transportation Strategy.

It is requested that clarification be provided on how 7.4 trips per dwelling were determined

Please don't hesitate to contact Council if you have any further questions. I apologise for the delay and hope to get relevant comments on the other strategies to you soon.

Kind regards,

DUBBO REGIONAL COUNCIL

Tim Howlett

Team Leader Growth Planning Projects

Growth Planning | Dubbo Regional Council

P 02 6801 4671

Tim.Howlett@dubbo.nsw.gov.au

We acknowledge the Wiradjuri people, the traditional custodians of the land. We pay respects to Elders past, present and emerging of the Wiradjuri Nation.

Please consider the environment before printing this email.

APPENDIX B: PLANNING PATHWAYS TO DELIVER HOUSING DIVERSITY MEMORANDUM

gln. planning consulting strategy

Memorandum

8 April 2022

Strategy and Planning Pathways to deliver Housing Diversity and Stage1 - Dubbo

Background

Bathla has secured an interest in the North West Dubbo Release Area and is seeking to deliver a high quality urban environment supported by appropriate infrastructure and housing typologies that support a community with a range of housing options.

The release area is zoned part IN1 and part R2 Low Density Residential under Dubbo Local Environmental Plan 2011 (Dubbo LEP). This memo relates primarily to the make-up and delivery of housing in the R2 Low Density Zone.

Under Dubbo LEP, the existing R2 Low Density Residential Zone has a single minimum lot size of 600m^2. In preliminary discussions, Council has advised that it is willing to consider proposals that provide more diverse housing particularly adjacent to key infrastructure and more broadly to achieve interesting streetscape outcomes in the right circumstances. A Planning Proposal would be required to implement changes to the current minimum lot size requirement.

Clause 6.3 of Dubbo LEP requires that before consent is granted in this area that a development control plan needs to be in place. Any DCP would need to align with proposals for more diverse housing and hence will be tied to and only applied after the Planning Proposal process is complete.

An imperative of Bathla is to progress a first stage release while the broader Planning Proposal and DCP for the diverse housing package progress through the planning process. This memo sets outs a pathway that achieves both for Council's consideration.

Purpose of Memorandum

The purpose of this memo is to:

1. Outline planning amendments and outcomes to achieve more diverse housing to support infrastructure and deliver broader streetscape improvements

2. Identify opportunities to enable Bathla to commence a discrete first stage residential subdivision while the broader Planning Proposal and DCP progress through the planning process.

1. Planning Amendments for Housing Diversity

As noted above the entire North Dubbo Release is zoned R2 Low Density Residential with a minimum subdivision size of 600m^2.

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glnplanning.com.au

Dual occupancies are permissible and enable the only housing diversity, potentially on lots as small as 300m^2. This diverse housing option is limited value for a genuine affordable and diverse housing as Council would expect the dual occupancy built form to be complete before subdivision occurs. It is clear that the built form pursued by applicants for dual occupancy often adopt attached mirror reverse designs which can be incongruous with other dwellings in the street.

Diverse housing in a greenfield release is seen as important as:

- It provides different price points for purchasers including first time property purchasers
- It enables densities to be planned (and more people to live close) to important urban infrastructure such as shops, schools and open space
- It can produce more interesting and visually diverse streetscapes.

Enabling diverse housing by varying lot sizes (and more importantly lot frontages) permits different affordability price points and a varied streetscape that are desired features of greenfield release areas.

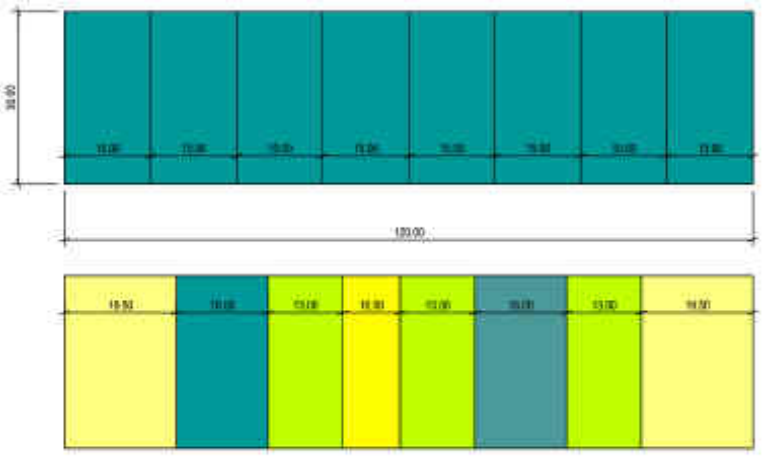
The opportunities for diverse housing in Dubbo North would be focussed around key infrastructure to support these land uses as well as more generally spread throughout the remaining areas to deliver improved streetscape outcomes.

The planning approaches to achieve these outcomes used in other areas have applied either a density target or a lot cap applicable to the nominated street block(s). Dwelling caps are derived from a "site density" calculation, based on the residential street blocks within an area i.e. excluding roads and open space, as opposed to Net Developable Area which includes roads and local open space in the density calculation. The site density is a more accurate calculation to determine the yield in each area.

The density or lot cap has the same effect in that it determines the number of dwellings that can be achieved in the street block(s) by adopting an average lot size based on its location to the different types of infrastructure, with a minimum lot size set to regulate the smallest lot size.

Every time a smaller lot that is under the average lot size is proposed, the remaining lots in the street block(s) must be larger than the average, so that the overall cap or density is not exceeded. This offsetting approach facilitates different lot frontages and more diverse product as shown in the figure below taken from work on another project where the example compares an average lot size of 450m^2 delivered compared to the outcome where the cap or net density is set on the same 450m^2 lot size, but where a minimum lot size of 300m^2 is adopted to enable diverse outcomes. To achieve a visually diverse streetscapes, the emphasis is shifted to enabling different frontages.

In greenfield release areas, lot caps based on an average lot sizes and a minimum lot sizes that is lower than the average have been proposed as the mechanism to achieve these outcomes in Local Environmental Plans or through Development Control Plans.



This density driven approach that can target nominated street block(s) is appropriate as it can be used to deliver the smaller lot and diverse outcomes depending on the scale of the infrastructure that the street blocks are located adjacent and in proximity to. Increases in density would be limited to the street block(s) immediately surrounding local open space areas, whereas district sporting spaces, schools and local shops present the opportunity to transition density to more street blocks up to a walking distance of 400m.

Within the remaining residential areas not proximate to key infrastructure items, there is also the opportunity to use the same approach to generate improved streetscape outcomes as a preference to dual occupancy development that would likely occur in these areas. The opportunities for diverse housing in this North Dubbo Release are described in more detail below:

Around local open space

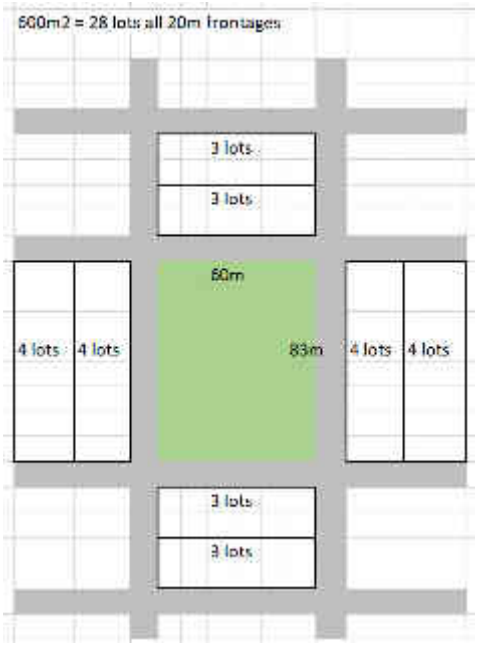
This opportunity exists around local parks (typically 0.5ha or more) to improve casual surveillance and increase the number of people living in close walking distance.

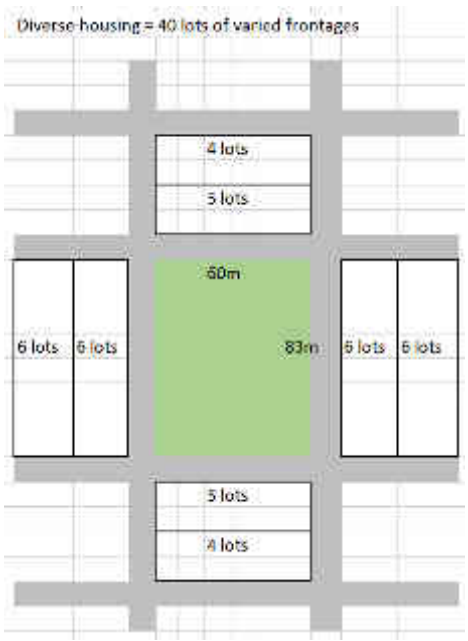
This opportunity would only be applied to the street blocks immediately adjacent to the nominated local open space area to produce smaller lots that can be sold to the public without first building the product.

Within the street block(s) opposite local open space, lots immediately opposite would be to an average of 375m^2 (12.5m x 30m) with a minimum of 300m^2 (down to 10m frontage). Lots with frontage less than 12.5m would require zero lot line provisions. The lots in the same street block(s) not immediately opposite the park would have an average of 450m^2 (15m x 30m) with a minimum of 400m^2. Beyond the perimeter street block would be the regular subdivision.

Compared to a standard subdivision of 600m^2, the yield around the park would increase by 12 lots from 28 to 40 lots assuming this were applied to each immediately adjoining street block opposite a local open space area of 0.5ha. If the open space is larger, then there would potentially be a correspondingly greater increases opposite the larger open space road frontages.

Comparing the density outcomes based on the local open space example above, the street blocks would go from 16.6 dwellings per net ha to 30 dwellings/net ha





Dual occupancies would be assessed under the lot cap/density controls.

Around District Open Spaces, Shops and Schools

The opportunity that exists around district open space (ie district sports fields and other recreation opportunities), local shops and schools is similar to that described for local open space, with the exception that the densities will transition to street blocks located in close walking distance from these infrastructure items to ensure they are well used and activated.

These infrastructure items have areas ranging from over 0.7ha for shops and around 5ha for district sports fields. Therefore, the increase in density will be different depending on the infrastructure items and adjoining road frontage.

Within the entire street block(s) immediately opposite these infrastructure items, lots opposite would be to an average of 375m^2 (12.5m x 30m) with a minimum of 300m^2 (down to a 10m frontage).

The next street block would be an average of 450m^2 (15m x 30m), with a minimum lot size of 400m^2 down to a 13.5m frontage.

The next street block after would be an average of 525m^2 (17.5 x 30m), with a minimum lot size of 480m^2 down to a 16m frontage.

The next street block would revert to 600m^2 lots, subject to the discussion in the next section.

Remaining Low Density Residential Areas

This opportunity applies to the remainder of the residential zones not in proximity to infrastructure that is currently subject to a 600m^2 minimum lot size. This area already permits dual occupancy so higher density product on lot sizes down to 300m^2 are possible.

A typical street block (60m x 250m) of 600m^2 lots would yield 24 lots (corner lots slightly wider) or 12 lots to each long street. Assuming that dual occupancy product represents up to 10% of dwelling stock over the next 10 or so years, there is the opportunity to incorporate 2 additional lots into each street block.

If this higher yield becomes the lot cap or nominated density with a lot average of 577m^2, with a minimum lot size of 500m^2 down to a 16.5m frontage.

2. Opportunity for first stage release while the Planning Proposal is being assessed

The planning amendments to enable more diverse and affordable housing will require a Planning Proposal supported by a Development Control Plan detailing additional urban design controls and the other requirements relating to the release. Such a Planning Proposal typically takes well over one year to process through the planning process

Bathla is keen to create a presence on site and a cash flow to fund essential lead in infrastructure. A pathway to achieve this end would be to lodge a concept development application (CDA) under Division 4.4 of the Environmental Planning and Assessment Act (the Act) for concept approval for the lead in and collector roads to lock in place the structure, provision of services and stormwater, and biodiversity outcomes, as well as a first stage comprising two lanes of the 4 lane north south road and subdivision of the first stage into minimum lot sizes of 600m^2 as per the current Dubbo LEP. The 2 eastern most lanes of the north south carriage way and intersection to Narromine Road will be constructed and operate in the interim for north south traffic to connect to the Stage 1 release. The remaining sections of the north south roads will be outlined in the concept application for subsequent stages.

The land is located in a urban release area. Clause 6.3 requires that a Development Control Plan be in place before Council can determine an application. As noted above, it is intended that a DCP be prepared and is necessary to address the release area and in particular the controls for housing diversity. However, the provisions for CDAs in the Act provides that CDAs can satisfy the requirement for a DCP. However, the application will nonetheless need to address the same matters that would have been in a DCP.

The framework provided by the Act and Dubbo LEP would enable the discrete Stage 1 Release to enable Bathla to get underway, whilst leaving the substantive remainder of the release to progress through the much slower rezoning process. Council can have comfort that Stage 1 will have to address the same DCP matters but applied to this individual stage. The Concept Development Application would of course include the indicative structure Plan for the remainder of the release recognising that the north south collector road to access the release is infrastructure that Council has advised is required for any development on the land. To give context to this Strategy, the

following concept shows our preliminary thoughts for the location of the Stage 1 release, with the collector roads in blue.

We believe this is a reasonable proposal that will best address both Bathla's and Council's objectives for the area.

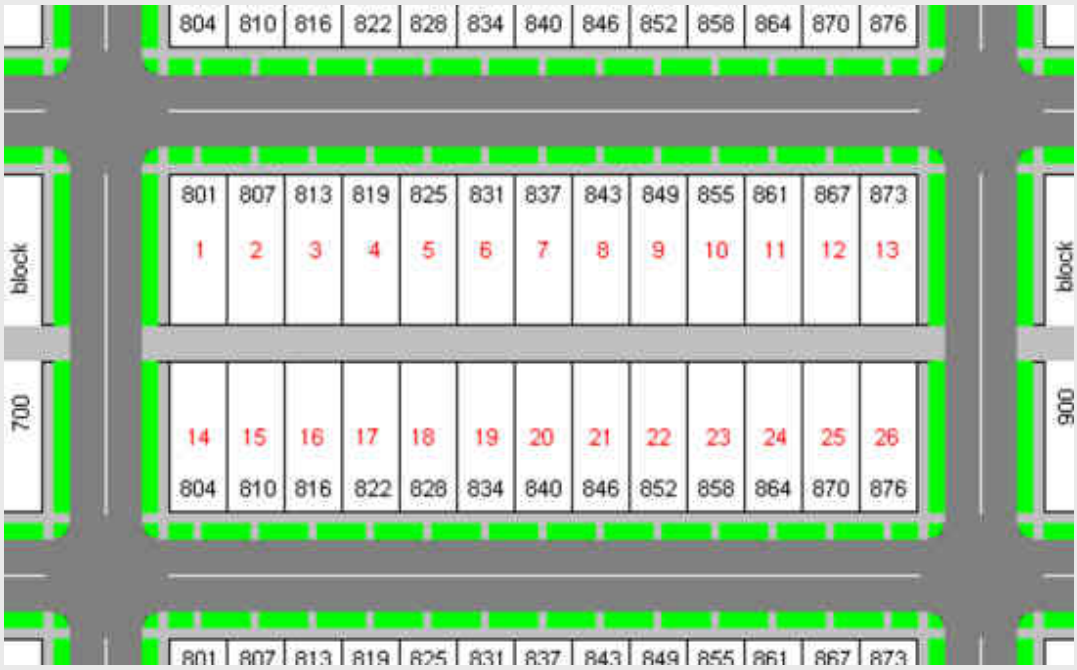
APPENDIX C: KEY PLANNING CONTROLS – SITE SPECIFIC DCP

Site Specific DCP controls – R1 zone

The following table provides an overview of key planning controls to help guide the future development of lots within the R1 General Residential zones land. This is anticipated to form a new chapter within Dubbo DCP for site specific planning controls related to this area and can be further expanded up as required.

Table 5 Summary of key planning controls

Element	Control	Comment
Objectives	○ To provide for smaller lot sizes in appropriate locations which are well connected to open space and shops. ○ To promote housing diversity and affordability through a range of housing sizes and products. ○ To establish and maintain the desired character of the R1 zoned residential area. ○ To support and provide for vegetation which can ultimately provide green canopies. ○ To ensure local infrastructure is sufficient to cope with population growth.	Guiding objectives to achieve through the planning controls for the R1 zoned land.
Lot frontage	Minimum 10m No more than 50% of the residential lots within a street block may have a frontage of less than 12m. Note: A street block is defined as being enclosed by (usually four) neighbouring and intersecting streets as illustrated below.	Cross overs should be considered and designed of an appropriate width to ensure sufficient space between driveways to accommodate on-street parking. The requirement limiting the number of lots under 12m within a street block is designed to promote housing diversity within the estate. This ensures that 10m wide lots will not be replicated on mass throughout the Precinct and promotes diversity in the housing typologies delivered within the area. This is based on typical housing designs being created for lots with a frontage of 10m, 12.5m, 14m and 15+. Therefore, up to 50% of the lots could be delivered based on a 10m wide lot with the remaining street block being comprised of lot sizes above 12m which introduces a variety of

Element	Control	Comment
		housing designs within the Precinct.
 Typical street block which is enclosed by (usually four) neighbouring and intersecting streets.		
Front setback	Minimum 3.5m to the building façade. Minimum 5.5m to a garage.	A reduced front setback of 3.5m provides better opportunity for private open space within the rear of the lot which is more likely to be used by residents while also allowing for soft landscaping at the front of the dwelling. The front of the dwelling will benefit from large street trees that are capable of being planted along the street
Side setback	Detached boundary = Minimum 0.9m Zero lot boundary (to one side only): • Ground floor = 0m • First floor = 0m Maximum length of zero lot line = 15m	The zero lot boundary is to be set on the high side of the lot with the burdened lot on the low side. A 0.9m easement will also be required adjacent to the zero lot line to provide opportunities for maintaining this façade. No structures will be permissible within this easement.
Rear setback	Minimum 5m	This ensures sufficient space to provide private open space, achieve solar access requirements and provide space to accommodate a reasonable size

Element	Control	Comment
		tree per lot to achieve a green canopy through the mid-block This rear setback includes pergolas and other structures attached to the house but excludes small garden sheds and other ancillary structures.
Corner lots	Minimum lot size of 500m The dwelling design shall address both street frontages. Substations and kiosks shall be considered in the design of corner lots and should be located on the secondary street frontage.	Corner lot dwellings should emphasise the corner and address both street frontages. A larger lot facilitates this and provides a better urban design outcome by providing sufficient space to achieve this and identify the street entrance with a more prominent building form.
Private open space	Minimum 20m^2	The amount of POS will largely be determined by setbacks. The POS should generally be provided as a flat useable area.
Site coverage	Upper level no more than 40% of lot area	Ground floor site coverage will be determined based on setbacks and landscaping / open space requirements.
Soft landscaped area	Minimum 15% of the lot. One mature tree (minimum 75L pot size) should be provided within the rear POS of each lot to assist in establishing a green canopy mid-block.	The requirement for one mature tree is designed to achieve a green canopy centrally through the subdivision and compliment the street tree canopy to be established along the streets at the front of the lots.
Solar access	At least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to at least 50% of the required POS to both: • All affected neighbouring properties • The proposed dwelling	
Parking	Minimum car parking rate of: • 1 space for 1-2 bedroom dwellings • 2 car parking spaces for 3+ bedroom dwellings	The location of driveways crossovers should consider on-street parking to provide sufficient on-street parking between neighbouring driveways.

APPENDIX D: STATEMENT OF CONSISTENCY – SECTION 9.1 DIRECTIONS

Statement of Consistency – Section 9.1 Directions

Direction	Consistent
Focus Area 1: Planning Systems	
1.1 Implementation of Region Plans	The Planning Proposal is consistent with the draft Central West and Orana Regional Plan 2041 as discussed within Section B – Relationship to the strategic planning process on page 16.
1.3 Approval and Referral Requirements	No new unnecessary referral or concurrence conditions are proposed as part of the PP.
1.4 Site Specific Provisions	The PP utilises appropriate zones to achieve the intended land use outcomes which do not require or impose any additional provisions or development standards and hence is consistent with this direction.
Focus Area 1: Planning Systems – Place-based	Not applicable
Focus Area 3: Biodiversity and Conservation	
3.1 Conservation Zones	The PP proposes to rezone certain land within the site from R2 Low Density Residential to R1 General Residential. Direction 3.1 aims to protect and conserve environmentally sensitive areas. Dubbo LEP 2022 maps biodiversity as illustrated within Figure 15**.** This shows that the site is not impacted by mapped terrestrial biodiversity. Notwithstanding, the site still contains native vegetation. As such, a BDAR will be prepared to investigate biodiversity offsets holistically across the site which will be further assessed as part of any future DAs relating to the development of this site.

Direction	Consistent

Figure 15 Dubbo LEP 2022 - biodiversity

3.2 Heritage Conservation	The PP does not propose changes to the LEP clause or Maps relating to Heritage. All future DAs submitted will be required to comply with the relevant provisions within the LEP, *National Parks and Wildlife Act 1974* and *Heritage Act 1977*. The PP is consistent with this Direction.
Focus Area 4: Resilience and Hazards	
4.1 Flooding	Not applicable. The site is not identified as flood prone land.
4.3 Planning for Bushfire Protection	The land is not mapped as bushfire prone land.
4.4 Remediation of Contaminated Land	Preliminary site Investigations found low risk of contamination with further analysis required following the demolition of existing structures. This will occur following these demolition works but are located outside the boundaries of this PP.
Focus Area 5: Transport and Infrastructure	
5.1 Integrating Land Use and Transport	Future residential lots will be provided with access to key transport nodes/networks via appropriate road, cycle and pedestrian linkages within the estate The PP is considered consistent with this Ministerial Direction.
5.2 Reserving Land for Public Purposes	Not applicable.

Direction	Consistent
5.3 Development Near Regulated Airports and Defence Airfields	The site is not located within Dubbo Regional Airport's ANEF contours. The site is currently zoned for residential uses with this PP seeking to rezone the site to R1 General Residential with a minimum lot size of 300m2 to increase opportunities for housing diversity within the Precinct. Consultation with the airport will occur as part of the PP consultation.
Focus Area 6: Housing	
6.1 Residential zones	This PP is consistent with this Direction as it will facilitate the delivery of residential lots down to 300m^2 which will provide for increased variety of housing typologies to suit the needs of people within the community. This provides opportunities for smaller lot sizes which will target different price points in the market and accommodate a greater variety of housing designs. It will also make efficient use of infrastructure to be provided within the URA therefore being able to easily connect into the wider network.
Focus Area 7: Industry and Employment	Not applicable
Focus Area 8: Resources and Energy	Not applicable
Focus Area 9: Primary Production	Not Applicable

APPENDIX E: CONTAMINATION AND GEOTECHNICAL REPORT

APPENDIX F: ABORIGINAL HERTIAGE ASSESSMENT

APPENDIX G: ACOUSTIC REPORT

APPENDIX H: MAPS

Dubbo Regional Local Environmental Plan 2022

Land Zoning Map - Sheet LZN_001A

Zone

- B1 Neighbourhood Centre
- B2 Local Centre
- B3 Commercial Core
- B4 Mixed Use
- B5 Business Development
- B6 Enterprise Corridor
- B7 Business Park
- C1 National Parks and Nature Reserves
- C2 Environmental Conservation
- C3 Environmental Management
- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- R1 General Residential
- R2 Low Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU1 Primary Production
- RU2 Rural Landscape
- RU3 Forestry
- RU4 Primary Production Small Lots
- RU5 Village
- SP2 Infrastructure
- SP3 Tourist
- W1 Natural Waterways
- W2 Recreational Waterways

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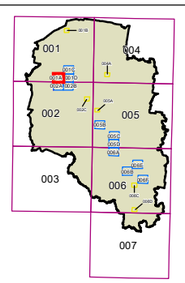

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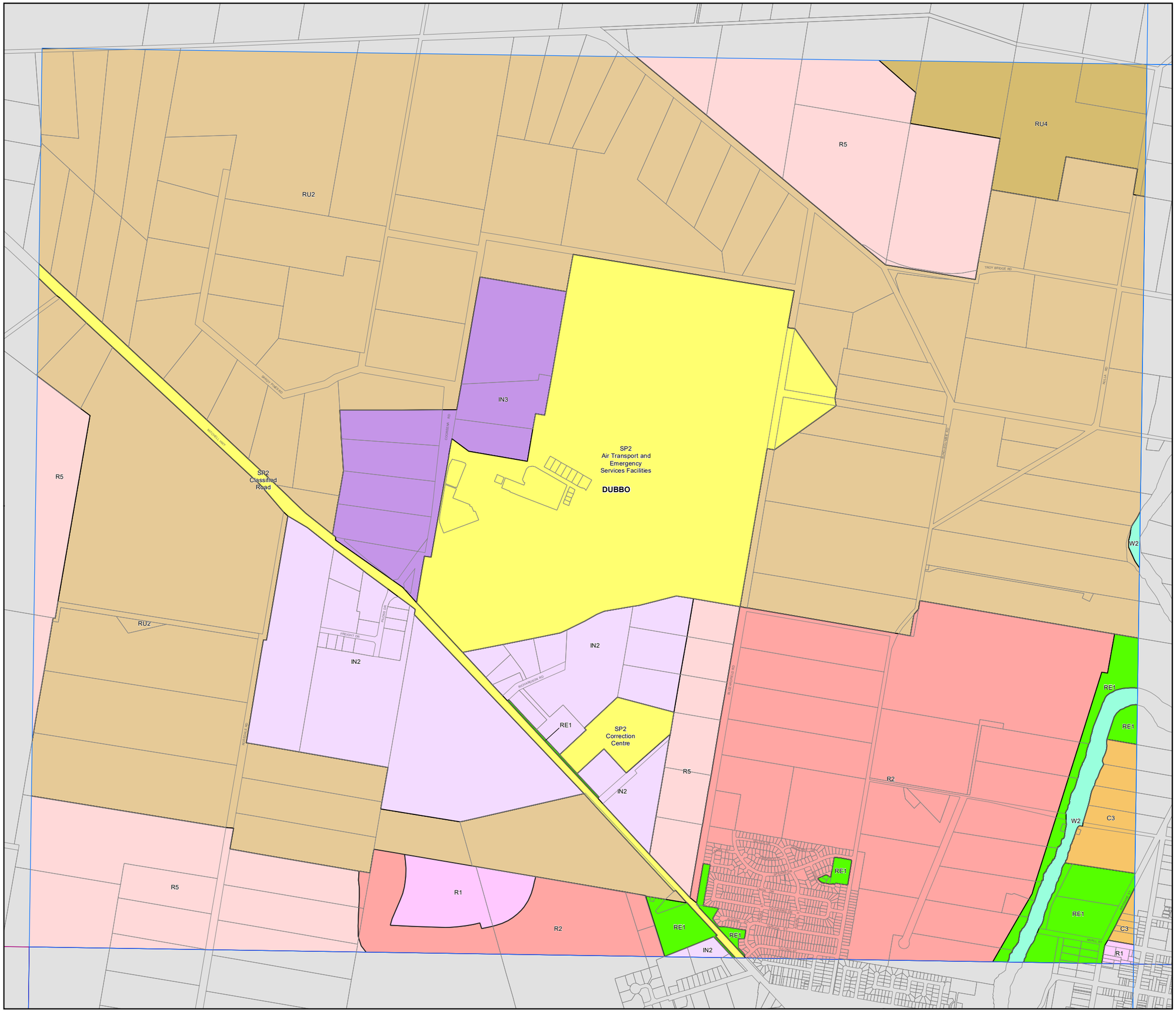

Dubbo Regional Local Environmental Plan 2022

Lot Size Map
- Sheet LSZ_001A

Minimum Lot Size (sq m)

D	300
G	450
M	600
S	800
U	1,000
V	2,000
W	4,000
X1	6,000
X2	7,000
Y1	1 ha
Y2	1.5 ha
Z1	2 ha
Z2	3 ha
Z3	4 ha
AA1	5 ha
AA2	8 ha
AB1	10 ha
AB2	20 ha
AB3	25 ha
AB4	35 ha
AC	50 ha
AD	100 ha
AE	250 ha
AF	400 ha
AH	800 ha
AI	2,000 ha
	Refer to Clause 4.1 (3A) & 7.18

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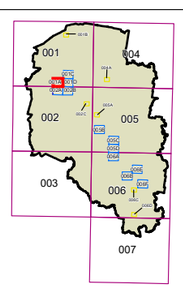

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MGA Zone 55

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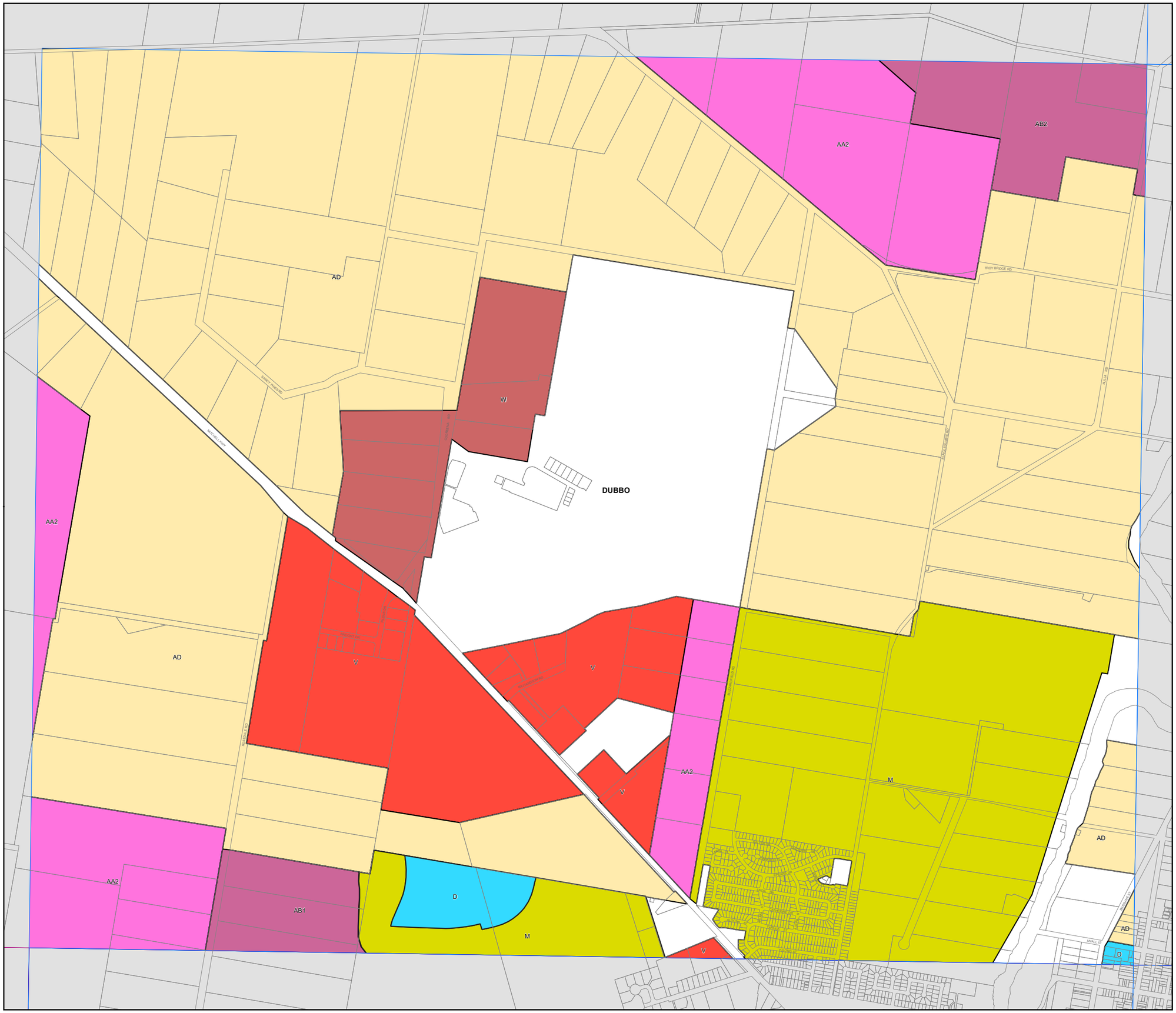

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Appendix B

"Preliminary Site Investigation Report, Ref# NE1295, Site Contamination Investigation Report, 13L Narromine Road (LOT 22, DP 1038924) and Lot 7 DP223428 Jannali Rd, Dubbo NSW 2830, Ref# NE1295, Rev (0) 16 June 2022"

PRELIMINARY SITE INVESTIGATION REPORT

PROJECT: 13L Narromine Road Dubbo, NSW and Jannali Road, Dubbo, NSW 2830

CLIENT: Bathla Group

DATE: 16 June 2022

REPORT NO: NE1295

REVISION: 0

GEOTESTA

GEOTESTA PTY LTD ABN 91 851 620 815

Unit 6, 20-22 Foundry Road, Seven Hills, NSW 2147

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Contents

Appendices

A **Aerial Photographs**
B Planning Certificate Under Section 10.7
C **Lotsearch**
D **Borehole Logs**
E **Laboratory Results**

EXECUTIVE SUMMARY

Geotesta was engaged by Bathla Group to conduct a Preliminary Site Investigation (PSI) on the site referred to as 13L and Lot 7 DP223428 Narromine Rd, Dubbo NSW 2830.

The PSI was conducted in general accordance with "Managing Land Contamination Planning Guidelines SEPP 55" and this report compiled, taking into consideration the *NSW EPA Consultants reporting on Contaminated Land Guidelines update May 2020.* The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI a limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- assess the requirements for additional investigations; and
- address the requirements of the planning authority.

The following scope of works was implemented to achieve the objectives of the PSI.

The PSI was conducted in general accordance with the Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non volatile and semi-volatile compounds*, the Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*, the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1, and other relevant NSW guidelines and legislation, including the NSW EPA Sampling Guidelines (1995).

The scope of works included the following:

- A site inspection;
- historical aerial photographs;

- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections of the report.

The analytical results are discussed following:

- Detected concentrations of all soil heavy metal analytes were within the Site Assessment Criteria (SAC).
- Concentrations of Organochlorine Pesticides/Organophosphorus Pesticides (OCP/OPP) were below the laboratory reporting limit (LOR) and the Site Assessment Criteria.
- Concentrations of PAH and BTEX analytes were below the laboratory reporting limit and therefore within the Site Assessment Criteria
- One exceedance in TRH Fraction F3: C16-34 was detected in Sample DI-11-2, having exceeded the TRH Criteria / ESL (Fine Soil). Regarding the Hydrocarbon exceedance, given that the sample was sampled in a tree lined area and there was no visual evidence of hydrocarbons in the soil such as oil staining, Geotesta Pty Ltd is of the opinion, the hydrocarbons are natural, often associated with oils from eucalyptus trees and dropped leaves.
- All remaining concentrations of TRH analytes were below the laboratory reporting limit (LOR) and therefore within the Site Assessment Criteria (SAC).
- No traces of asbestos were detected in the samples analysed above the Reporting Limit of 0.01% w/w. No suspected asbestos containing materials (ACM) were observed on site during the inspection.
- Detected concentrations of copper, nickel and zinc within the water sample exceeded the adopted Site Assessment Criteria (ANZEC 95% Freshwater Guidelines). All remaining metal and OCP/OPP Pesticides screened were within the SAC

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- Geotesta Pty Ltd is of the opinion, that the detected TRH Fraction F3: C16-34 at Sample location# DI-11-2 are natural hydrocarbons, associated with oils from eucalyptus trees and dropped leaves. Given that the sample was sampled in a tree lined area and there was no visual evidence or odours of hydrocarbons in the soil such as oil staining.

- Given the heavy metal exceedances (copper, nickel and zinc) within the dam water sampled, dam decommissioning can be performed once the Dam Decommissioning reports have been issued.

- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed development pending an additional Data Gap Contamination Assessment is undertaken.
- Due to the existence of a data-gap in this investigation, a further assessment post demolition of the existing structures/dwellings is required to address further potential AECs identified previously and to determine if any contamination hotspots exist within the footprint of the existing sheds and dwellings. The Gap Assessment scope must also include the following:
  - A Delineation Assessment is recommended in the vicinity of the TRH Fraction F3: C16-34 concentration elevation at the location of Sample# DI-11-2
  - Any stockpiles and areas under stockpiled materials that were not assessed at the time of the PSI or are new to site, will require sampling as part of the Data Gap Assessment.

1. INTRODUCTION

Geotesta was engaged by Bathla Group to conduct a Site Contamination Investigation (PSI) on the site referred to as 13L and Lot 7 DP223428 Narromine Rd, Dubbo NSW 2830.

The PSI was conducted in general accordance with *"Managing Land Contamination Planning Guidelines SEPP 55"* and this report compiled, taking into consideration the *NSW EPA Consultants reporting on Contaminated Land Guidelines update May 2020*. The PSI contains an appraisal of the site's history, a report based on a visual site inspection and an assessment of analytes for contamination. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI a limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

2. PLANNING GUIDELINES

The land is to be developed for standard residential use with on-site roadways. The planning authority must consider the possibility that the previous land use has the potential to cause contamination of the site as well as the potential risk to health or the environment from that contamination. The PSI is the first stage to determine if there is a potential for land contamination that has a potential to impact the development application (DA).

The Guidelines recommend that re-zonings, development control plans and development applications (DAs) are backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used.

3. OBJECTIVE

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- assess the requirements for additional investigations; and
- address the requirements of the planning authority.

4. SCOPE OF WORKS

The following scope of works was implemented to achieve the objectives of the PSI.

The PSI was conducted in general accordance with the Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non volatile and semi-volatile compounds*, the Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*, the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1, and other relevant NSW guidelines and legislation, including the NSW EPA Sampling Guidelines (1995).

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

5. SITE DESCRIPTION

5.1 Site Identification

The site under investigation is situated at 13L (i.e., Lot 22 DP1038924) and Lot 7 DP223428 Narromine Rd, Dubbo NSW 2830 on the western side of Narromine Road and is approximately 400 km (by road) northwest of Sydney CBD. The site is irregular in shape and has a total area of 271,9 ha. The site is located within The Dubbo Regional Council. The site identification detail is presented in Table 1. The site location is also shown in Figure 1.

Table 1: Site Identification

Site Details	Site Observations
Address	13L Narromine Road Dubbo, NSW and Jannali Road, Dubbo, NSW 2830
Lot/Section/Plan no:	Lot 22 DP1038924 and Lot 7 DP223428
Local Government Area	Dubbo Regional Council
Site Area (Approximately)	~ 271,9 ha
Zoning	IN2 - Light Industrial R2 - Low Density Residential R5 - Large Lot Residential RU2 - Rural Landscape
Current Land Use	Light Industrial (IN2), Low Density Residential (R2), Large Lot Residential (R5), Rural Landscape (RU2), Infrastructure (SP2)

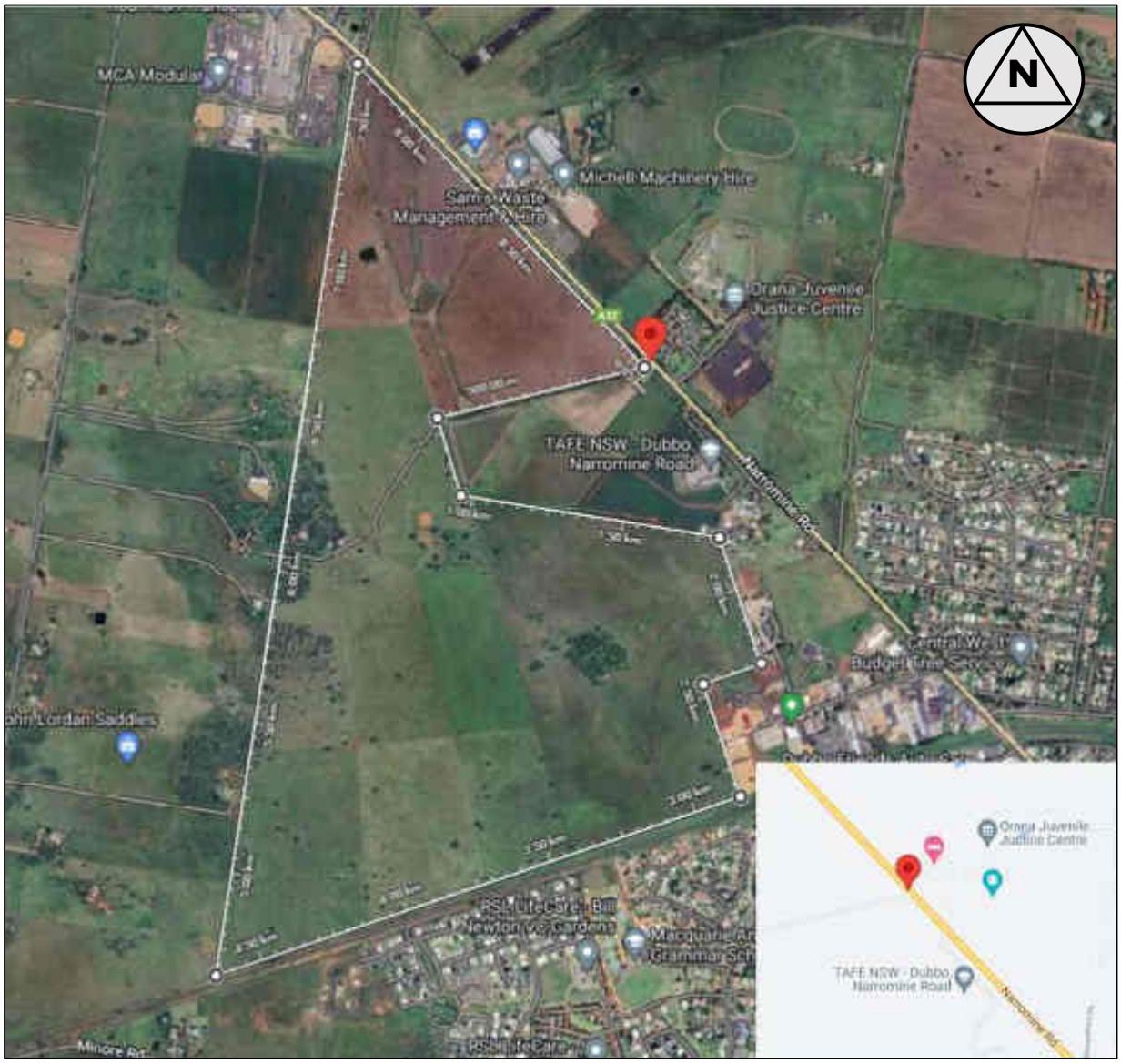

Figure 1. Site Location Plan

5.2 Proposed Development

It is understood that the site is proposed for a residential subdivision with on-site driveways. The site lies within the following planning zones:

- Light Industrial (IN2)
- Low Density Residential (R2)
- Large Lot Residential (R5)
- Rural Landscape (RU2)
- Infrastructure (SP2)

Planning zones that are in the vicinity of the site include:

- Neighbourhood Centre (B1)
- Local Centre (B2)

- Commercial Core (B3)
- Business Development (B5)
- Environmental Conservation (C3)
- Heavy Industrial (IN3)
- Low Density Residential (R2)
- Public Recreation (RE1)
- Primary Production (RU1)
- Infrastructure (SP2)
- Recreational Waterways (W2)
- Mixed Use (B4)
- Enterprise Corridor (B6)
- Light Industrial (IN2)
- General Residential (R1)
- Large Lot Residential (R5)
- Private Recreation (RE2)
- Rural Landscape (RU2)
- Tourist (SP3)

5.3 Site Details, Geology and Topography

The subject site of the proposed development mostly consists of a vacant land covered with grass and distributed trees. However, in the site, there were a few old fuel barrels, garages and sheds containing demolished vehicles and straw/hay bales. There was also one old single-level residential dwelling. It seems the site has been used mainly for livestock/agriculture purposes. The site is relatively flat with an average gradient of approximately <5% at some locations.

The geological origin of the soil profile was identified from our visual examination of the soil samples, geotechnical experience, and reference to geological maps of the area. The geological map of the area indicates that the site is underlain by Pilliga Sandstone of the Surat Basin and comprises of massive to cross-bedded coarse pebbly lithic-quartz sandstone, minor fine-grained sandstone and siltstone, (Jp). The geological maps indicate igneous outcrops comprising of tholeiite, alkali basalt, basanite, nephelinite, limburgite, trachyte and rare obsidian, (Tb) (Dubbo, 1:100 000, Geological Sheet 8633).

The ESPADE web application provided by NSW Department of Planning, Industry and Environment for the Wongarbon region indicates site subsoils can comprise Euchrozems which are strongly structured, dark reddish-brown light to medium clay; pH 6.5 - 8.0. Changing at 40 cm to reddish-brown to dark red light to medium clay; strong polyhedral to prismatic structure; pH ranges from 7.0 - 8.5. Calcium carbonate often occurs at depth (80 to 100 cm).

The site lies at an elevation approximately averaging 300 metres above sea level (ASL) referenced to Australian Height Datum (AHD). (http://en-au.topographic-map.com).

5.4 Site Regional Meteorology and Hydrogeology

The following climate information from the Commonwealth Bureau of Meteorology website (http://www.bom.gov.au/) can be obtained:

- Mean maximum temperature of 24.7°C from January to December at Dubbo Airport AWS approximately 2.5 km away from site.
- Mean minimum temperature of 10.3°C from January to December at Dubbo Airport AWS approximately 2.5 km away from site.
- Lowest annual rainfall of 211.2 mm and highest annual rainfall of 924.4 mm, averaging 569.6mm from January to December at Dubbo Airport AWS approximately 2.5 km away from site.

Groundwater salinity is mapped >14000mg/l and therefore unsuitable for stock use. The direction of the regional groundwater flow is expected to follow the slight slope of the regional topography.

5.5 Registered Bore Search

A search of Department Primary Industries - Office of Water records identified twenty-two existing groundwater wells located within an approximate distance of 500 metre from the site.

Table 2: Bore wells Identification

Bore ID	Bore Depth(m)	Latitude	Longitude
GW040471.1.1	67.1	-32.229826	148.555625
GW063785.1.1	30	-32.226215	148.553402
GW057513.1.1	65	-32.230659	148.575624
GW061181.1.1	70	-32.232326	148.560902
GW062544.1.1	151	-32.2446	148.560161
GW057092.1.1	42	-32.223993	148.564513
GW804991.1.1	35.5	-32.228475	148.550219
GW052247.1.1	65	-32.226493	148.570347
GW001241.1.1	85.3	-32.228715	148.554236
GW800690.1.1	84	-32.244553	148.560236
GW805096.1.1	182	-32.251344	148.557456
GW056342.1.1	51.8	-32.248715	148.546458
GW001249.1.1	40.2	-32.242882	148.559236

GW065788.1.1	99	-32.236339	148.548189
GW051858.1.1	49.4	-32.222882	148.563402
GW806046.1.1	88	-32.23093	148.561281
GW060792.1.1	91	-32.23897	148.554305
GW802547.1.1	12	-32.24008	148.587803
GW049357.1.1	39.6	-32.241493	148.557291
GW050571.1.1	61	-32.245937	148.547014
GW802626.1.1	11	-32.246191	148.574072
GW066564.1.1	87	-32.238447	148.554296

5.6 Acid Sulphate Soils

The Department for Infrastructure, Planning and Natural Resources (DIPNR) Acid Sulphate Soils Risk Mapping (1997) and the NSW Environmental Acid Sulphate Soil Risk Mapping eSPADE application indicates that the Site is not expected to be underlain by acid sulphate soils.

5.7 Summary of Site History

5.7.1 Historical Background

The aerial photographs indicate that the site has been used for livestock/agricultural purposes. The site consists of a single-story house with multiple sheds that were noted to contain straw/hay bales, fuel barrels, chemicals, combustible liquid, generators and equipment, and storage of vehicles.

5.7.2 Aerial Photograph Review

An aerial photograph search was conducted on 17th December 2021. The historical aerial photos were viewed with observations presented in Table 3. Historical aerial photographs are presented in Appendix A.

Table 3: Aerial Photograph Review

Year	Site Observations	Surrounding Area
1964	Four small basins/dams onsite. Three small sheds/dwellings on far western side of site. Majority of site vacant land, tree growth west of site.	Low-density residential dwellings south-east of site. Airport north of site. Vacant land south and west of site.
1971	Two small shed/dwellings constructed far west of site.	Small structures built north of site.
1974	No change from previous photograph.	No change from the previous photograph.
1980	No change from previous photograph.	Structures constructed north of site. Dwellings constructed south-east of site.
1991	No change from previous photograph.	Further dwellings constructed east and south of site. Dwellings constructed north of site.
1995	No change from previous photograph.	Dwellings constructed in surrounding area.
1996	No change from previous photograph.	No change from previous photograph.
2011	Several agricultural livestock/farming zones visible on far west side, near sheds/dwellings	Structures developed in surrounding areas.
2019	Stockpiles visible near sheds/dwellings.	Structures developed north and south of site.
2020	No change from previous photograph.	No change from previous photograph.
2021	No change from previous photograph.	No change from previous photograph.

5.8 Site Walkover

Results of the site walkover inspection carried out for 13L Narromine Road Dubbo, NSW (Lot 22 DP1038924) on 27-29 January 2022 is presented below:

- The site was divided to several paddles mainly used for livestock purposes.
- A few garages and sheds containing straw bales and old vehicles are observed.
- Several fuel barrels exist in the site.
- A few small dams are located on the site.
- Vegetation onsite appeared to be healthy.
- The site appeared to drain to the east of the site with the site sloping towards the east at a gradient < 5%.

Results of the site walkover inspection carried out for Jannali Road, Dubbo, NSW 2830 (Lot 7 DP223428) on 11 May 2022 is presented below:

- Vacant land, grass covered ground surfaces, multiple trees located in the centre of the property
- Vegetation onsite appeared to be healthy, with no signs of vegetation die-back.

- The site's northern section terrain is essentially flat, the southern section's terrain – appeared to slope towards the south at a gradient of < 5 – 10 %.
- The site appeared to drain predominantly to the south

5.9 NSW OEH/EPA Records

The site or nearby surrounding areas have no notices under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985).

5.10 Planning Certificate

Planning Certificate Under Section 10.7 (Certificate No: 436) for the site (Lot: 22 DP: 1038924, 13L Narromine Road Dubbo, NSW) was sourced from Dubbo Regional Council on 24 February 2022. The certificate is presented in Appendix B. The Planning Certificate, which is applicable to Lot 22 DP 1038924, indicates that there are no matters arising under Section 59(2) of the Contaminated Land Management Act 1997 (Act), as follows:

- The land is NOT significantly contaminated land (or part of the land) within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject to a management order within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of an approval voluntary management proposal within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of an ongoing maintenance order within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of a site audit statement within the meaning of the Act at the date when the certificates were issued.

5.11 Historical Land Titles

No Historical Land Titles search was conducted for the site.

5.12 Lotsearch

A Lotsearch report is provided in Appendix C for JANNALI ROAD DUBBO 2830, NSW Lot# 7/-/DP223428.

5.13 Salinity Mapping

The eSPADE web app found at https://www.environment.nsw.gov.au/eSpade2WebApp indicated that the site is in an area of low salinity potential (see Figure 2).

The following observations/inspections were noted onsite:

- ✓ Vegetation growth appeared healthy throughout the site.
- ✓ No water marks or salt crystals observed on the ground surface

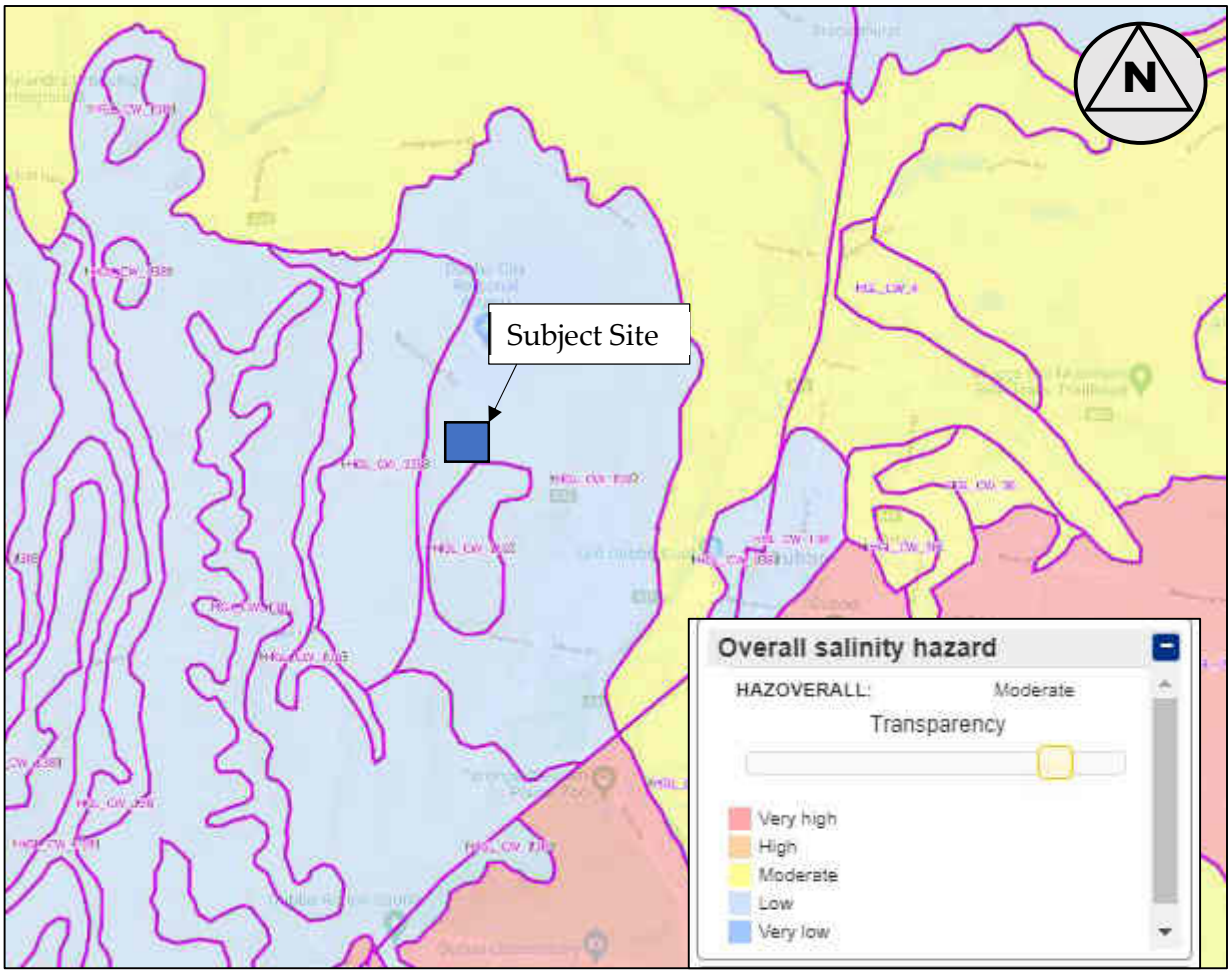

Figure 2. Salinity Potential Map

6. CONCEPTUAL SITE MODEL

6.1 Areas of Environmental Concern

Our assessment of site AECs and COPCs (Table 4) is made based on available site history, aerial photograph interpretation and site walkovers. A map showing locations of identified AECs is provided in Figure 3.

Table 4: Areas of Environmental Concern and Contaminants of Primary Concern (COPC)

AEC	Potential for Contamination	COPC	Contamination Likelihood
A – Areas of Dwellings/Sheds	Heavy metals may have been used underneath dwellings. Sheds or areas surrounding sheds may have been used as fuel storage, oil or drums of unknown content; asbestos sheeting, may include lead-based paints.	HM, OCP/OPP and Asbestos	Medium
B – Stockpiles and Site fillings	Contaminants from old vehicles or equipment, old generators, fuels and chemicals, rusted metal, wood, rubble material and general refuse may have spilled, leaked or been distributed onto underlying soil.	HM, TRH, PAH, BTEX and OCP/OPP	Medium
C – Areas of light agricultural/garden farm cropping	Heavy metals and pesticides used for light agricultural activities may pose potential risk of contamination	HM, TRH and OCP/OPP	Low
D – Fuel Storage	Mobile oil tanks, onsite fuel pumping stations and combustible fuel liquid storage containers may pose potential risk of contamination into soil via leakage.	HM, TRH, PAH and BTEX	Medium to High
E – Dam	Contaminants resulting from agricultural land uses may have been washed into and accumulated in the dam during its use. Infilling of the dam using unknown fill containing potential contaminants, may have contaminated the underlying soil.	HM, OCP/OPP, TRH, Ecoli, Faecal Coliforms, Nutrients, EC, pH, Salinity, BOD, Turbidity and Dissolved Oxygen	Medium

6.2 Potential Receptors and Sensitive Environments

The residents and visitors/workers on site are identified as immediately sensitive environmental receptors. A summary of the identified potential receptors and sensitive environments is detailed below in Table 5.

Table 5: Potential Receptors and Sensitive Environments

Receptors/Environments	Potential Pathway
Human Receptors: • Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct skin contact • Ingestion of contaminated soil • Inhalation via airborne dust
Sensitive Environments: • Site fauna and flora	• Migration via stormwater run-off or within groundwater • Migration into underlying soil

6.3 Potential for migration and exposure of contamination

During site investigation, several potential receptors for off-site migration of potential contamination has been raised. Site history information and onsite inspection observations indicated a potential for contaminants to present a direct contact and inhalation exposure risk on site. Exposure routes of contaminants could potentially be through direct contact with exposed soils (Heavy Metals, TPH, PAHs, BTEX and OCP/OPP) or airborne dust (Asbestos). These exposure risks will "likely", and potentially at its highest risk during any demolition, earthworks or construction phases within the site.

There is a potential for these contaminates to be present within underlying soils and have the ability to migrate vertically (dispersed up into the atmosphere, or infiltrate down into the groundwater) and migrate horizontally (through stormwater runoff pathways) from the proposed development.

6.4 Assessment of Preliminary Site Investigation and Recommendations

The results of the site history indicated the site has been used for residential purposes for at least 46 years, with the eastern half of site being used for the transportation of construction material via heavy vehicle trucks. Aerial photography indicated the western half of the site appears untouched since 1947 and continues to be grass cover. At the time of investigation, large stockpiles of rail sleepers and iron tracks were observed on the northern side of site, adjacent to an unloading/loading zone for heavy

vehicles and parking zone for trailers. Stockpiles of wood, sheet metal excavator buckets, rusted trailers and equipment, fuel and chemicals, were noted onsite. During site investigation it was highly likely that fuel, chemicals, material and vehicles were being stored in the sheds observed onsite. Excavators were observed onsite, as well as mobile oil storage tanks. Shipping containers with combustible liquid were identified onsite near the storage shed. These observations determined onsite during site investigation pose environmental concern to the surrounding soil.

Based on the site history and walkthrough, the site is considered to have the following environmental concerns of:

- Areas of dwellings/sheds may currently (of have previously) stored fuel, oils, pesticides, zinc treated (galvanised) metals and/or lead based paints.
- Contaminants from the contents of the stockpiles, fuel barrels, oil storage tanks and heavy vehicles may have leaked, spilled or been distributed onto the underlying soil.
- Areas of possible cropping/farming activity may have introduced heavy metals or pesticides to the soil.
- Areas near mobile oil tanks and fuel storage tanks may have heavy metal, fuel and chemical contaminants leaked or spilled into the underlying soil.

To address identified AECs, intrusive soil/water sampling regime is recommended to determine what, if any, remediation is required to render the site fit for residential use. A soil sampling plan is to be developed based on a judgemental or systematic sampling pattern and risk-based assessment.

Assessment shall address each of the identified AECs and assess COPC identified for each AEC (Table 4). Results of the site testing shall be assessed against Site Acceptance Criteria (SAC) with reference to ASC NEPM (1999, amended 2013).

7. SAMPLING AND ANALYSIS QUALITY PLAN (SAQP)

A limited SAQP was developed to ensure that data collected for this PSI was representative and provided a robust basis for site assessment decisions considering the areas of environmental concerns identified in Section 6.

Preparation of the SAQP includes:

- Field Screening and Sampling Program;
- Sampling QA/QC;
- Sample Handling, Preservation and Storage Procedures;
- Analytical Program and Site Investigation Data Assessment

7.1 Field Screening and Sampling Program

7.1.1 Data Quality Plan

Investigations at the Site included a review of the preliminary site investigation prior to the commencement of work. The sampling regime for the investigation area of the Site was in accordance with the requirements as outlined in the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites.

7.1.2 Visual Inspection

During the sampling works for the site contamination investigation report, a visual inspection was conducted to ensure no suspected asbestos containing materials (ACM) were present. The inspections for ACM were undertaken in a systematic, back and forth fashion over the site to identify suspected ACM.

7.1.3 Soil Sampling Techniques

All techniques used for soil sampling, are based on methods specified by the National Environmental Protection (Assessment of Site Contamination) Measure (NEPM, 2013). Experienced personnel of Geotesta collected all the samples for delivery to NATA accredited laboratory of Eurofins MGT. Soil samples for chemical analysis were in a judgemental sampling pattern based on site history and AECs.

7.1.4 Rationale for Sampling Program and Locations

The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience and history of the Site

(Judgement Sampling Pattern). All historical investigations and anecdotal evidence supported the sampling approach adopted and provided for samples to be collected in an unbiased manner. All the AECs including heavy metals, OCP/OPP, TRH, PAH, BTEX and asbestos concentrations have been targeted.

7.1.5 Sampling Program

Fieldwork for this investigation was carried out on 28 January 2022 and 11 May 2022 and included excavation of thirty-nine (39) boreholes. Some boreholes were advanced by vehicle-mounted auger to a maximum depth of 0.4m as part of Geotechnical Site Investigation in conjunction with this detailed site investigation, and others by hand auger. The sampling locations are shown in Figure 4. Environmental soil samples were collected from the surface and at lower depths. Standard procedures were used for sampling and soil sampling methodology was completed to meet data quality objectives.

7.1.6 Soil Logging

Boreholes were logged by an experienced environmental/geotechnical engineer in accordance with Standard procedures. The borehole logs are presented in Appendix D.

7.2 Sampling Quality control (QC) / Quality Assurance (QA)

7.2.1 Sampling Procedures

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included an auger, stainless-steel bowl, stainless steel trowel and knife. All equipment was decontaminated between samplings. The following measures have been utilized during the sampling to achieve the sampling quality controls.

7.2.1.1 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lid. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team and media collected.

7.2.1.2 Sample Tracking and Identification

All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records.

7.2.1.3 Decontamination

All equipment used in the sampling program, which includes a steel shovel, and a hand auger was decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;

- Cleaning in a solution of Decon-90TM;

- Rinsing in clean demineralised water then wiping with clean lint free cloths.

7.2.1.4 Sample Transport

All samples were packed in ice from the time of collection and were transported under chain of custody from the Site to NATA registered laboratory identified as Eurofins MGT Services in Lane Cove. Collected samples were placed into an ice chilled cooler-box. During the project, the laboratory reported that all the samples arrived intact, with appropriate preservation medium and were analysed within their relative holding times for the respective analytes.

7.2.2 Analytical QA/QC Procedures

Quality control is achieved by utilising NATA accredited laboratories, using standard methods supported by internal duplicates, the checking of high, abnormal, or otherwise anomalous results against background and other chemical results for the sample concerned.

Quality assurance is achieved by confirming field or anticipated results based upon the comparison of field observations with laboratory results. One duplicate sample (D6) was taken for the first day of sampling and was duplicate sample of parent samples Di-6. Second duplicate sample (EBH4) was taken for the second day of sampling and was duplicate sample of parent samples BD1.

The laboratory undertakes additional duplicate analysis as part of their internal quality assurance program. Chain of Custody documentations were used to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

Reinstate sample were collected for this investigation, however, we do not consider the absence of these QA/QC results to have impacted the useability of the data for this investigation, as discussed in section 8.3.

8. SAMPLING PROGRAM

8.1 Field Investigation

Fieldwork for this investigation was carried out on 28 January 2022 and 11 May 2022 and included drilling of thirty-nine (39) boreholes. Boreholes were advanced by both hand auger and a vehicle-mounted auger to a maximum depth of 400mm. The sampling locations are shown in Figure 4. Environmental soil samples were collected from the surface and at lower depths and held for selected analysis.

During the sampling works a visual inspection was also conducted to ensure no suspected asbestos containing materials (ACM) were visible. The inspections for asbestos were undertaken in a systematic, back and forth fashion over the site to identify suspected ACM.

8.2 Analytical Program

Samples were to be analysed to provide information for the characterisation of the most likely contaminated soils. This allowed the assessment of soils samples against the Site Acceptance Criteria. All analyses were to be carried out by NATA certified laboratory Eurofins MGT in accordance with Chain of Custody (CoC) instructions supplied by Geotesta. The samples were checked for heavy metals, OCP/OPP, PAH, TRH, BTEX and Asbestos. Summary of the soil laboratory analyses is presented in Table 6. The details of samples' types and depths are provided in Table 7.

DI6 and the duplicate sample D6

Table 6: Summary of soil laboratory program

COC	Number of samples analysed
Suite B10[1]	6
Heavy Metals[2]	36
Suite B14[3]	5
Suite B15[4]	12
Suite B7A[5]	12
Asbestos	17

Notes:

[1]Suite B10: **TRH, BTEX, PAH, OCP, OPP, Arsenic, cadmium, Chromium, copper, lead, Mercury, Nickel, Zinc**

[2]Heavy metals: **Arsenic, cadmium, Chromium, copper, lead, Mercury, Nickel, Zinc**

[3]Suite B14: **OCP and OPP**

[4]Suite B15: **OCP, OPP, PCB**

[5]Suite B7A: **TRH, BTEX, PAH, Phenols, Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Mercury**

Table 7: Samples Depth and Requested Lab Tests

Sample ID (BH)	Depth (m)	Sample Type	Suite B10	HM[1]	Suite B14	Suite B15	Suite B7A	Asbestos
DI-1-1	0.1	Silty CLAY		×				
DI-2-1	0.15	Topsoil		×				
DI-2-3	0.1	Topsoil		×				
DI-3	0.5	Silty CLAY		×				
DI-3-2	0.15	Topsoil		×				
DI-3-3	0.2	Topsoil		×				
DI-4	0.5	Silty CLAY		×	×			
DI-4-3	0.1	Silty CLAY		×				
DI-5	1.0	Silty CLAY		×				
DI-5-1	0.1	Topsoil		×				
DI-6	1.0	Silty CLAY		×	×			
D-6-2	0.1	Topsoil		×	×			
DI-7-1	0.1	Topsoil	×					
DI-7-2	0.2	Topsoil		×	×			
DI-8-1	0.1	Topsoil		×				
DI-9	0.5	Silty CLAY	×					
DI-10-1	0.1	Topsoil		×				
DI-10-2	0.15	Topsoil		×	×			
DI-11-1	0.1	Silty CLAY	×					
DI-11-2	0.15	Silty CLAY	×					
DI-12-1	0.2	Silty CLAY	×					
DI-13-1	0.2	Topsoil	×					
ASB-7-1	0.15	Silty CLAY						×
ASB-11-1	0.1	Silty CLAY						×
ASB12-1	0.1	Topsoil						×
ASB-13-1	0.2	Topsoil						×
ASB-14-1	0.1	Silty CLAY						×
EBH1	0.4	Silty CLAY		×		×	×	×
EBH2	0.2	Topsoil		×		×	×	×
EBH3	0.2	Topsoil		×		×	×	×
EBH4	0.2	Topsoil		×		×	×	×
EBH5	0.2	Topsoil		×		×	×	×
EBH6	0.2	Topsoil		×		×	×	×
EBH7	0.2	Topsoil		×		×	×	×
EBH8	0.2	Topsoil		×		×	×	×
EBH9	0.2	Topsoil		×		×	×	×
EBH10	0.2	Topsoil		×		×	×	×
EBH11	0.2	Topsoil		×		×	×	×
EBH12	0.2	Topsoil		×		×	×	×

Asterisk (*) indicates previous samples collected on 24 September 2021
[1]HM: Heavy metal
[2]OCP: Organochloride pesticides
[2]OPP: Organophosphate pesticides
[3]R17: Total Recoverable Hydrocarbons - 1999 NEPM Fractions: Volatile Organics
Total Recoverable Hydrocarbons - 2013 NEPM Fractions
Polycyclic Aromatic Hydrocarbons, Organochlorine Pesticides
Polychlorinated Biphenyls (PCB), Spectated Phenols, Total Recoverable Hydrocarbons - 2013 NEPM Fractions, Chromium (hexavalent), Cyanide (total) and Fluoride
Heavy Metals such as arsenic, copper, lead, etc., Total Recoverable Hydrocarbons - 1999 NEPM Fractions, TRH: Total recoverable hydrocarbons
PAH: Polycyclic aromatic hydrocarbons
BTEX: Benzene, toluene, ethyl benzene, xylene
PCB: Polychlorinated Biphenyls

9. ASSESSMENT CRITERIA

9.1 Heavy metals, PAH, PCB, OCP/OPP and asbestos

Based on the proposed development, Health Investigation levels (HIL) of Residential A with soil access (ASC NEPM 1999, amended 2013) have been adopted as the Soil Assessment Criteria (SAC) for metals, OCP, OPP and PAH for this investigation.

The bonded asbestos Health Screening Levels (HSLs) in soils (NEPM 2013) were also adopted for the Site. In addition to soil samples tested for asbestos, the 'presence/absence' of asbestos in soil material has been adopted as the SAC. Generic Ecological Investigation Levels (EILS) will also be used to assess the site to confirm suitability for the proposed residential land use.

Table 8 presents HILs for heavy metals, PAH, pesticides (OCP/OPP) and HSLs asbestos.

Table 8: Site Assessment Criteria for Soils (mg/kg)

Analytes	HILs-Residential A[1]	HSLs-Residential A[1]
Arsenic	100	--
Cadmium	20	--
Chromium (VI)	100	--
Copper	6000	--
Lead	300	--
Mercury (inorganic)	40	--
Nickel	400	--
Zinc	7400	--
Total PAHs	300	--
Benzo(a)PyreneTEQ	3	--
PCB	1	--
Pesticides: (Aldrin/DielDrin), Chlordane DDT+DDE+DDD Chlorpyrifos	 6 50 240 160	 -- -- --
Asbestos: Bonded ACM[2], Friable Asbestos[3] (FA), Asbestos Fines[4] (AF), Surface Asbestos (0.1m)	 -- -- --	 0.01% 0.001% No Visible

1- Criteria adopted for residential areas of the Site
2- Bonded ACM (bonded Asbestos) - asbestos-containing-material which is in sound condition and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). Bonded ACM refers to, in this instance, material that cannot pass a 7 mm x 7 mm sieve.
3- Fibrous Asbestos - friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This material is in a degraded condition such that it can be broken or crumbled by hand pressure.
4- Asbestos Fines - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

9.2 Total Recoverable Hydrocarbons (TRH) and Benzene Toluene Ethylbenzene Xylene (BTEX)

The NEPM (2013) provides Health Screening Levels (HSLs), Ecological Screening Levels (ESLs) and Management Limits (MLs) for TRH fractions in soil based on concerns regarding ecological impacts, inhalation of vapours and direct contact with contaminant sources. The Fraction Number (i.e. hydrocarbon compound range) is identified and compared against the prescribed HSL, ESL and ML values. HSLs, ESLs and MLs take into consideration the followings:

- ✓ Carbon number range, indicated by a Fraction Number (F1, F2, F3 or F4);
- ✓ Type of soil (sand, silt or clay);
- ✓ Depth to the source of contamination;
- ✓ Intended land-use

For this Site, the intended land use is HSL A – Residential with garden/accessible soil and the soil type was clay within a depth range of 0-1.0 m, 1.0 - < 2.0 m and 2.0 - < 4.0 m. The criteria are summarised in Tables 9 and 10 below. They are obtained from Table 1A(3) (HSL A & HSL B), Table 1B(6) (fine soils) and Table 1B(7) (fine soils) in NEPM (2013).

Table 9: NEPM 2013 BTEX and TRH Criteria – HSL Criteria for 0-1m, 1-<2m and 2-<4m

Analytes	HSL-A(Clay) 0-1.0m	HSL-A (Clay) 1-<2.0m	HSL-A (Clay) 2-<4.0m
Benzene	0.7	1	2
Toluene	480	NL	NL
Ethylbenzene	NL	NL	NL
Xylene	110	310	NL
F1: C6-C10 Less BTEX	50	90	150
F2:C10-C16 Less Naphthalene	280	NL	NL
F3: C16-C34	N/A	N/A	N/A
F4: C34-C40	N/A	N/A	N/A

NL = Not Limiting (i.e. the soil vapour concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario).
N/A = Not applicable as F3 and F4 are non-volatile and hence are not of concern for vapour intrusion.
*'Fine' refers to the soil texture grading as per NEPM 1999.
1 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion* – 0-1.0m
2 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion* – 1-<2.0m
3 NEPM 2013 Amendment *Table 1A(3) – Soil HSLs for vapour intrusion* – 2-<4.0m

Table 10: NEPM 2013 BTEX and TRH Criteria, ESL and ML Criteria for 0-1m, 1-<2m and 2-<4m

Analytes	NEPM 2013 Amendment TRH Criteria (mg/kg dry wt.) ESL (Fine*)	NEPM 2013 Amendment TRH Criteria (mg/kg dry wt.) ML (Fine*)
Benzene	65	
Toluene	105	
Ethylbenzene	125	
Xylene	45	
F1: C6-C10	180	800
F2:C10-C16	120	1000
F3: C16-C34	1300	3500
F4: C34-C40	5600	10000

'Fine' refers to the soil texture grading as per NEPM 1999.
1 NEPM 2013 Amendment Table 1B(6) – ESLs for TPH fractions, BTEX and benzo(a)pyrene in soil.
2 NEPM 2013 Amendment Table 1B(7) – Management Limits for TPH fractions F1-F4 in soil.

9.3 Ecological Investigation Levels

Ecological Investigation Levels (EILS) were also used to assess the site to confirm suitability for the proposed residential land use.

The current version of the NEPM (2013) specifies default EILs for arsenic, lead, DDT and naphthalene.

NEPM (2013) specifies a methodology for the derivation of site-specific EILs for nickel, chromium III, copper and zinc. The derivation process requires determination of ambient background concentrations (ABC) and added contaminant limits (ACLs) for these chemicals, and the EIL is then calculated as the ABC plus the ACL.

In Samples# Di-7-2 & EBH5, soil properties to be measured for site-specific derivation of ACLs for Cr(III), Cu, Ni and Zn

- pH, CEC and % Clay.

Table 11 presents EILs derived from the measured soil properties in sample#EBH5 for aged soils in Urban Residential/Public Open Space based, utilising ABC levels derived from sample# Di-5 & EIL.

Table 11: NEPM (2013) EILs for Urban Residential and Public Open Spaces

Analyte	pH	CEC^	Clay Content*	ABC	ACL	EIL
Zinc	7.0	15.5	-	21	400	421
Copper	7.0	15.5	-	19	235	190
Chromium (III)	-	-	17%	99[2]	400	499
Nickel	-	15.5	-	41	170	211
Lead	-	-	-	7	1100	1,107
Arsenic	-	-	-	-	-	100
DDT	-	-	-	-	-	180
Naphthalene	-	-	-	-	-	170

Note(s):

1. ABC = ambient background concentrations, ACL = added contaminant limits, ESL = ecological screening levels, CEC = cation exchange capacity;
2. Total Chromium utilised for Cr(III)

10. RESULTS

10.1 Subsurface Conditions

A summary of sub-surface soil conditions encountered in the site is presented below:

Based on the fieldwork results, an approximately 0.3m thick topsoil/fill layer was observed in boreholes.

The material below the topsoil/fill material was mostly stiff to hard Silty CLAY. Augur refusal was encountered in some of the boreholes at depths varying between 1.8m – 2.5m.

Groundwater was not encountered in any of the boreholes.

10.2 Laboratory Analytical Results

Selected soil samples were analysed for the COPCs. A summary of analytical results follows. The lab test reports are presented in Appendix E.

10.2.1 Heavy Metals (HM)

A total of twenty-four (36) soil samples were analysed for heavy metals. The results of the lab tests for the heavy metal components are presented in Table 12. The 95% UCL was calculated as a statistical analysis of the heavy metal detections including minimum, maximum and average along with the adopted SAC, and is shown in Table 13.

Table 12: Heavy Metal Detections in soil samples (mg/kg)

Sample	Sample Depth (m)	Arsenic (As)	Cadmium (Cd)	Chromium (total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
DI-1-1	0.1	**3.2**	< 0.4	**88**	**15**	**10**	< 0.1	**30**	**24**
DI-2-1	0.15	**4.3**	< 0.4	**99**	**28**	**14**	< 0.1	**70**	**45**
DI-2-3	0.1	**3.7**	< 0.4	**91**	**30**	**12**	< 0.1	**80**	**54**
DI-3	0.5	**7.2**	< 0.4	**160 (<1) ***	**33**	**8.9**	< 0.1	**100**	**37**
DI-3-2	0.15	**6.5**	< 0.4	**52**	**19**	**12**	< 0.1	**42**	**52**
DI-3-3	0.2	**7.2**	< 0.4	**74**	**23**	**10**	< 0.1	**60**	**62**
DI-4	0.5	**3.6**	< 0.4	**28**	**11**	**10**	< 0.1	**46**	**30**
DI-4-3	0.1	**3.3**	< 0.4	**42**	**15**	**8.3**	< 0.1	**28**	**34**
DI-5	1	**6.6**	< 0.4	**160 (<1) ***	**32**	**14**	< 0.1	**71**	**33**
DI-5-1	0.1	**5.3**	< 0.4	**120 (<1) ***	**22**	**12**	< 0.1	**57**	**40**
DI-6	0.1	**4.3**	< 0.4	**83**	**17**	**14**	< 0.1	**37**	**19**
D-6-2	0.1	**3.2**	< 0.4	**200 (<1) ***	**42**	**9.8**	< 0.1	**130**	**64**
DI-7-1	0.1	**7.8**	< 0.4	**53**	**15**	**10**	< 0.1	**44**	**33**
DI-7-2	0.2	**7.5**	< 0.4	**99**	**33**	**15**	< 0.1	**65**	**63**
DI-8-1	0.1	**6.3**	< 0.4	**130 (<1) ***	**15**	**13**	< 0.1	**56**	**29**
DI-9	0.5	**4.5**	< 0.4	**74**	**18**	**10**	< 0.1	**58**	**35**
D-9	0.5	**3.6**	< 0.4	**53**	**15**	**8.9**	< 0.1	**47**	**29**
DI-10-1	0.1	**3.9**	< 0.4	**91**	**22**	**15**	< 0.1	**52**	**34**
DI-10-2	0.15	**4.1**	< 0.4	**120 (<1) ***	**21**	**15**	< 0.1	**48**	**33**
DI-11-1	0.1	**3.6**	< 0.4	**110 (<1) ***	**25**	**13**	< 0.1	**80**	**150**
DI-11-2	0.15	**12**	< 0.4	**200 (<1) ***	**82**	**33**	< 0.1	**130**	**750**
DI-12-1	0.2	**4.4**	< 0.4	**150 (<1) ***	**31**	**45**	< 0.1	**94**	**170**
DI-13-1	0.2	**4.1**	**1.6**	**150 (<1) ***	**30**	**67**	< 0.1	**110**	**1200**
D6	0.1	**4.2**	< 0.4	**78**	**21**	**11**	< 0.1	**38**	**21**
EBH1	0.4	**3.3**	< 0.4	**140 (<1) ***	**35**	< 5	< 0.1	**130**	**52**
EBH2	0.2	**3.3**	< 0.4	**140 (<1)***	**53**	< 5	< 0.1	**180**	**70**
EBH3	0.2	**2.1**	< 0.4	**37**	**12**	**7.1**	< 0.1	**23**	**19**
EBH4	0.2	**2.8**	< 0.4	**80**	**24**	**7.8**	< 0.1	**60**	**34**
EBH5	0.2	**2.6**	< 0.4	**82**	**19**	**7.4**	< 0.1	**52**	**26**
EBH6	0.2	**2.5**	< 0.4	**250 (<1) ***	**44**	**5.0**	< 0.1	**230**	**52**
EBH7	0.2	**3.3**	< 0.4	**60**	**13**	**6.8**	< 0.1	**52**	**34**

EBH8	0.2	**4.8**	< 0.4	**110 (<1) ***	**31**	**9.3**	< 0.1	**77**	**41**
EBH9	0.2	**2.8**	< 0.4	**78**	**16**	**7.1**	< 0.1	**55**	**29**
EBH10	0.2	**6.1**	< 0.4	**64**	**16**	**8.0**	< 0.1	**49**	**35**
EBH11	0.2	**2.3**	< 0.4	**110 (<1) ***	**32**	**7.6**	< 0.1	**98**	**50**
EBH12	0.2	**2.7**	< 0.4	**130 (<1) ***	**30**	**6.3**	< 0.1	**96**	**39**

Note- Chromium is total chromium and includes trivalent and hexavalent chromium.

***Hexavalent Chromium**

Table 13: Statistical analysis of Heavy Metal Detections in Soil samples (mg/kg)

	As	Cd	Total Cr	Cu	Pb	Hg	Ni	Zn
Samples count[1]	36	36	36	36	36	36	36	36
Minimum	**2.1**	**1.6**	**28**	**11**	**5.0**	**-**	**23**	**19**
Maximum	**12**	**1.6**	**250** (<1) ***	**82**	**67**	**-**	**130**	**1200**
Average	4.52	1.60	106.2	26.1	13.0	-	74.3	97.8
Standard Deviation	2.04	-	50.2	13.7	12.0	-	43.3	224.5
95% Confidence	0.69	-	17	4.62	4.06	-	14.66	75.96
NEPM 2013 HIL	**100**	**20**	**100***	**6000**	**300**	**40**	**400**	**7400**
NEPM 2013 EIL	**100**	**--**	**499****	**190**	**1107**	**--**	**211**	**421**
No. of HIL Exceedance	0	0	0	0	0	0	0	0

* Note: Hexavalent Chromium ** Note: Trivalent Chromium

[1] Note: Duplicate sample is excluded in sample count.

Total Chromium concentrations initially appeared to have exceeded the HIL A Criteria in sixteen (16) samples, additional analysis was required. Following the additional analysis for chromium (VI), Cr (VI) concentrations were reported to be below the Limits of Reporting (LOR). All chromium (III) concentrations were within the EIL Criteria.

Therefore, all detected concentrations of heavy metals were found to be within the Site Assessment Criteria (HIL A and EIL).

10.2.1 Organochlorine Pesticides / Organophosphorus Pesticides (OCP/OPP)

A total of eleven (11) samples were analysed for a range of Organochlorine and Organophosphorus pesticides. Table 14 shows the OCP/OPP detections.

Table 14: OCP/OPP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	DDT+DDE+ DDD	Aldrin and Dieldrin	Endrin	Chlordane Total	Toxaphene	Chlorpyrifos
DI-4	0.5	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-6	0.1	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-6-2	0.1	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-7-1	0.1	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-7-2	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-9	0.5	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-10-2	0.15	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-11-1	0.1	< 0.5	< 0.5	< 0.5	< 0.1	< 10	< 0.5
DI-11-2	0.15	< 0.5	< 0.5	< 0.5	< 0.1	< 10	< 0.5
DI-12-1	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
DI-13-1	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH1	0.4	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH2	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH3	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH4	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH5	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH6	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH7	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH8	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH9	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH10	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH11	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
EBH12	0.2	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
NEPM 2013 HIL		**240**	**6**	**240**	**50**	**20**	**160**
No. of HIL Exceedance		0	0	0	0	0	0

All concentrations of OCP/OPP were found to be below the Limit of Reporting (LOR) and were within the adopted Site Assessment Criteria (SAC).

10.2.2 Polycyclic Aromatic Hydrocarbons (PAH)

A total of twenty-two (22) samples were analysed for a range of PAH. Total PAH detections are shown in Table 15.

Table 15: Total PAH Detections in soil samples (mg/kg)

	Sample Depth (m)	Total PAH	Benzo(a) Pyrene (Upper Bound)	Naphthalene
DI-1-1	0.1	< 0.5	1.2	< 0.5
DI-2-3	0.1	< 0.5	1.2	< 0.5
DI-3-2	0.15	< 0.5	1.2	< 0.5
DI-4-3	0.1	< 0.5	1.2	< 0.5
DI-7-1	0.1	< 0.5	1.2	< 0.5
DI-9	0.5	< 0.5	1.2	< 0.5
DI-11-1	0.1	< 0.5	1.2	< 0.5
DI-11-2	0.15	< 0.5	1.2	< 0.5
DI-12-1	0.1	< 0.5	1.2	< 0.5
DI-13-1	0.2	< 0.5	1.2	< 0.5
EBH1	0.4	< 0.5	1.2	< 0.5
EBH2	0.2	< 0.5	1.2	< 0.5
EBH3	0.2	< 0.5	1.2	< 0.5
EBH4	0.2	< 0.5	1.2	< 0.5
EBH5	0.2	< 0.5	1.2	< 0.5
EBH6	0.2	< 0.5	1.2	< 0.5
EBH7	0.2	< 0.5	1.2	< 0.5
EBH8	0.2	< 0.5	1.2	< 0.5
EBH9	0.2	< 0.5	1.2	< 0.5
EBH10	0.2	< 0.5	1.2	< 0.5
EBH11	0.2	< 0.5	1.2	< 0.5
EBH12	0.2	< 0.5	1.2	< 0.5
NEPM 2013		**300**	**3**	**170**
No of NEPM Exceedance		**0**	**0**	**0**

All concentrations of PAH were found to be below the Limit of Reporting (LOR) and were within the adopted Site Assessment Criteria (SAC).

10.2.3 Total Recoverable Hydrocarbons (TRH) - 2013 NEPM Fractions

A total of twenty-five (25) samples were analysed for TRH. TRH detections are presented in Table 16.

Table 16: Total TRH Detections in soil samples (mg/kg)

Sample ID	Sample Depth (m)	F1: C6-C10	F2: C10-C16	F3: C16-C34	F4: C34-C40
DI-2-1	0.15	< 20	< 50	< 100	< 100
DI-3	0.5	< 20	< 50	< 100	< 100
DI-3-3	0.2	< 20	< 50	< 100	< 100
DI-5-1	0.1	< 20	< 50	**150**	< 100
DI-6	0.1	< 20	< 50	< 100	< 100
DI-7-1	0.1	< 20	< 50	< 100	< 100
DI-8-1	0.1	< 20	< 50	< 100	< 100
DI-9	0.5	< 20	< 50	< 100	< 100
DI-10-1	0.1	< 20	< 50	< 100	< 100
DI-11-1	0.1	< 20	**100**	**1200**	**200**
DI-11-2	0.15	< 20	**120**	**1400**	**340**
DI-12-1	0.2	< 20	< 50	**220**	< 100
DI-13-1	0.2	< 20	< 50	**220**	< 100
EBH1	0.4	< 20	< 50	< 100	< 100
EBH2	0.2	< 20	< 50	< 100	< 100
EBH3	0.2	< 20	< 50	< 100	< 100
EBH4	0.2	< 20	< 50	< 100	< 100
EBH5	0.2	< 20	< 50	< 100	< 100
EBH6	0.2	< 20	< 50	< 100	< 100
EBH7	0.2	< 20	< 50	< 100	< 100
EBH8	0.2	< 20	< 50	< 100	< 100
EBH9	0.2	< 20	< 50	< 100	< 100
EBH10	0.2	< 20	< 50	< 100	< 100
EBH11	0.2	< 20	< 50	< 100	< 100
EBH12	0.2	< 20	< 50	< 100	< 100
HSL		**50**	**280**	**NL**	**NL**
ESL		**180**	**120**	**1300**	**5600**
ML		**800**	**1000**	**3500**	**10000**
No of HSL/ESL/ML Exceedance		**0**	**0**	**1**	**0**

All samples analysed, are found to have concentrations of TRH within the adopted Site Criteria (HSL, ESL and ML). With the exception of Sample# Di-11-2 where the concentration of TRH F3: C16-C34 exceeded the Ecological Screening Level (ESL), the Management Level was not exceeded.

Given that the sample was sampled in a tree lined area and there was no visual evidence or odours of hydrocarbon contamination within the soil such as oil staining. Geotesta Pty Ltd is of the opinion, the hydrocarbons were natural occurring, often associated with oils from eucalyptus trees and dropped leaves.

10.2.4 Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) - 2013 NEPM Fractions

A total of nineteen (19) samples were analysed for BTEX. BTEX detections are presented in Table 17.

Table 17: Total BTEX Detections in soil samples (mg/kg)

	Sample Depth (m)	Benzene	Toluene	Ethylbenzene	Xylene
DI-5	0.1	< 0.1	< 0.1	< 0.1	< 0.3
DI-7-1	0.1	< 0.1	< 0.1	< 0.1	< 0.3
DI-9	0.5	< 0.1	< 0.1	< 0.1	< 0.3
DI-11-1	0.1	< 0.1	< 0.1	< 0.1	< 0.3
DI-11-2	0.15	< 0.1	< 0.1	< 0.1	< 0.3
DI-12-1	0.2	< 0.1	< 0.1	< 0.1	< 0.3
DI-13-1	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH1	0.4	< 0.1	< 0.1	< 0.1	< 0.3
EBH2	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH3	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH4	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH5	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH6	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH7	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH8	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH9	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH10	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH11	0.2	< 0.1	< 0.1	< 0.1	< 0.3
EBH12	0.2	< 0.1	< 0.1	< 0.1	< 0.3
HSL		**0.7**	**480**	**NL**	**110**
ESL		**65**	**105**	**125**	**45**
No. of HSL/ESL Exceedance		**0**	**0**	**0**	**0**

All samples analysed, are found to have concentrations of BTEX below the LOR and therefore within the adopted Site Criteria (HSL and ESL).

10.2.5 Asbestos

All sample locations were visually assessed for the presence of visible suspected asbestos containing materials (ACM) within surface soils, no suspected ACM were encountered. Within all samples analysed for asbestos, no asbestos was detected above the Reporting Limit.

10.2.6 Swamp/dam water results

Four water samples (W1 for 1/2/22) and (W1-W3 for 12/5/22) of swamp/dam water were sampled and sent to the laboratory for analysis of heavy metals and OCP/OPP. The laboratory results are presented in Tables 18 and 19. The samples were unfiltered and represent the Dam waters.

Table 18: Heavy Metal Detections in dam water sample (mg/L)

	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
W1 1/2/22	**0.002**	< 0.0002	**0.006**	**0.011**	**0.002**	< 0.0001	**0.017**	**0.01**
W1 12/5/22	< 0.001	< 0.0002	**0.01**	**0.005**	**0.002**	< 0.0001	**0.011**	**0.015**
W2 12/5/22	< 0.001	< 0.0002	**0.007**	**0.004**	**0.001**	< 0.0001	0.007	**0.015**
W3 12/5/22	< 0.001	< 0.0002	**0.013**	**0.007**	**0.003**	< 0.0001	**0.015**	**0.02**
ANZEC 95% Freshwater	0.024	0.0002	-	0.0014	0.0034	0.0006	0.011	0.008
Exceedances	0	0	0	**4**	0	0	**3**	**4**

Table 19: OCP/OPP (Pesticides) Detections in dam water sample (mg/L)

	Malathion	Diazinon	DDT	Aldrin+ Dieldrin	Chlordanes
W1	< 0.002	< 0.002	< 0.0002	< 0.0002	< 0.002
W2	< 0.002	< 0.002	< 0.0002	< 0.0002	< 0.002
W3	< 0.002	< 0.002	< 0.0002	< 0.0002	< 0.002
NEPM 2013 GILs	**0.07**	**240**	**0.004**	**0.0003**	**0.002**
Exceedances	0	0	0	0	0

Exceedances for copper, nickel and zinc were detected within the water dam samples analysed, all other Heavy Metal concentrations were found to be below the Site Assessment Criteria. All the concentrations of Pesticides detections were found to be below the adopted Site Assessment Criteria and limit of reporting (LOR).

10.3 Evaluation Analytical Quality Assurance

10.3.1 Duplicate Sample

The laboratory quality control measures are assessed based on a duplicate sample which was collected during the field works.

The Relative Percentage Difference (RPD) values between primary/parent sample DI6 and the duplicate sample D6 was calculated to assess the results. A zero RPD means perfect agreement of results between the primary and duplicate sample whilst an RPD above 200% indicates total disagreement in results. Any value >50% RPD will be noted and discussed, as per Standards Australia requirements, with respect to its acceptability for inclusion in the dataset.

An acceptable RPD of 30% was adopted for this assessment, however, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.

The following Table 20 presents the RPD results for the duplicate collected and pairs of results obtained above the laboratory detection limits.

Table 20: Relative Percentage Difference against DI6 and D6

Chemical	DI6	D6	RPD%
Arsenic	**4.3**	**4.2**	**2.4**
Cadmium	< 0.4	< 0.4	-
Chromium	**83**	**78**	**6.2**
Copper	**17**	**21**	**21.1**
Lead	**14**	**11**	**24**
Mercury	< 0.1	< 0.1	-
Nickel	**37**	**38**	**2.7**
Zinc	**19**	**21**	**10**

Adapted from Eurofins Certificate of Analysis 860033-S (Appendix E) 860033-S

The RPD for the duplicate samples analysed by the primary laboratory (Eurofins MGT) were between 2.4 % and 24 %. No results exceeded 50%. RPD values could not be determined for Cadmium and Mercury as they were below the laboratory reporting limits. Based on the laboratory QA/QC and the duplicate results the data is considered suitable for use in this environmental assessment of the site.

The Relative Percentage Difference (RPD) values between primary/parent sample EBH4 and the duplicate sample BD1 was calculated to assess the results.

The following Table 21 presents the RPD results for the duplicate collected and pairs of results obtained above the laboratory detection limits.

Table 21: Relative Percentage Difference against EBH4 and BD1

Chemical	EBH4	BD1	RPD%
Arsenic	**2.8**	**3.5**	**22.2**
Cadmium	< 0.4	< 0.4	-
Chromium	**80**	**100**	**22.2**
Copper	**24**	**20**	**18.2**
Lead	**7.8**	**5.5**	**34.6**
Mercury	< 0.1	< 0.1	-
Nickel	**60**	**67**	**11.0**
Zinc	**34**	**42**	**21.1**

Adapted from Eurofins Certificate of Analysis 889035-S (Appendix E)

The RPD for the duplicate samples analysed by the primary laboratory (Eurofins MGT) were between 11.0 % and 34.6 %. No results exceeded 50%. RPD values could not be determined for Cadmium and Mercury as they were below the laboratory reporting limits. Based on the laboratory QA/QC and the duplicate results the data is considered suitable for use in this environmental assessment of the site.

10.3.2 Trip Spike

The trip spike sample assesses the loss of volatile compounds through field handling and transport procedures. The trip spike is a sand sample spiked with a known concentration of BTEX by the analytical laboratory. The sample is transported to and from the site with the primary samples and is analysed to determine the percentage of BTEX recovered.

Upon analysis, the recovery rates were between 90% and 96% of the known concentration (refer to Table 22). Therefore, the field and transport procedures were considered satisfactory for minimising the potential loss of volatile compounds from the primary samples.

Table 22: Trip Spike Recovery (%)

Sample	Benzene	Toluene	Ethylbenzene	o-Xylene	Total Xylene
Trip Spike (%)	84	84	81	83	82
Assessment Criteria	70 – 130	70 – 130	70 – 130	70 – 130	70 – 130

Adapted from Eurofins Certificate of Analysis 889035-S S (Appendix E)

10.3.1 Trip Blank

The trip blank sample assesses the potential for the primary sample to be affected by external and environmental factors during transport between the site and laboratory. The trip blank sample consists of blank sand which is transported to and from the site and laboratory with the primary samples.

Upon analysis, no concentrations of BTEX were detected (refer to Table 23). As such, there is a minimal potential for cross-contamination to have occurred during the field and trip handling procedures.

Table 23: Trip Blank Sample Results (mg/kg)

Analyte	Trip Blank (mg/L)
Benzene	< 0.1
Toluene	< 0.1
Ethylbenzene	< 0.1
o-Xylene	< 0.1
Total Xylene	< 0.3

Adapted from Eurofins Certificate of Analysis 889035-S (Appendix E)

11. DISCUSSION

11.1 Soil Contamination Summary

The historical review indicated the site has been used for residential purposes since 1964 and vacant land prior to that. During the site investigation it is understood that the site has been using for agriculture purposes, Cattle sheds, Old tractors, and water tanks were observed on site. These may cause potential concern of contamination from heavy metals, OCP/OPP, PAH, TRH, BTEX and Asbestos.

A summary of the lab result is presented as the following:

- Detected concentration of all heavy metals were within the Site Assessment Criteria (SAC).
- Detected concentrations of Organochlorine Pesticides/Organophosphorus Pesticides (OCP/OPP) were below the laboratory reporting limit (LOR) and the Site Assessment Criteria.
- Detected concentrations of PAH and BTEX analytes were below the laboratory reporting limit and therefore within the Site Assessment Criteria
- One exceedance in TRH Fraction F3: C16-34 was detected in Sample DI-11-2, having exceeded the TRH Criteria / ESL (Fine Soil). Regarding the Hydrocarbon exceedance, given that the sample was sampled in a tree lined area and there was no visual evidence or odours of hydrocarbon contamination within the soil such as oil staining. Geotesta Pty Ltd is of the opinion, the hydrocarbons were natural occurring, often associated with oils from eucalyptus trees and dropped leaves.
- All remaining detected concentrations of TRH analytes were below the laboratory reporting limit (LOR) and therefore within the Site Assessment Criteria (SAC).
- Based on laboratory results, no asbestos were detected above the Reporting Limit within the samples analysed. No suspected asbestos containing materials (ACM) were observed on site during the inspection.
- Detected concentrations of copper, nickel and zinc within the water sample exceeded the adopted Site Assessment Criteria (ANZEC 95% Freshwater Guidelines). All remaining heavy metal and OCP/OPP Pesticides screened were within the SAC.

12. CONCLUSIONS AND RECOMMENDATIONS

A Preliminary Site Investigation of 13L and Lot 7 DP223428 Narromine Rd, Dubbo NSW 2830 was undertaken by Geotesta Pty Ltd to investigate the likelihood of the presence of contamination on the site. Based on the assessment undertaken, the following conclusions and recommendations can be made:

- Geotesta Pty Ltd is of the opinion, that the detected TRH Fraction F3: C16-34 at Sample location# DI-11-2 are natural hydrocarbons, associated with oils from eucalyptus trees and dropped leaves. Given that the sample was sampled in a tree lined area and there was no visual evidence or odours of hydrocarbons in the soil such as oil staining.

- Given the heavy metal exceedances (copper, nickel and zinc) within the dam water sampled, dam decommissioning can be performed once the Dam Decommissioning reports have been issued.

- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed development pending an additional Data Gap Contamination Assessment is undertaken.
- Due to the existence of a data-gap in this investigation, a further assessment post demolition of the existing structures/dwellings is required to address further potential AECs identified previously and to determine if any contamination hotspots exist within the footprint of the existing sheds and dwellings. The Gap Assessment scope must also include the following:
  - A Delineation Assessment is recommended in the vicinity of the TRH Fraction F3: C16-34 concentration elevation at the location of Sample# DI-11-2
  - Any stockpiles and areas under stockpiled materials that were not assessed at the time of the PSI or are new to site, will require sampling as part of the Data Gap Assessment.

DOCUMENT CONTROL

Date	Version	Report Prepared By:	Report Reviewed and issued by:
16 June 2022	Rev (0)	**Ngoc Thang Pham** BEng MSc PhD Geotechnical Engineer **Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant	**Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant

13. REFERENCES

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EPA NSW, http://www.epa.nsw.gov.au/prclmapp/aboutregister.aspx.

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Eurofins Environment Testing Pty Ltd, 01 February 2022, Certificate of Analysis 860033-S, prepared for Geotesta Pty Ltd

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Eurofins Environment Testing Pty Ltd, 13 May 2022, Certificate of Analysis 888819-W, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 14 June 2022, Certificate of Analysis 897298-S, prepared for Geotesta Pty Ltd

Lotsearch, Jannali Road, Dubbo, NSW 2830, Reference: LS032012 EP, 11 May 2022

Information about this report

The report contains the results of a contamination investigation conducted for a specific purpose and client. The results should not be used by other parties, or for other purposes, as they may contain neither adequate nor appropriate information. In particular, the investigation does not cover contamination issues unless specifically required to do so by the client.

Test Hole Logging

The information on the test hole logs (boreholes, test pits, exposures etc.) is based on a visual and tactile assessment, except at the discrete locations where test information is available (field and/or laboratory results). The test hole logs include both factual data and inferred information.

Groundwater

Unless otherwise indicated, the water levels presented on the test hole logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The actual groundwater level may differ from this recorded level depending on material permeability (i.e. depending on response time of the measuring instrument). Further, variations of this level could occur with time due to such effects as seasonal, environmental and tidal fluctuations or construction activities. Confirmation of groundwater levels, phreatic surfaces or piezometric pressures can only be made by appropriate instrumentation techniques and monitoring programmes.

Interpretation of Results

The discussion or recommendations contained within this report normally are based on a site evaluation from discrete test hole data. Generalized, idealized or inferred subsurface conditions (including any geotechnical cross-sections) have been assumed or prepared by interpolation and/or extrapolation of these data. As such these conditions are an interpretation and must be considered as a guide only.

Change in Conditions

Local variations or anomalies in the generalized ground conditions do occur in the natural environment, particularly between discrete test hole locations. Additionally, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Furthermore, conditions may change at the site from those encountered at the time of the geotechnical investigation through construction activities and constantly changing natural forces.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed or reported should be referred to GEOTESTA for appropriate assessment and comment.

Environmental Verification

Verification of the environmental/contamination assumptions and/or model is an integral part of the design process-investigation, construction verification, and performance monitoring. Variability is a feature of the natural environment and, in many instances, verification of soil or rock quality, or foundation levels, is required. There may be a requirement to extend foundation depths, to modify a foundation system or to conduct monitoring as a result of this natural variability. Allowance for verification by geotechnical personnel accordingly should be recognized and programmed during construction.

Reproduction of Reports

Where it is desired to reproduce, the information contained in our contamination report, or other technical information, for the inclusion in contract documents or engineering specification of the subject development, such reproductions should include at least all of the relevant test hole and test data, together with the appropriate standard description sheets and remarks made in the written report of a factual or descriptive nature. Reports are the subject of copyright and shall not be reproduced either totally or in part without the express permission of Geotesta.

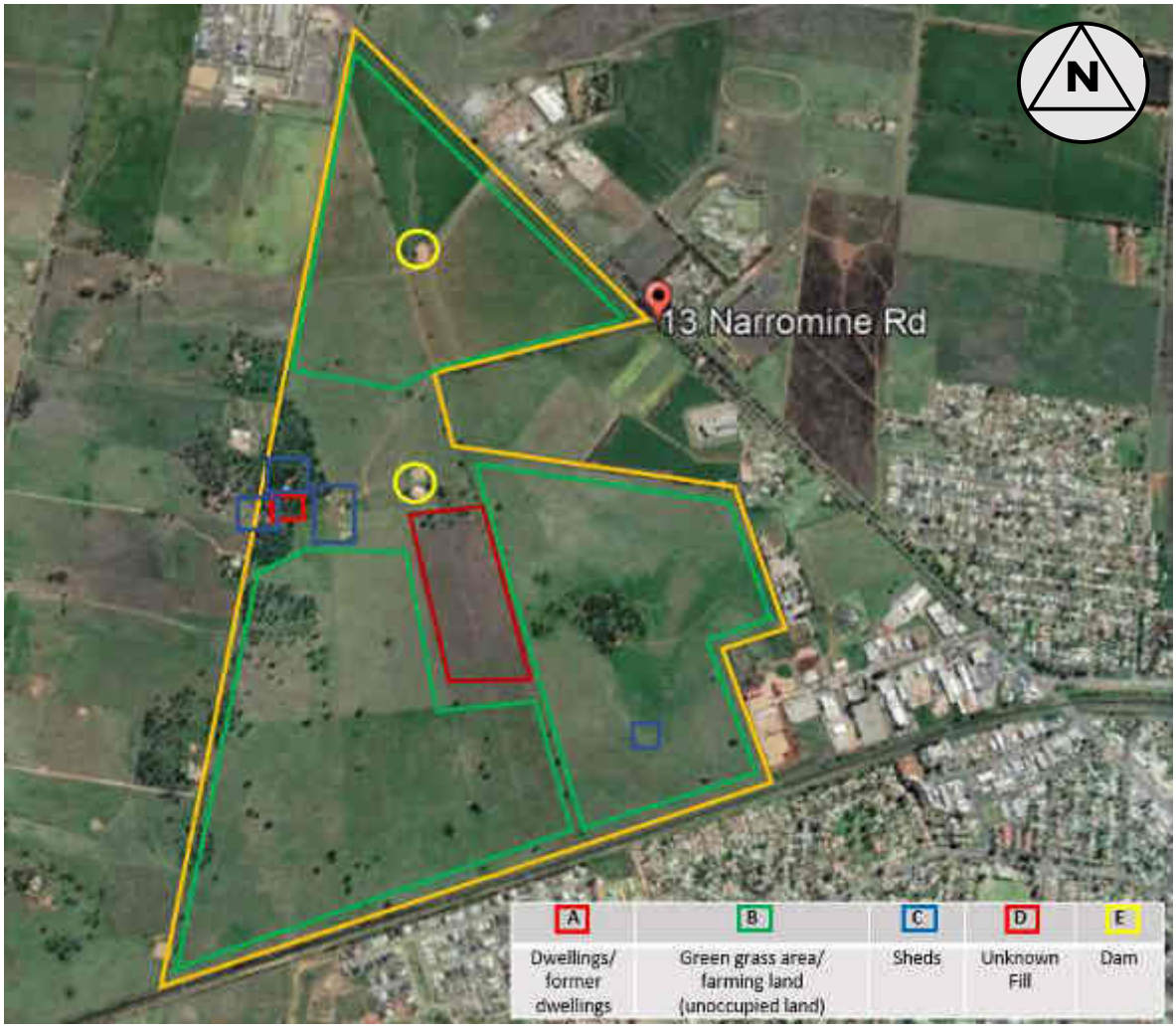


Figure 3: Areas of Environmental Concerns

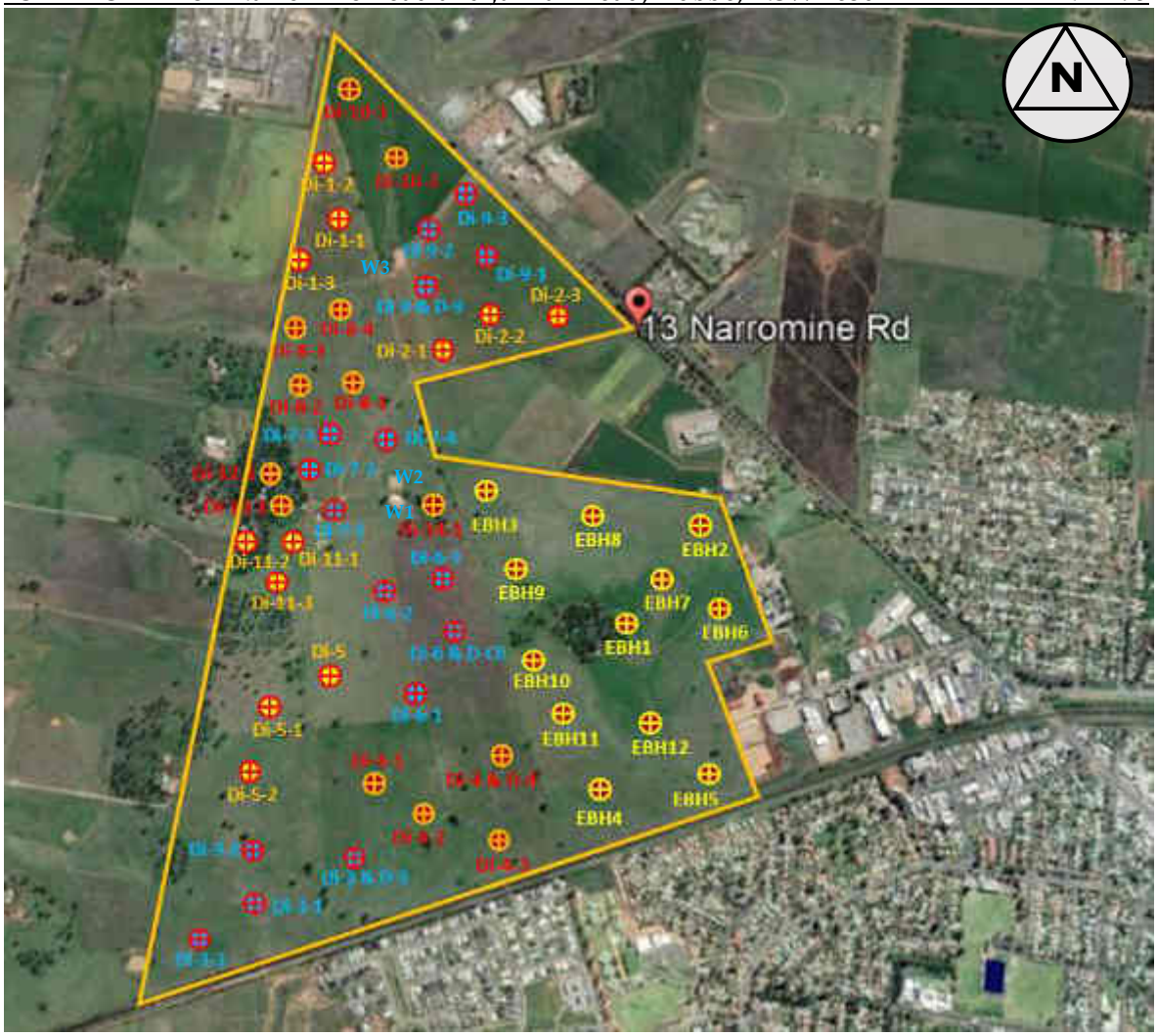


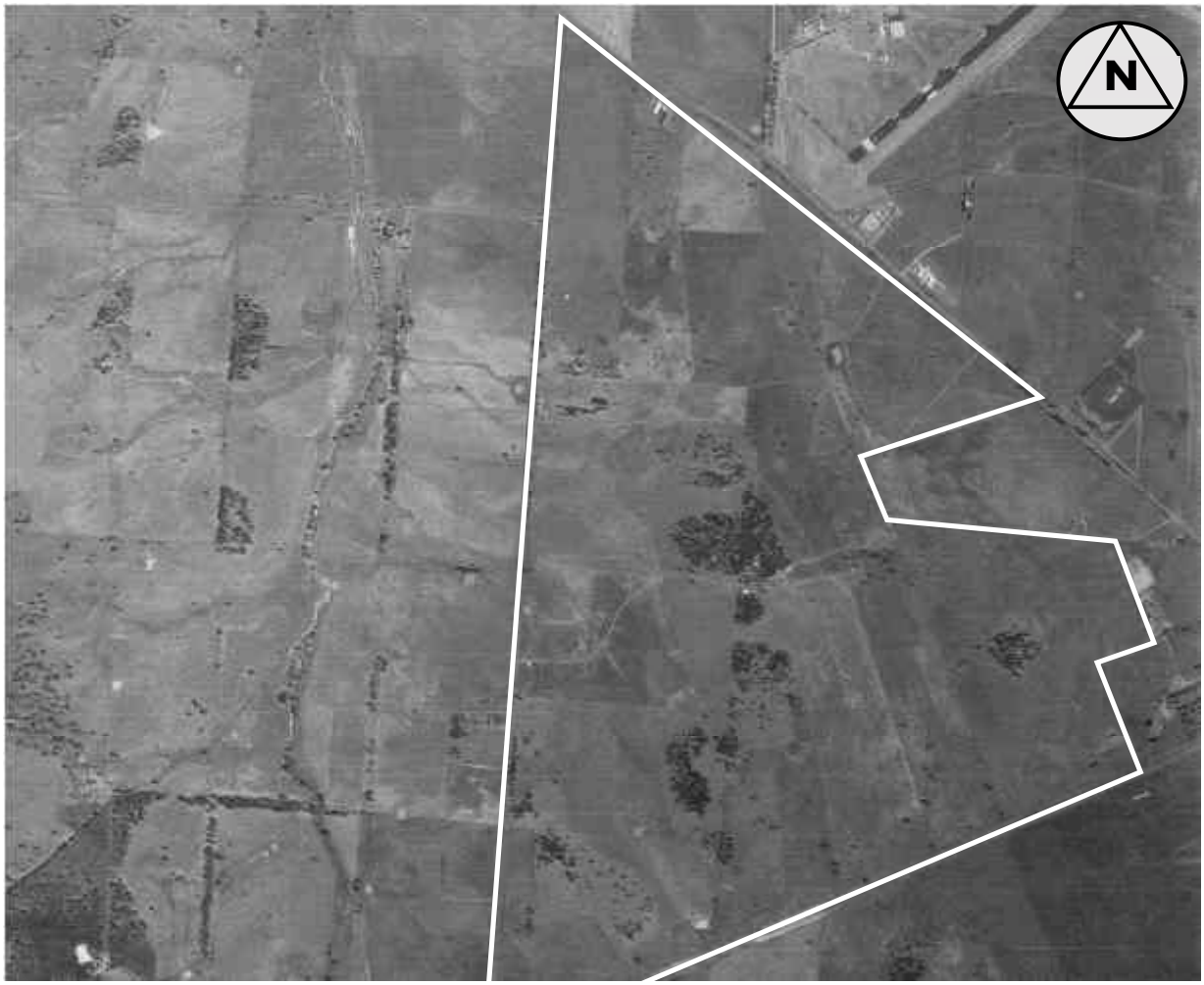
Figure 4: Soil Samples Location

Appendix A
Aerial Photographs

Aerial Photo 1964

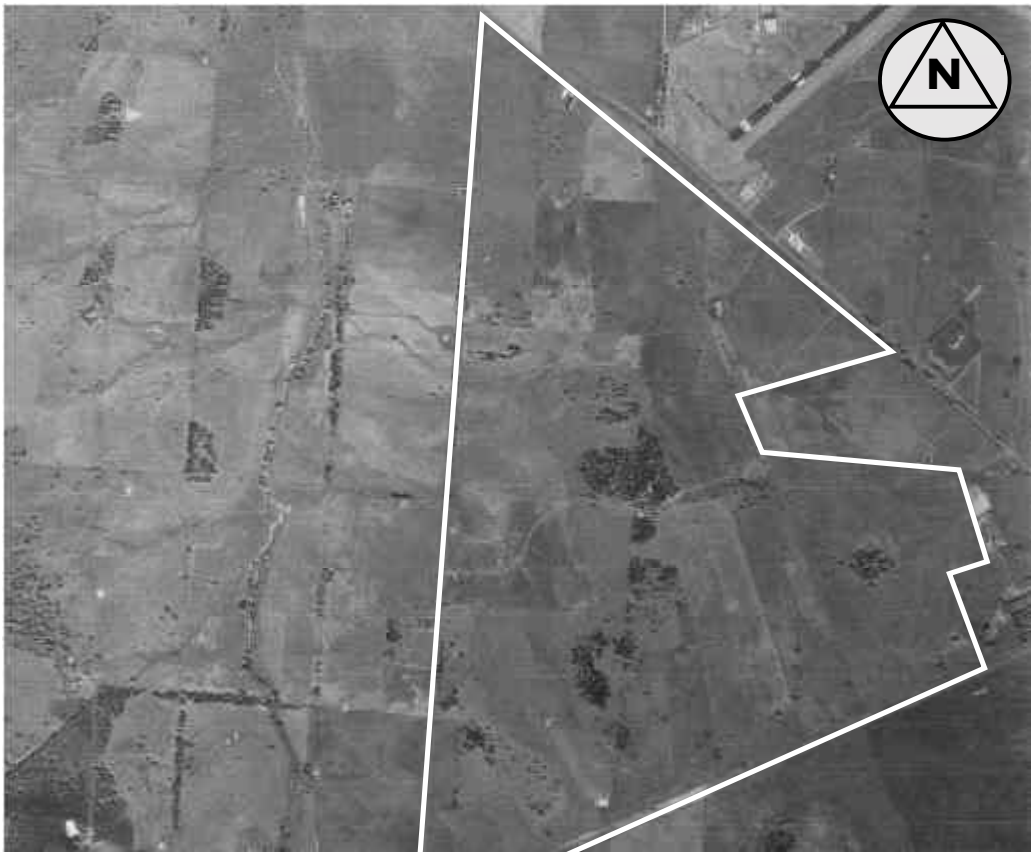
Aerial Photo 1971

Aerial Photo 1974

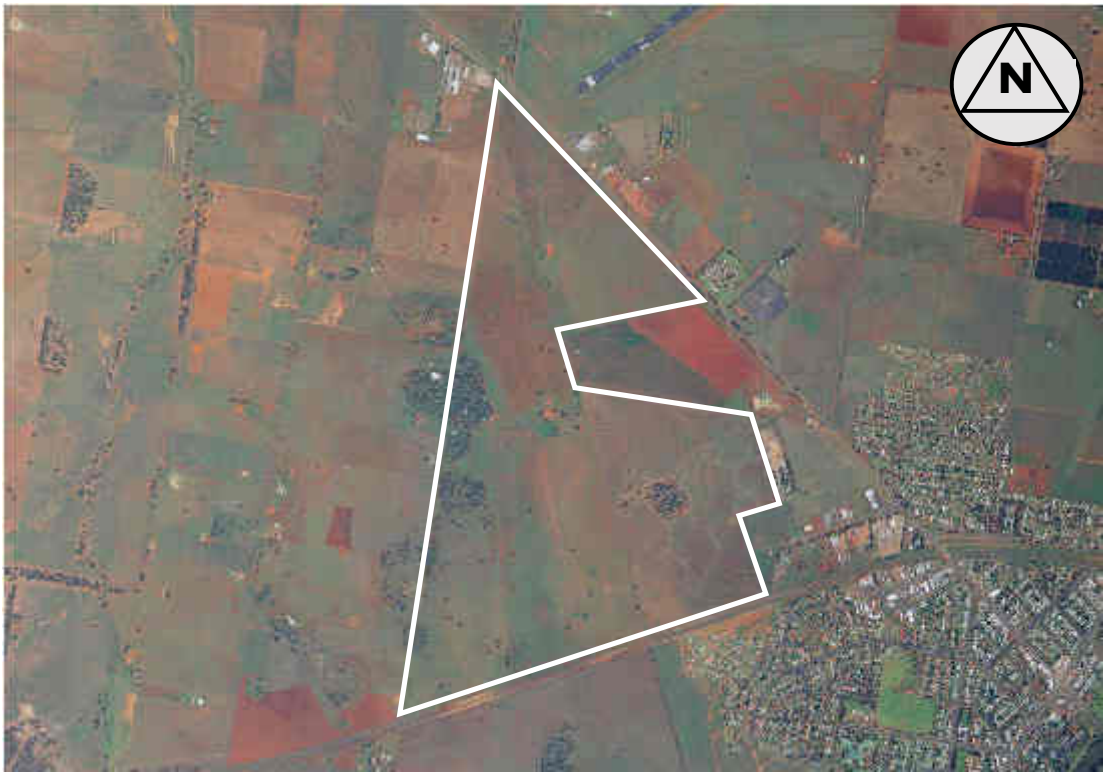


Aerial Photo 1980

Aerial Photo 1991

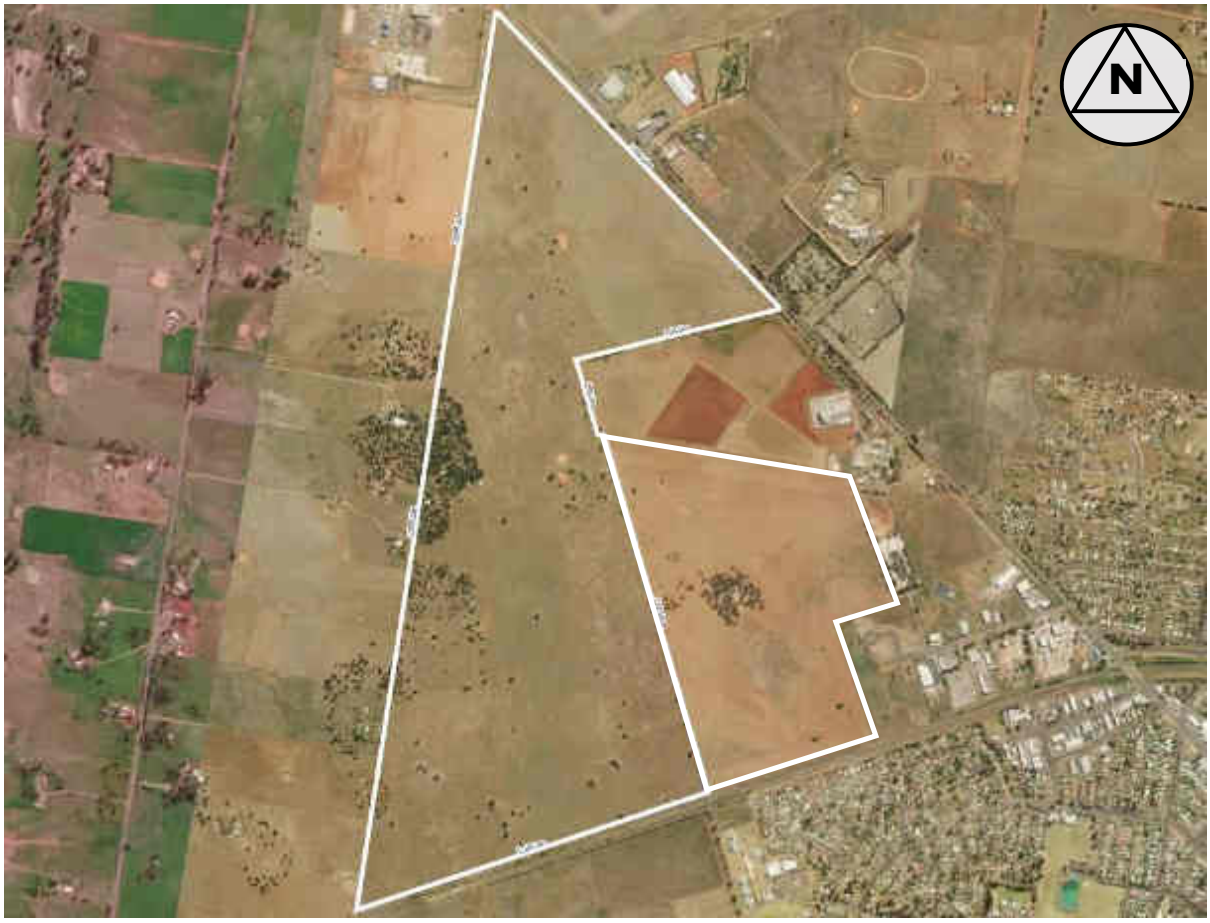


Aerial Photo 1995



Aerial Photo 1996

Aerial Photo 2011



Aerial Photo 2019

Aerial Photo 2020

Aerial Photo 2021

Appendix B

Planning Certificate Under Section 10.7

Certificate No: 436
Applicant Ref: NE1167
Receipt No: 81057263

24/02/2022

DUBBO REGIONAL COUNCIL

Geotesta Pty Ltd
7 Business Park Drive
NOTTING HILL VIC 3168

PLANNING CERTIFICATE

Issued under Section 10.7 (2) of the
Environmental Planning and Assessment Act 1979

Parcel No: 15197
Property description: Lot: 22 DP: 1038924, 13L Narromine Road DUBBO

SECTION 10.7 (2) PRESCRIBED MATTERS UNDER SCHEDULE 4 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

At the date of the Certificate, the following LEPs, DCPs and SEPPs apply to the subject land:

Local Environmental Plan (LEP):
Dubbo Local Environmental Plan 2011, applies to the subject land.

State Environmental Planning Polices (SEPP):

State Environmental Planning Policy No 33 - Hazardous and Offensive Development, applies to the State.

State Environmental Planning Policy No 50 - Canal Estate Development, applies to the State.

State Environmental Planning Policy No 55 - Remediation of Land, applies to the State.

State Environmental Planning Policy No 64 - Advertising and Signage, applies to the State.

State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development, applies to the State.

State Environmental Planning Policy (State Significant Precincts) 2005, applies to the State.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007, applies to the State.

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004, applies to the State.

State Environmental Planning Policy (Infrastructure) 2007, applies to the State.

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008, applies to the State.

State Environmental Planning Policy (State and Regional Development) 2011, applies to the State.

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017, applies to the State.

State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017, applies to the State.

State Environmental Planning Policy (Primary Production and Rural Development) 2019, applies to the State.

State Environmental Planning Policy (Concurrences and Consents) 2018, applies to the State.

State Environmental Planning Policy (Housing) 2021, applies to the State.

Draft Local Environmental Planning Instrument:
The Planning Proposal for the draft Dubbo Regional Local Environmental Plan 2021 was on public exhibition from 2 June 2021 until 30 June 2021. The intent of the Planning Proposal is to consolidate and rationalise the existing provisions of the Dubbo LEP 2011 and Wellington LEP 2012 to create a new consolidate LEP for Dubbo Region.

Zone RU2 Rural Landscape

(1) Objectives of zone
* To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
* To maintain the rural landscape character of the land.
* To provide for a range of compatible land uses, including extensive agriculture.

(2) Permitted without consent
Environmental protection works; Extensive agriculture; Home-based child care; Home occupations; Roads.

(3) Permitted with consent

Agricultural produce industries; Agriculture; Animal boarding or training establishments; Aquaculture; Boat launching ramps; Camping grounds; Caravan parks; Cellar door premises; Centre-based child care facilities; Community facilities; Correctional centres; Depots; Dwelling houses; Eco-tourist facilities; Educational establishments; Environmental facilities; Extractive industries; Farm buildings; Forestry; Group homes; Health consulting rooms; Highway service centres; Home businesses; Home industries; Industrial training facilities; Information and education facilities; Jetties; Mooring pens; Moorings; Open cut mining; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Research stations; Respite day care centres; Secondary dwellings; Sewerage systems; Signage; Tourist and visitor accommodation; Truck depots; Water recreation structures; Water supply systems; Wharf or boating facilities.

(4) Prohibited
Advertising structures; Hotel or motel accommodation; Intensive livestock agriculture; Serviced apartments; Any other development not specified in item 2 or 3.

Zone R2 Low Density Residential

(1) Objectives of zone
* To provide for the housing needs of the community within a low density residential environment.
* To enable other land uses that provide facilities or services to meet the day to day needs of residents.
* To ensure development is consistent with the character of the immediate locality.
* To encourage low density housing within a landscaped setting on the fringe of the Dubbo urban area.

(2) Permitted without consent
Environmental protection works; Home-based child care; Home occupations; Roads.

(3) Permitted with consent
Bed and breakfast accommodation; Boarding houses; Centre-based child care facilities; Community facilities; Dwelling houses; Educational establishments; Environmental facilities; Exhibition homes; Exhibition villages; Group homes; Health consulting rooms; Home businesses; Home industries; Information and education facilities; Medical centres; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Recreation areas; Residential accommodation; Respite day care centres; Signage; Tank-based aquaculture; Water reticulation systems.

(4) Prohibited
Advertising structures; Attached dwellings; Hostels; Multi dwelling housing; Residential flat buildings; Rural workers' dwellings; Shop top housing; Any other development not specified in item 2 or 3.

Zone R5 Large Lot Residential

(1) Objectives of zone

* To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.
* To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.
* To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.
* To minimise conflict between land uses within this zone and land uses within adjoining zones.

(2) Permitted without consent

Environmental protection works; Extensive agriculture; Home-based child care; Home occupations; Roads.

(3) Permitted with consent

Agricultural produce industries; Dairies (pasture-based); Dwelling houses; Dual occupancies; Home industries; Horticulture; Neighbourhood shops; Oyster aquaculture; Plant nurseries; Pond-based aquaculture; Tank-based aquaculture; Water reticulation systems; Any other development not specified in item 2 or 4.

(4) Prohibited

Advertising structures; Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Attached dwellings; Boarding houses; Boat building and repair facilities; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Dual occupancies (detached); Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm stay accommodation; Flood mitigation works; Freight transport facilities; Function centres; Heavy industrial storage premises; Helipads; Highway service centres; Home occupations (sex services); Hostels; Hotel or motel accommodation; Industrial retail outlets; Industrial training facilities; Industries; Marinas; Mortuaries; Multi dwelling housing; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential flat buildings; Restricted premises; Rural industries; Rural workers' dwellings; Semi-detached dwellings; Seniors housing; Service stations; Serviced apartments; Sewerage systems; Sex services premises; Shop top housing; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Waste or resource management facilities; Water supply systems; Wholesale supplies.

Zone IN2 Light Industrial

(1) Objectives of zone

* To provide a wide range of light industrial, warehouse and related land uses.

* To encourage employment opportunities and to support the viability of centres.
* To minimise any adverse effect of industry on other land uses.
* To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.
* To support and protect industrial land for industrial uses.
* To recognise the Depot Road and McKenzie Street industrial area as providing start up and transport related development opportunities.

(2) Permitted without consent
Environmental protection works; Roads

(3) Permitted with consent
Agricultural produce industries; Depots; Funeral homes; Garden centres; Hardware and building supplies; Health consulting rooms; Industrial training facilities; Landscaping material supplies; Light industries; Liquid fuel depots; Medical centres; Neighbourhood shops; Oyster aquaculture; Places of public worship; Plant nurseries; Rural supplies; Take away food and drink premises; Tank-based aquaculture; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Waste or resource transfer stations; Water reticulation systems; Any other development not specified in item 2 or 4.

(4) Prohibited
Advertising structures; Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Centre-based child care facilities; Charter and tourism boating facilities; Commercial premises; Correctional centres; Eco-tourist facilities; Entertainment facilities; Exhibition homes; Exhibition villages; Farm buildings; Flood mitigation works; Forestry; Function centres; Health services facilities; Heavy industrial storage premises; Helipads; Home-based child care; Home businesses; Home occupations; Home occupations (sex services); Industries; Jetties; Marinas; Mooring pens; Moorings; Pond-based aquaculture; Public administration buildings; Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Respite day care centres; Restricted premises; Rural industries; Sewerage systems; Sex services premises; Tourist and visitor accommodation; Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities.

Draft Development Standards – Dwelling House:

Land Zoned RU2 Rural Landscape
The minimum subdivision lot size for the subject property for the purpose of a dwelling is 100 hectares.

Land Zoned R5 Large Lot Residential
Land Zoned R2 Low Density Residential
There are no development standards pursuant to the Dubbo Regional Local Environmental Plan 2021 that fix minimum land dimensions for the erection of a dwelling house on the subject land, noting that dwellings are 'prohibited' in the zone.

Land Zoned IN2 Light Industrial
There are no development standards pursuant to the Dubbo Regional Local Environmental Plan 2021 that set minimum allotment sizes for the erection of a dwelling house on the subject land, noting that dwelling houses are 'prohibited' in the subject zone.

Land Zoned RU2 Rural Landscape
4.2C Erection of dwelling houses on land in certain rural and environmental protection zones

(1) The objectives of this clause are as follows:
  (a) to minimise unplanned rural residential development,
  (b) to enable the replacement of lawfully erected dwelling houses in certain rural and environmental protection zones.

(2) This clause applies to:
  (a) for the erection of a dwelling house—land in Zone RU1 Primary Production, Zone RU2 Rural Landscape, Zone RU4 Primary Production Small Lots or Zone C3 Environmental Management, or
  (b) for the erection of a dual occupancy - land in Zone RU1 Primary Production

(3) Development consent must not be granted for the erection of a dwelling house or a dual occupancy on land, and on which no dwelling house or dual occupancy has been erected, unless the land:
  (a) is a lot that is at least the minimum lot size shown on the Lot Size Map in relation to that land, or
  (b) is a lot created under an environmental planning instrument before this Plan commenced and on which the erection of a dwelling house or dual occupancy was permissible immediately before that commencement, or
  (c) is a lot resulting from a subdivision for which development consent (or equivalent) was granted under an environmental planning instrument before this Plan commenced and on which the erection of a dwelling house or dual occupancy would have been permissible if the plan of subdivision had been registered before that commencement,or
  (d) is an existing holding, or
  (e) would have been a lot or a holding referred to in paragraph (a), (b), (c) or (d) had it not been affected by:
    (i) a minor realignment of its boundaries that did not create an additional lot, or
    (ii) a subdivision creating or widening a public road or public reserve or for another public purpose.

Note - A dwelling cannot be erected on a lot created under clause 9 of State Environmental Planning Policy (Rural Lands) 2008 or clause 4.2.

(4) Development consent may be granted for the erection of a dwelling house or dual occupancy on land to which this clause applies if there is a lawfully erected dwelling house or dual occupancy on the land and the dwelling house or dual occupancy to be erected is intended only to replace the existing dwelling house or dual occupancy.

(5) In this clause:
Existing Holding means land that:
(a) was a holding on 26 June 1987,
(b) was located within the former Wellington Local Government Area prior to 12 May 2016, and
(c) is a holding at the time the application for development consent referred to in subclause (3) is lodged, whether or not there has been a change in the ownership of the holding since 26 June 1987, and includes any other land adjoining that land acquired by the owner since 26 June 1987.
Holding means all adjoining land, even if separated by a road or railway, held by the same person or persons.

Note - The owner in whose ownership all the land is at the time the application is lodged need not be the same person as the owner in whose ownership all the land was on the stated date.

Draft Critical habitat:
The land does not include or comprise 'critical habitat' under Dubbo Regional Local Environment Plan 2021.

Draft Conservation area:
The land is not in a conservation area under Dubbo Regional Local Environment Plan 2021.

Draft Heritage:
A heritage item is not situated on the land under Dubbo Regional Local Environment Plan 2021.

Development Control Plan (DCP):
Dubbo Development Control Plan 2013, applies to the subject land.

The subject land is zoned:

Zone IN2 Light Industrial

(1) Objectives of zone
* To provide a wide range of light industrial, warehouse and related land uses.
* To encourage employment opportunities and to support the viability of centres.
* To minimise any adverse effect of industry on other land uses.

* To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.
* To support and protect industrial land for industrial uses.
* To recognise the Depot Road and McKenzie Street industrial area as providing start up and transport related development opportunities.

(2) Permitted without consent
Environmental protection works; Roads

(3) Permitted with consent
Agricultural produce industries; Depots; Funeral homes; Garden centres; Hardware and building supplies; Health consulting rooms; Industrial training facilities; Landscaping material supplies; Light industries; Liquid fuel depots; Medical centres; Neighbourhood shops; Oyster aquaculture; Places of public worship; Plant nurseries; Rural supplies; Take away food and drink premises; Tank-based aquaculture; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Waste or resource transfer stations; Water reticulation systems; Any other development not specified in item 2 or 4.

(4) Prohibited
Advertising structures; Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat launching ramps; Boat sheds; Camping grounds; Caravan parks; Cemeteries; Centre-based child care facilities; Charter and tourism boating facilities; Commercial premises; Correctional centres; Eco-tourist facilities; Entertainment facilities; Exhibition homes; Exhibition villages; Farm buildings; Flood mitigation works; Forestry; Function centres; Health services facilities; Heavy industrial storage premises; Helipads; Home-based child care; Home businesses; Home occupations; Home occupations (sex services); Industries; Jetties; Marinas; Mooring pens; Moorings; Pond-based aquaculture; Public administration buildings; Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Respite day care centres; Restricted premises; Rural industries; Sewerage systems; Sex services premises; Tourist and visitor accommodation; Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities.

Zone RU2 Rural Landscape

(1) Objectives of zone
* To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
* To maintain the rural landscape character of the land.
* To provide for a range of compatible land uses, including extensive agriculture.

(2) Permitted without consent
Environmental protection works; Extensive agriculture; Home-based child care; Home occupations; Roads.

(3) Permitted with consent
Agricultural produce industries; Agriculture; Animal boarding or training establishments; Aquaculture; Boat launching ramps; Camping grounds; Caravan parks; Cellar door premises; Centre-based child care facilities; Community facilities; Correctional centres; Depots; Dwelling houses; Eco-tourist facilities; Educational establishments; Environmental facilities; Extractive industries; Farm buildings; Forestry; Group homes; Health consulting rooms; Highway service centres; Home businesses; Home industries; Industrial training facilities; Information and education facilities; Jetties; Mooring pens; Moorings; Open cut mining; Plant nurseries; Recreation areas; Recreation facilities (outdoor); Research stations; Respite day care centres; Secondary dwellings; Sewerage systems; Signage; Tourist and visitor accommodation; Truck depots; Water recreation structures; Water supply systems; Wharf or boating facilities.

(4) Prohibited
Advertising structures; Hotel or motel accommodation; Intensive livestock agriculture; Serviced apartments; Any other development not specified in item 2 or 3.

Zone R2 Low Density Residential

(1) Objectives of zone
* To provide for the housing needs of the community within a low density residential environment.
* To enable other land uses that provide facilities or services to meet the day to day needs of residents.
* To ensure development is consistent with the character of the immediate locality.
* To encourage low density housing within a landscaped setting on the fringe of the Dubbo urban area.

(2) Permitted without consent
Environmental protection works; Home-based child care; Home occupations; Roads.

(3) Permitted with consent
Bed and breakfast accommodation; Boarding houses; Centre-based child care facilities; Community facilities; Dwelling houses; Educational establishments; Environmental facilities; Exhibition homes; Exhibition villages; Group homes; Health consulting rooms; Home businesses; Home industries; Information and education facilities; Medical centres; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Recreation areas; Residential accommodation; Respite day care centres; Signage; Tank-based aquaculture; Water reticulation systems.

(4) Prohibited
Advertising structures; Attached dwellings; Hostels; Multi dwelling housing; Residential flat buildings; Rural workers' dwellings; Shop top housing; Any other development not specified in item 2 or 3.

Zone R5 Large Lot Residential

(1) Objectives of zone

* To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.
* To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.
* To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.
* To minimise conflict between land uses within this zone and land uses within adjoining zones.

(2) Permitted without consent

Environmental protection works; Extensive agriculture; Home-based child care; Home occupations; Roads.

(3) Permitted with consent

Agricultural produce industries; Dairies (pasture-based); Dwelling houses; Home industries; Horticulture; Neighbourhood shops; Oyster aquaculture; Plant nurseries; Pond-based aquaculture; Tank-based aquaculture; Water reticulation systems; Any other development not specified in item 2 or 4.

(4) Prohibited

Advertising structures; Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Attached dwellings; Boarding houses; Boat building and repair facilities; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Dual occupancies; Eco-tourist facilities; Entertainment facilities; Extractive industries; Farm stay accommodation; Flood mitigation works; Freight transport facilities; Function centres; Heavy industrial storage premises; Helipads; Highway service centres; Home occupations (sex services); Hostels; Hotel or motel accommodation; Industrial retail outlets; Industrial training facilities; Industries; Marinas; Mortuaries; Multi dwelling housing; Open cut mining; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential flat buildings; Restricted premises; Rural industries; Rural workers' dwellings; Semi-detached dwellings; Seniors housing; Service stations; Serviced apartments; Sewerage systems; Sex services premises; Shop top housing; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Waste or resource management facilities; Water supply systems; Wholesale supplies.

Notwithstanding the above land use permissibility information indicating development 'permitted without consent'; development 'permitted with consent'; and development

'prohibited', the Dubbo Local Environmental Plan 2011 provides in some circumstances additional use provisions and other relevant land use permissibility/prohibition provisions.

It is recommended that consultation of the Dubbo Local Environmental Plan 2011 be undertaken to ascertain precisely the types of land uses permissible or prohibited on the land the subject of this Certificate.

Development Standards – Dwelling House:

Land Zoned RU2 Rural Landscape
The minimum subdivision lot size for the subject property for the purpose of a dwelling is 100 hectares.

Land Zoned R5 Large Lot Residential
Land Zoned R2 Low Density Residential
There are no development standards pursuant to the Dubbo Local Environmental Plan 2011 that fix minimum land dimensions for the erection of a dwelling house on the subject land.

Land Zoned RU2 Rural Landscape
4.2C Erection of dwelling houses on land in certain rural and environmental protection zones

(1) The objectives of this clause are as follows
(a) to minimise unplanned rural residential development,
(b) to enable the replacement of lawfully-erected dwelling houses in rural and environmental protection zones.
(2) This clause applies to land in the following zones:
(a) RU1 Primary Production,
(b) RU2 Rural Landscape,
(c) RU4 Primary Production Small Lots,
(d) E3 Environmental Management.

(3) Development consent must not be granted for the erection of a dwelling house on land in a zone to which this clause applies, and on which no dwelling house has been erected, unless the land is:
(a) a lot that is at least the minimum lot size specified for that land by the Lot Size Map, or
(b) a lot created before this Plan commenced and on which the erection of a dwelling house was permissible immediately before that commencement, or
(c) a lot resulting from a subdivision for which development consent (or equivalent) was granted before this Plan commenced and on which the erection of a dwelling house would have been permissible if the plan of subdivision had been registered before that commencement.

Note. A dwelling cannot be erected on a lot created under clause 9 of State Environmental Planning Policy (Rural Lands), 2008 or clause 4.2.

(4) Despite subclause (3), development consent may be granted for the erection of a

dwelling house on land to which this clause applies if:

(a) there is a lawfully-erected dwelling house on the land and the dwelling house to be erected is intended only to replace the existing dwelling house, or

(b) the land would have been a lot referred to in subclause (3) had it not been affected by:

(i) a minor realignment of its boundaries that did not create an additional lot, or

(ii) a subdivision creating or widening a public road or public reserve or for another public purpose.

Land Zoned IN2 Light Industrial

There are no development standards pursuant to the Dubbo Local Environmental Plan 2011 that set minimum allotment sizes for the erection of a dwelling house on the subject land, noting that dwelling houses are 'prohibited' in the subject zone.

Critical habitat:

The land does not include or comprise 'critical habitat' under Dubbo Local Environment Plan 2011 or Wellington Local Environmental Plan 2012.

Conservation area:

The land is not in a conservation area under Dubbo Local Environment Plan 2011 or Wellington Local Environmental Plan 2012.

Heritage:

A heritage item is not situated on the land under Dubbo Local Environment Plan 2011 or Wellington Local Environmental Plan 2012.

Complying development:

(1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3), and (4), 1.18 (1) (c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes, 2008.

(2) The extent to which complying development may not be carried out on the land because of the provision of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of the Policy and the reasons why it may not be carried out under those clauses.

(3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Part 3B. Low Rise Medium Density Housing Code:
No - other than Complying Development carried out on the part of the lot which is not within the 25 ANEF contour or higher. Within the 25 ANEF contour or higher only ancillary development, the alteration of or an addition to ancillary development or the alteration of a dwelling house is Complying Development.

No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 3C. Greenfield Housing Code:
No other than Complying Development carried out on the part of the lot which is not within the 25 ANEF contour or higher. Within the 25 ANEF contour or higher only ancillary development, the alteration of or an addition to ancillary development or the alteration of a dwelling house is Complying Development.

No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 3D. Inland Code:
No - other than Complying Development carried out on the part of the lot which is not within the 25 ANEF contour or higher. Within the 25 ANEF contour or higher only ancillary development, the alteration of or an addition to ancillary development or the alteration of a dwelling house is Complying Development.

No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 4. Housing Alterations Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 4A. General Development Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 5. Industrial and Business Alterations Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 5A. and 5B. Industrial and Business Buildings Code and the Container Recycling Facilities Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 6. Subdivision Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 7. Demolition Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Part 8. Fire Safety Code:
No - does not apply to the land. The subject land is identified as High Biodiversity on Council's Natural Resource - Biodiversity Map.

Coastal Protection:
The subject land is not affected by the operation of Section 5 of the Coastal Management Act, 2016.

Mine Subsidence:
The subject land is not within a proclaimed mine subsidence district as defined by Section 20 of the Coal Mine Subsidence Compensation Act, 2017.

Road Widening and Road Realignment:
The land is not affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993; or
(b) Any environmental planning instrument; or
(c) Any resolution of the Council.

Council and Other Public Authority Policies on Hazard Risk Restrictions:
The land the subject of this Certificate is not affected by any policy adopted by the Council that restricts the use of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk.

The subject land is not affected by a policy adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council, that restricts the development of the land because of the likelihood of land slip, bushfire, flooding, tidal inundation, subsidence, acid sulphate soils or any other risk.

The subject land is in whole/part classified as 'Natural Resource - Biodiversity Land' pursuant to the Dubbo Local Environmental Plan 2011, Clause 7.2. For further information, please contact Council's Development and Environment Division on (02) 6801 4000.

The subject land is in whole/part classified as 'Natural Resource - Groundwater Vulnerability' pursuant to the Dubbo Local Environmental Plan 2011, Clause 7.5. For further information, please contact Council's Development and Environment Division on (02) 6801 4000.

Flood-related Development Control Information:
The subject land is not subject to any policy adopted by Council that restricts the use of the land because of the likelihood of flooding.

Land Reserved for Acquisition:
There is no environmental planning instrument, deemed environmental planning instrument or draft environmental planning instrument applying to the subject land that provides for the acquisition of the land by a public authority as referred to in Section 3.15 of the Environmental Planning and Assessment Act, 1979.

Contribution Plans:
Dubbo Water Supply and Sewerage Contributions Policy, applies to the land.

Section 94 Contributions Plan - Urban Stormwater Drainage Headworks Contributions Plan, applies to the land.

Section 94 Urban Roads and Car Parking Contributions Plan, applies to the land.

Section 94 Development Contributions Plan for Dubbo Open Space and Recreation Facilities Plan 2016-2026, applies to the land.

Biodiversity Certified Land:
Council is unaware of any biodiversity certified land under Part 8 of the Biodiversity Conservation Act 2016.

Biodiversity Stewardship Sites:
Council is unaware that the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the Biodiversity Conservation Act 2016.

Native Vegetation Clearing Set Asides:
Council is unaware that the land contains a set aside area under Section 60ZC of the Local Lands Services Act 2013.

Bushfire Prone Land:
The subject land is not identified as Bush Fire Prone Land on the Bush Fire Prone Land Map certified by the Commissioner of the NSW Rural Fire Service under Section 10.3 of the Environmental Planning and Assessment Act, 1979 (EP&A Act 1979).

Property Vegetation Plans:
Council has not been notified of the existence of a property vegetation plan approved under Part 4 the Native Vegetation Act 2003 (and that continues in force) applying to the land.

Orders under Trees (Disputes Between Neighbours) Act, 2006:
Council is not aware of any order made under the Trees (Dispute Between Neighbours) Act, 2006 applying to the subject land.

Directions under Part 3A:
This section of the Act has been repealed.

Site Compatibility Certificates and Conditions of Seniors Housing:
Council is not aware of any current Site Compatibility Certificate (Seniors Housing) or occupancy restrictions applying to the subject land.

Site Compatibility Certificates for Infrastructure, Schools or TAFE Establishments:
Council is not aware of any current Site Compatibility Certificate (Infrastructure) applying to the subject land.

Site Compatibility Certificates and Conditions for Affordable Rental Housing:
Council is not aware of any current Site Compatibility Certificate (Affordable Rental Housing) or management/operational restrictions pertaining to affordable housing on the subject land.

Paper Subdivision Information:
Council is not aware of any development plan applying to the subject land.

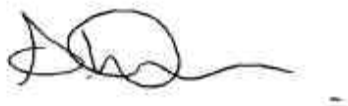
Site Verification Certificates:
Council is not aware of any current Site Verification Certificate (Biophysical Strategic Agricultural Land or Critical Industry Cluster Land) applying to the subject land.

Loose-fill Asbestos Insulation:
Council is not aware of any current loose-fill asbestos insulation applying to the subject land.

Affected Building Notices and Building Product Rectification Orders:
Council is not aware of any current affected building notices and building product rectification orders applying to the subject land.

Matters arising under the Contaminated Land Management Act, 1997
Pursuant to Section 59(2) of the Contaminated Land Management Act 1997, the subject land is:
(a) Not within land declared to be significantly contaminated land under Part 3 of that Act;
(b) Not subject to a Management Order in the meaning of that Act;
(c) Not the subject of an approved Voluntary Management Proposal of the Environment Protection Authority's agreement under Section 17 of that Act;
(d) Not subject to an ongoing Maintenance Order under Part 3 of that Act;
(e) Not the subject of a Site Audit Statement within the meaning of Part 4 of that Act.

For further enquires, please contact Council's Customer Service Centre on 6801 4000.



Stephen Wallace
Director Planning and Environment

Appendix C

Lotsearch

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 11 May 2022 11:31:01

Reference: LS032012 EP

Address: Jannali Road, Dubbo, NSW 2830

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	06/04/2022	06/04/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	25/06/2019	25/06/2019	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	19/04/2022	11/04/2022	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	02/03/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/05/2021	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	15/02/2021	13/07/2012	Annually	1000m	0	0	1
EPA PFAS Investigation Program	Environment Protection Authority	03/05/2022	14/07/2021	Monthly	2000m	1	1	1
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	11/05/2022	11/05/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	11/05/2022	11/05/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	11/05/2022	11/05/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	03/03/2022	03/03/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	1	2
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	1	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	10/05/2022	10/05/2022	Monthly	1000m	0	0	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	4	4
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	16
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	1
Points of Interest	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	14
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	0	0	1
Major Easements	NSW Department of Customer Service - Spatial Services	19/08/2021	19/08/2021	Quarterly	1000m	1	1	7
State Forest	Forestry Corporation of NSW	25/02/2021	14/02/2021	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	1	69

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	2	2	2
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000m	1	2	3
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	06/04/2022	18/02/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	2
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	19/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	20/04/2022	20/04/2022	Monthly	1000m	5	5	5
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	6	39
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	19/08/2021	25/06/2021	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	06/04/2022	25/03/2022	Monthly	1000m	0	0	0
Bush Fire Prone Land	NSW Rural Fire Service	09/05/2022	08/12/2021	Weekly	1000m	0	0	0
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000m	1	1	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	3	3	5
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	09/05/2022	09/05/2022	Weekly	10000m	-	-	-

Site Diagram

Jannali Road, Dubbo, NSW 2830

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 716279m²

Total Perimeter: 3.69km

Scale: 0 25 50 100 150 200 250 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

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

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

Coordinate System:
GDA 1994 MGA Zone 56

Date: 11 May 2022

Contaminated Land

Jannali Road, Dubbo, NSW 2830

List of NSW contaminated sites notified to EPA

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

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

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

Jannali Road, Dubbo, NSW 2830

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

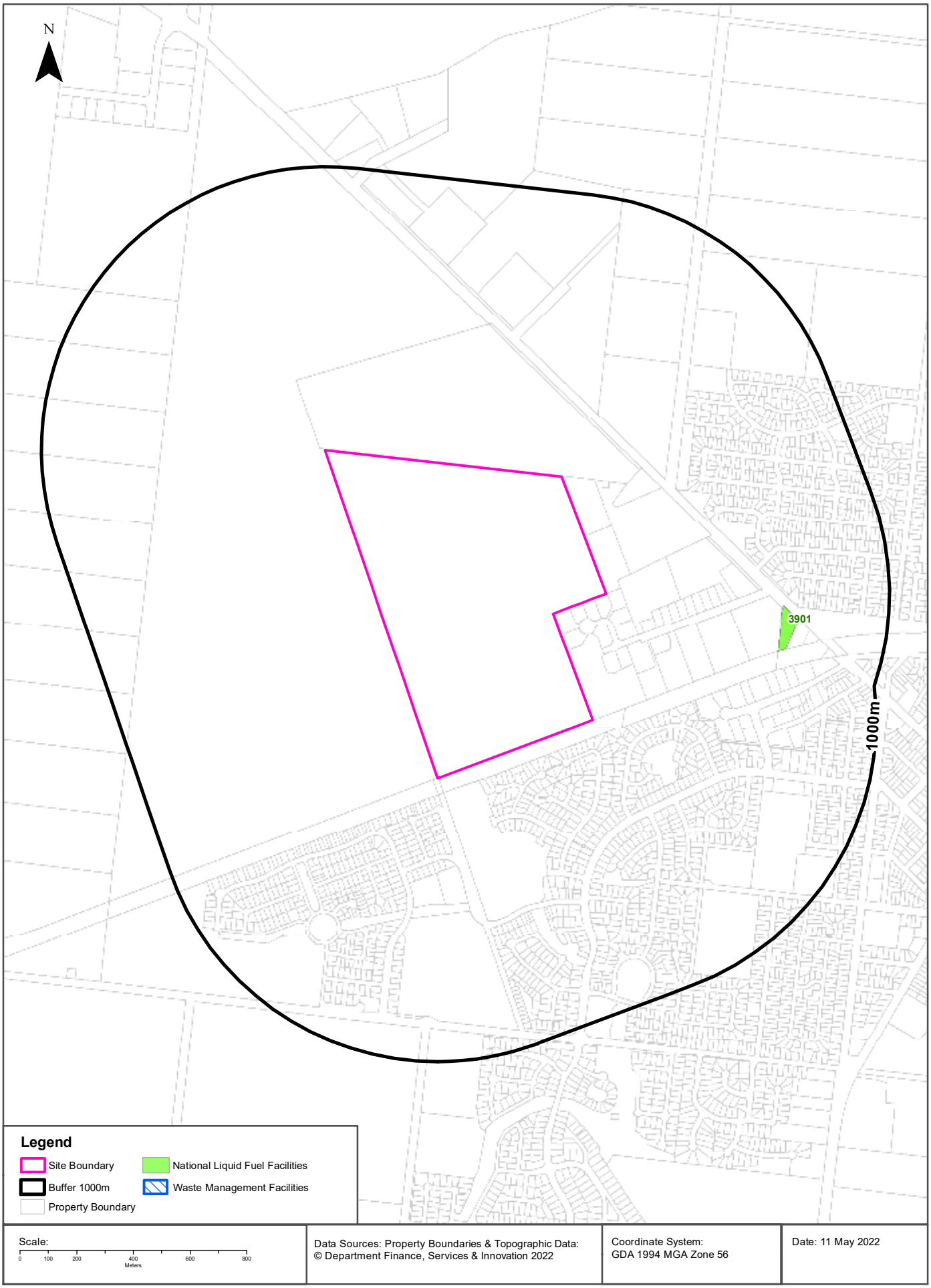
Former Gasworks within the dataset buffer:

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

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Jannali Road, Dubbo, NSW 2830



Waste Management & Liquid Fuel Facilities

Jannali Road, Dubbo, NSW 2830

National Waste Management Site Database

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

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

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
3901	BP	BP West Dubbo	98 Victoria Street	Dubbo	Petrol Station	Operational		25/07/2011	Premise Match	617m	East

PFAS Investigation & Management Programs

Jannali Road, Dubbo, NSW 2830

PFAS Investigation & Management Programs

Jannali Road, Dubbo, NSW 2830

EPA PFAS Investigation Program

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

Map ID	Site	Address	Loc Conf	Dist	Dir
49	Dubbo groundwater investigation		Area Match	0m	On-site

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Jannali Road, Dubbo, NSW 2830

Defence 3 Year Regional Contamination Investigation Program

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

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

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

EPA Other Sites with Contamination Issues

Jannali Road, Dubbo, NSW 2830

EPA Other Sites with Contamination Issues

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

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

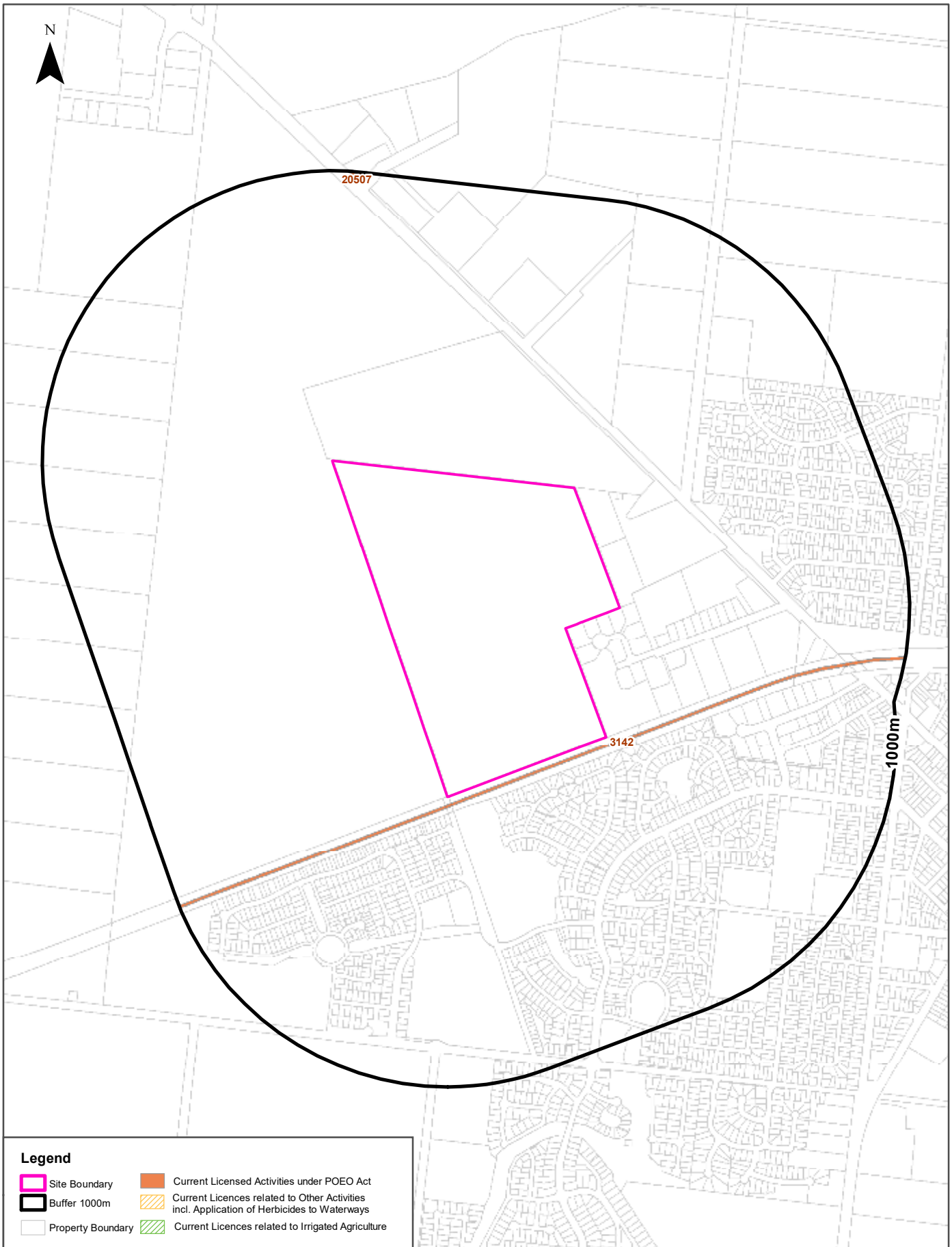
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

Current EPA Licensed Activities

Jannali Road, Dubbo, NSW 2830



Scale: 0 100 200 400 600 800 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022	Coordinate System: GDA 1994 MGA Zone 56	Date: 11 May 2022

EPA Activities

Jannali Road, Dubbo, NSW 2830

Licensed Activities under the POEO Act 1997

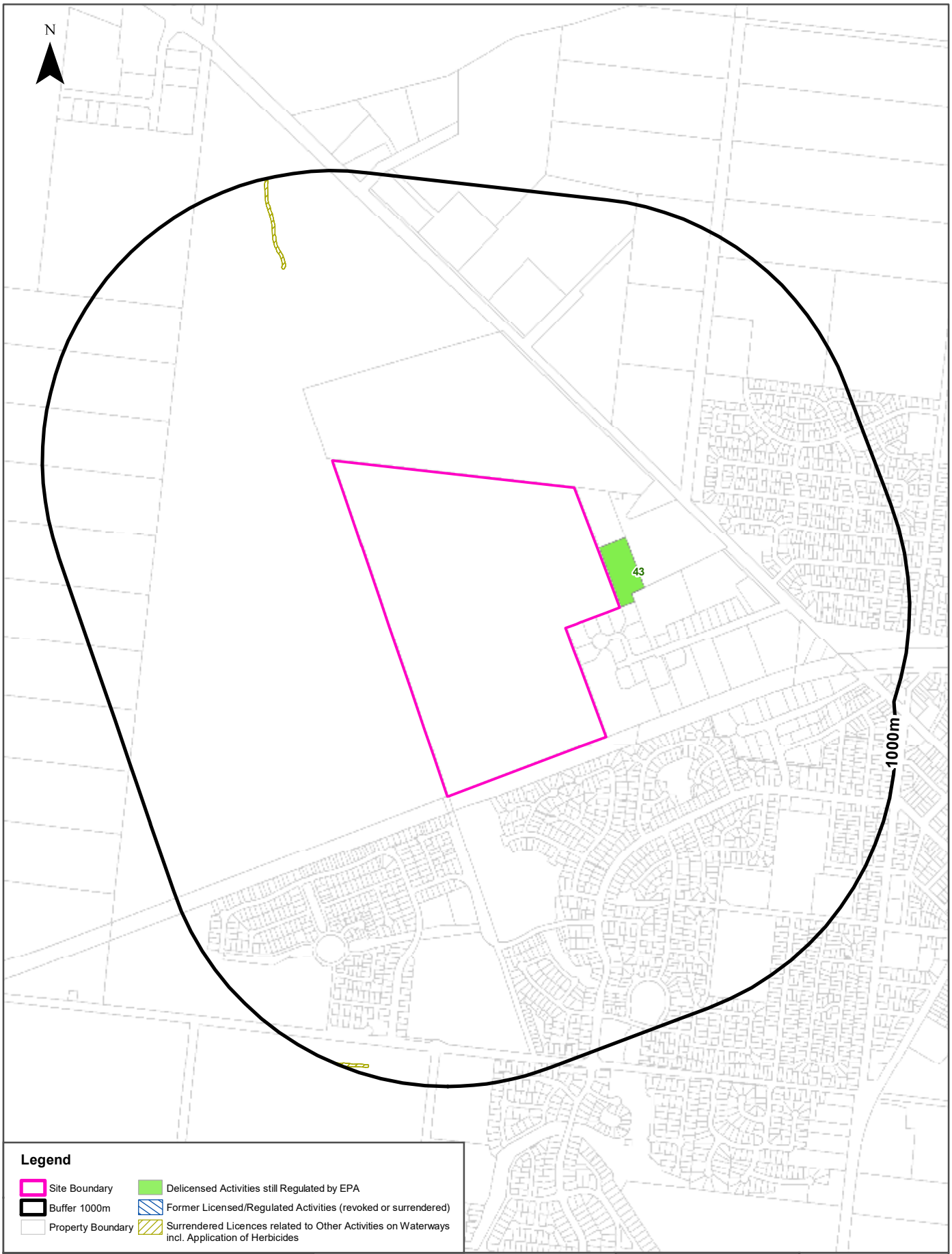
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		AUSTRALIAN RAIL TRACK CORPORATION (ARTC) NETWORK, SYDNEY, NSW 2001		Railway systems activities	Network of Features	25m	South
20507	HARLEY JOB		18 R Narromine Road, DUBBO, NSW 2830		Recovery of hazardous and other waste, Recovery of waste oil, Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste,	Premise Match	964m	North

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Jannali Road, Dubbo, NSW 2830



EPA Activities

Jannali Road, Dubbo, NSW 2830

Delicensed Activities still regulated by the EPA

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

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
43	BORAL RESOURCES (COUNTRY) PTY. LIMITED	BORAL COUNTRY - CONCRETE & QUARRIES	JANALLI ROAD	DUBBO	Concrete works	Premise Match	0m	East

Delicensed Activities Data Source: Environment Protection Authority

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

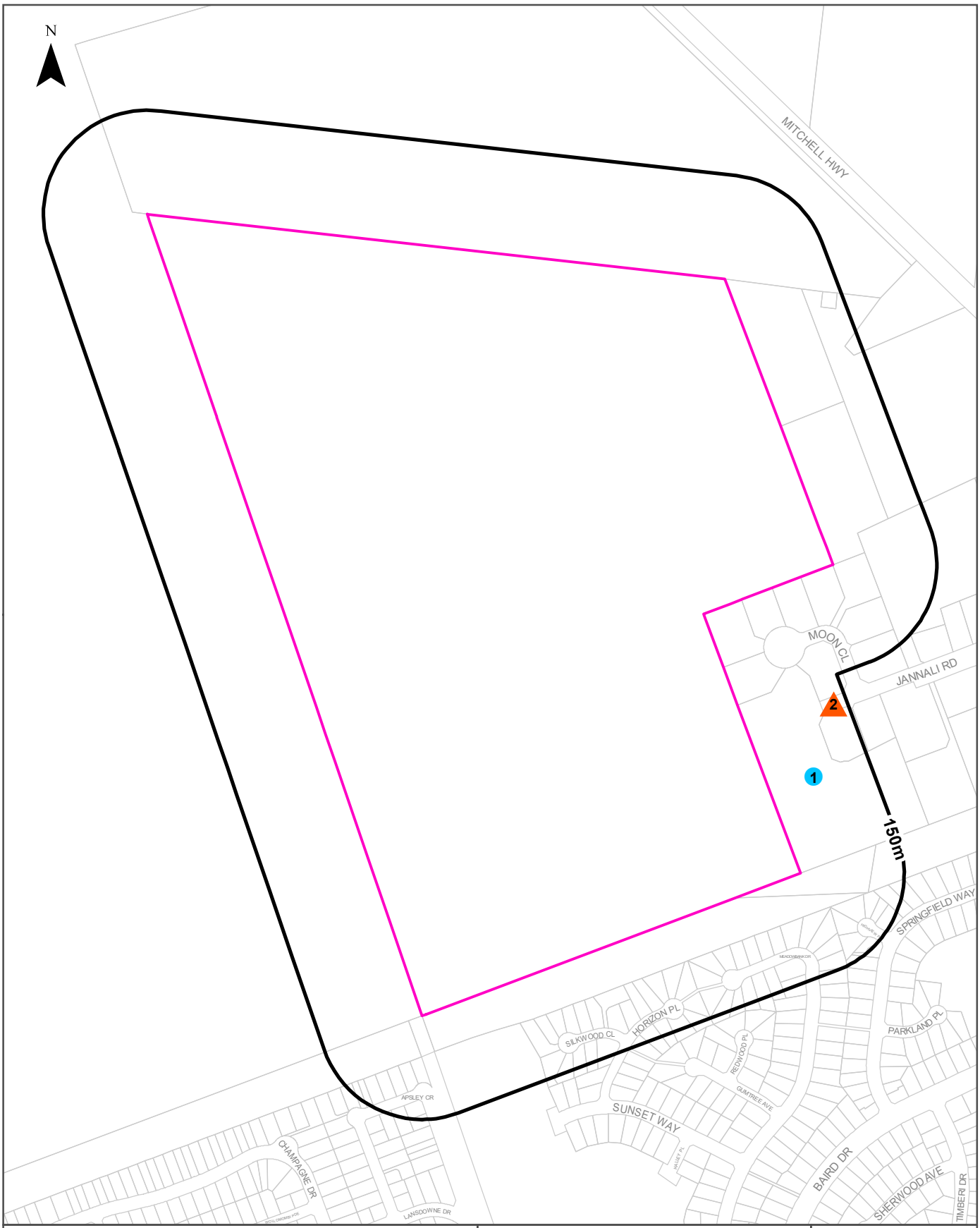
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	681m	North West
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	681m	North West
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	681m	North West

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Jannali Road, Dubbo, NSW 2830



Legend

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

Scale: 0 100 200 300 400 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 11 May 2022

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

Historical Business Directories

Jannali Road, Dubbo, NSW 2830

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR CAR DEALERS - NEW &/OR USED	Swane Peter Trucks., 14 Jannali Rd, Dubbo 2830	125301	1991	Premise Match	0m	South East
	TRACTOR MFRS. &/OR IMPS. &/OR DISTS.	Swane Peter Trucks., 14 Jannali Rd, Dubbo 2830	131191	1991	Premise Match	0m	South East
	FORK LIFT TRUCK SERVICE, MAINTENANCE &/OR REPAIRS.	Swane. Peter Trucks., 14 Jannali Rd, Dubbo 2830	119493	1991	Premise Match	0m	South East
	MOTOR ACCESSORIES-RETAIL	Swans Peter Trucks., 14 Jannali Rd, Dubbo 2830	125277	1991	Premise Match	0m	South East

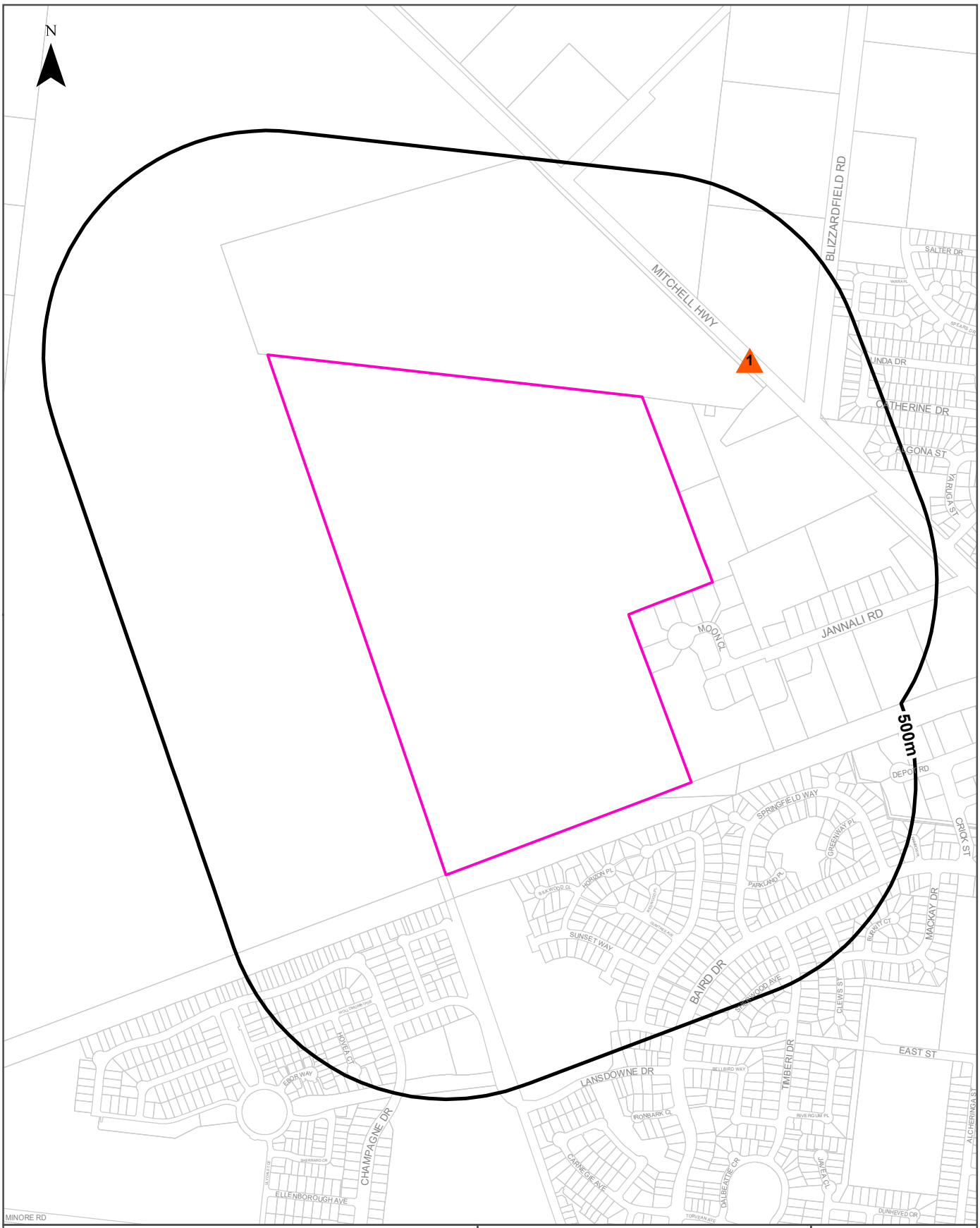
Business Directory Records 1950-1991
Road or Area Matches

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
2	CONCRETE PRODUCTS MFRS. &/OR DISTS. &/OR W/SALERS	Amatek Rocla., Jannali Rd, Dubbo 2830	126825	1991	Road Match	113m
	FENCING MATERIAL MFRS. &/OR DISTS	Amatek Rocla., Jannali Rd, Dubbo 2830	119457	1991	Road Match	113m
	PIPE &/OR PIPE FITTINGS MFRS. &/OR DISTS	Amatek Rocla., Jannali Rd, Dubbo 2830	125514	1991	Road Match	113m
	PIPE &/OR PIPE FITTINGS MFRS. &/OR DISTS. - CONCRETE.	Amatek Rocla., Jannali Rd, Dubbo 2830	125517	1991	Road Match	113m
	SEPTIC TANK MFRS. &/OR INSTALLERS &/OR SPECIALISTS	Amatek Rocla., Jannali Rd, Dubbo 2830	125668	1991	Road Match	113m
	TANK &/OR TANKSTAND MFRS. &/OR DISTS	Amatek Rocla., Jannali Rd, Dubbo 2830	131148	1991	Road Match	113m
	MOTOR OIL, SPIRIT & GREASE MFRS. &/OR IMPS. &/OR DISTS.	Ampol Petroleum., Jannali Rd, Dubbo 2830	125361	1991	Road Match	113m
	CONCRETE PRODUCTS MFRS. &/OR DISTS. &/OR W/SALERS	BMG Concrete., Jannali Rd, Dubbo 2830	126826	1991	Road Match	113m
	GARAGE MFRS. &/OR DISTS. &/OR INSTALLERS	McFadden D. & G. Garages., Jannali Rd, Dubbo 2830	119529	1991	Road Match	113m
	SHEDS	McFadden D. & G. Garages., Jannali Rd, Dubbo 2830	125676	1991	Road Match	113m
	BORING & DRILLING CONTRACTORS	Pontil Pty. Ltd., Jannali Rd, Dubbo 2830	126614	1991	Road Match	113m
	MOTOR OIL &/OR SPIRIT DEPOTS.	Ampol Petroleum, Jannali Rd., Dubbo 2830	184214	1982	Road Match	113m
	CONCRETE PRODUCTS MFRS. &/OR DISTS. &/OR W/SALERS.	Monier Pipe Co., Jannali Rd., Dubbo 2830	183699	1982	Road Match	113m
	PIPE &/OR PIPE FITTINGS MFRS. &/OR DISTS.	Monier Pipe Co., Jannali Rd., Dubbo 2830	184309	1982	Road Match	113m
	PIPE MFRS. - CONCRETE.	Monier Pipe Co., Jannali Rd., Dubbo 2830	184308	1982	Road Match	113m
	MOTOR BRAKE SPECIALISTS.	Ratcliff Brake Service. Jannali Rd., Dubbo 2830	184144	1982	Road Match	113m

Dry Cleaners, Motor Garages & Service Stations

Jannali Road, Dubbo, NSW 2830



Legend

- Site Boundary
- Buffer 500m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 160 320 480 640 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 11 May 2022

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

Historical Business Directories

Jannali Road, Dubbo, NSW 2830

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

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

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

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
1	MOTOR SERVICE STATIONS-PETROL, ETC.	Poplars Service Station and Caravan Park, Mitchell Highway., Dubbo	200328	1961	Road Match	212m

Aerial Imagery 2021

Jannali Road, Dubbo, NSW 2830

Scale:
0 90 180 270 360
Meters

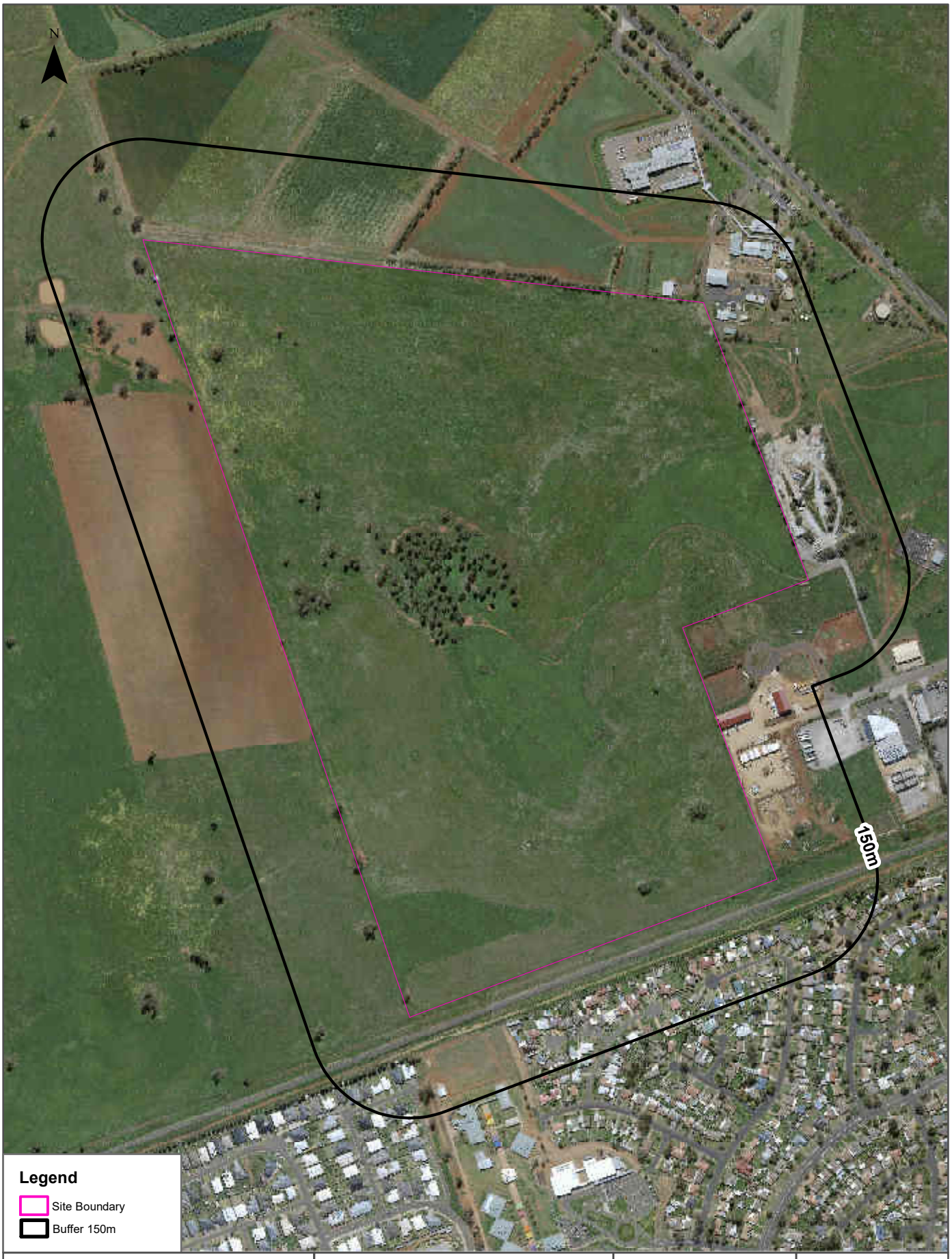
Data Source Aerial Imagery:
© Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Coordinate System:
GDA 1994 MGA Zone 56

Date: 11 May 2022

Aerial Imagery 2020

Jannali Road, Dubbo, NSW 2830



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 11 May 2022
0 90 180 270 360 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

Aerial Imagery 2011

Jannali Road, Dubbo, NSW 2830

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 11 May 2022
0 90 180 270 360 Meters	© Aerometrex Pty Ltd	GDA 1994 MGA Zone 56	

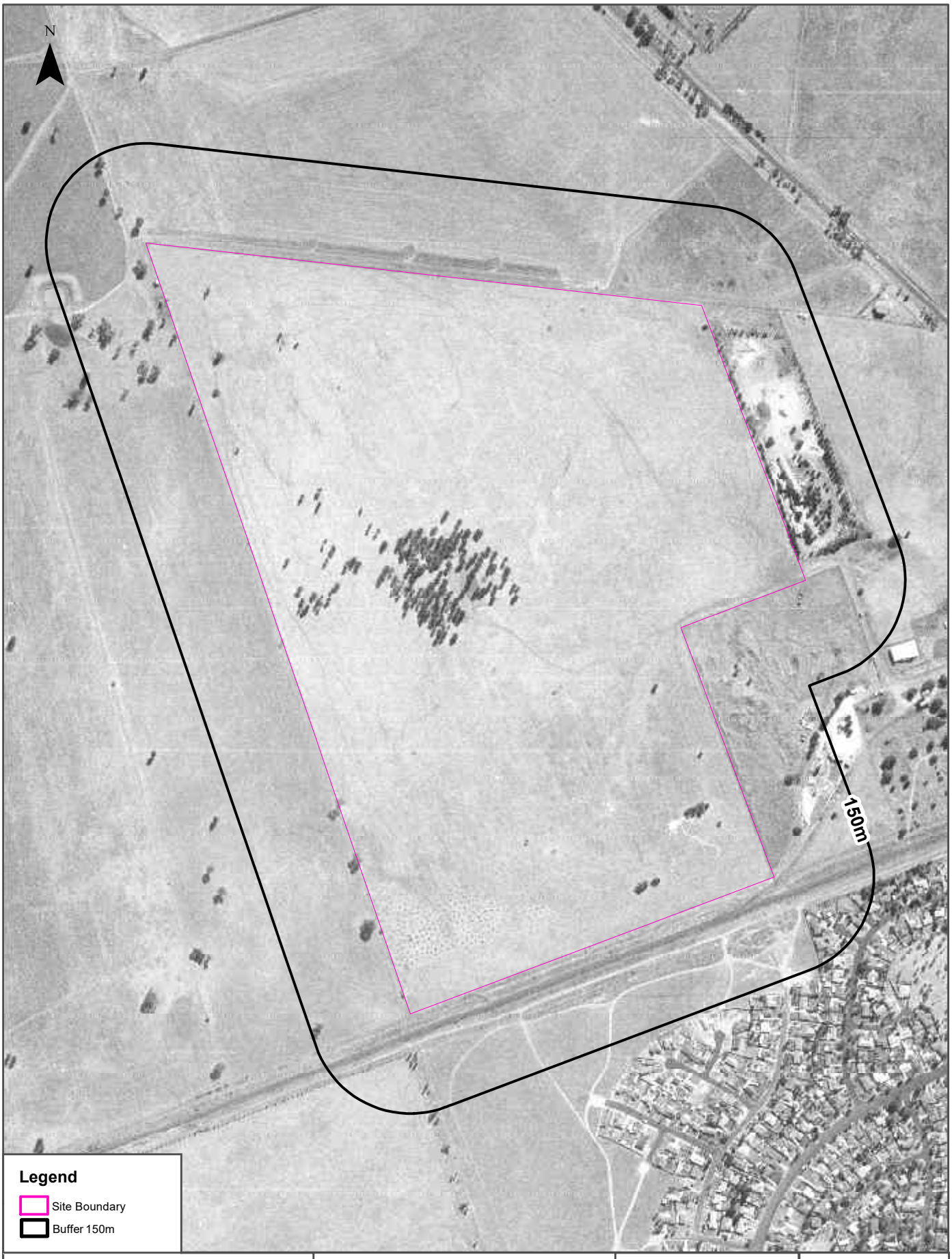
Aerial Imagery 2003

Jannali Road, Dubbo, NSW 2830

Scale: 0 90 180 270 360 Meters	Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 11 May 2022

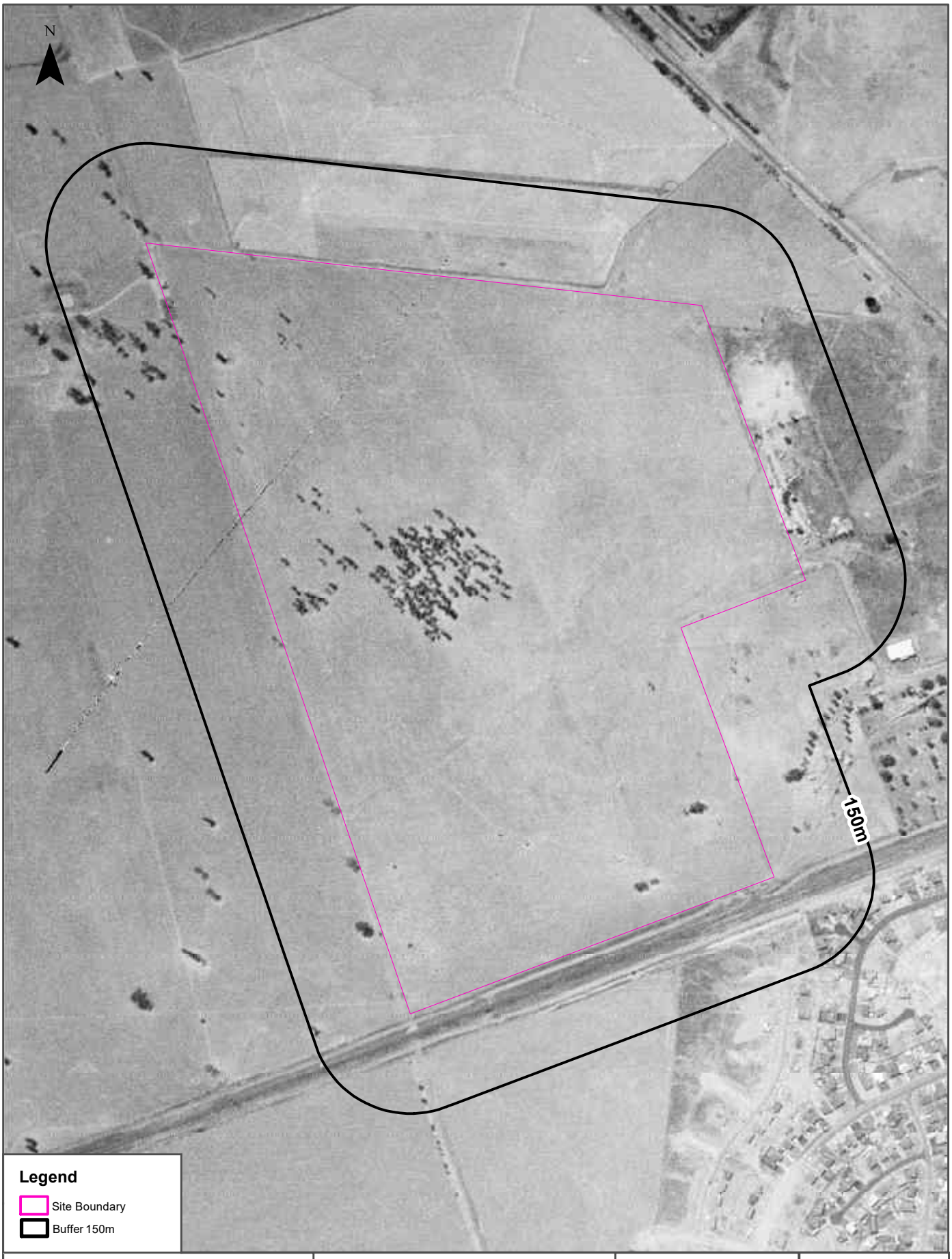
Aerial Imagery 1991

Jannali Road, Dubbo, NSW 2830



Aerial Imagery 1980

Jannali Road, Dubbo, NSW 2830



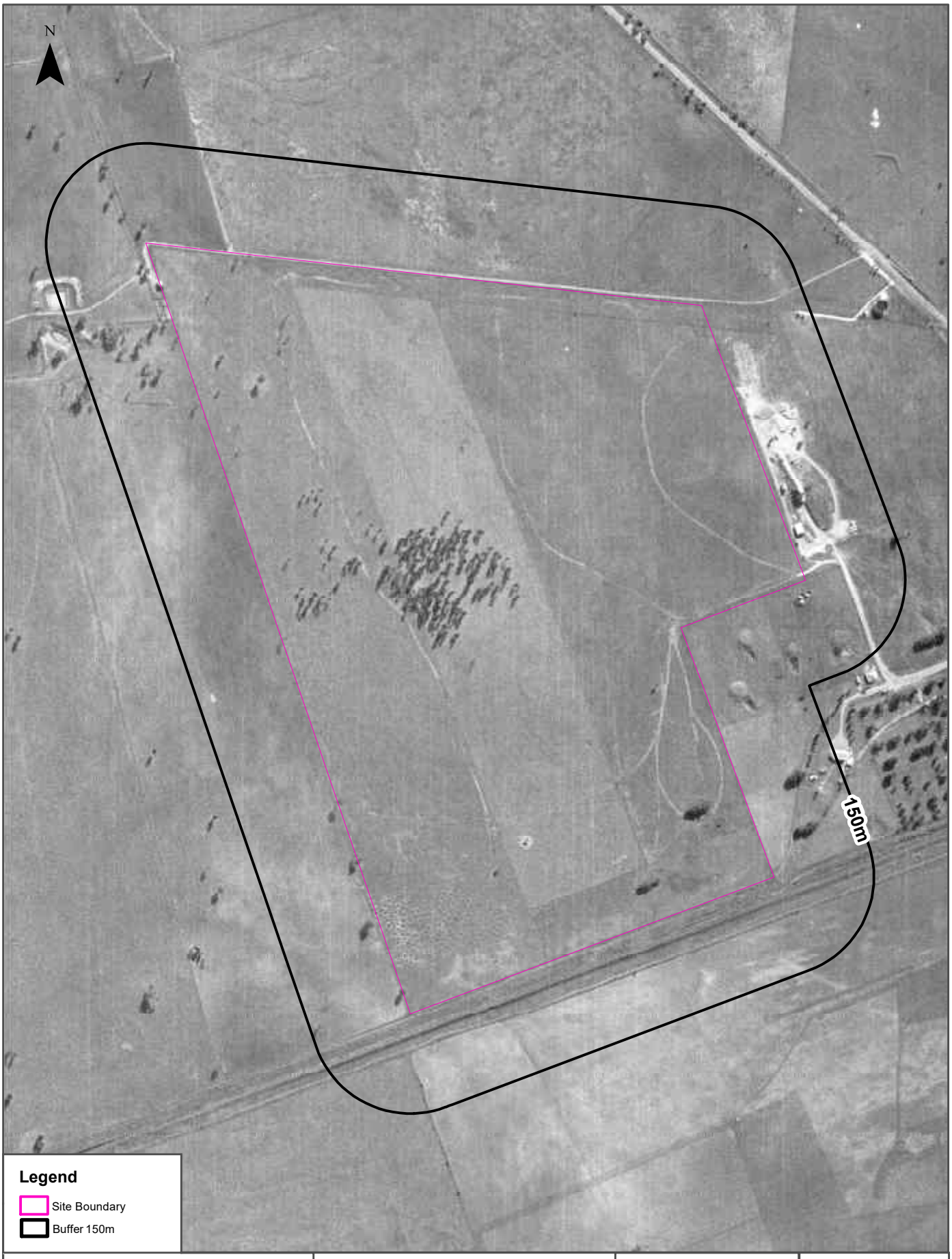
Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 11 May 2022
0 90 180 270 360 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1971

Jannali Road, Dubbo, NSW 2830

Aerial Imagery 1964

Jannali Road, Dubbo, NSW 2830



Aerial Imagery 1959

Jannali Road, Dubbo, NSW 2830

Aerial Imagery 1955

Jannali Road, Dubbo, NSW 2830

Scale:	Data Source Aerial Imagery: ©2022 Geoscience Australia	Coordinate System: GDA 1994 MGA Zone 56	Date: 11 May 2022

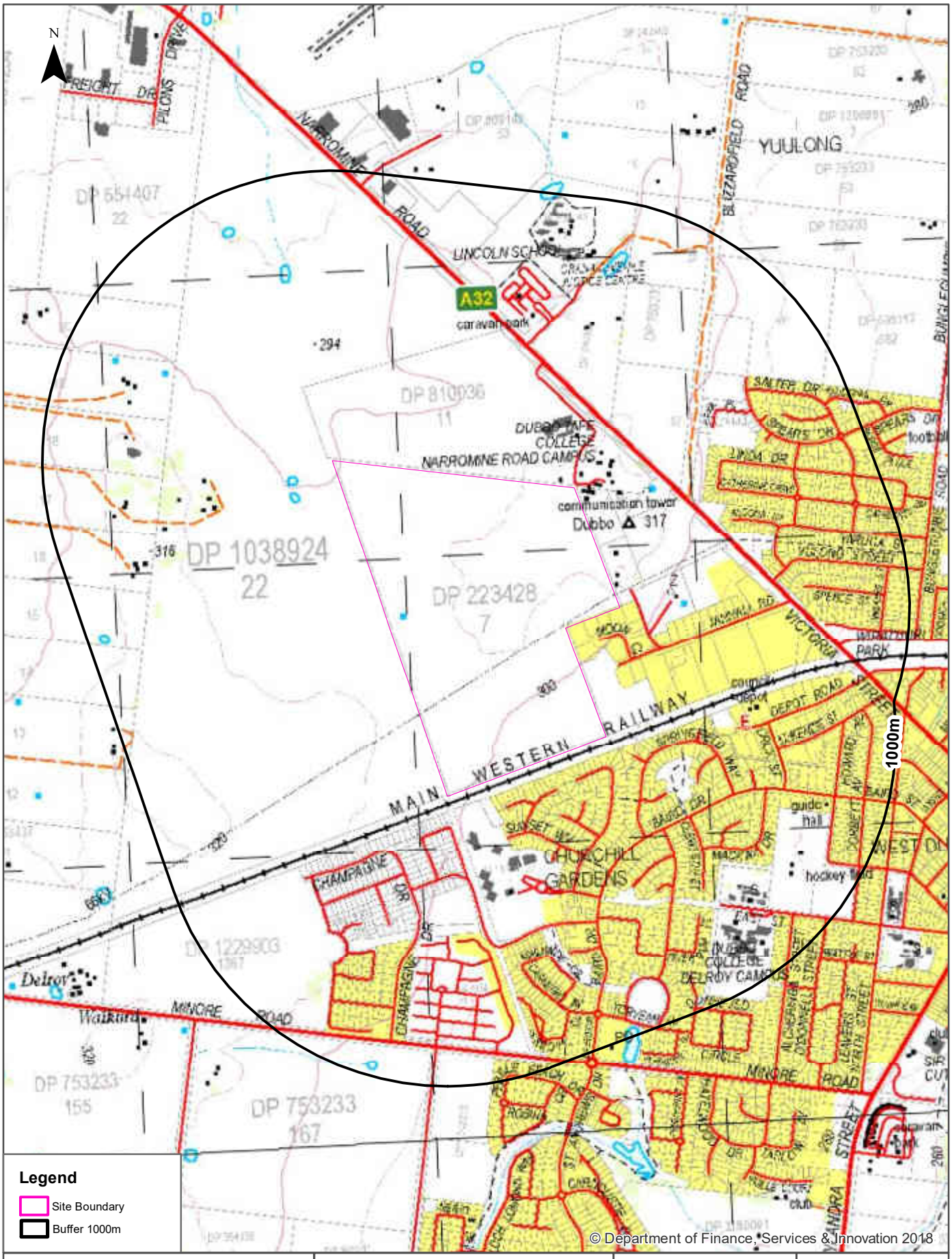
0 90 180 270 360
Meters

Aerial Imagery 1944

Jannali Road, Dubbo, NSW 2830

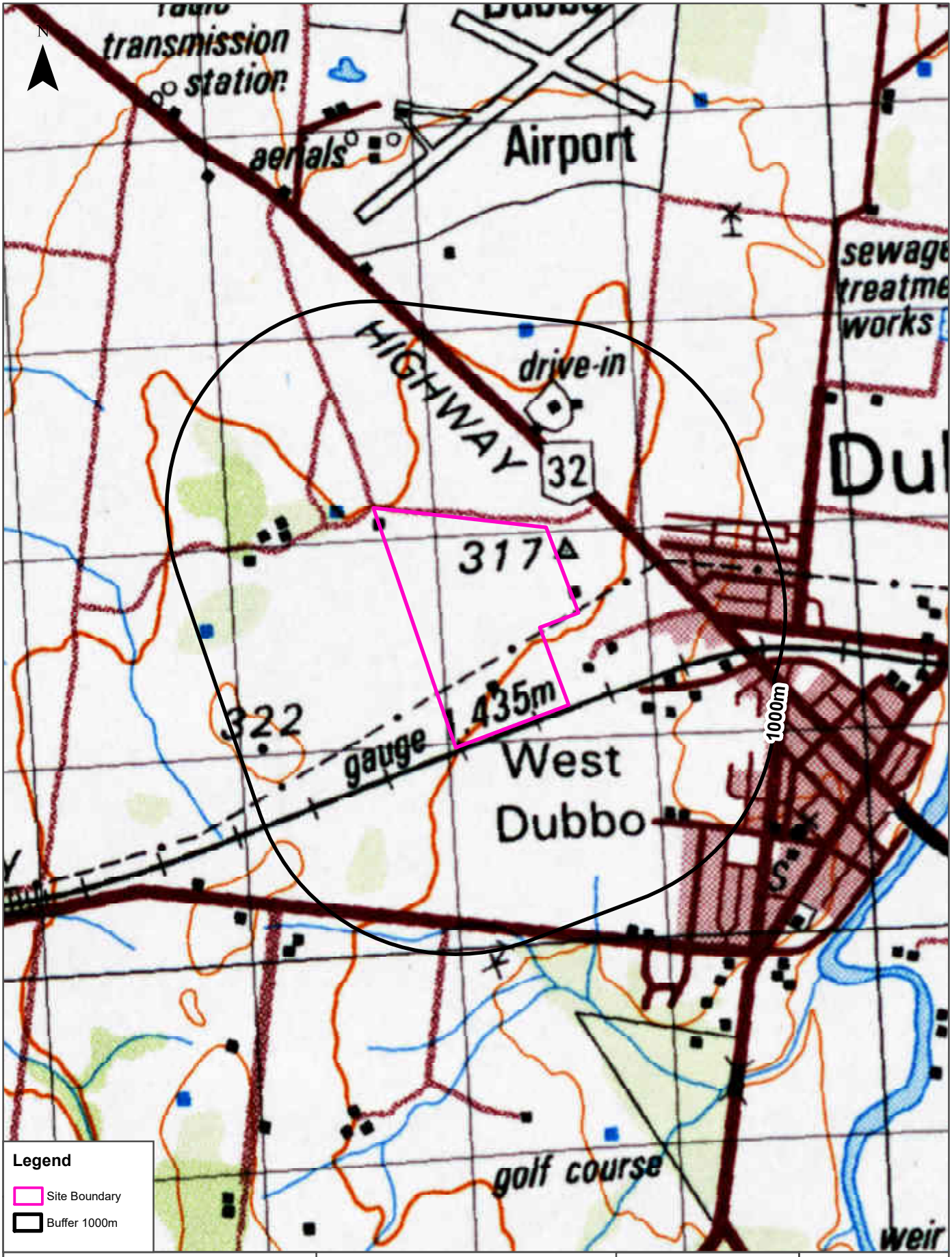
Topographic Map 2015

Jannali Road, Dubbo, NSW 2830



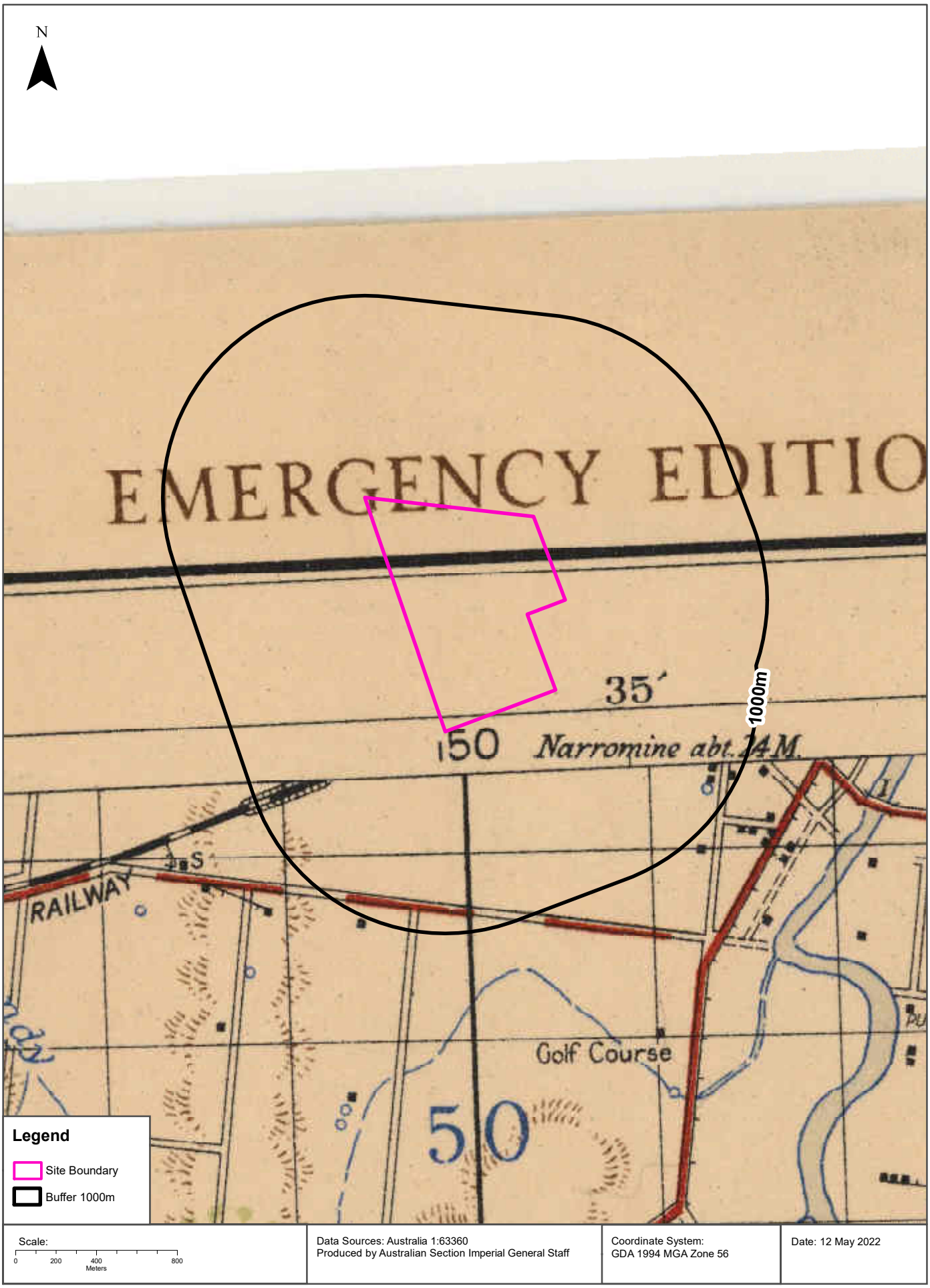
Historical Map 1973

Jannali Road, Dubbo, NSW 2830



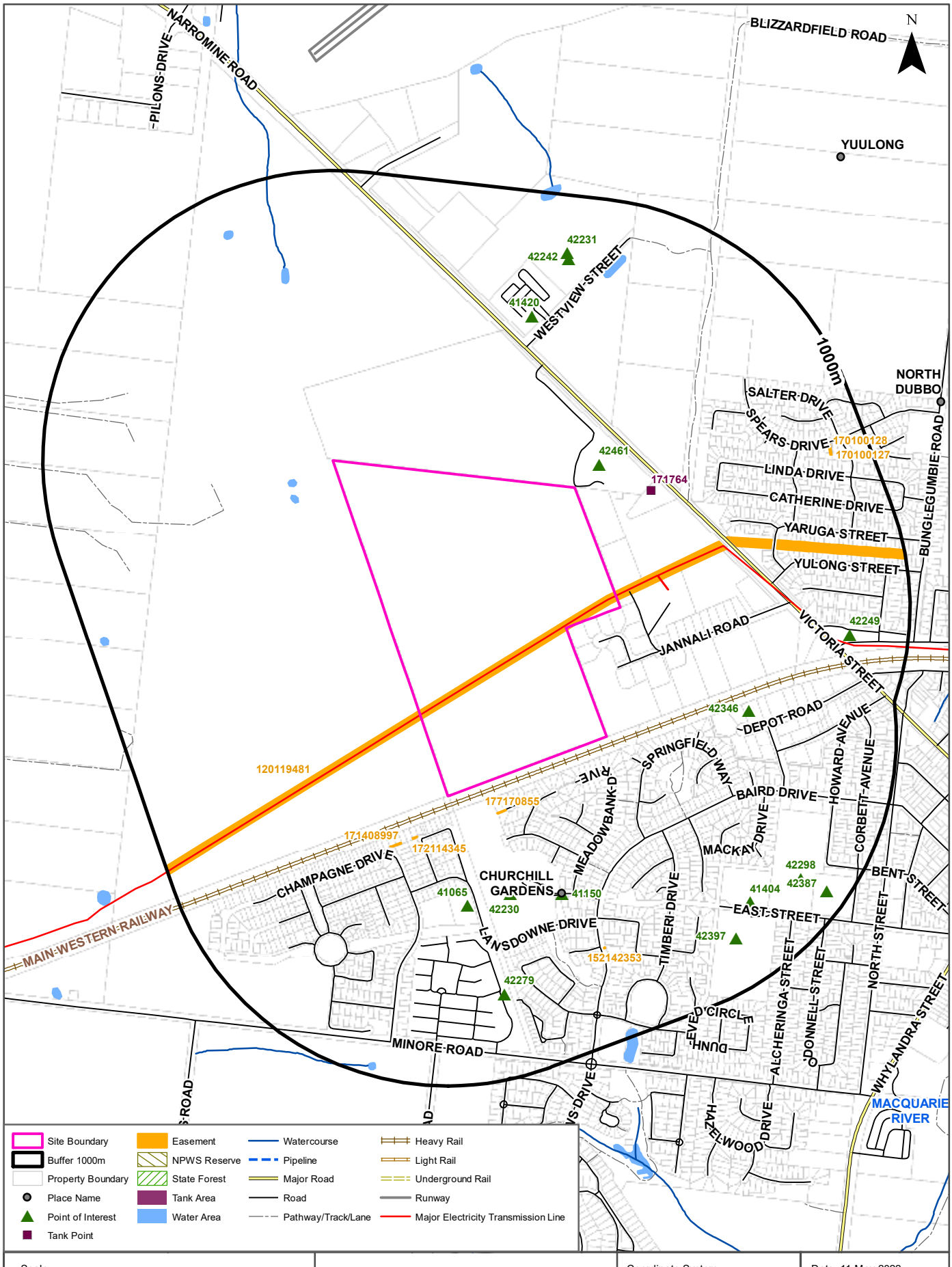
Historical Map c.1942

Jannali Road, Dubbo, NSW 2830



Topographic Features

Jannali Road, Dubbo, NSW 2830



Topographic Features

Jannali Road, Dubbo, NSW 2830

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
42461	TAFE College	DUBBO TAFE COLLEGE NARROMINE ROAD CAMPUS	116m	North East
41065	Nursing Home	BILL NEWTON VC GARDENS	384m	South
42230	Combined Primary-Secondary School	MACQUARIE ANGLICAN GRAMMAR SCHOOL	392m	South
41150	Urban Place	CHURCHILL GARDENS	453m	South
42346	SES Facility	DUBBO SES	499m	East
41420	Tourist Park / Home Village	WESTVIEW TOURIST CARAVAN PARK	570m	North
42279	Retirement Village	HORIZONS VILLAGE	710m	South
41404	Special School	YAWARRA COMMUNITY SCHOOL	757m	South East
42242	Gaol	ORANA JUVENILE JUSTICE CENTRE	780m	North
42249	Park	WIRADJURI PARK	797m	East
42231	Special School	LINCOLN SCHOOL	800m	North
42397	High School	DUBBO COLLEGE DELROY CAMPUS	827m	South East
42298	Sports Field	HOCKEY FIELD	831m	South East
42387	Park	PIONEER PARK	927m	South East

Topographic Features

Jannali Road, Dubbo, NSW 2830

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
171764	Water	Operational		09/10/2009	243m	North East

Major Easements

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120119481	Primary	Undefined		0m	On-site
177170855	Primary	Right of way	4m	113m	South
172114345	Primary	Right of way	4m	174m	South
171408997	Primary	Right of way	4m	228m	South
152142353	Primary	Right of way	5m	678m	South
170100128	Primary	Right of way	2.5m	864m	North East
170100127	Primary	Right of way	2.5m	866m	North East

Topographic Features

Jannali Road, Dubbo, NSW 2830

State Forest

What State Forest exist within the dataset buffer?

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

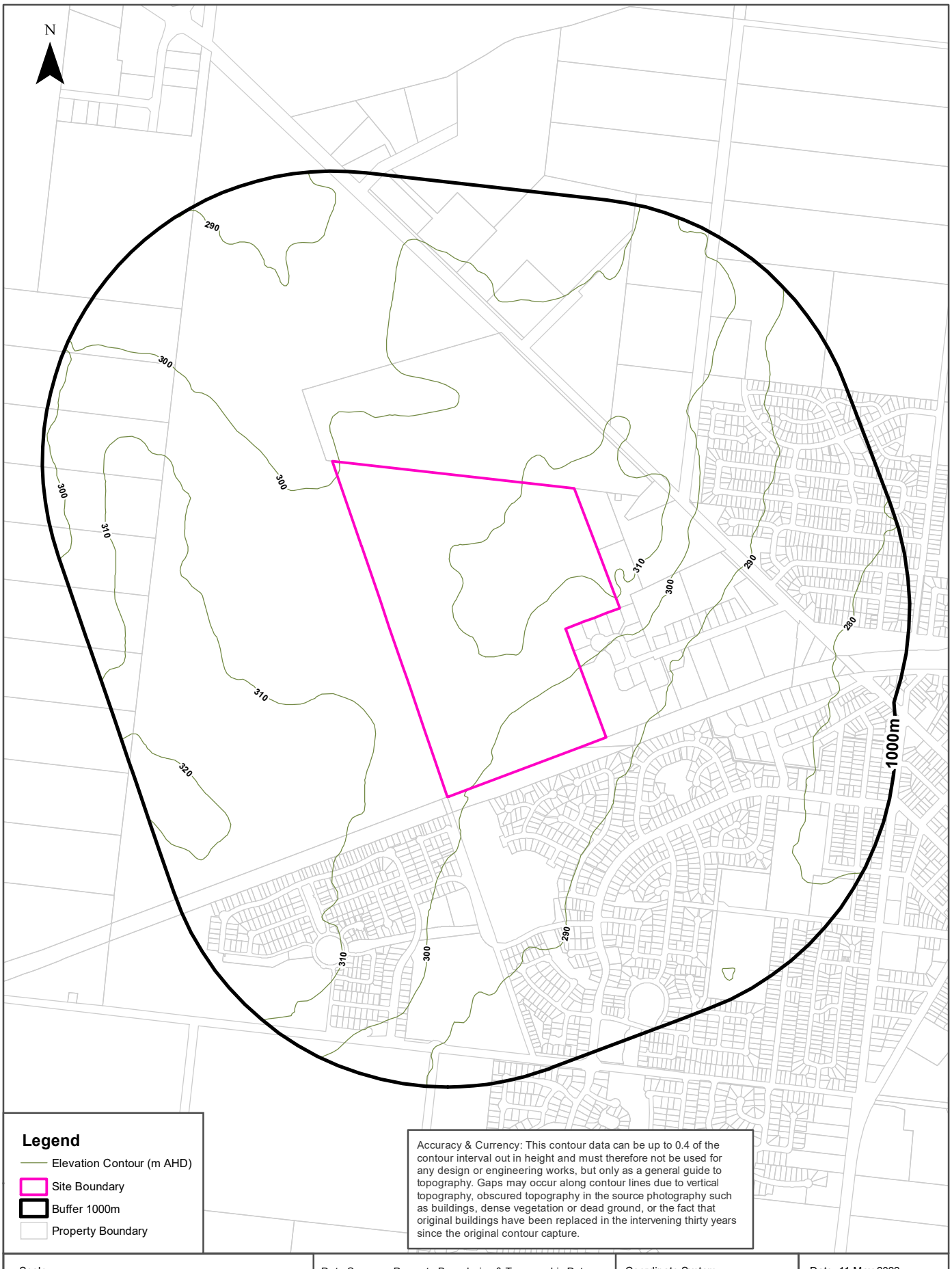
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

Elevation Contours (m AHD)

Jannali Road, Dubbo, NSW 2830



Legend

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

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

Scale:	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022	Coordinate System: GDA 1994 MGA Zone 56	Date: 11 May 2022

0 100 200 400 Meters

Hydrogeology & Groundwater

Jannali Road, Dubbo, NSW 2830

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

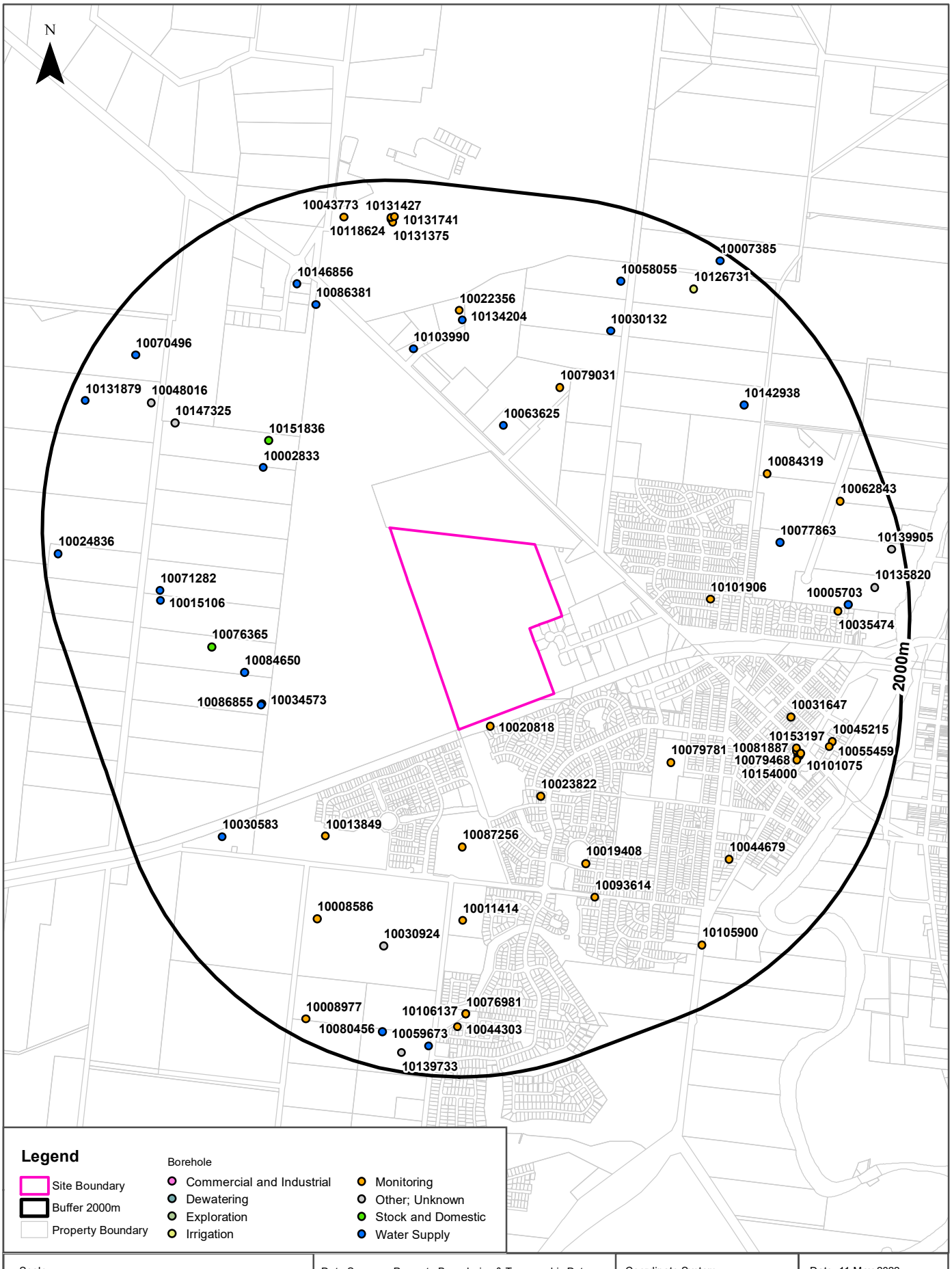
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

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

Groundwater Boreholes

Jannali Road, Dubbo, NSW 2830



Hydrogeology & Groundwater

Jannali Road, Dubbo, NSW 2830

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10020818	GW802626	Monitoring	Functional	07/03/2005	11.00		AHD				49m	South
10023822	GW802594	Monitoring	Functional	25/01/2005	4.50		AHD				528m	South
10063625	GW057513	Water Supply	Unknown	01/09/1982	65.00		AHD	Fresh			656m	North
10087256	GW802619	Monitoring	Functional	07/03/2005	5.00		AHD				678m	South
10079781	GW802579	Monitoring	Functional	12/12/2004	3.00		AHD				783m	South East
10002833	GW061181	Water Supply	Unknown	01/09/1985	70.00		AHD	Good			804m	North West
10151836	GW806046	Stock and Domestic	Functioning	11/04/2018	88.00		AHD				858m	North West
10101906	GW802547	Monitoring	Functional	18/11/2004	12.00		AHD			9.15	860m	East
10079031	GW802629	Monitoring	Functional	07/03/2005	2.50		AHD				913m	North
10019408	GW802607	Monitoring	Functional	20/01/2006	6.00		AHD				982m	South East
10013849	GW802636	Monitoring	Abandoned	07/03/2005	1.50		AHD				984m	South West
10034573	GW800690	Water Supply	Functioning	29/01/1999	84.00		AHD	Good	0.310	12.00	1023m	West
10086855	GW062544	Water Supply	Functioning	01/02/1985	151.00		AHD				1031m	West
10103990	GW052247	Water Supply	Unknown	01/02/1981	65.00		AHD	Fresh			1038m	North
10084650	GW001249	Water Supply	Unknown	01/09/1923	40.20		AHD				1060m	West
10011414	GW802618	Monitoring	Functional	07/03/2005	6.00		AHD			3.55	1102m	South
10093614	GW802543	Monitoring	Functional	01/11/2004	6.00		AHD			3.73	1182m	South
10076365	GW049357	Stock and Domestic	Functioning	01/01/1977	39.60		AHD				1192m	West
10134204	GW021218	Water Supply	Unknown	01/02/1966	121.90		AHD	501-1000 ppm			1234m	North
10022356	GW802630	Monitoring	Functional	07/03/2005	3.00		AHD				1286m	North
10030132	GW803875	Water Supply	Functioning	01/07/1989	111.00		AHD	Good	0.250		1300m	North East
10030924	GW000171	Unknown	Unknown	01/01/1918	100.20		AHD				1320m	South
10077863	GW804542	Water Supply	Functioning	01/07/1992	80.00		AHD				1325m	East
10086381	GW057092	Water Supply	Unknown	01/04/1983	42.00		AHD	Good			1352m	North West
10008586	GW802635	Monitoring	Functional	07/03/2005	2.00		AHD				1362m	South West
10071282	GW066564	Water Supply	Functioning	18/02/1989	87.00	292.50	AHD		0.910	23.70	1369m	West
10031647	GW802578	Monitoring	Abandoned	01/11/2004	1.50		AHD				1372m	East
10147325	GW040471	Unknown	Functioning	01/01/1927	67.10		AHD				1374m	North West
10015106	GW060792	Water Supply	Unknown	01/03/1985	91.00		AHD	Fresh			1383m	West
10044679	GW802546	Monitoring	Abandoned	17/11/2004	1.00		AHD				1390m	South East

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10084319	GW802548	Monitoring	Functional	09/01/2006	9.00		AHD				1396m	North East
10153197	GW805660	Monitoring	Functional	27/08/2013	3.00		AHD				1434m	East
10081887	GW802120	Monitoring	Functioning	04/06/2003	12.00		AHD				1437m	South East
10142938	GW023635	Water Supply	Unknown	01/01/1966	48.80		AHD	0-500 ppm			1447m	North East
10005183	GW802121	Monitoring	Functioning	04/06/2003	15.00		AHD				1451m	South East
10079468	GW802122	Monitoring	Functioning	03/06/2003	12.00		AHD				1451m	South East
10154000	GW805761	Monitoring	Functional	27/08/2013	2.70		AHD				1451m	South East
10101075	GW802119	Monitoring	Functioning	03/06/2003	13.80		AHD				1461m	South East
10153145	GW805662	Monitoring	Functioning	27/08/2013	10.00		AHD				1461m	South East
10153930	GW805663	Monitoring	Functional	28/08/2013	11.50		AHD				1465m	South East
10030583	GW805096	Water Supply	Functioning	21/10/2013	182.00		AHD		0.440		1496m	South West
10146856	GW051858	Water Supply	Unknown	01/11/1979	49.40		AHD	Good			1501m	North West
10048016	GW001241	Unknown	Unknown	01/08/1923	85.30		AHD	Fresh			1549m	North West
10058055	GW063629	Water Supply	Unknown		41.50		AHD	Good			1590m	North East
10035474	GW802549	Monitoring	Functional	18/11/2004	5.50		AHD				1591m	East
10055459	GW805651	Monitoring	Functional	20/04/2011	13.40		AHD			10.83	1616m	East
10045215	GW805652	Monitoring	Functional	19/04/2011	11.90		AHD			10.45	1628m	East
10076981	GW803971	Monitoring	Functional	20/03/2009	9.80		AHD			7.31	1639m	South
10106137	GW803972	Monitoring	Functional	20/03/2009	7.50		AHD			7.27	1639m	South
10005703	GW060961	Water Supply	Functioning	01/01/1930	14.90		AHD				1649m	East
10105900	GW802545	Monitoring	Abandoned	25/11/2004	3.00		AHD				1682m	South East
10044303	GW802544	Monitoring	Abandoned	25/11/2004	3.00		AHD				1713m	South
10126731	GW003348	Irrigation	Unknown	01/07/1935	81.40		AHD	Fresh			1730m	North East
10062843	GW802602	Monitoring	Functional	25/01/2005	7.00		AHD				1734m	East
10131375	GW803571	Monitoring	Functional	08/06/2006	8.00		AHD	3445			1760m	North
10070496	GW063785	Water Supply	Unknown	01/01/1979	30.00		AHD				1767m	North West
10118624	GW803574	Monitoring	Functional	07/06/2006	8.00		AHD	3445		5.30	1776m	North
10131427	GW803573	Monitoring	Functional	08/06/2006	10.00		AHD	3445		1.20	1785m	North
10131741	GW803572	Monitoring	Functional	08/06/2006	8.00		AHD	3445		0.88	1788m	North
10080456	GW035884	Water Supply	Unknown	01/04/1973	2.20		AHD	Good			1796m	South
10043773	GW802631	Monitoring	Functional	07/03/2005	5.50		AHD				1806m	North
10135820	GW042273	Unknown	Unknown		14.90		AHD				1809m	East
10059673	GW035501	Water Supply	Unknown	01/01/1973	42.60		AHD				1832m	South
10008977	GW802634	Monitoring	Functional	07/03/2005	3.00		AHD				1886m	South West
10139733	GW042215	Unknown	Functioning		2.70		AHD				1890m	South
10131879	GW804991	Water Supply	Functioning	25/01/2013	35.50		AHD	650	1.200	11.50	1898m	North West

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10024836	GW065788	Water Supply	Removed	29/03/1990	99.00		AHD				1913m	West
10139905	GW042274	Unknown	Functioning	01/01/1932	14.90		AHD				1936m	East
10007385	GW048877	Water Supply	Unknown	01/01/1978	45.70		AHD				1946m	North East

Hydrogeology & Groundwater

Jannali Road, Dubbo, NSW 2830

Driller's Logs

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

NGIS Bore ID	Drillers Log	Distance	Direction
10020818	0.00m-0.10m Loam, dark brown 0.10m-0.50m Loam, brown 0.50m-1.00m Sandy Clay, reddish brown, fine, light 1.00m-2.50m Sandy Clay, reddish brown 2.50m-3.50m Sandy Clay, brown 3.50m-4.50m Loam, sandy, brown 4.50m-5.00m Clay Loam, sandy, reddish brown 5.00m-5.50m Sandy Clay, reddish brown 5.50m-6.00m Sandy Clay, reddish brown, fine 6.00m-7.00m Clay, brown, light medium 7.00m-8.00m Silty Clay, brown 8.00m-9.00m Sandy Clay, brown, 10% siltstone gravel 9.00m-10.00m Sand/Gravel, brown 10.00m-11.00m Sandy Clay, brown	49m	South
10023822	0.00m-0.10m Loam, sandy, brown 0.10m-0.50m Sandy Clay, brown, coarse, <1% quartz to 5mm 0.50m-1.50m Sandy Clay, reddish brown, medium 1.50m-2.00m Sandy Clay, brown, medium 2.00m-3.00m Sandy Clay, yellowish brown, medium 3.00m-3.50m Sandy Clay, grey, medium, 20% sandsteon to 50mm 3.50m-4.50m Sandy Clay, grey, 50% coarse sandstone gravel	528m	South
10063625	0.00m-1.00m Topsoil 1.00m-16.00m Clay Sandy Coloured 16.00m-28.50m Basalt Decomposed 28.50m-41.00m Basalt Black Hard 41.00m-48.00m Clay Yellow 48.00m-65.00m Sandstone Soft Water Supply	656m	North
10087256	0.00m-0.10m Clay Loam, sandy, 20% gravel to 15mm 0.10m-0.50m Sandy Clay Loam, dark brown 0.50m-1.00m Sandy Clay, light reddish brown, 20% lime 1.00m-1.50m Sandy Clay, yellowish brown, 5% lime 1.50m-2.00m Clay Loam, sandy, dark brown, coarse 2.00m-2.50m Silty Clay, light grey, 5% lime 2.50m-4.00m Silty Clay, light grey, 10% lime 4.00m-4.50m Silty Clay, light grey, 5-10% lime 4.50m-5.00m Silty Clay, light grey, 2% lime	678m	South
10079781	0.00m-0.10m Loamy Sand, dark brown 0.10m-0.50m Clayey Sand, dark reddish brown 0.50m-1.00m Clayey Sand, brown 1.00m-2.00m Clayey Sand, yellowish brown 2.00m-2.50m Sandy Loam, yellowish brown 2.50m-2.90m Sandy Clay Loam, reddish brown 2.90m-3.00m Rock	783m	South East
10002833	0.00m-1.00m Topsoil 1.00m-18.29m Clay Yellow 18.29m-30.48m Clay 30.48m-68.31m Clay Grey 68.31m-70.00m Gravel Water Supply	804m	North West
10101906	0.00m-0.10m Sandy Clay Loam, reddish brown 0.10m-0.50m Clay, dark reddish brown, medium, trace sand 0.50m-1.00m Clay, reddish brown, medium, trace of fine sand 1.00m-1.50m Clay, reddish brown, medium 1.50m-2.50m Clay, brown, medium 2.50m-3.00m Clay, reddish brown, medium heavy 3.00m-3.50m Clay, reddish brown, medium heavy, orange mottles 3.50m-4.50m Clay, brown, medium heavy 4.50m-5.00m Clay, brown, medium, 10% orange mottles 5.00m-5.50m Clay, ligth brown, light medium 5.50m-6.00m Clay, light brown, light medium, red & light grey mottles 6.00m-7.00m Clay, brown, light medium, 10% red mottles 7.00m-8.00m Sandy Clay, orangish brown, <5% fine sandstone 8.00m-10.00m Sandy Clay, orangish brown, 10% grey mottles 10.00m-11.00m Clay, grey, light medium 11.00m-12.00m Clay, light grey, light medium	860m	East

NGIS Bore ID	Drillers Log	Distance	Direction
10079031	0.00m-0.10m Sandy Clay Loam, red, 1% quartz to 5mm 0.10m-0.50m Clay, red, light medium, trace of fine sand, 1% gravel 0.50m-1.00m Clay, red, light medium, trace of fine sand, 1% quartz 1.00m-1.50m Sandy Clay, reddish brown 1.50m-2.00m Clay, reddish brown, medium, trace of fine sand 2.00m-2.40m Clay, reddishb brown, medium heavy 2.40m-2.50m Rock	913m	North
10019408	0.00m-0.10m Sandy Clay Loam, gryeish brown, light 0.10m-1.00m Loam, sandy, greyish brown 1.00m-2.00m Sandy Clay, greyish brown 2.00m-2.40m Sandy Clay, reddish brown 2.40m-3.00m Sandy Clay, greyish brown 3.00m-3.50m Sandy Clay, reddish brown 3.50m-4.00m Sandy clay, yellowish grey 4.00m-6.00m Silty Clay, grey	982m	South East
10013849	0.00m-0.10m Clay Loam, sandy, brown 0.10m-0.50m Clay, reddish brown, light medium 0.50m-1.00m Clay, dark greyish brown, light medium 1.00m-1.40m Sandy Clay, 20% basalt gravel, greyish brown 1.40m-1.50m Basalt	984m	South West
10034573	0.00m-1.00m Topsoil 1.00m-30.00m Clay, red and yellow 30.00m-84.00m Basalt, black	1023m	West
10086855	0.00m-1.00m Topsoil 0.00m-1.00m Boulders Basalt 1.00m-116.00m Basalt Solid 116.00m-151.00m Volcanic Ash	1031m	West
10103990	0.00m-1.00m Topsoil 1.00m-12.00m Clay Red Grey 12.00m-33.55m Basalt Very Hard Weathered Fresh 33.55m-65.00m Sandstone Soft Water Supply	1038m	North
10084650	0.00m-5.49m Clay 5.49m-9.14m Stones Gravel 9.14m-15.24m Gravel 15.24m-31.09m Clay 31.09m-32.00m Boulders Basalt 32.00m-40.23m Rock	1060m	West
10011414	0.00m-0.10m Loam, sandy, 1% quartz to 10mm, dark reddish brown 0.10m-0.50m Sandy Clay Loam, brown, light 0.50m-2.00m Clay, light medium, reddish brown 2.00m-4.00m Sandy Clay, reddish brown 4.00m-4.50m Sandy Clay, brown 4.50m-5.00m Clay, ligth medium, brown 5.00m-5.50m Clay Loam, sandy, brown 5.50m-6.00m Clay Loam, sand, brown, 5% sandstone to10mm	1102m	South
10093614	0.00m-0.10m Sandy Clay Loam, dark reddish brown 0.10m-0.50m Sandy Clay, reddish brown 0.50m-1.00m Clay, reddish brown, medium 1.00m-1.50m Clay, light red, medium, 1% basalt gravel to 5mm 1.50m-2.00m Clay, light red, medium, trace fine sand 2.00m-2.50m Clay, brown, medium 2.50m-3.00m Sandy Clay, brown, 5% red mottles 3.00m-3.50m Sandy Clay, reddish brown, 5% basalt gravel to 10mm 3.50m-4.00m Sandy Clay, brown, 20% red & orange mottles 4.00m-4.50m Sandy Clay, brown, 5% grey mottles 4.50m-5.00m Sandy Clay, brown 5.00m-5.50m Sandy Clay, greyish brown, 2% dark sandstone gravel 5.50m-6.00m Sandy Clay, light grey	1182m	South
10134204	0.00m-3.05m Clay Red 3.05m-19.81m Clay Coloured 19.81m-25.91m Boulders Basaltic Clay 25.91m-42.67m Basalt 42.67m-45.11m Clay Grey 45.11m-46.94m Sand Gravel Water Supply 46.94m-48.77m Clay Black Shale Water Supply 48.77m-49.99m Shale Clay Water Supply 49.99m-57.91m Clay Grey Sandy Water Bearing Water Supply 57.91m-60.66m Clay Grey Water Bearing Water Supply 60.66m-71.63m Shale Grey Rock Water Supply 71.63m-86.26m Shale Rock Water Supply 86.26m-96.93m Shale Grey Gritty Bands Water Supply 96.93m-103.63m Shale Grey Water Bearing Water Supply 103.63m-121.92m Shale Puggy Water Supply	1234m	North
10022356	0.00m-0.10m Clay Loam, dark brown 0.10m-0.50m Clay, dark reddish brown, medium 0.50m-1.00m Clay, dark reddish brown, medium heavy 1.00m-1.50m Clay, brown, medium heavy 1.50m-2.90m Clay, reddish brown, medium heavy 2.90m-3.00m Rock	1286m	North

NGIS Bore ID	Drillers Log	Distance	Direction
10030924	0.00m-9.75m Clay 9.75m-21.34m Sandstone 21.34m-22.86m Sandstone 21.34m-22.86m Ironstone Bands 22.86m-31.09m Sandstone Hard Bands 31.09m-37.19m Shale Black Sandstone 37.19m-49.38m Sandstone 37.19m-49.38m Ironstone Bands 49.38m-55.47m Shale Black 55.47m-61.26m Rock Slatey 61.26m-63.70m Sandstone 63.70m-65.84m Rock Hard 65.84m-71.93m Sandstone 65.84m-71.93m Ironstone Bands 71.93m-92.66m Rock Slatey 92.66m-100.28m Basalt	1320m	South
10086381	0.00m-1.00m Topsoil 1.00m-15.00m Clay Red 15.00m-19.00m Clay Yellow Sandy 19.00m-20.00m Sandstone Hard 20.00m-24.75m Clay White 20.00m-24.75m Sandstone Bands 24.75m-25.00m Sandstone Hard 25.00m-29.00m Clay White 25.00m-29.00m Sandstone Bands 29.00m-30.00m Sandstone 30.00m-38.00m Sandstone Pure 38.00m-39.00m Sandstone Water Supply 39.00m-42.00m Shale Grey	1352m	North West
10008586	0.00m-0.10m Loam, brown, sandy 0.10m-1.00m Sandy Clay, brown 1.00m-1.50m Sandy Clay, reddish brown 1.50m-1.90m Sandy Clay, 60% sandstone to 50mm, greyish brown 1.90m-2.00m Sandstone	1362m	South West
10071282	0.00m-2.00m Topsoil 2.00m-4.00m Clay, brown 4.00m-22.00m Clay, red/brown 22.00m-23.00m Shale, weathered, yellow 23.00m-24.00m Shale, weathered, light white/yellow 24.00m-35.00m Mudstone, grey 35.00m-37.00m Clay, brown 37.00m-48.00m Mudstone, grey 48.00m-53.00m Sandstone / Mudstone, grey 53.00m-77.00m Mudstone, grey 77.00m-84.00m Sandstone 84.00m-87.00m Shale, red/brown	1369m	West
10031647	0.00m-0.10m Sandy Clay Loam, dark reddish brown 0.10m-0.50m Sandy Clay, reddish brown 0.50m-1.00m Clay, reddish brown, light medium 1.00m-1.40m Sandy Clay, greyish brown, 30% ground basalt 1.40m-1.50m Basalt	1372m	East
10015106	0.00m-1.00m Topsoil 1.00m-4.00m Clay 4.00m-10.00m Basalt Weathered 10.00m-26.00m Shale White Grey Sandy 26.00m-40.00m Shale Coarse Sandy Water Supply 40.00m-42.00m Shale Soft 42.00m-50.00m Siltstone Black Oily Shale 50.00m-52.00m Sandstone Grey 52.00m-57.00m Gravel Waterworn Rounded 57.00m-61.00m Shale Grey Sandy 61.00m-74.00m Shale Black Water Supply 74.00m-79.00m Sandstone Grey 79.00m-82.00m Shale Black Water Supply 82.00m-91.00m Rhyolite Weathered	1383m	West
10044679	0.00m-0.10m Sandy Loam, dark brown 0.10m-0.50m Sandy Clay, reddish brown, 80% basalt gravel 0.50m-0.70m Weathered Rock 0.70m-1.00m Rock	1390m	South East

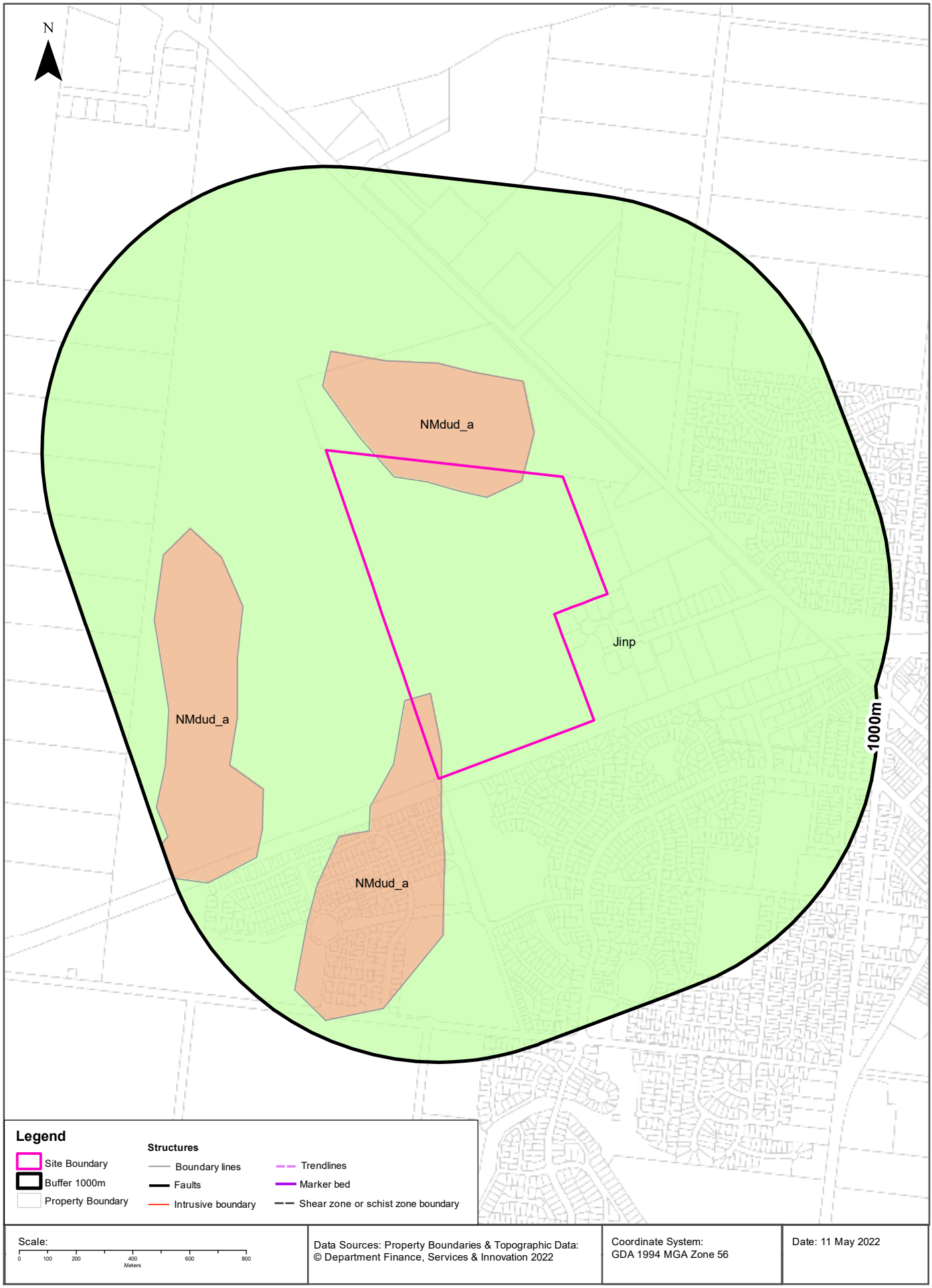
NGIS Bore ID	Drillers Log	Distance	Direction
10084319	0.00m-0.10m Clay Loam, reddish brown 0.10m-0.50m Clay, reddish brown, light medium 0.50m-1.50m Clay, red, light medium 1.50m-2.00m Clay, reddish brown, medium 2.00m-2.50m Sandy Clay, brown 2.50m-3.00m Sandy Clay, brown, 10% yellow mottles 3.00m-3.50m Sandy Clay, reddish brown, 10% red mottles 3.50m-4.00m Sandy Clay, yellowish brown 4.00m-5.00m Sandy Clay Loam, reddish brown 5.00m-5.50m Clay, reddish brown, light 5.50m-6.00m Sandy Clay, brown, 10% yellow mottles 6.00m-7.00m Sandy Clay, brown, 5% ground gravel to 5mm 7.00m-9.00m Sandy Clay, brown 9.00m-9.00m Rock	1396m	North East
10081887	0.00m-1.00m Fill 1.00m-2.00m Clay 2.00m-8.00m Basalt, weathered basalt 8.00m-12.00m Sandstone	1437m	South East
10142938	0.00m-5.49m Clay 5.49m-24.38m Clay Sandy 24.38m-27.13m Clay 27.13m-34.14m Shale 34.14m-34.75m Sandstone 34.75m-35.97m Sandstone Water Bearing Water Supply 35.97m-40.84m Sandstone 40.84m-47.24m Shale 47.24m-48.77m Sandstone	1447m	North East
10005183	0.00m-5.50m Fill 5.50m-7.50m Basalt 7.50m-15.00m Sandstone	1451m	South East
10079468	0.00m-2.50m Fill 2.50m-7.00m Basalt 7.00m-12.00m Sandstone	1451m	South East
10101075	0.00m-4.00m Fill 4.00m-7.00m Basalt 7.00m-13.50m Sandstone	1461m	South East
10030583	0.00m-0.50m Topsoil 0.50m-8.50m Clay 8.50m-35.00m Basalt; broken 35.00m-97.00m Shale; grey 97.00m-155.00m Granite; grey 155.00m-157.50m Granite; green 157.50m-158.00m Granite; green, water bearing 158.00m-165.50m Granite; red 165.50m-167.20m Granite; red, water bearing 167.20m-176.00m Grnaite; grey 176.00m-177.00m Granite; grey, fractured, water bearing 177.00m-182.00m Granite; grey	1496m	South West
10146856	0.00m-1.00m Topsoil 1.00m-15.00m Clay 15.00m-19.00m Clay Red 19.00m-29.00m Sandstone Hard 29.00m-29.50m Sandstone Water Bearing 29.50m-39.00m Sandstone Hard 39.00m-40.00m Sandstone Water Bearing 40.00m-41.00m Shale 41.00m-49.37m Shale Sandstone Water Supply	1501m	North West
10048016	0.00m-12.19m Clay Yellow Sticky 12.19m-19.81m Sandstone 19.81m-27.43m Sandstone 19.81m-27.43m Clay Seams 27.43m-37.19m Sand Rock Hard 37.19m-46.33m Rock 46.33m-50.90m Sandstone 50.90m-59.44m Shale 59.44m-62.48m Ironstone Rock Seams 62.48m-71.63m Sand Rock 71.63m-74.68m Shale 74.68m-79.25m Sandstone Water Supply 79.25m-81.08m Shale Grey 81.08m-85.34m Rock	1549m	North West
10058055	0.00m-1.00m Topsoil 1.00m-41.45m Shale Water Supply	1590m	North East

NGIS Bore ID	Drillers Log	Distance	Direction
10035474	0.00m-0.10m Clay Loam, dark brown 0.10m-0.50m Clay, dark reddish brown, medium 0.50m-1.00m Clay, dark reddish brown, medium heavy 1.00m-1.50m Clay, brown, medium heavy 1.50m-2.00m Clay, reddish brown, medium heavy 2.00m-2.50m Clay, reddish brown, medium heavy, brown mottles 2.50m-3.50m Clay, reddish brown, medium heavy 3.50m-4.50m Sandy Clay, brown, light 4.50m-5.00m Clay, reddish brown, light medium, orange mottles 5.00m-5.40m Clay, brown, light medium, basalt gravel to 40mm 5.40m-5.50m Basalt	1591m	East
10055459	0.00m-0.20m Sand, Clayey; red-brown, damp, loose, fine, poorly sorted with rounded fine-coarse quartz gravels. 0.05m Bitumen @ surfa 0.20m-0.30m Clay; brown, damp, medium stiff, plastic, homogenous 0.30m-1.00m Clay, Sandy; red-brown, damp, medium stiff, plastic, homogenous 1.00m-1.60m Clay, Sandy; red-brown with grey mottling, damp, medium stiff, plastic, homogenous 1.60m-3.20m Silt, Clayey; grey, dry, non plastic, soft, homogenous 3.20m-9.00m Silt, Clayey; brown-grey, dry, non plastic, soft, homogenous 9.00m-10.00m Silt, Clayey; brown-grey, damp, low plasticity, soft, homogenous 10.00m-12.00m Silt, Clayey; brown-grey, moist, low plasticity, soft, homogenous 12.00m-13.50m Silt, Clayey; brown-grey, saturated, low plasticity, soft, homogenous	1616m	East
10045215	0.00m-0.15m Sand, Clayey; red-brown, damp, loose, fine well sorted, 0.05m of bitumen @ surface 0.15m-0.25m Sand, Clayey; red-brown, damp, loose, fine, poorly sorted with rounded fine to coarse quartz gravels 0.25m-0.30m Clay; brown, damp, stiff, medium plasticity, homogenous 0.30m-0.50m Sand, Clayey; yellow-brown, damp, loose, poorly sorted with rounded, fine to coarse quartz gravels 0.50m-1.00m Clay, Sandy; red-brown, damp, stiff, high plasticity, homogenous 1.00m-1.80m Clay, Sandy; red-brown with grey mottling, damp, medium stiff, low plasticity, homogenous 1.80m-3.00m Silt, Clayey; grey-brown, damp, very soft, non plastic, homogenous 3.00m-8.00m Silt, Clayey; grey-brown, dry, very soft, low plasticity, homogenous 8.00m-9.00m Silt, Clayey; grey-brown, damp, very soft, low plasticity, homogenous 9.00m-10.50m Silt, Clayey; grey-0brown, moist, very soft, low plasticity, homogenous 10.50m-12.00m Clay, Silty; dark brown, sasturated, soft, low plasticity, homogenous	1628m	East
10076981	0.00m-4.70m Sandy Clay, brown 4.70m-7.80m Sand, silty, grey brown 7.80m-9.80m Silty Clay, with fine Gravel, grey brown	1639m	South
10106137	0.00m-3.20m Sandy Clay, yellow brown 3.20m-7.00m Sandy Clay/Silt, yellow 7.00m-8.50m Sandy Clay, black/dark grey	1639m	South
10105900	0.00m-0.10m Sandy Clay Loam, greyish brown, 10% sandstone 0.10m-0.50m Sandy Loam, brown, 5% sandstone gravel to 20mm 0.50m-1.00m Clayey Sand, light brown 1.00m-1.50m Sandy Clay Loam, light reddish brown 1.50m-2.00m Sandy Clay, light brown 2.00m-2.50m Sandy Clay Loam, greyish brown 2.50m-3.00m Sandy Clay, grey	1682m	South East
10044303	0.00m-0.10m Sandy Loam, reddish brown, fine 0.10m-0.50m Sandy Clay, yellow, 10% sandstone gravel to 15mm 0.50m-1.00m Sandy Clay, yellow, 5% sandstone gravel to 5mm 1.00m-1.50m Sandy Clay Loam, yellow, grey & orange mottles 1.50m-2.50m Sandy Clay Loam, grey, orange mottles 2.50m-3.00m Weathered rock	1713m	South
10126731	0.00m-1.83m Loam Sandy 1.83m-5.49m Conglomerate 5.49m-39.01m Clay Sticky 39.01m-75.90m Shale 75.90m-76.35m Sandstone Water Supply 76.35m-81.38m Shale	1730m	North East
10062843	0.00m-0.10m Sandy clay Loam, reddish brown 0.10m-1.00m Clay, light medium, reddish brown 1.00m-2.00m Sandy Clay, red 2.00m-3.00m Sandy Clay, brown 3.00m-3.50m sandy Clay, coarse, 80% basalt gravel to 80mm 3.50m-4.50m Sandy Clay, brown, 80% basalt gravel to 80mm 4.50m-5.00m Sandy Clay, yellow brown 5.00m-5.50m Sandy Clay, brown 5.50m-6.00m Sandy Clay, brown, 30% basalt gravel 6.00m-6.90m Sandy Clay, 30% basalt & 5% quartz to 10mm 6.90m-7.00m Basalt	1734m	East
10131375	0.00m-0.90m Clay, red-brown, hard, dry, low plasticity 0.90m-3.90m Clay, red-brown, hard, dry, no odour, low plasticity 3.90m-4.90m Clay, brown, stiff to hard, trace gravel & clay, moist 4.90m-8.00m Clay, brown mottled white, stiff, moist	1760m	North

NGIS Bore ID	Drillers Log	Distance	Direction
10118624	0.00m-1.00m Sandy Clay, fine, dark red-brown, silty, dry 1.00m-1.90m Sandy Clay, as above, becoming more sandy 1.90m-3.00m Clay, brown, soft-firm, plastic, fine 3.00m-3.90m Clay, brown, firm, plastic, moist, gravelly 3.90m-4.90m Clay, as above, trace gravel, less moist 4.90m-5.90m Clay, brown & grey, firm-stiff, moist, faint hydrocarbon odour 5.90m-6.90m clay, brown & white, firm gravelly, dry-moist, faint odour 6.90m-8.00m Clay, grey/white, moist, firm, plastic, no odour	1776m	North
10131427	0.00m-0.50m Clay, silty/sandy, red, firm-stiff, no odour 0.50m-1.90m Clay, silt, red, soft-firm 1.90m-3.00m Clay, light brown, dry, firm-stiff, large gravels rounded 3.00m-3.90m Clay, light brown, moist-dry, firm, no odour 3.90m-4.90m Clay, light brown, fine, sandy, trace gravels, small 4.90m-5.00m Clay, light brown, silty, dry-moist, soft-firm 5.00m-10.00m Clay, lihgt brown, moist to wet, soft-firm	1785m	North
10131741	0.00m-0.50m Sand, clayey, fine, red-brown, dry some asphalt 0.50m-1.90m Clay, pale red-brown, soft, low plasticity 1.90m-6.90m Clay, brown, soft, faint hydrocarbon odour 6.90m-8.00m Clay, pale brown mottled white, soft, moist	1788m	North
10080456	0.00m-1.21m Silt 1.21m-1.98m Silt Sand 1.98m-2.28m Aquifer Water Supply	1796m	South
10043773	0.00m-0.10m Loam, dark brown 0.10m-0.50m Sandy Clay Loam, dark reddish brown 0.50m-1.00m Clay, reddish brown, light medium 1.00m-1.50m Clay, brown, light medium, 2% lime 1.50m-2.50m Sandy Clay, reddish brown, 1% lime 2.50m-3.00m Sandy Clay, yellowish brown, 2% lime 3.00m-3.50m Sandy Clay, grey, 5% lime 3.50m-4.00m Sandy Clay, grey, 2% lime 4.00m-4.50m Sandy Clay, grey, <1% lime 4.50m-5.00m Sandy Clay, yellowish brown 5.00m-5.50m Sandy Clay, greyish brown, 20% gravel	1806m	North
10059673	0.00m-1.52m Topsoil 1.52m-9.14m Clay 9.14m-27.43m Clay 27.43m-36.57m Clay Gritty 36.57m-41.14m Sandstone 41.14m-42.67m Sandstone Hard	1832m	South
10008977	0.00m-0.10m Loam, sandy, dark brown 0.10m-0.50m Loam, sandy, brown 0.50m-1.00m Sandy Clay, reddish brown, light 1.00m-1.50m Sandy Clay Loam, reddish brown 1.50m-2.50m Sandy Clay, grey 2.50m-3.00m Sandy Clay, gravelly, yellowish brown	1886m	South West
10131879	0.00m-5.00m Clay, red 5.00m-5.10m Sandstone, weathered, coarse 5.10m-5.20m Ironstone 5.20m-5.50m Clay, grey 5.50m-25.00m Clay, red 25.00m-32.50m Quartz & Gravels, water bearing 32.50m-35.50m Clay, red	1898m	North West
10024836	0.00m-6.20m Brown Soil & Clay 6.20m-18.00m Red Sand & Clay 18.00m-21.00m Yellow Sand & Clay 21.00m-26.00m Red Sand & Clay 26.00m-41.00m Yellow Sand & Clay 41.00m-53.00m Siltstone 53.00m-61.00m Weathered Basalt 61.00m-99.00m Basalt	1913m	West
10007385	0.00m-0.61m Topsoil 0.61m-2.44m Clay 2.44m-9.14m Clay Red 9.14m-15.24m Clay Yellow 15.24m-22.86m Clay Sandy 22.86m-30.48m Clay Cream Sandy 30.48m-34.14m Clay White Yellow 34.14m-39.62m Clay Yellow Gravel 39.62m-45.11m Sandstone Water Supply 45.11m-45.72m Shale	1946m	North East

Geology

Jannali Road, Dubbo, NSW 2830



Geology

Jannali Road, Dubbo, NSW 2830

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Jinp	Pilliga Sandstone	Medium- to very coarse-grained, well sorted, angular to subangular quartzose sandstone and conglomerate. Minor interbeds of mudstone, siltstone and fine-grained sandstone and coal. Common carbonaceous fragments and iron staining. Rare lithic fragments.	/Injune Creek Group//Pilliga Sandstone//	Callovian (base) to Kimmeridgian (top)	Sandstone	0m
NMdud_a	Dubbo Volcanics - alkaline basalt	Alkaline basalt.	/Dubbo Volcanic Complex//Dubbo Volcanics/Dubbo Volcanics - alkaline basalt/	Burdigalian (base) to Serravallian (top)	Basalt	0m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Naturally Occurring Asbestos Potential

Jannali Road, Dubbo, NSW 2830

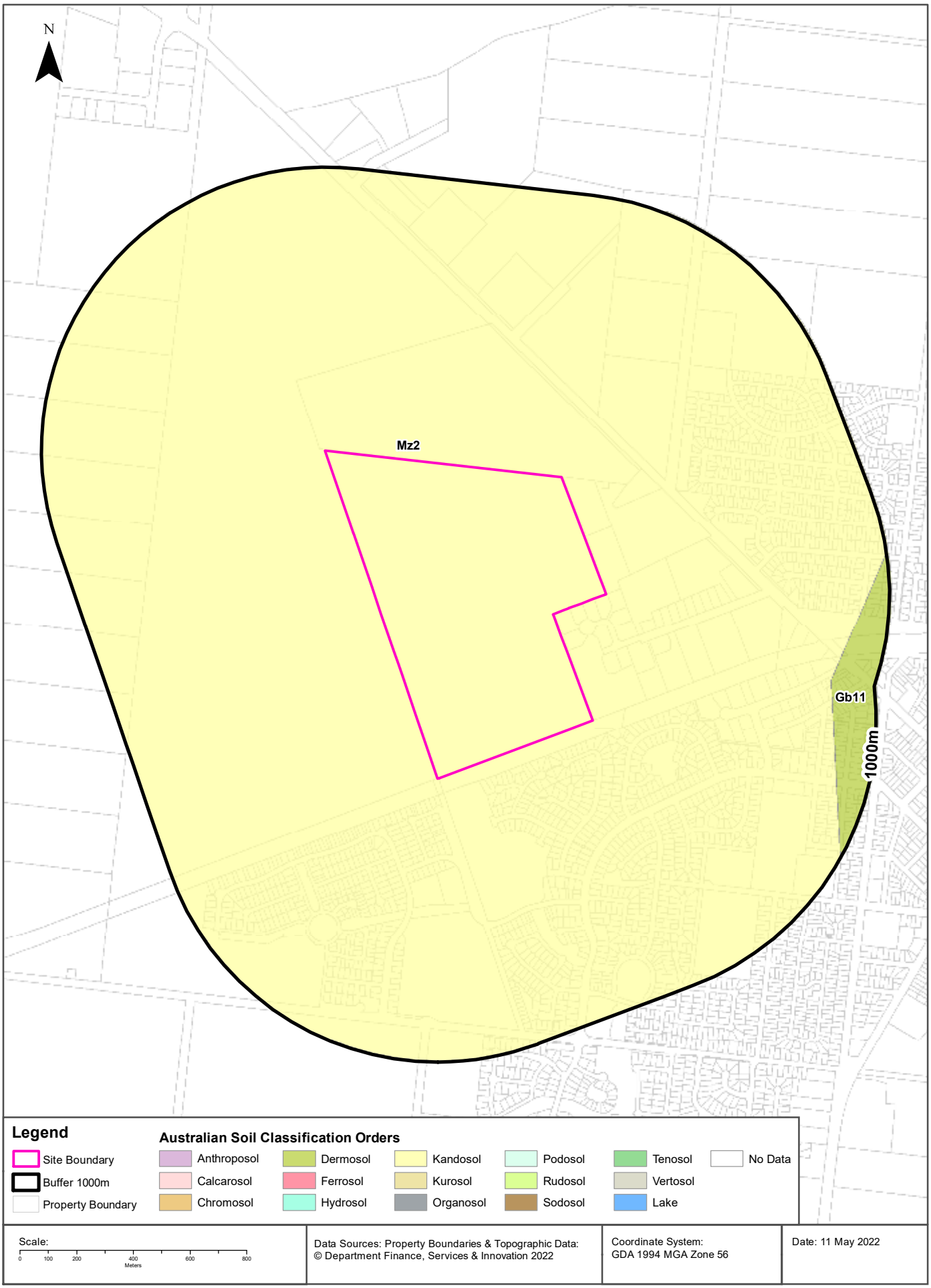
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

Atlas of Australian Soils

Jannali Road, Dubbo, NSW 2830



Soils

Jannali Road, Dubbo, NSW 2830

Atlas of Australian Soils

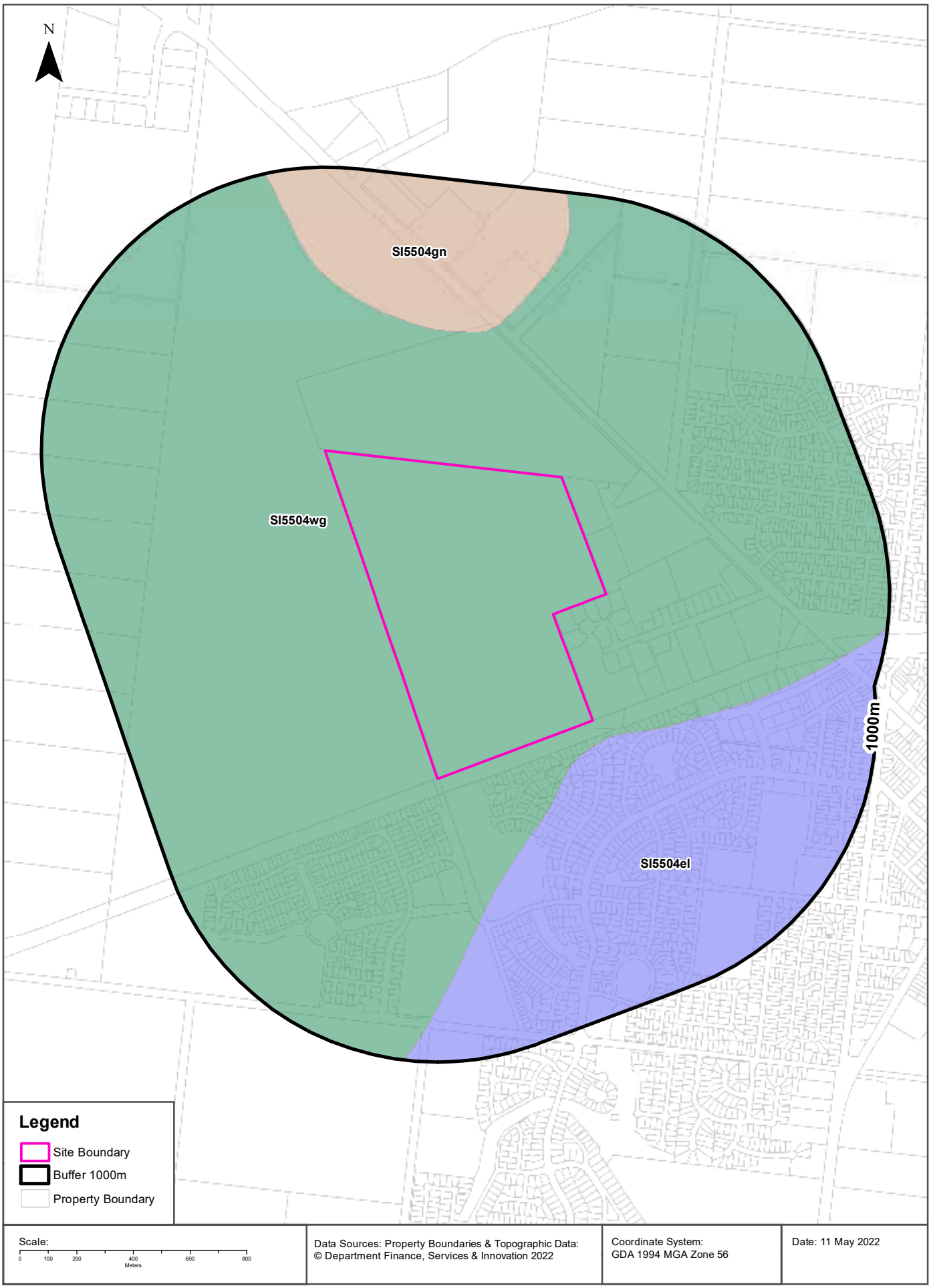
Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Mz2	Kandosol	Flat to gently undulating (?terrace remnants): red earths (Gn2.11 and Gn2.12) on flat to gently undu- lating areas. Associated are red friable earths (Gn3.12 and Gn3.13) in the vicinity of basalt-strewn ridges and knolls some of which have cracking clays such as (Ug5.32) on their crests and slopes; some (Dr2.33) soils; and some low gravelly hillocks of unit Ms1 soils.	0m	On-site
Gb11	Dermosol	River terraces and flood-plains: chief soils are dark porous loamy soils (Um6.11) and, less commonly, cracking clays (Ug5.16) on the younger terraces, with various (Um) and (Uc) soils on the flood-plains. Associated are higher terrace remnants with a variety of soils including (Dr2.22), (Dr3.43), (Dy3.4), (Gn3 . 12), and (Gn2. 15) soils. Data are limited.	840m	East

Atlas of Australian Soils Data Source: CSIRO

Soil Landscapes of Central and Eastern NSW

Jannali Road, Dubbo, NSW 2830



Soils

Jannali Road, Dubbo, NSW 2830

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
SI5504wg	Wongarbon	0m	On-site
SI5504el	Eulomogo	82m	South East
SI5504gn	Goonoo	461m	North

Acid Sulfate Soils

Jannali Road, Dubbo, NSW 2830

Environmental Planning Instrument - Acid Sulfate Soils

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

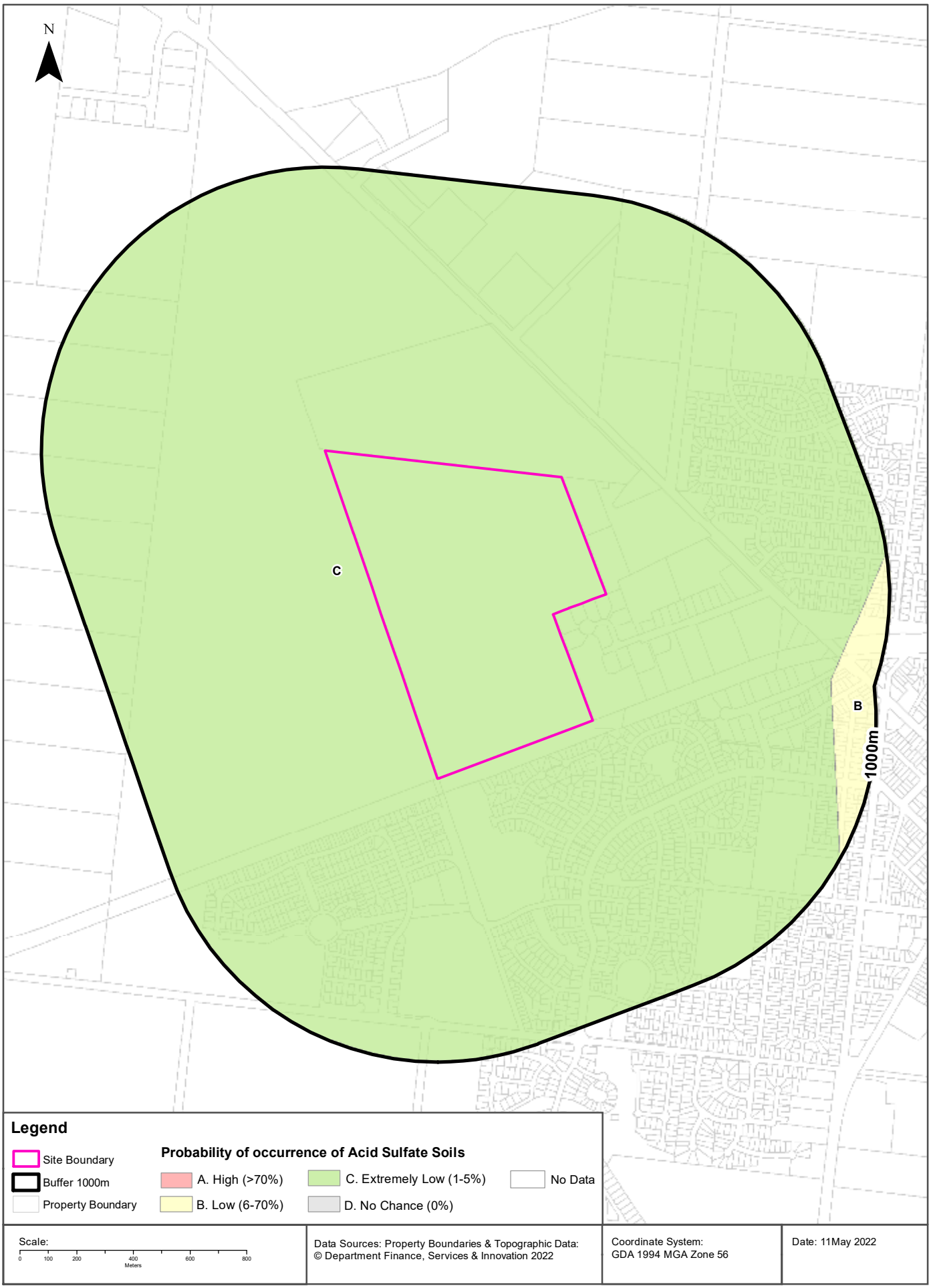
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

Jannali Road, Dubbo, NSW 2830



Acid Sulfate Soils

Jannali Road, Dubbo, NSW 2830

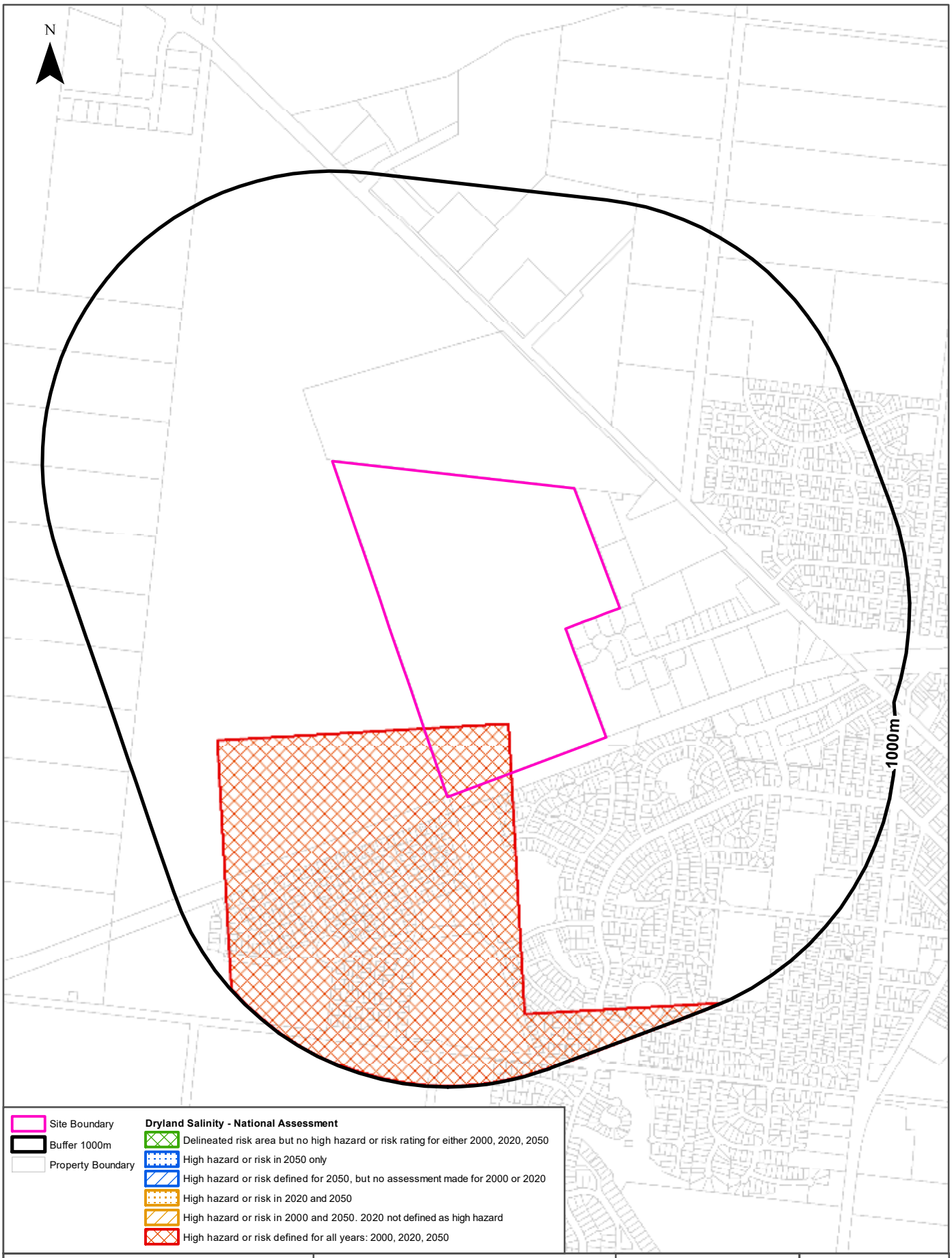
Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site
B	Low Probability of occurrence. 6-70% chance of occurrence.	839m	East

Dryland Salinity

Jannali Road, Dubbo, NSW 2830



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 11 May 2022

Dryland Salinity

Jannali Road, Dubbo, NSW 2830

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

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

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	On-site

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

Mining

Jannali Road, Dubbo, NSW 2830

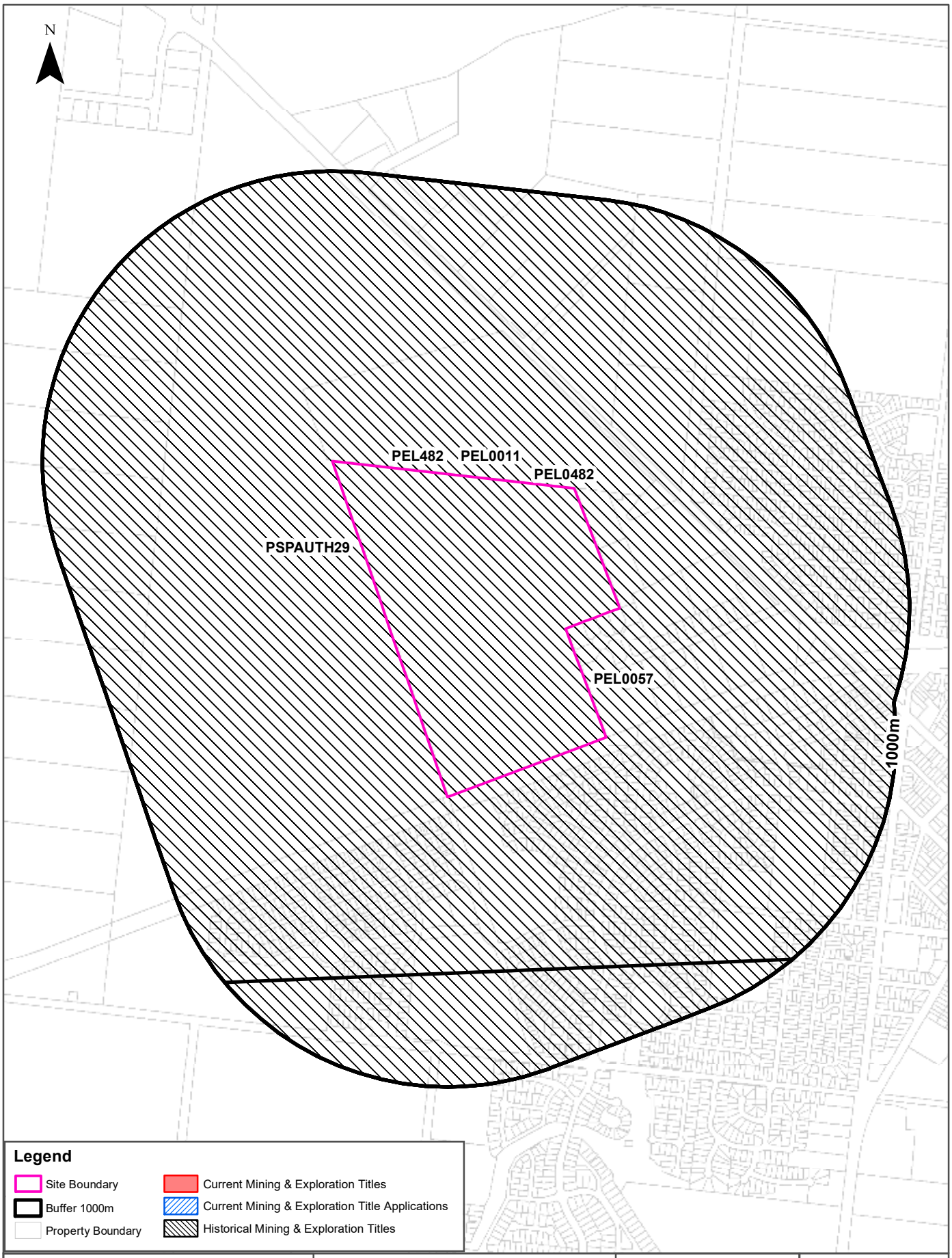
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining & Exploration Titles

Jannali Road, Dubbo, NSW 2830



Mining

Jannali Road, Dubbo, NSW 2830

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

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

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Jannali Road, Dubbo, NSW 2830

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PEL482	SURAT RESOURCES PTY LIMITED			MINERALS		0m	On-site
PEL0057	L H SMART OIL EXPLORATION CO. LTD			PETROLEUM	Petroleum	0m	On-site
PEL0011	METALLIC RESOURCES PTY LIMITED	24/05/1995	21/08/1996	PETROLEUM	Petroleum	0m	On-site
PSPAUTH29	EAST COAST POWER PTY LTD	23/12/2008	23/12/2009	PETROLEUM	Petroleum	0m	On-site
PEL0482	SURAT RESOURCES PTY LTD	8/04/2010	20/05/2011	PETROLEUM	Petroleum	0m	On-site

State Environmental Planning Policy

Jannali Road, Dubbo, NSW 2830

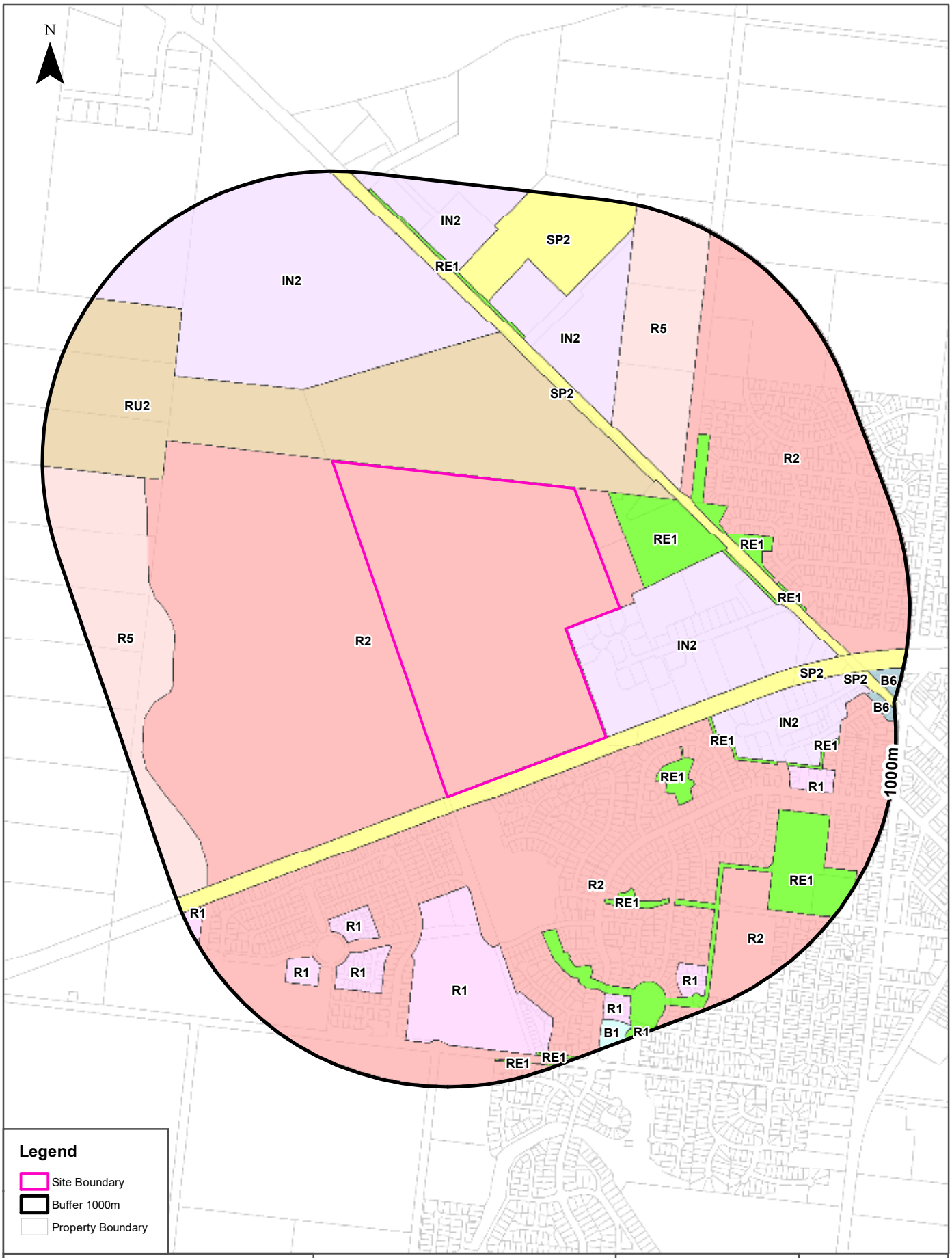
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

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

EPI Planning Zones

Jannali Road, Dubbo, NSW 2830



Environmental Planning Instrument

Jannali Road, Dubbo, NSW 2830

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		0m	On-site
RU2	Rural Landscape		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		0m	North West
SP2	Infrastructure	Railway	Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		0m	South East
IN2	Light Industrial		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		0m	East
R2	Low Density Residential		Dubbo Local Environmental Plan 2011	26/10/2018	26/10/2018	09/07/2021	Amendment No 13	55m	South
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		98m	East
SP2	Infrastructure	Classified Road	Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		201m	North East
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		216m	South East
R5	Large Lot Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		242m	North East
IN2	Light Industrial		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		250m	North
IN2	Light Industrial		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		264m	North West
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		317m	South
R2	Low Density Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		333m	North East
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		353m	South East
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		359m	North East
IN2	Light Industrial		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		363m	East
R1	General Residential		Dubbo Local Environmental Plan 2011	26/10/2018	26/10/2018	09/07/2021	Amendment No 13	467m	South
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		488m	North
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		516m	South East
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		545m	East
R1	General Residential		Dubbo Local Environmental Plan 2011	26/10/2018	26/10/2018	09/07/2021	Amendment No 13	545m	South
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		551m	South East
SP2	Infrastructure	Correctional Centre	Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		605m	North
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		622m	South East
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		627m	South East
R5	Large Lot Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		650m	West
IN2	Light Industrial		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		693m	North
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		722m	South West

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		820m	South East
SP2	Infrastructure	Classified Road	Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		821m	East
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		826m	South
B6	Enterprise Corridor		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		875m	East
B6	Enterprise Corridor		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		896m	East
B1	Neighbourhood Centre		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		906m	South
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		918m	South
RE1	Public Recreation		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		930m	South
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		934m	South West
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		985m	South
R1	General Residential		Dubbo Local Environmental Plan 2011	11/11/2011	11/11/2011	09/07/2021		997m	East

Heritage

Jannali Road, Dubbo, NSW 2830

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

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

State Heritage Register - Curtilages

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

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

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

Environmental Planning Instrument - Heritage

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

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

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards

Jannali Road, Dubbo, NSW 2830

Bush Fire Prone Land

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

Bush Fire Prone Land Category	Distance	Direction
No records in buffer		

Ecological Constraints

Jannali Road, Dubbo, NSW 2830

Ramsar Wetlands

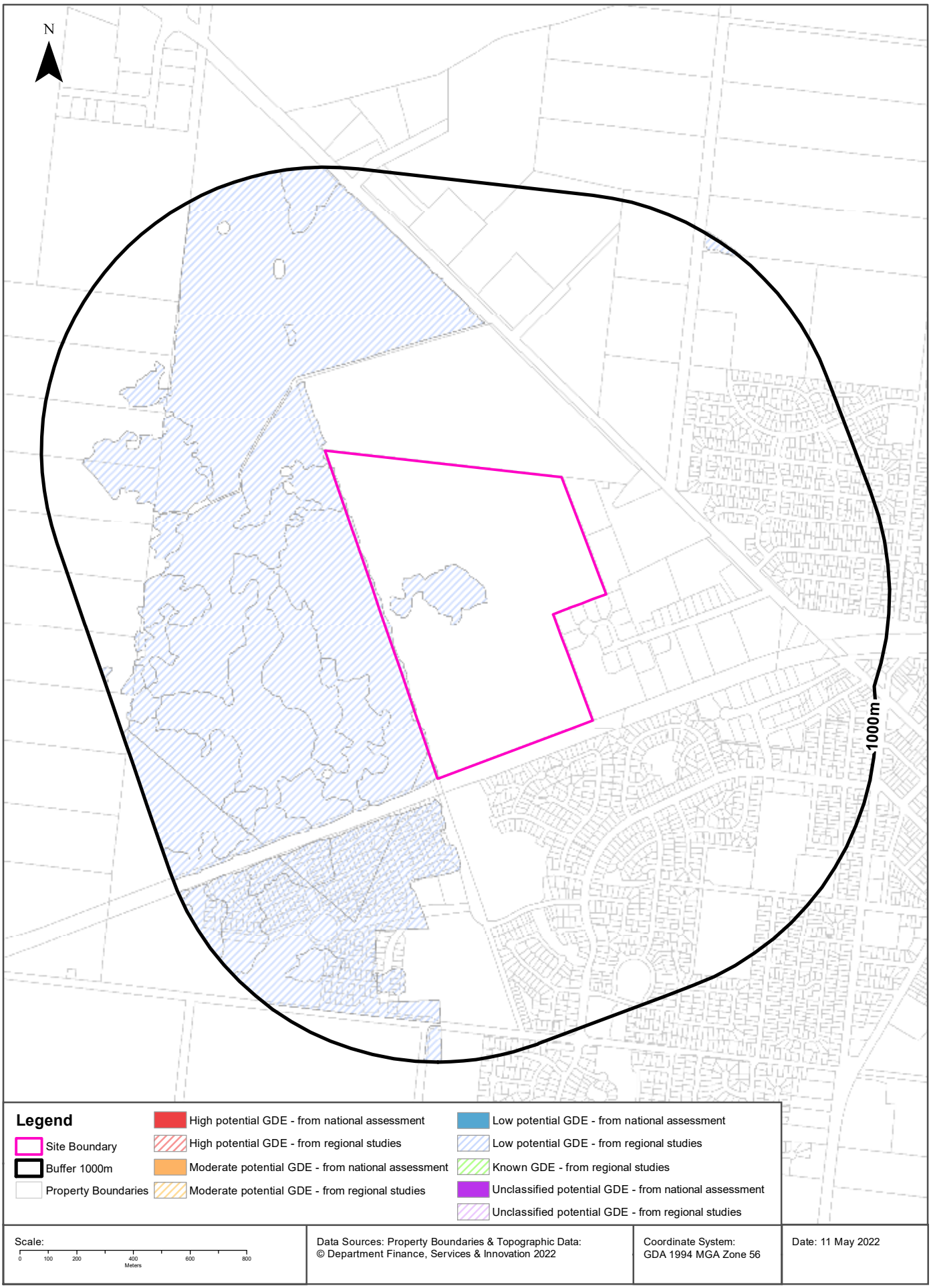
What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Jannali Road, Dubbo, NSW 2830



Ecological Constraints

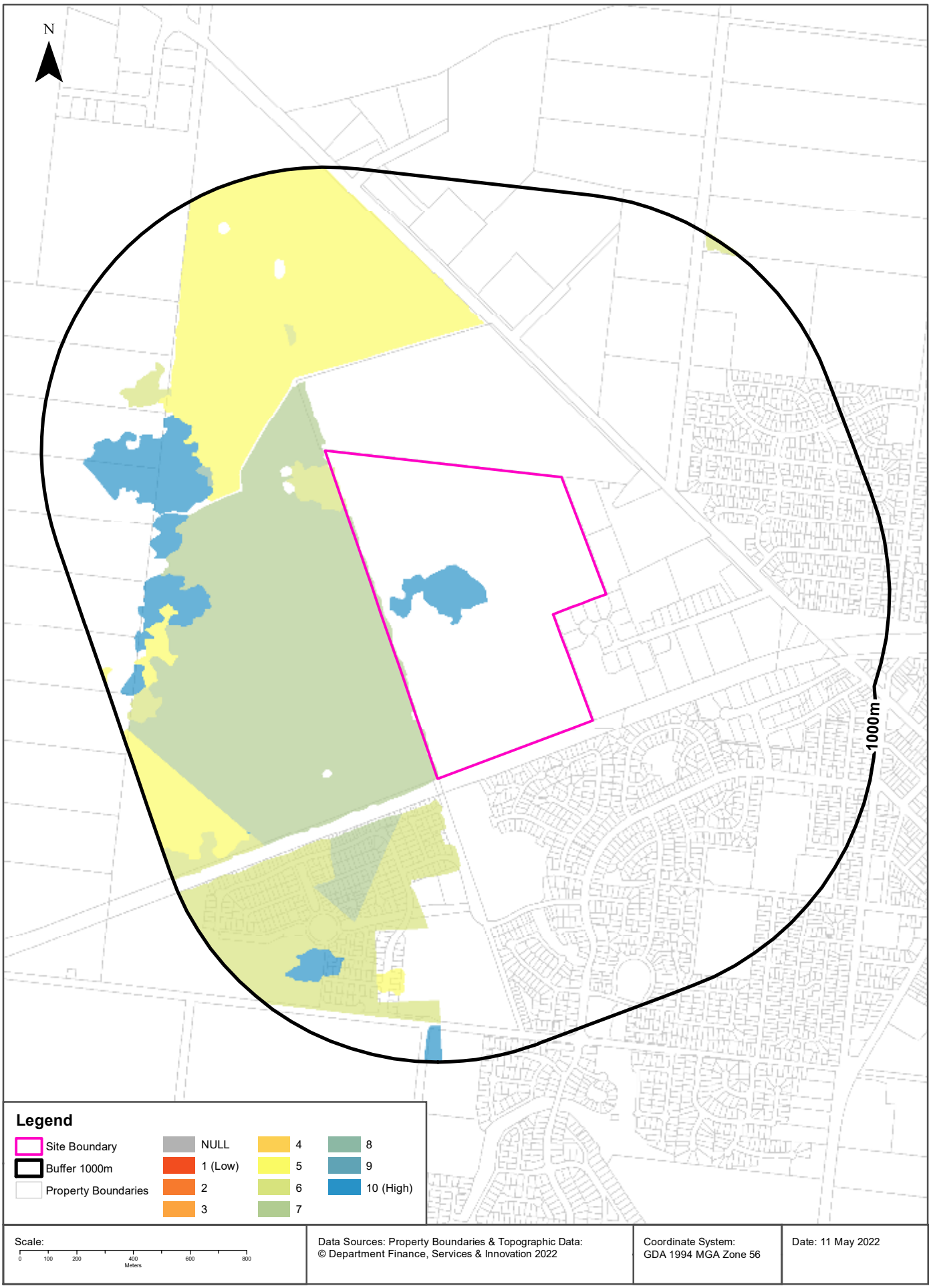
Jannali Road, Dubbo, NSW 2830

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Tablelands stepping down to west and breaking into detached hills.	Vegetation		0m	On-site

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Jannali Road, Dubbo, NSW 2830



Ecological Constraints

Jannali Road, Dubbo, NSW 2830

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	10	Tablelands stepping down to west and breaking into detached hills.	Vegetation		0m	On-site
Terrestrial	7	Tablelands stepping down to west and breaking into detached hills.	Vegetation		0m	On-site
Terrestrial	6	Tablelands stepping down to west and breaking into detached hills.	Vegetation		0m	On-site
Terrestrial	5	Tablelands stepping down to west and breaking into detached hills.	Vegetation		225m	North West
Terrestrial	8	Tablelands stepping down to west and breaking into detached hills.	Vegetation		406m	North West

Ecological Constraints

Jannali Road, Dubbo, NSW 2830

NSW BioNet Atlas

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

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Listed	Not Sensitive	Not Listed	ROKAMBA;JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Menura alberti	Albert's Lyrebird	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox strenua	Powerful Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Phaethon rubricauda	Red-tailed Tropicbird	Vulnerable	Not Sensitive	Not Listed	CAMBA;JAMBA
Animalia	Aves	Philomachus pugnax	Ruff	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tringa stagnatilis	Marsh Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Chalinolobus picatus	Little Pied Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Macrotis lagotis	Bilby	Extinct	Not Sensitive	Vulnerable	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Chelonia mydas	Green Turtle	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Reptilia	Ramphotyphlops endoterus	Interior Blind Snake	Endangered	Not Sensitive	Not Listed	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Calotis glandulosa	Mauve Burr-daisy	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Commersonia procumbens		Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Vulnerable	Category 2	Not Listed	
Plantae	Flora	Homoranthus darwinioides	Fairy Bells	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Indigofera efoliata	Leafless Indigo	Endangered	Category 3	Endangered	

Data does not include NSW category 1 sensitive species.

Location Confidences

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

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

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Appendix D

Borehole Logs

BOREHOLE LOG

BOREHOLE No: BH1

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
				TOPSOIL: Silty Clay with sand, red-brown	W	-	6 4	Di-1-1: 0.1m			
			CI	**Silty CLAY:** red-brown with medium plasticity	M	F	2 1				
0.50							1				0.50
							1	Att-1-1: 1.2m			
						ST	4				
						VST	9				
							6				
1.00							6	S-1-1: 1.3m			1.00
				Grades, orange-brown, with gravel pieces			10				
							10				
							9				
							11				
1.50							14				1.50
							11				
							12				
							9				
							9				
2.00	Solid Flight Auger					H	12				2.00
							14				
							18				
							17				
							14				
2.50							15				2.50
							14				
							17				
							17				
							Refusal	Number of blows>20			
3.00											3.00
				Grades, mottled grey yellow-brown, medium to high plasticity							
3.50											3.50
4.00											4.00
4.50											4.50
				Borehole Terminated at 4.5m.							
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water: ▼ water level; ▼ level risen to; ● water inflow

sampling / testing: ■ intact sample from core; T intact tube sample; Standard Penetration Test; B Bulk sample; Supp Su from Pocket Penetrometer; Suv Su from Field Vane Shear test

soil classification:
soil is classified in accordance with AS1726 unless otherwise noted

Notes:

BOREHOLE LOG

BOREHOLE No: BH2

Page: 1 **of** 1

Client:	The Bathla Group 13L Narromine Road, Dubbo NSW	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
				TOPSOIL: Silty Clay with gravel, red brown	D-M		13 8 5				
0.50	Solid Flight Auger		CI	**Silty CLAY:** medium plasticity, red-brown	D-M	ST	5 4 4	Di-2-1: 0.15m Di-2-2: 0.2m Di-2-3: 0.1m			0.50
						VST	8 12 12	S2-1: 1.3m			
1.00							12 11 8	ATT-2-1: 0.9m			1.00
1.50				Becoming high plasticity	M		6 5 7 6				1.50
2.00							6 5 7 6				2.00
2.50						H	6 6 8 10 12 14 Refusal	Number of blows > 20			2.50
3.00				Borehole Terminated at 3m.							3.00
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water: ▼ water level; ▼ level risen to; water inflow

soil classification:
soil is classified in accordance with AS1726
unless otherwise noted

Notes:

sampling / testing:
intact sample from core
T intact tube sample
Standard Penetration Test
B Bulk sample
Supp Su from Pocket Penetrometer
Suv Su from Field Vane Shear test

BOREHOLE LOG

BOREHOLE No: BH3

Page: 1 **of** 1

Client:	The Bathla Group 13L Narromine Road, Dubbo NSW	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
	Solid Flight Auger			**TOPSOIL:** Silty Clay with gravel, brown-red	D.M		10	Di-3-1: 0.1m			
							8	Di-3-2: 0.2m			
							6	Di-3-3: 0.3m			
			CI	Silty **CLAY:** medium plasticity, red-brown	M	ST	4				
0.50						VST	5	Di-3: 0.5m			0.50
							6				
							7				
							6				
							6				
1.00				with gravel, mottled gray brown			7				1.00
							8				
							9				
							8				
						H	11				
1.50							14				1.50
							18				
							18	S3-1: 1.8m			
							Refusal	Number of blows >20			
				SHALE: Extremely Weathered,Very Low Strength, red brown, n	M	H					
2.00											2.00
				Borhole refusal at 2m							
2.50											2.50
3.00											3.00
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water:

▼ water level

▼ level risen to

water inflow

sampling / testing:

intact sample from core

T intact tube sample

Standard Penetration Test

B Bulk sample

Supp Su from Pocket Penetrometer

Suv Su from Field Vane Shear test

soil classification:
soil is classified in accordance with AS1726
unless otherwise noted

Notes:

BOREHOLE LOG

BOREHOLE No: BH4

Page: 1 **of** 1

Client:	The Bathla Group 13L Narromine Road, Dubbo NSW	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
				TOPSOIL: Silty Clay, red-brown		WC	9	Di-4-1: 0.1m			
							8	Di-4-2: 0.2m			
			CI	Silty **CLAY:** medium plasticity, red-brown	M	ST	4	Di-4-3: 0.3m			
							4	Di-4: 0.5			
0.50						VST	5				0.50
							5	Att-4-1: 0.7m			
							6	S-4-1: 0.8m			
							7				
							5				
1.00							6				1.00
							7				
				becoming mottled grey-brown			8				
							8				
							9				
1.50						H	11				1.50
							14				
							16				
							17				
							18				
2.00							16				2.00
				Sandy CLAY with silt, medium plasticity, yellow-orange white	D-M	M	17				
							18				
							17				
							19				
2.50							Refusal	Number of blows > 20			2.50
	Solid Flight Auger			becoming yellow orange							
3.00											3.00
				Borhole terminated at 3m							
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water:

▼ water level

▼ level risen to

water inflow

soil classification:
soil is classified in accordance with AS1726 unless otherwise noted

Notes:

sampling / testing:

intact sample from core

T intact tube sample

Standard Penetration Test

B Bulk sample

Supp Su from Pocket Penetrometer

Suv Su from Field Vane Shear test

BOREHOLE LOG

BOREHOLE No: BH5

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
				TOPSOIL: Silty **CLAY**, red- brown	M	PC	5 5	Di-5-1: 0.1m			
			CI	Silty **CLAY**: medium plasticity, red- brown	M	VST	6 6 8 6 5 5 7 6 6 7 7 7 8 8 6 6 6 6 6 5 6	Di-5-2: 0.15m S-5-1:0.9m Di-5: 1m			
0.50											0.50
1.00											1.00
1.50											1.50
2.00											2.00
2.50	Solid Flight Auger			Grades: becoming orange brown Grades: with gravel dominated, red- brown		H	12 R	Number of blows >20			2.50
3.00											3.00
				Borehole terminated at 3m							
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water: water level; level risen to; water inflow

sampling / testing: intact sample from core; intact tube sample; Standard Penetration Test; B Bulk sample; Supp Su from Pocket Penetrometer; Suv Su from Field Vane Shear test

soil classification:
soil is classified in accordance with AS1726
unless otherwise noted

Notes:

BOREHOLE LOG

BOREHOLE No: BH6

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
	Solid Flight Auger			**TOPSOIL**: Silty CLAY, red-brown	M	WC	9 7	Di - 6-1: 0.1m			
			CI	Silty **CLAY**: medium plasticity, red- brown	M	VST	5 4	Di - 6-2: 0.1m Di - 6-3: 0.15m			
0.50							5 6				0.50
							5 6				
1.00							5 5 6	Di - 6: 1m			1.00
							8 7 8				
1.50							9				1.50
				Grades: becoming yellow- orange		H	12 13 12				
2.00							15 16				2.00
							16 17 17				
2.50							18 18 19				2.50
3.00							18 R	Number of blows >20			3.00
				Borehole terminated at 3m							
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water: water level; level risen to; water inflow

soil classification:
soil is classified in accordance with AS1726 unless otherwise noted

sampling / testing:
intact sample from core; intact tube sample; Standard Penetration Test

B Bulk sample
Supp Su from Pocket Penetrometer
Suv Su from Field Vane Shear test

Notes:

BOREHOLE LOG

BOREHOLE No: BH7

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels Depth (m)
0.00										0.00
	Solid Flight Auger			**TOPSOIL**: Silty **CLAY**, red - brown	D-M	WC	10 12	Di - 7 -1 : 0.1m		
				Silty **CLAY**: medium plasticity, red- brown	D-M		16 7	Di - 7 -2 : 0.2m Di - 7 - 3 : 0.15m		
0.50							6 5			0.50
							3 6			
							9			
1.00							5			1.00
						ST	4			
				Grades: becoming yellow- brown			4 5			
							4			
1.50							4	S- 7-1 : 1.4m		1.50
						VST	5	Att -7- 1: 1.4m		
				Grades: becoming mottled grey yellow - brown			5 8			
							R	Number of blows > 20		
2.00										2.00
				Grades: becoming more grey						
2.50										2.50
				Borehole refusal at 2.5m						
3.00										3.00
3.50										3.50
4.00										4.00
4.50										4.50
5.00										5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water: water level; level risen to; water inflow

soil classification:
soil is classified in accordance with AS1726
unless otherwise noted

sampling / testing:
intact sample from core
intact tube sample
Standard Penetration Test
B Bulk sample
Supp Su from Pocket Penetrometer
Suv Su from Field Vane Shear test

Notes:

BOREHOLE LOG

BOREHOLE No: BH8

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00										0.00	
	Solid Flight Auger			**TOPSOIL**: Silty **CLAY**, red - brown, with gravel dominated	D-M	WC	15 8 5	Di -8-1: 0.1m Di -8-2 : 0.15m			
				s							
0.50			Cl	Natural silty **CLAY**: medium plasticity, red - brown	D-M	VST	14 9 8 4 10	Di -8-3: 0.1m Di -8-4 : 0.2m			0.50
1.00				Clayey **SILT**: medium plasticity, brown, with sand soil, yellow - wije	M	VST	5 11 7 6 7 5	Att - 8 -1: 1m			1.00
1.50				Grades: becoming mottled grey yellow - brown			R>20	S-8-1: 1.4m			1.50
				Grades: becoming red- brown							
2.00				Borehole refusal at 1.8m							2.00
2.50											2.50
3.00											3.00
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water:

water level

level risen to

water inflow

soil classification:

soil is classified in accordance with AS1726 unless otherwise noted

sampling / testing:

intact sample from core

T intact tube sample

Standard Penetration Test

B Bulk sample

Supp Su from Pocket Penetrometer

Suv Su from Field Vane Shear test

Notes:

BOREHOLE LOG

BOREHOLE No: BH9

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
	Solid Flight Auger			**TOPSOIL**: Silty CLAY, red -brown	M	PC	13 4 2				
0.50				Silty **CLAY**: medium plasticity, red- brown orange	M	ST	2 3				0.50
							3 3 4	Di - 9: 0.5m S-9-1 : 0.5m Att 9-1: 0.5m			
1.00							4 3 4				1.00
						VST	4 5 5				
1.50							5 6 6				1.50
2.00				Grades: becoming yellow - orange			5 7 8 8				2.00
						H	10 10 12				
2.50							12 14 14				2.50
3.00							17				3.00
				Borehole termination at 3m							
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water:

▼ water level

▼ level risen to

water inflow

soil classification:

soil is classified in accordance with AS1726 unless otherwise noted

sampling / testing:

intact sample from core

T intact tube sample

Standard Penetration Test

B Bulk sample

Supp Su from Pocket Penetrometer

Suv Su from Field Vane Shear test

Notes:

BOREHOLE LOG

BOREHOLE No: BH10

Page: 1 **of** 1

Client:	The Bathla Group	Drilling Co:	Geotesta Pty Ltd	Easting:	---
Project:	13L Narromine Road, Dubbo NSW 2830	Driller:	Ali	Northing:	---
Job No:	NE1167	Rig Type:	Ute Mounted	Grid Ref:	See Figure 1
Location:	13L Narromine Road, Dubbo NSW 2830	Inclination:	Vertical	Collar RL:	
Date Drilled:	20/01/2022	Bearing:	Vertical	Logged by:	BD Checked by: M.H.B

Test Method: AS 1289.6.3.2-1997 & AS 1726-2017

Depth (m)	Drilling Method	Graphic Log	Group Symbol	MATERIAL DESCRIPTION Type, colour, particle size and shape, structure	Moisture	Consistency / Strength	DCP blows/100mm	FIELD TESTS & NOTES	Sampling / Runs	Water Levels	Depth (m)
0.00											0.00
				TOPSOIL: Silty **CLAY**, red - brown	M	WC	10 7	Di -10-1: 0.1m			
				Silty **CLAY**: medium plasticity, red- brown	M	VST	5 4	Di -10-2: 0.15m			
0.50							5 7	Att-10-1: 0.5m			0.50
							7 8	S-10-1: 0.7m			
1.00							7 7				1.00
				Grades: becoming more moist orange - brown - red			7 8				
							8 8				
1.50							8 7				1.50
							9 9				
							10				
2.00						10(0.7r	10				2.00
	Solid Flight Auger			Borehole terminated at 2m							
2.50											2.50
3.00											3.00
3.50											3.50
4.00											4.00
4.50											4.50
5.00											5.00

consistency:

VS	very soft
S	soft
F	firm
ST	stiff
VST	very stiff
H	hard
WC	well compacted

relative density:

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

EL: extremly low strength

moisture:

D	Dry
M	Moist
W	Wet
S	Saturated

water:

▼ water level

▼ level risen to

water inflow

soil classification:

soil is classified in accordance with AS1726 unless otherwise noted

sampling / testing:

intact sample from core

T intact tube sample

Standard Penetration Test

B Bulk sample

Supp Su from Pocket Penetrometer

Suv Su from Field Vane Shear test

Notes:

EBH1 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, low-to-medium plasticity, brown	Moist	Moderately Compacted	Sample collected at 0.2-0.4m
0.2-0.9	CI	Silty CLAY: medium plasticity, brown, trace medium-grained sand	Moist	Firm to Stiff	Groundwater was not encountered

EBH2 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, medium plasticity, dark brown, traced gravel	Moist	Moderately Compacted	Sample collected at 0.0-0.2m
0.1-0.5	CI	Silty CLAY: medium plasticity, grey-brown	Moist	Stiff	Groundwater was not encountered

EBH3 & EIL - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, low-to-medium plasticity, brown, with sand	Moist	Poorly Compacted	EBH3 & EIL collected at 0.0-0.4m
0.2-0.4	CI	Silty CLAY: medium plasticity, yello brown	Moist	Firm	Groundwater was not encountered

EBH4 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, medium-to-high plasticity, dark brown	Wet	Poorly Compacted	EBH4 collected at 0.0-0.2m
0.2-1.0	CI	Silty CLAY: medium plasticity, brown, mottled black	Moist to Wet	Firm	Groundwater was not encountered

EBH5 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, medium plasticity, dark brown	Moist to Wet	Poorly Compacted	EBH5 collected at 0.0-0.2m
0.2-0.6	CI	Silty CLAY: medium plasticity, brown, trace ironstone pieces	Moist	Firm to Stiff	Groundwater was not encountered

EBH6 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with sandstone pieces and rootlets	Moist to Wet	Moderately Compacted	EBH6 collected at 0.0-0.3m
0.2-0.5	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

EBH7 - Log

Depth	Symbol	Material Description	Moisture	Consistency/Density	Field Notes

(m)					
0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with rootlets and boulders and crushed sandstones	Moist to Wet	Moderately Compacted	EBH7 collected at 0.0-0.2m
0.2-0.4	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

EBH8 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with rootlets	Moist to Wet	Poorly Compacted	EBH8 collected at 0.0-0.3m
0.2-0.5	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

EBH9 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with rootlets	Moist to Wet	Poorly Compacted	EBH9 collected at 0.0-0.4m
0.2-0.6	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

EBH10 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes

0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with grass rootlets	Moist to Wet	Poorly Compacted	EBH10 collected at 0.0-0.3m
0.2-0.5	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

EBH11 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with sandstone fragments	Moist to Wet	Poorly Compacted	EBH11 collected at 0.0-0.3m
0.2-0.5	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

EBH12 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	TOPSOIL: Silty CLAY, dark brown, with rootlets	Moist to Wet	Poorly Compacted	EBH12 collected at 0.0-0.3m
0.2-0.5	CI	Silty CLAY: medium plasticity, brown	Moist	Firm	Groundwater was not encountered

Appendix E
Laboratory Results

CHAIN OF CUSTODY RECORD

Sydney Laboratory | Brisbane Laboratory | Perth Laboratory | Melbourne Laboratory

Company	Geotests	Project No	NE1167	Project Manager	
Address	6/20-22 Foundry Road, Seven Hills	Project Name	131 Alameda Road, Dubbo	Report Format	
Contact Name	Dr. Mohammad Hossein Baygar				
Phone No	452454416				
Special Direction					
Purchase Order					
Quote ID No					

No	Client Sample ID	Date	Matrix	Suite B15	Heavy Metals	Suite B14	TRH	PAHs	BTEX	Asbestos	pH/EC	Sulphate
	DI-1-1	1/02/22	Soil		X			X				
	DI-2-1	1/02/22	Soil		X		X					
	DI-2-3	1/02/22	Soil		X			X				
	DI-3	1/02/22	Soil		X		X					
	DI-3-2	1/02/22	Soil		X			X				
	DI-3-3	1/02/22	Soil		X		X					
	DI-4	1/02/22	Soil		X	X						
	DI-4-3	1/02/22	Soil		X			X				
	DI-5	1/02/22	Soil		X				X			
	DI-6-1	1/02/22	Soil		X		X					
	DI-2	1/02/22	Soil		X	X	X					
	DI-6	1/02/22	Soil		X							
	DI-6-2	1/02/22	Soil		X	X						
	DI-7-1	1/02/22	Soil	X								
	DI-7-2	1/02/22	Soil		X	X						
	DI-8-1	1/02/22	Soil		X		X					
	DI-1	1/02/22	Soil	X								
	DI-8	1/02/22	Soil		X							
	DI-10-1	1/02/22	Soil		X		X					
	DI-10-2	1/02/22	Soil		X	X						
	DI-11-1	1/02/22	Soil	X								
	DI-11-2	1/02/22	Soil	X								
	DI-12-1	1/02/22	Soil	X								
	DI-13-1	1/02/22	Soil	X								
	Asb-7-1	1/02/22	Soil							X		
	Asb-11-1	1/02/22	Soil							X		
	Asb-12-1	1/02/22	Soil							X		
	Asb-13-1	1/02/22	Soil							X		
	Asb-14-1	1/02/22	Soil							X		
	Total Counts			6	18	5	7	4	1	5		

Relinquished By: ___ Date: ___ Time: ___

Email for Results: ___

Containers: 1L Plastic; 250mL Plastic; 125mL Plastic; 200mL Amber Glass; 40mL vial; 125mL Amber Glass; Jar; Other ( )

Turn Around Requirements: Overnight (9am)* / 1 Day* / 2 Day* / 3 Day* / 4 Day / Other ( )

Sample Comments / DG Hazard Warning

Method of Shipment: Courier (#) / Hand Delivered / Postal / Name: ___ Signature: ___ Date: ___ Time: ___

Laboratory Use Only								
Received By	L-M	SYD | BNE | MEL | PER | ADL | NEW	Signature: LM	Date: 1/2/22	Time: 4:38pm	Temperature: 21.2
Received By		SYD | BNE | MEL | PER | ADL | NEW	Signature:	Date:	Time:	Report No: 860033

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **860033-S**
Project name 13 L NARROMINE RD DUBBO
Project ID NE1167
Received Date Feb 01, 2022

Client Sample ID			**DI-1-1**	**DI-2-1**	**DI-2-3**	**DI-3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Fe03201**	**S22-Fe03202**	**S22-Fe03203**	**S22-Fe03204**
Date Sampled			**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	98	-	100	-
p-Terphenyl-d14 (surr.)	1	%	111	-	121	-
Heavy Metals						
Arsenic	2	mg/kg	3.2	4.3	3.7	7.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	88	99	91	160
Copper	5	mg/kg	15	28	30	33
Lead	5	mg/kg	10	14	12	8.9
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	30	70	80	100
Zinc	5	mg/kg	24	45	54	37
% Moisture	1	%	7.2	4.5	7.1	14

Client Sample ID			DI-1-1	DI-2-1	DI-2-3	DI-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03201	S22-Fe03202	S22-Fe03203	S22-Fe03204
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	< 50	-	< 50
TRH C29-C36	50	mg/kg	-	64	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	64	-	< 50
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	< 100	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	< 100

Client Sample ID			DI-3-2	DI-3-3	DI-4	DI-4-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03205	S22-Fe03206	S22-Fe03207	S22-Fe03208
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	-	-	99
p-Terphenyl-d14 (surr.)	1	%	106	-	-	94
Heavy Metals						
Arsenic	2	mg/kg	6.5	7.2	3.6	3.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	52	74	28	42
Copper	5	mg/kg	19	23	11	15
Lead	5	mg/kg	12	10	10	8.3

Client Sample ID			DI-3-2	DI-3-3	DI-4	DI-4-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03205	S22-Fe03206	S22-Fe03207	S22-Fe03208
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	42	60	46	28
Zinc	5	mg/kg	52	62	30	34
% Moisture	1	%	7.0	6.2	11	12
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	61	-	-
TRH C10-C36 (Total)	50	mg/kg	-	61	-	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-HCH	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-HCH	0.05	mg/kg	-	-	< 0.05	-
d-HCH	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	0.5	mg/kg	-	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	-	-	82	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	83	-

Client Sample ID			DI-3-2	DI-3-3	DI-4	DI-4-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03205	S22-Fe03206	S22-Fe03207	S22-Fe03208
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	82	-

Client Sample ID			DI-5	DI-5-1	DI-6	D-6-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03209	S22-Fe03210	S22-Fe03211	S22-Fe03212
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	6.6	5.3	4.3	3.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	160	120	83	200
Copper	5	mg/kg	32	22	17	42
Lead	5	mg/kg	14	12	14	9.8
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			DI-5	DI-5-1	DI-6	D-6-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03209	S22-Fe03210	S22-Fe03211	S22-Fe03212
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Nickel	5	mg/kg	71	57	37	130
Zinc	5	mg/kg	33	40	19	64
% Moisture	1	%	13	11	15	12
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	56	< 50	-
TRH C29-C36	50	mg/kg	-	140	< 50	-
TRH C10-C36 (Total)	50	mg/kg	-	196	< 50	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	-	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	< 20	-
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	< 50	-
TRH >C16-C34	100	mg/kg	-	150	< 100	-
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	150	< 100	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
d-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	-	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	102	82
Tetrachloro-m-xylene (surr.)	1	%	-	-	98	103

Client Sample ID			DI-5	DI-5-1	DI-6	D-6-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03209	S22-Fe03210	S22-Fe03211	S22-Fe03212
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	-	< 2	< 2
Demeton-S	0.2	mg/kg	-	-	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	-	< 0.2	< 0.2
Diazinon	0.2	mg/kg	-	-	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	-	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	-	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	-	< 0.2	< 0.2
EPN	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	-	< 2	< 2
Naled	0.2	mg/kg	-	-	< 0.5	< 0.5
Omethoate	2	mg/kg	-	-	< 2	< 2
Phorate	0.2	mg/kg	-	-	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	-	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	-	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	-	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	100	92
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	82	-	-	-

Client Sample ID			DI-7-1	DI-7-2	DI-8-1	DI-9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03213	S22-Fe03214	S22-Fe03215	S22-Fe03216
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	-	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	-	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	106	-	-	88
p-Terphenyl-d14 (surr.)	1	%	115	-	-	90
Heavy Metals						
Arsenic	2	mg/kg	7.8	7.5	6.3	4.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	53	99	130	74
Copper	5	mg/kg	15	33	15	18
Lead	5	mg/kg	10	15	13	10
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	44	65	56	58
Zinc	5	mg/kg	33	63	29	35
% Moisture	1	%	9.3	18	3.0	18
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	-	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	-	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	-	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	-	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	-	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	-	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	-	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	-	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	< 100	< 100

Client Sample ID			DI-7-1	DI-7-2	DI-8-1	DI-9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03213	S22-Fe03214	S22-Fe03215	S22-Fe03216
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	121	108	-	92
Tetrachloro-m-xylene (surr.)	1	%	118	103	-	93
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2

Client Sample ID			DI-7-1	DI-7-2	DI-8-1	DI-9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03213	S22-Fe03214	S22-Fe03215	S22-Fe03216
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	-	< 2
Naled	0.2	mg/kg	< 0.5	< 0.5	-	< 0.5
Omethoate	2	mg/kg	< 2	< 2	-	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	124	116	-	96
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62	-	-	104

Client Sample ID			D-9	DI-10-1	DI-10-2	[G01] DI-11-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03217	S22-Fe03218	S22-Fe03219	S22-Fe03220
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	-	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5

Client Sample ID			D-9	DI-10-1	DI-10-2	[G01] DI-11-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03217	S22-Fe03218	S22-Fe03219	S22-Fe03220
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	101
p-Terphenyl-d14 (surr.)	1	%	-	-	-	88
Heavy Metals						
Arsenic	2	mg/kg	3.6	3.9	4.1	3.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	53	91	120	110
Copper	5	mg/kg	15	22	21	25
Lead	5	mg/kg	8.9	15	15	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	47	52	48	80
Zinc	5	mg/kg	29	34	33	150
% Moisture	1	%	18	3.5	6.4	8.8
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	91
TRH C15-C28	50	mg/kg	-	< 50	-	930
TRH C29-C36	50	mg/kg	-	< 50	-	390
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	1411
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50	-	100
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	< 50	-	100
TRH >C16-C34	100	mg/kg	-	< 100	-	1200
TRH >C34-C40	100	mg/kg	-	< 100	-	200
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	1500
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.5
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.5
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.5
a-HCH	0.05	mg/kg	-	-	< 0.05	< 0.5
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.5
b-HCH	0.05	mg/kg	-	-	< 0.05	< 0.5
d-HCH	0.05	mg/kg	-	-	< 0.05	< 0.5
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.5
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.5
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.5
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.5
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.5
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.5
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.5
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.5
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.5
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.5
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.5
Methoxychlor	0.05	mg/kg	-	-	< 0.05	< 0.5

Client Sample ID			D-9	DI-10-1	DI-10-2	[G01] DI-11-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03217	S22-Fe03218	S22-Fe03219	S22-Fe03220
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Toxaphene	0.5	mg/kg	-	-	< 0.5	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	83	89
Tetrachloro-m-xylene (surr.)	1	%	-	-	117	93
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.5
Bolstar	0.2	mg/kg	-	-	< 0.2	< 0.5
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	< 0.5
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	< 0.5
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.5
Coumaphos	2	mg/kg	-	-	< 2	< 5
Demeton-S	0.2	mg/kg	-	-	< 0.2	< 0.5
Demeton-O	0.2	mg/kg	-	-	< 0.2	< 0.5
Diazinon	0.2	mg/kg	-	-	< 0.2	< 0.5
Dichlorvos	0.2	mg/kg	-	-	< 0.2	< 0.5
Dimethoate	0.2	mg/kg	-	-	< 0.2	< 0.5
Disulfoton	0.2	mg/kg	-	-	< 0.2	< 0.5
EPN	0.2	mg/kg	-	-	< 0.2	< 0.5
Ethion	0.2	mg/kg	-	-	< 0.2	< 0.5
Ethoprop	0.2	mg/kg	-	-	< 0.2	< 0.5
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.5
Fenitrothion	0.2	mg/kg	-	-	< 0.2	< 0.5
Fensulfothion	0.2	mg/kg	-	-	< 0.2	< 0.5
Fenthion	0.2	mg/kg	-	-	< 0.2	< 0.5
Malathion	0.2	mg/kg	-	-	< 0.2	< 0.5
Merphos	0.2	mg/kg	-	-	< 0.2	< 0.5
Methyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.5
Mevinphos	0.2	mg/kg	-	-	< 0.2	< 0.5
Monocrotophos	2	mg/kg	-	-	< 2	< 5
Naled	0.2	mg/kg	-	-	< 0.2	< 0.5
Omethoate	2	mg/kg	-	-	< 2	< 5
Phorate	0.2	mg/kg	-	-	< 0.2	< 0.5
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.5
Pyrazophos	0.2	mg/kg	-	-	< 0.2	< 0.5
Ronnel	0.2	mg/kg	-	-	< 0.2	< 0.5
Terbufos	0.2	mg/kg	-	-	< 0.2	< 0.5
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	< 0.5
Tokuthion	0.2	mg/kg	-	-	< 0.2	< 0.5
Trichloronate	0.2	mg/kg	-	-	< 0.2	< 0.5
Triphenylphosphate (surr.)	1	%	-	-	95	78
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1

Client Sample ID			D-9	DI-10-1	DI-10-2	[G01] DI-11-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03217	S22-Fe03218	S22-Fe03219	S22-Fe03220
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	120

Client Sample ID			[G01] DI-11-2	DI-12-1	DI-13-1	D-6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03221	S22-Fe03222	S22-Fe03223	S22-Fe03229
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	91	94	112	-
p-Terphenyl-d14 (surr.)	1	%	75	89	107	-
Heavy Metals						
Arsenic	2	mg/kg	12	4.4	4.1	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	1.6	< 0.4
Chromium	5	mg/kg	200	150	150	78
Copper	5	mg/kg	82	31	30	21
Lead	5	mg/kg	33	45	67	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	130	94	110	38
Zinc	5	mg/kg	750	170	1200	21
% Moisture	1	%	34	10.0	5.0	15
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	110	< 20	< 20	-
TRH C15-C28	50	mg/kg	870	130	140	-
TRH C29-C36	50	mg/kg	680	130	120	-
TRH C10-C36 (Total)	50	mg/kg	1660	260	260	-

Client Sample ID			[G01]DI-11-2	DI-12-1	DI-13-1	D-6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03221	S22-Fe03222	S22-Fe03223	S22-Fe03229
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	-
TRH >C10-C16	50	mg/kg	120	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	120	< 50	< 50	-
TRH >C16-C34	100	mg/kg	1400	220	220	-
TRH >C34-C40	100	mg/kg	340	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	1860	220	220	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 10	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 1	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	76	98	127	-
Tetrachloro-m-xylene (surr.)	1	%	91	96	117	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 5	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-

Client Sample ID			[G01]DI-11-2	DI-12-1	DI-13-1	D-6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-Fe03221	S22-Fe03222	S22-Fe03223	S22-Fe03229
Date Sampled			Feb 01, 2022	Feb 01, 2022	Feb 01, 2022	Feb 01, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
EPN	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 5	< 2	< 2	-
Naled	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Omethoate	2	mg/kg	< 5	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.5	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	77	89	107	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	110	118	107	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Feb 07, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Organochlorine Pesticides	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
BTEX	Sydney	Feb 07, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Feb 03, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 13 L NARROMINE RD DUBBO
Project ID: NE1167

Order No.:
Report #: 860033
Phone: 1300852 216
Fax:

Received: Feb 1, 2022 4:33 PM
Due: Feb 8, 2022
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - AS4964	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Suite B14; OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	Eurofins Suite B10
Melbourne Laboratory - NATA # 1261 Site # 1254														
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	DI-1-1	Feb 01, 2022		Soil	S22-Fe03201			X	X			X		
2	DI-2-1	Feb 01, 2022		Soil	S22-Fe03202				X			X	X	
3	DI-2-3	Feb 01, 2022		Soil	S22-Fe03203			X	X			X		
4	DI-3	Feb 01, 2022		Soil	S22-Fe03204				X			X	X	
5	DI-3-2	Feb 01, 2022		Soil	S22-Fe03205			X	X			X		
6	DI-3-3	Feb 01, 2022		Soil	S22-Fe03206				X			X	X	
7	DI-4	Feb 01, 2022		Soil	S22-Fe03207				X		X	X		
8	DI-4-3	Feb 01, 2022		Soil	S22-Fe03208			X	X			X		
9	DI-5	Feb 01, 2022		Soil	S22-Fe03209				X	X		X		

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Melbourne Laboratory - NATA # 1261 Site # 1254														
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	DI-5-1	Feb 01, 2022		Soil	S22-Fe03210				X			X	X	
11	DI-6	Feb 01, 2022		Soil	S22-Fe03211				X		X	X	X	
12	D-6-2	Feb 01, 2022		Soil	S22-Fe03212				X		X	X		
13	DI-7-1	Feb 01, 2022		Soil	S22-Fe03213							X		X
14	DI-7-2	Feb 01, 2022		Soil	S22-Fe03214				X		X	X		
15	DI-8-1	Feb 01, 2022		Soil	S22-Fe03215				X			X	X	
16	DI-9	Feb 01, 2022		Soil	S22-Fe03216							X		X
17	D-9	Feb 01, 2022		Soil	S22-Fe03217				X			X		
18	DI-10-1	Feb 01, 2022		Soil	S22-Fe03218				X			X	X	
19	DI-10-2	Feb 01, 2022		Soil	S22-Fe03219				X		X	X		
20	DI-11-1	Feb 01, 2022		Soil	S22-Fe03220							X		X

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Melbourne Laboratory - NATA # 1261 Site # 1254														
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
21	DI-11-2	Feb 01, 2022		Soil	S22-Fe03221							X		X
22	DI-12-1	Feb 01, 2022		Soil	S22-Fe03222							X		X
23	DI-13-1	Feb 01, 2022		Soil	S22-Fe03223							X		X
24	ASB-7-1	Feb 01, 2022		Soil	S22-Fe03224	X								
25	ASB-11-1	Feb 01, 2022		Soil	S22-Fe03225	X								
26	ASB12-1	Feb 01, 2022		Soil	S22-Fe03226	X								
27	ASB-13-1	Feb 01, 2022		Soil	S22-Fe03227	X								
28	ASB-14-1	Feb 01, 2022		Soil	S22-Fe03228	X								
29	D-6	Feb 01, 2022		Soil	S22-Fe03229				X			X		
30	DI_14_1	Feb 01, 2022		Soil	S22-Fe03230		X							
Test Counts						5	1	4	18	1	5	24	7	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	101			70-130	Pass	
Acenaphthylene	%	96			70-130	Pass	
Anthracene	%	97			70-130	Pass	
Benz(a)anthracene	%	96			70-130	Pass	
Benzo(a)pyrene	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	%	110			70-130	Pass	
Benzo(g.h.i)perylene	%	106			70-130	Pass	
Benzo(k)fluoranthene	%	98			70-130	Pass	
Chrysene	%	79			70-130	Pass	
Dibenz(a.h)anthracene	%	107			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	111			70-130	Pass	
Naphthalene	%	98			70-130	Pass	
Phenanthrene	%	104			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	114			80-120	Pass	
Cadmium	%	108			80-120	Pass	
Chromium	%	110			80-120	Pass	
Copper	%	106			80-120	Pass	
Lead	%	110			80-120	Pass	
Mercury	%	93			80-120	Pass	
Nickel	%	109			80-120	Pass	
Zinc	%	106			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	99			70-130	Pass	
TRH C10-C14	%	70			70-130	Pass	
Naphthalene	%	127			70-130	Pass	
TRH C6-C10	%	95			70-130	Pass	
TRH >C10-C16	%	70			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	95			70-130	Pass	
4.4'-DDD	%	118			70-130	Pass	
4.4'-DDE	%	97			70-130	Pass	
4.4'-DDT	%	112			70-130	Pass	
a-HCH	%	98			70-130	Pass	
Aldrin	%	101			70-130	Pass	
b-HCH	%	111			70-130	Pass	
d-HCH	%	114			70-130	Pass	
Dieldrin	%	108			70-130	Pass	
Endosulfan I	%	122			70-130	Pass	
Endosulfan II	%	113			70-130	Pass	
Endosulfan sulphate	%	86			70-130	Pass	
Endrin	%	115			70-130	Pass	
Endrin aldehyde	%	80			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-HCH (Lindane)	%	115			70-130	Pass	
Heptachlor	%	124			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor epoxide			%	118			70-130	Pass	
Hexachlorobenzene			%	102			70-130	Pass	
Methoxychlor			%	85			70-130	Pass	
LCS - % Recovery									
Organophosphorus Pesticides									
Diazinon			%	110			70-130	Pass	
Dimethoate			%	88			70-130	Pass	
Ethion			%	72			70-130	Pass	
Fenitrothion			%	75			70-130	Pass	
Methyl parathion			%	86			70-130	Pass	
Mevinphos			%	75			70-130	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	108			70-130	Pass	
Toluene			%	101			70-130	Pass	
Ethylbenzene			%	96			70-130	Pass	
m&p-Xylenes			%	97			70-130	Pass	
o-Xylene			%	96			70-130	Pass	
Xylenes - Total*			%	96			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benzo(g.h.i)perylene	S22-Fe07242	NCP	%	109			70-130	Pass	
Chrysene	S22-Fe07242	NCP	%	113			70-130	Pass	
Dibenz(a.h)anthracene	S22-Fe07242	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Fe03081	NCP	%	114			75-125	Pass	
Cadmium	S22-Fe03081	NCP	%	112			75-125	Pass	
Chromium	S22-Fe03524	NCP	%	91			75-125	Pass	
Copper	S22-Fe03081	NCP	%	114			75-125	Pass	
Lead	S22-Fe03081	NCP	%	111			75-125	Pass	
Mercury	S22-Fe03081	NCP	%	99			75-125	Pass	
Nickel	S22-Fe03524	NCP	%	91			75-125	Pass	
Zinc	S22-Fe03081	NCP	%	95			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin	S22-Fe00015	NCP	%	130			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Fe03213	CP	%	111			70-130	Pass	
Acenaphthylene	S22-Fe03213	CP	%	119			70-130	Pass	
Anthracene	S22-Fe03213	CP	%	115			70-130	Pass	
Benz(a)anthracene	S22-Fe03213	CP	%	104			70-130	Pass	
Benzo(a)pyrene	S22-Fe03213	CP	%	118			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Fe03213	CP	%	102			70-130	Pass	
Benzo(k)fluoranthene	S22-Fe03213	CP	%	119			70-130	Pass	
Fluoranthene	S22-Fe03213	CP	%	109			70-130	Pass	
Fluorene	S22-Fe03213	CP	%	119			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Fe03213	CP	%	129			70-130	Pass	
Naphthalene	S22-Fe03213	CP	%	112			70-130	Pass	
Phenanthrene	S22-Fe03213	CP	%	103			70-130	Pass	
Pyrene	S22-Fe03213	CP	%	110			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Fe03213	CP	%	88			70-130	Pass	
4.4'-DDE	S22-Fe03213	CP	%	89			70-130	Pass	
4.4'-DDT	S22-Fe03213	CP	%	109			70-130	Pass	
a-HCH	S22-Fe03213	CP	%	93			70-130	Pass	
Aldrin	S22-Fe03213	CP	%	92			70-130	Pass	
b-HCH	S22-Fe03213	CP	%	100			70-130	Pass	
d-HCH	S22-Fe03213	CP	%	106			70-130	Pass	
Dieldrin	S22-Fe03213	CP	%	101			70-130	Pass	
Endosulfan I	S22-Fe03213	CP	%	109			70-130	Pass	
Endosulfan II	S22-Fe03213	CP	%	107			70-130	Pass	
Endosulfan sulphate	S22-Fe03213	CP	%	73			70-130	Pass	
Endrin ketone	S22-Fe03213	CP	%	93			70-130	Pass	
g-HCH (Lindane)	S22-Fe03213	CP	%	84			70-130	Pass	
Heptachlor	S22-Fe03213	CP	%	113			70-130	Pass	
Heptachlor epoxide	S22-Fe03213	CP	%	111			70-130	Pass	
Hexachlorobenzene	S22-Fe03213	CP	%	96			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S22-Fe03213	CP	%	118			70-130	Pass	
Fenitrothion	S22-Fe03213	CP	%	130			70-130	Pass	
Mevinphos	S22-Fe03213	CP	%	120			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Fe03216	CP	%	126			70-130	Pass	
Anthracene	S22-Fe03216	CP	%	126			70-130	Pass	
Benz(a)anthracene	S22-Fe03216	CP	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Fe03216	CP	%	112			70-130	Pass	
Fluoranthene	S22-Fe03216	CP	%	124			70-130	Pass	
Naphthalene	S22-Fe03216	CP	%	127			70-130	Pass	
Phenanthrene	S22-Fe03216	CP	%	115			70-130	Pass	
Pyrene	S22-Fe03216	CP	%	125			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Fe03216	CP	%	102			70-130	Pass	
4.4'-DDD	S22-Fe03216	CP	%	75			70-130	Pass	
4.4'-DDE	S22-Fe03216	CP	%	103			70-130	Pass	
4.4'-DDT	S22-Fe03216	CP	%	123			70-130	Pass	
a-HCH	S22-Fe03216	CP	%	107			70-130	Pass	
Aldrin	S22-Fe03216	CP	%	108			70-130	Pass	
b-HCH	S22-Fe03216	CP	%	114			70-130	Pass	
d-HCH	S22-Fe03216	CP	%	118			70-130	Pass	
Dieldrin	S22-Fe03216	CP	%	117			70-130	Pass	
Endosulfan I	S22-Fe03216	CP	%	124			70-130	Pass	
Endosulfan II	S22-Fe03216	CP	%	122			70-130	Pass	
Endosulfan sulphate	S22-Fe03216	CP	%	87			70-130	Pass	
Endrin ketone	S22-Fe03216	CP	%	110			70-130	Pass	
g-HCH (Lindane)	S22-Fe03216	CP	%	126			70-130	Pass	
Heptachlor	S22-Fe03216	CP	%	127			70-130	Pass	
Heptachlor epoxide	S22-Fe03216	CP	%	128			70-130	Pass	
Hexachlorobenzene	S22-Fe03216	CP	%	110			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Ethion	S22-Fe03216	CP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	S22-Fe03216	CP	%	71			70-130	Pass	
Methyl parathion	S22-Fe03216	CP	%	81			70-130	Pass	
Mevinphos	S22-Fe03216	CP	%	71			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Methoxychlor	S22-Fe08164	NCP	%	70			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	S22-Fe08164	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-Fe03220	CP	%	108			70-130	Pass	
Naphthalene	S22-Fe03220	CP	%	100			70-130	Pass	
TRH C6-C10	S22-Fe03220	CP	%	109			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Fe03220	CP	%	98			70-130	Pass	
Toluene	S22-Fe03220	CP	%	90			70-130	Pass	
Ethylbenzene	S22-Fe03220	CP	%	83			70-130	Pass	
m&p-Xylenes	S22-Fe03220	CP	%	85			70-130	Pass	
o-Xylene	S22-Fe03220	CP	%	85			70-130	Pass	
Xylenes - Total*	S22-Fe03220	CP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S22-Fe03222	CP	%	89			70-130	Pass	
TRH >C10-C16	S22-Fe03222	CP	%	85			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin aldehyde	S22-Fe03306	NCP	%	54			70-130	Fail	Q08

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Fe03202	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Fe03202	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Fe03202	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Fe03202	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Fe03202	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Fe03202	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Fe03202	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Fe03202	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Fe03202	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Fe03205	CP	mg/kg	6.5	5.8	13	30%	Pass	
Cadmium	S22-Fe03205	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Fe03205	CP	mg/kg	52	49	5.0	30%	Pass	
Copper	S22-Fe03205	CP	mg/kg	19	18	7.0	30%	Pass	
Lead	S22-Fe03205	CP	mg/kg	12	11	9.0	30%	Pass	
Mercury	S22-Fe03205	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Fe03205	CP	mg/kg	42	38	10	30%	Pass	
Zinc	S22-Fe03205	CP	mg/kg	52	50	3.0	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe03205	CP	%	7.0	6.9	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe03215	CP	%	3.0	3.3	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Fe03216	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Fe03216	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Fe03216	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Fe03216	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Fe03216	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Fe03216	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Fe03216	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Fe03216	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Fe03216	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S22-Fe03221	CP	mg/kg	110	81	33	30%	Fail	Q15
TRH C15-C28	S22-Fe03221	CP	mg/kg	870	680	25	30%	Pass	
TRH C29-C36	S22-Fe03221	CP	mg/kg	680	600	12	30%	Pass	
TRH >C10-C16	S22-Fe03221	CP	mg/kg	120	93	25	30%	Pass	
TRH >C16-C34	S22-Fe03221	CP	mg/kg	1400	1100	19	30%	Pass	
TRH >C34-C40	S22-Fe03221	CP	mg/kg	340	320	5.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Fe03221	CP	mg/kg	< 1	< 1	<1	30%	Pass	
4.4'-DDD	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDE	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDT	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
a-HCH	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aldrin	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
b-HCH	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
d-HCH	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dieldrin	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan I	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan II	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan sulphate	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin aldehyde	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin ketone	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
g-HCH (Lindane)	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor epoxide	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobenzene	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methoxychlor	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Toxaphene	S22-Fe03221	CP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bolstar	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorfenvinphos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorpyrifos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorpyrifos-methyl	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	S22-Fe03221	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Demeton-S	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton-O	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
EPN	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethyl parathion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Merphos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	S22-Fe03221	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Naled	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Omethoate	S22-Fe03221	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Phorate	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pirimiphos-methyl	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrazophos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Terbufos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachlorvinphos	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tokuthion	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloronate	S22-Fe03221	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Victor Kirpichnikov (GEOTESTA)**

Report **866406-S**
Project name ADDITIONAL: 13 L NARROMINE RD DUBBO
Project ID NE1167
Received Date Feb 23, 2022

Client Sample ID			**DI-3**	**DI-5**	**DI-5-1**	**D-6-2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Fe51776**	**S22-Fe51777**	**S22-Fe51778**	**S22-Fe51779**
Date Sampled			**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**
Test/Reference	LOR	Unit				
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
% Moisture	1	%	14	13	11	12

Client Sample ID			**DI-8-1**	**DI-10-2**	**DI-11-1**	**DI-11-2**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Fe51780**	**S22-Fe51781**	**S22-Fe51782**	**S22-Fe51783**
Date Sampled			**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**
Test/Reference	LOR	Unit				
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
% Moisture	1	%	3	3.5	8.8	34

Client Sample ID			**DI-12-1**	**DI-13-1**	**DI-7-2**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Fe51784**	**S22-Fe51785**	**S22-Fe51786**
Date Sampled			**Feb 01, 2022**	**Feb 01, 2022**	**Feb 01, 2022**
Test/Reference	LOR	Unit			
Chromium (hexavalent)	1	mg/kg	< 1	< 1	-
% Moisture	1	%	10	5	18
% Clay	1	%	-	-	17
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	190
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	7.0
Cation Exchange Capacity					
Cation Exchange Capacity	0.05	meq/100g	-	-	18

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chromium (hexavalent)	Sydney	Feb 25, 2022	28 Days
- Method: In-house method E057.2			
% Clay	Brisbane	Feb 28, 2022	14 Days
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Feb 25, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			
% Moisture	Sydney	Mar 01, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	Feb 25, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Feb 28, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			

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NATA # 1261 Site # 1254

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
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NATA # 2377 Site # 2370

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IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: ADDITIONAL: 13 L NARROMINE RD DUBBO
Project ID: NE1167

Order No.:
Report #: 866406
Phone: 1300852 216
Fax:

Received: Feb 23, 2022 2:13 PM
Due: Feb 28, 2022
Priority: 3 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Chromium (hexavalent)	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity
Melbourne Laboratory - NATA # 1261 Site # 1254									X	X
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X				
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	DI-3	Feb 01, 2022		Soil	S22-Fe51776		X		X	
2	DI-5	Feb 01, 2022		Soil	S22-Fe51777		X		X	
3	DI-5-1	Feb 01, 2022		Soil	S22-Fe51778		X		X	
4	D-6-2	Feb 01, 2022		Soil	S22-Fe51779		X		X	
5	DI-8-1	Feb 01, 2022		Soil	S22-Fe51780		X		X	
6	DI-10-2	Feb 01, 2022		Soil	S22-Fe51781		X		X	
7	DI-11-1	Feb 01, 2022		Soil	S22-Fe51782		X		X	
8	DI-11-2	Feb 01, 2022		Soil	S22-Fe51783		X		X	
9	DI-12-1	Feb 01, 2022		Soil	S22-Fe51784		X		X	

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ABN: 50 005 085 521

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IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: ADDITIONAL: 13 L NARROMINE RD DUBBO
Project ID: NE1167

Order No.:
Report #: 866406
Phone: 1300852 216
Fax:

Received: Feb 23, 2022 2:13 PM
Due: Feb 28, 2022
Priority: 3 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	Chromium (hexavalent)	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity
Melbourne Laboratory - NATA # 1261 Site # 1254									X	X
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X				
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										
10	DI-13-1	Feb 01, 2022		Soil	S22-Fe51785		X		X	
11	DI-7-2	Feb 01, 2022		Soil	S22-Fe51786	X		X	X	X
Test Counts						1	10	1	11	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chromium (hexavalent)			mg/kg	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)			uS/cm	< 10			10	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	101			70-130	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)			%	102			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	S22-Fe51777	CP	%	84			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	S22-Fe51776	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	S22-Fe51786	CP	uS/cm	190	170	7.7	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S22-Fe51786	CP	pH Units	7.0	7.0	<1	30%	Pass	

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Comments

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Emma Beesley	Analytical Services Manager
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Certificate of Analysis

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Site Number 18217

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Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Attention:	- Mohammad Hossein Bazyar
Report	860033-AID
Project Name	13 L NARROMINE RD DUBBO
Project ID	NE1167
Received Date	Feb 01, 2022
Date Reported	Feb 08, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name 13 L NARROMINE RD DUBBO
Project ID NE1167
Date Sampled Feb 01, 2022
Report 860033-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
ASB-7-1	22-Fe03224	Feb 01, 2022	Approximate Sample 606g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB-11-1	22-Fe03225	Feb 01, 2022	Approximate Sample 494g Sample consisted of: Red- brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB12-1	22-Fe03226	Feb 01, 2022	Approximate Sample 361g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB-13-1	22-Fe03227	Feb 01, 2022	Approximate Sample 442g Sample consisted of: Brown fine-grained clayey soil, cement and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB-14-1	22-Fe03228	Feb 01, 2022	Approximate Sample 456g Sample consisted of: Brown fine-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Feb 03, 2022	Indefinite

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Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 13 L NARROMINE RD DUBBO
Project ID: NE1167

Order No.:
Report #: 860033
Phone: 1300852 216
Fax:

Received: Feb 1, 2022 4:33 PM
Due: Feb 8, 2022
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - AS4964	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Suite B14; OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	Eurofins Suite B10
Melbourne Laboratory - NATA # 1261 Site # 1254														
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	DI-1-1	Feb 01, 2022		Soil	S22-Fe03201			X	X			X		
2	DI-2-1	Feb 01, 2022		Soil	S22-Fe03202				X			X	X	
3	DI-2-3	Feb 01, 2022		Soil	S22-Fe03203			X	X			X		
4	DI-3	Feb 01, 2022		Soil	S22-Fe03204				X			X	X	
5	DI-3-2	Feb 01, 2022		Soil	S22-Fe03205			X	X			X		
6	DI-3-3	Feb 01, 2022		Soil	S22-Fe03206				X			X	X	
7	DI-4	Feb 01, 2022		Soil	S22-Fe03207				X		X	X		
8	DI-4-3	Feb 01, 2022		Soil	S22-Fe03208			X	X			X		
9	DI-5	Feb 01, 2022		Soil	S22-Fe03209				X	X		X		

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 13 L NARROMINE RD DUBBO
Project ID: NE1167

Order No.:
Report #: 860033
Phone: 1300852 216
Fax:

Received: Feb 1, 2022 4:33 PM
Due: Feb 8, 2022
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - AS4964	HOLD	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Suite B14; OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	Eurofins Suite B10
Melbourne Laboratory - NATA # 1261 Site # 1254														
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	DI-5-1	Feb 01, 2022		Soil	S22-Fe03210				X			X	X	
11	DI-6	Feb 01, 2022		Soil	S22-Fe03211				X		X	X	X	
12	D-6-2	Feb 01, 2022		Soil	S22-Fe03212				X		X	X		
13	DI-7-1	Feb 01, 2022		Soil	S22-Fe03213							X		X
14	DI-7-2	Feb 01, 2022		Soil	S22-Fe03214				X		X	X		
15	DI-8-1	Feb 01, 2022		Soil	S22-Fe03215				X			X	X	
16	DI-9	Feb 01, 2022		Soil	S22-Fe03216							X		X
17	D-9	Feb 01, 2022		Soil	S22-Fe03217				X			X		
18	DI-10-1	Feb 01, 2022		Soil	S22-Fe03218				X			X	X	
19	DI-10-2	Feb 01, 2022		Soil	S22-Fe03219				X		X	X		
20	DI-11-1	Feb 01, 2022		Soil	S22-Fe03220							X		X

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Eurofins Analytical Services Manager : Asim Khan

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Melbourne Laboratory - NATA # 1261 Site # 1254														
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
21	DI-11-2	Feb 01, 2022		Soil	S22-Fe03221							X		X
22	DI-12-1	Feb 01, 2022		Soil	S22-Fe03222							X		X
23	DI-13-1	Feb 01, 2022		Soil	S22-Fe03223							X		X
24	ASB-7-1	Feb 01, 2022		Soil	S22-Fe03224	X								
25	ASB-11-1	Feb 01, 2022		Soil	S22-Fe03225	X								
26	ASB12-1	Feb 01, 2022		Soil	S22-Fe03226	X								
27	ASB-13-1	Feb 01, 2022		Soil	S22-Fe03227	X								
28	ASB-14-1	Feb 01, 2022		Soil	S22-Fe03228	X								
29	D-6	Feb 01, 2022		Soil	S22-Fe03229				X			X		
30	DI_14_1	Feb 01, 2022		Soil	S22-Fe03230		X							
Test Counts						5	1	4	18	1	5	24	7	6

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Attention: **- Mohammad Hossein Bazyar**

Report **859443-W**
Project name 13L NARROMINE ROAD DUBBO
Project ID NE1167
Received Date Feb 01, 2022

Client Sample ID			**W-1**
Sample Matrix			**Water**
Eurofins Sample No.			**S22-Ja40054**
Date Sampled			**Feb 01, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005

Client Sample ID			W-1
Sample Matrix			Water
Eurofins Sample No.			S22-Ja40054
Date Sampled			Feb 01, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	130
Tetrachloro-m-xylene (surr.)	1	%	89
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	101
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	
Conductivity (at 25°C)	10	uS/cm	180
Dissolved Oxygen	0.01	mg/L	8.9
Dissolved Oxygen (% Saturation)		%	98
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
pH (at 25 °C)	0.1	pH Units	5.8

Client Sample ID			W-1
Sample Matrix			**Water**
Eurofins Sample No.			**S22-Ja40054**
Date Sampled			**Feb 01, 2022**
Test/Reference	LOR	Unit	
Phosphate total (as P)	0.01	mg/L	0.24
Salinity (expressed as TDS)*	10	mg/L	300
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.4
Total Nitrogen (as N)*	0.2	mg/L	2.4
Turbidity	1	NTU	110
Heavy Metals			
Arsenic	0.001	mg/L	0.002
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.006
Copper	0.001	mg/L	0.011
Lead	0.001	mg/L	0.002
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.017
Zinc	0.005	mg/L	0.010
Pathogens			
E.coli (MPN)	1	MPN/100mL	[N06]see attached
Thermotolerant Coliforms (MPN)	1	MPN/100mL	[N06]see attached

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Suite B14: OCP/OPP			
Organochlorine Pesticides	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Biochemical Oxygen Demand (BOD-5 Day)	Melbourne	Feb 02, 2022	2 Days
- Method: LTM-INO-4010 Biochemical Oxygen Demand (BOD5) in Water			
Conductivity (at 25°C)	Melbourne	Feb 02, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
Dissolved Oxygen	Melbourne	Feb 03, 2022	28 Days
- Method: APHA 4500-O B, C, G using Dissolved Oxygen analyser			
Dissolved Oxygen (% Saturation)	Melbourne	Feb 03, 2022	1 Days
- Method: APHA 4500-O B, C, G using Dissolved Oxygen analyser			
pH (at 25 °C)	Melbourne	Feb 02, 2022	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Salinity (expressed as TDS)*	Melbourne	Feb 02, 2022	7 Days
- Method: LTM-INO-4030			
Turbidity	Melbourne	Feb 02, 2022	28 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8	Melbourne	Feb 02, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Thermotolerant Coliforms (MPN)	WaterTestingVic	Feb 01, 2022	24 Hours
- Method: LTM-MIC-6623 Thermotolerant Coliforms by MPN			
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N)	Melbourne	Feb 02, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Total Kjeldahl Nitrogen (as N)	Melbourne	Feb 02, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B19A: Total N (TKN, NOx), Total P			
Phosphate total (as P)	Melbourne	Feb 02, 2022	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			

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Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Biochemical Oxygen Demand (BOD-5 Day)	Conductivity (at 25°C)	Dissolved Oxygen	Dissolved Oxygen (% Saturation)	E.coli (MPN)	pH (at 25 °C)	Salinity (expressed as TDS)*	Thermotolerant Coliforms (MPN)	Turbidity	Metals M8	Suite B14: OCP/OPP	Total Recoverable Hydrocarbons	Eurofins Suite B19A: Total N (TKN, NOx), Total P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X		X	X		X	X	X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217																		
Brisbane Laboratory - NATA # 1261 Site # 20794																		
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory										X			X					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	W-1	Feb 01, 2022		Water	S22-Ja40054	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Dissolved Oxygen (% Saturation)	%	110				N/A	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Phosphate total (as P)	mg/L	0.01			0.01	Pass	
Salinity (expressed as TDS)*	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	118			70-130	Pass	
TRH C10-C14	%	79			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
TRH C6-C10	%	119			70-130	Pass	
TRH >C10-C16	%	86			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	77			70-130	Pass	
4.4'-DDD	%	80			70-130	Pass	
4.4'-DDE	%	84			70-130	Pass	
4.4'-DDT	%	77			70-130	Pass	
a-HCH	%	76			70-130	Pass	
Aldrin	%	80			70-130	Pass	
b-HCH	%	87			70-130	Pass	
d-HCH	%	79			70-130	Pass	
Dieldrin	%	90			70-130	Pass	
Endosulfan I	%	105			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	102			70-130	Pass	
Endosulfan sulphate	%	90			70-130	Pass	
Endrin	%	78			70-130	Pass	
Endrin ketone	%	80			70-130	Pass	
g-HCH (Lindane)	%	76			70-130	Pass	
Heptachlor	%	78			70-130	Pass	
Heptachlor epoxide	%	72			70-130	Pass	
Hexachlorobenzene	%	78			70-130	Pass	
Methoxychlor	%	86			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	114			70-130	Pass	
Dimethoate	%	95			70-130	Pass	
Ethion	%	70			70-130	Pass	
Fenitrothion	%	94			70-130	Pass	
Methyl parathion	%	70			70-130	Pass	
Mevinphos	%	92			70-130	Pass	
LCS - % Recovery							
Conductivity (at 25°C)	%	106			70-130	Pass	
Nitrate & Nitrite (as N)	%	109			70-130	Pass	
Phosphate total (as P)	%	100			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	98			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	97			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	97			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	97			80-120	Pass	
Nickel	%	97			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M22-Fe01502	NCP	%	104			70-130	Pass	
TRH C10-C14	M22-Fe05149	NCP	%	93			70-130	Pass	
Naphthalene	M22-Fe01502	NCP	%	76			70-130	Pass	
TRH C6-C10	M22-Fe01502	NCP	%	105			70-130	Pass	
TRH >C10-C16	M22-Fe05149	NCP	%	102			70-130	Pass	
Spike - % Recovery									
				Result 1					
Nitrate & Nitrite (as N)	S22-Fe02403	NCP	%	105			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M22-Fe04387	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Fe03944	NCP	%	104			75-125	Pass	
Cadmium	S22-Fe03944	NCP	%	82			75-125	Pass	
Chromium	S22-Fe03944	NCP	%	96			75-125	Pass	
Copper	S22-Fe03944	NCP	%	88			75-125	Pass	
Lead	S22-Fe03944	NCP	%	77			75-125	Pass	
Mercury	S22-Fe03944	NCP	%	89			75-125	Pass	
Nickel	S22-Fe03944	NCP	%	93			75-125	Pass	
Zinc	S22-Fe03944	NCP	%	102			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M22-Fe01508	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M22-Fe05148	NCP	mg/L	12	11	10	30%	Pass	
TRH C15-C28	M22-Fe05148	NCP	mg/L	0.5	0.2	86	30%	Fail	Q15
TRH C29-C36	M22-Fe05148	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	M22-Fe01508	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M22-Fe01508	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M22-Fe05148	NCP	mg/L	3.6	3.0	18	30%	Pass	
TRH >C16-C34	M22-Fe05148	NCP	mg/L	0.2	< 0.1	200	30%	Fail	Q15
TRH >C34-C40	M22-Fe05148	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	L22-Fe01310	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	L22-Fe01310	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	L22-Fe01310	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	L22-Fe01310	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Malathion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	L22-Fe01310	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	L22-Fe01310	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	L22-Fe01310	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	M22-Fe00576	NCP	uS/cm	< 10	< 10	<1	30%	Pass	
Dissolved Oxygen	S22-Ja16511	NCP	mg/L	8.9	8.8	2.0	30%	Pass	
Dissolved Oxygen (% Saturation)	S22-Ja40054	CP	%	98	97	2.0	30%	Pass	
Nitrate & Nitrite (as N)	S22-Fe02403	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
pH (at 25 °C)	M22-Fe00576	NCP	pH Units	5.0	5.0	pass	30%	Pass	
Phosphate total (as P)	B22-Ja38001	NCP	mg/L	0.07	0.08	10	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B22-Fe00402	NCP	mg/L	0.3	0.4	40	30%	Fail	Q15
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Fe03944	NCP	mg/L	0.002	0.002	8.0	30%	Pass	
Cadmium	S22-Fe03944	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-Fe03944	NCP	mg/L	0.003	0.003	12	30%	Pass	
Copper	S22-Fe03944	NCP	mg/L	0.017	0.017	4.0	30%	Pass	
Lead	S22-Fe03944	NCP	mg/L	0.010	0.010	2.0	30%	Pass	
Mercury	S22-Fe03944	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-Fe03944	NCP	mg/L	0.007	0.007	4.0	30%	Pass	
Zinc	S22-Fe03944	NCP	mg/L	0.030	0.031	2.0	30%	Pass	

Comments

E.coli and Thermotolerant Coliforms analysed by: Eurofins Food Testing Australia Pty Ltd, NATA Accreditation number: 20293, report reference AR-22-NV-001350-01.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N06	This result has been produced by a third-party laboratory and is not covered by Eurofins | Environment Testing lab ISO/IEC 17025 accreditation.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Vivian Wang	Senior Analyst-Volatile (VIC)

Glenn Jackson
General Manager

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

eurofins | mgt

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CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Page 1 of 2

Company Name :	Geotesta	Contact Name:	Victor Kirpichnikov / Dr. Mohammad Bazyar	Purchase Order :	NE1295
Office Address :	Unit 06, 20-22 Foundry Road, Seven Hills 2147	Project Manager :	Victor Kirpichnikov / Dr. Mohammad Bazyar	PROJECT Number :	NE1295
Phone: 452454418		Email for results :	vk@geotesta.com.au, mb@geotesta.co	PROJECT Name :	Lot 7 DP223428 Narromine Road Dubbo

COC Number :

Eurofins | mgt quote ID :

Data output format:

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous Iron	7 days	ASLP, TCLP	7 days

Analytes / Containers:

	Sample ID	Date	Matrix	BTA 6 B15	Asbestos ID in soil - NEPM & WA Guidelines - 0.001% w/w	Heavy Metal M8	CEC	pH	% clay	BTEX and Volatile TRHs	500P	250P	125P	60ml plastic	40ml vial	200ml glass	Jar	Zip lock bag	Sample comments:
1	EBH1	12/05/2022	Soil	X	X												X	X	7mm sieved for
2	EBH2	12/05/2022	Soil	X	X												X	X	7mm sieved for
3	EBH3	12/05/2022	Soil	X	X												X	X	7mm sieved for
4	EBH4	12/05/2022	Soil	X	X												X	X	7mm sieved for
5	EBH5	12/05/2022	Soil	X	X		X	X	X								X	X	7mm sieved for
6	EBH6	12/05/2022	Soil	X	X												X	X	7mm sieved for
7	EBH7	12/05/2022	Soil	X	X												X	X	7mm sieved for
8	EBH8	12/05/2022	Soil	X	X												X	X	7mm sieved for
9	EBH9	12/05/2022	Soil	X	X												X	X	7mm sieved for
10	EBH10	12/05/2022	Soil	X	X												X	X	7mm sieved for
11	EBH11	12/05/2022	Soil	X	X												X	X	7mm sieved for
12	EBH12	12/05/2022	Soil	X	X												X	X	7mm sieved for
13	BD1	12/05/2022	Soil			X											X		
14	BL	12/05/2022	Soil			X											X		
15	TripSpike and Trip Blank	12/05/2022	QAQC							X									2 x QAQC vials
16																			
17																			
18																			
19																			
20																			
21																			
22																			
23																			
24																			
25																			

		Laboratory Staff		Turn around time	Method Of Shipment	
Relinquished By:	Victor Kirpichnikov	Received By:		1 DAY ☐ 2 DAY ☐ 3 DAY ☐	☑ Courier	Temperature on arrival:
Date & Time:	13/05/22	Date & Time:		5 DAY ☑ 10 DAY ☐	☐ Hand Delivered	Report number: 889035
Signature:		Signature:			☐ Postal	
					Courier Consignment # :	

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Victor Kirpichnikov (GEOTESTA)**

Report **889035-S**
Project name LOT 7 DP223428 NARROMINE ROAD
Project ID NE1295
Received Date May 13, 2022

Client Sample ID			**EBH1**	**EBH2**	**EBH3**	**EBH4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-My0038531**	**S22-My0038532**	**S22-My0038533**	**S22-My0038534**
Date Sampled			**May 12, 2022**	**May 12, 2022**	**May 12, 2022**	**May 12, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	105	89	85	99
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			EBH1	EBH2	EBH3	EBH4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038531	S22-My0038532	S22-My0038533	S22-My0038534
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	92	67	93	89
p-Terphenyl-d14 (surr.)	1	%	100	105	95	87
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	68	79	78	75
Tetrachloro-m-xylene (surr.)	1	%	78	82	76	73
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			EBH1	EBH2	EBH3	EBH4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038531	S22-My0038532	S22-My0038533	S22-My0038534
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	115	95	99	94
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	68	79	78	75
Tetrachloro-m-xylene (surr.)	1	%	78	82	76	73
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1

Client Sample ID			EBH1	EBH2	EBH3	EBH4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038531	S22-My0038532	S22-My0038533	S22-My0038534
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	97	87	83	94
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	2	mg/kg	3.3	3.3	2.1	2.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	140	140	37	80
Copper	5	mg/kg	35	53	12	24
Lead	5	mg/kg	< 5	< 5	7.1	7.8
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	130	180	23	60
Zinc	5	mg/kg	52	70	19	34
% Moisture	1	%	19	20	16	25

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038535	S22-My0038536	S22-My0038537	S22-My0038538
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038535	S22-My0038536	S22-My0038537	S22-My0038538
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	98	93	94	90
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	89	88	92	96
p-Terphenyl-d14 (surr.)	1	%	90	87	102	107
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038535	S22-My0038536	S22-My0038537	S22-My0038538
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	67	69	122	123
Tetrachloro-m-xylene (surr.)	1	%	74	72	134	136
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	78	86	100	92

Client Sample ID			EBH5	EBH6	EBH7	EBH8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038535	S22-My0038536	S22-My0038537	S22-My0038538
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	67	69	122	123
Tetrachloro-m-xylene (surr.)	1	%	74	72	134	136
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	89	92	146	130
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20
Heavy Metals						
Arsenic	2	mg/kg	2.6	2.5	3.3	4.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	82	250	60	110
Copper	5	mg/kg	19	44	13	31
Lead	5	mg/kg	7.4	5.0	6.8	9.3
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	52	230	52	77
Zinc	5	mg/kg	26	52	34	41
% Moisture	1	%	17	22	16	22
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	< 10	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.0	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	13	-	-	-

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038539	S22-My0038540	S22-My0038541	S22-My0038542
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	137	68	64	67
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	88	85	95	83
p-Terphenyl-d14 (surr.)	1	%	92	86	107	97
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038539	S22-My0038540	S22-My0038541	S22-My0038542
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	101	106	108	94
Tetrachloro-m-xylene (surr.)	1	%	121	117	131	122
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038539	S22-My0038540	S22-My0038541	S22-My0038542
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	93	97	73	70
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	101	106	108	94
Tetrachloro-m-xylene (surr.)	1	%	121	117	131	122
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4.5-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4.6-Trichlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1	< 1	< 1
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	< 20	< 20	< 20
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1	< 1	< 1
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2.4-Dinitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	135	113	126	110
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20	< 20	< 20

Client Sample ID			EBH9	EBH10	EBH11	EBH12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038539	S22-My0038540	S22-My0038541	S22-My0038542
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.8	6.1	2.3	2.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	78	64	110	130
Copper	5	mg/kg	16	16	32	30
Lead	5	mg/kg	7.1	8.0	7.6	6.3
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	55	49	98	96
Zinc	5	mg/kg	29	35	50	39
% Moisture	1	%	23	17	21	19

Client Sample ID			BD1	EIL	TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038543	S22-My0038544	S22-My0038545	S22-My0038546
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	-	< 20
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	96
Heavy Metals						
Arsenic	2	mg/kg	3.5	< 2	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	100	38	-	-
Copper	5	mg/kg	20	5.7	-	-
Lead	5	mg/kg	5.5	< 5	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	67	11	-	-
Zinc	5	mg/kg	42	8.8	-	-
% Moisture	1	%	17	13	-	-
TRH C6-C10	1	%	-	-	83	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	77	-
TRH C6-C9	1	%	-	-	82	-

Client Sample ID			BD1	EIL	TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S22-My0038543	S22-My0038544	S22-My0038545	S22-My0038546
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit				
BTEX						
Benzene	1	%	-	-	84	-
Ethylbenzene	1	%	-	-	81	-
m&p-Xylenes	1	%	-	-	82	-
o-Xylene	1	%	-	-	83	-
Toluene	1	%	-	-	84	-
Xylenes - Total	1	%	-	-	82	-
4-Bromofluorobenzene (surr.)	1	%	-	-	77	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (Halogenated)	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	May 20, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	May 20, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	May 20, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	May 17, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	May 20, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	May 20, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	May 20, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: LOT 7 DP223428 NARROMINE ROAD
Project ID: NE1295

Order No.:
Report #: 889035
Phone: 1300852 216
Fax:

Received: May 13, 2022 4:00 PM
Due: May 20, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	EBH1	May 12, 2022		Soil	S22-My0038531	X			X	X		X		
2	EBH2	May 12, 2022		Soil	S22-My0038532	X			X	X		X		
3	EBH3	May 12, 2022		Soil	S22-My0038533	X			X	X		X		
4	EBH4	May 12, 2022		Soil	S22-My0038534	X			X	X		X		
5	EBH5	May 12, 2022		Soil	S22-My0038535	X	X		X	X	X	X		
6	EBH6	May 12, 2022		Soil	S22-	X			X	X		X		

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Project ID: NE1295

Order No.:
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Phone: 1300852 216
Fax:

Received: May 13, 2022 4:00 PM
Due: May 20, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
					My0038536									
7	EBH7	May 12, 2022		Soil	S22-My0038537	X			X	X		X		
8	EBH8	May 12, 2022		Soil	S22-My0038538	X			X	X		X		
9	EBH9	May 12, 2022		Soil	S22-My0038539	X			X	X		X		
10	EBH10	May 12, 2022		Soil	S22-My0038540	X			X	X		X		
11	EBH11	May 12, 2022		Soil	S22-My0038541	X			X	X		X		
12	EBH12	May 12, 2022		Soil	S22-My0038542	X			X	X		X		

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
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NSW 2147

Project Name: LOT 7 DP223428 NARROMINE ROAD
Project ID: NE1295

Order No.:
Report #: 889035
Phone: 1300852 216
Fax:

Received: May 13, 2022 4:00 PM
Due: May 20, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
13	BD1	May 12, 2022		Soil	S22-My0038543			X		X				
14	EIL	May 12, 2022		Soil	S22-My0038544			X		X				
15	TRIP SPIKE	May 12, 2022		Soil	S22-My0038545									X
16	TRIP BLANK	May 12, 2022		Soil	S22-My0038546								X	
Test Counts						12	1	2	12	14	1	12	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Total PAH*	mg/kg	-			0.5	N/A	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Total Non-Halogenated Phenol*	mg/kg	< 0			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	77			70-130	Pass	
TRH C10-C14	%	85			70-130	Pass	
Naphthalene	%	97			70-130	Pass	
TRH C6-C10	%	76			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	103			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	101			70-130	Pass	
Xylenes - Total*	%	100			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	92			70-130	Pass	
Acenaphthylene	%	94			70-130	Pass	
Anthracene	%	77			70-130	Pass	
Benz(a)anthracene	%	76			70-130	Pass	
Benzo(a)pyrene	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	%	76			70-130	Pass	
Benzo(g.h.i)perylene	%	75			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	80			70-130	Pass	
Dibenz(a.h)anthracene	%	98			70-130	Pass	
Fluoranthene	%	81			70-130	Pass	
Fluorene	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	93			70-130	Pass	
Naphthalene	%	85			70-130	Pass	
Phenanthrene	%	89			70-130	Pass	
Pyrene	%	78			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	105			70-130	Pass	
4.4'-DDD	%	86			70-130	Pass	
4.4'-DDE	%	84			70-130	Pass	
4.4'-DDT	%	73			70-130	Pass	
a-HCH	%	96			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-HCH	%	87			70-130	Pass	
d-HCH	%	87			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	84			70-130	Pass	
Endosulfan II	%	101			70-130	Pass	
Endosulfan sulphate	%	100			70-130	Pass	
Endrin	%	115			70-130	Pass	
Endrin aldehyde	%	118			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-HCH (Lindane)	%	90			70-130	Pass	
Heptachlor	%	114			70-130	Pass	
Heptachlor epoxide	%	116			70-130	Pass	
Hexachlorobenzene	%	99			70-130	Pass	
Methoxychlor	%	83			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	117			70-130	Pass	
Dimethoate	%	82			70-130	Pass	
Ethion	%	127			70-130	Pass	
Fenitrothion	%	124			70-130	Pass	
Methyl parathion	%	119			70-130	Pass	
Mevinphos	%	76			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	92			70-130	Pass	
Aroclor-1260	%	97			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	%	89			25-140	Pass	
2.4-Dichlorophenol	%	85			25-140	Pass	
2.4.5-Trichlorophenol	%	70			25-140	Pass	
2.4.6-Trichlorophenol	%	86			25-140	Pass	
2.6-Dichlorophenol	%	87			25-140	Pass	
4-Chloro-3-methylphenol	%	94			25-140	Pass	
Pentachlorophenol	%	89			25-140	Pass	
Tetrachlorophenols - Total	%	83			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Methyl-4.6-dinitrophenol	%	75			25-140	Pass	
2-Nitrophenol	%	85			25-140	Pass	
2.4-Dimethylphenol	%	91			25-140	Pass	
2-Methylphenol (o-Cresol)	%	92			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	94			25-140	Pass	
4-Nitrophenol	%	80			25-140	Pass	
Dinoseb	%	73			25-140	Pass	
Phenol	%	70			25-140	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	81			80-120	Pass	
Cadmium	%	90			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	102			80-120	Pass	
Lead	%	87			80-120	Pass	
Mercury	%	101			80-120	Pass	
Nickel	%	100			80-120	Pass	
Zinc	%	100			80-120	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S22-My0031974	NCP	%	70			70-130	Pass	
TRH C10-C14	S22-My0029530	NCP	%	87			70-130	Pass	
Naphthalene	S22-My0031974	NCP	%	113			70-130	Pass	
TRH C6-C10	S22-My0036868	NCP	%	70			70-130	Pass	
TRH >C10-C16	S22-My0029530	NCP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-My0031974	NCP	%	98			70-130	Pass	
Toluene	S22-My0036868	NCP	%	97			70-130	Pass	
Ethylbenzene	S22-My0031974	NCP	%	90			70-130	Pass	
m&p-Xylenes	S22-My0031974	NCP	%	96			70-130	Pass	
o-Xylene	S22-My0031974	NCP	%	100			70-130	Pass	
Xylenes - Total*	S22-My0031974	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-No14133	NCP	%	85			70-130	Pass	
Pyrene	S21-No14133	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-No14133	NCP	%	71			70-130	Pass	
4.4'-DDD	S21-No14133	NCP	%	76			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	S21-No14133	NCP	%	76			70-130	Pass	
4.4'-DDT	S21-No14147	NCP	%	76			70-130	Pass	
a-HCH	S21-No14133	NCP	%	72			70-130	Pass	
Aldrin	S21-No14133	NCP	%	76			70-130	Pass	
b-HCH	S21-No14133	NCP	%	71			70-130	Pass	
d-HCH	S21-No14133	NCP	%	72			70-130	Pass	
Dieldrin	S21-No14133	NCP	%	72			70-130	Pass	
Endosulfan I	S21-No14133	NCP	%	72			70-130	Pass	
Endosulfan II	S21-No14133	NCP	%	78			70-130	Pass	
Endosulfan sulphate	S21-No14147	NCP	%	75			70-130	Pass	
Endrin	S21-No14133	NCP	%	73			70-130	Pass	
Endrin ketone	S21-No14147	NCP	%	73			70-130	Pass	
g-HCH (Lindane)	S21-No14133	NCP	%	75			70-130	Pass	
Heptachlor	S21-No14133	NCP	%	77			70-130	Pass	
Heptachlor epoxide	S21-No14133	NCP	%	70			70-130	Pass	
Hexachlorobenzene	S21-No14133	NCP	%	76			70-130	Pass	
Methoxychlor	S21-No14133	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-No14133	NCP	%	108			70-130	Pass	
Dimethoate	S21-No14133	NCP	%	108			70-130	Pass	
Ethion	S21-No14133	NCP	%	130			70-130	Pass	
Fenitrothion	S21-No14133	NCP	%	118			70-130	Pass	
Mevinphos	S21-No14133	NCP	%	120			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Chromium	S22-My0014481	NCP	%	111			75-125	Pass	
Copper	S22-My0047608	NCP	%	93			75-125	Pass	
Zinc	S22-My0014481	NCP	%	108			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthylene	S22-My0041423	NCP	%	101			70-130	Pass	
Anthracene	S22-My0041423	NCP	%	91			70-130	Pass	
Benz(a)anthracene	S22-My0041422	NCP	%	105			70-130	Pass	
Benzo(a)pyrene	S22-My0041422	NCP	%	115			70-130	Pass	
Benzo(b&j)fluoranthene	S22-My0041422	NCP	%	108			70-130	Pass	
Benzo(g.h.i)perylene	S22-My0041422	NCP	%	119			70-130	Pass	
Benzo(k)fluoranthene	S22-My0041423	NCP	%	92			70-130	Pass	
Chrysene	S22-My0041423	NCP	%	70			70-130	Pass	
Dibenz(a.h)anthracene	S22-My0041423	NCP	%	71			70-130	Pass	
Fluoranthene	S22-My0041422	NCP	%	98			70-130	Pass	
Fluorene	S22-My0041423	NCP	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-My0041422	NCP	%	118			70-130	Pass	
Naphthalene	S22-My0041423	NCP	%	90			70-130	Pass	
Phenanthrene	S22-My0041423	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S22-My0035430	NCP	%	83			30-130	Pass	
2.4.6-Trichlorophenol	S22-My0035430	NCP	%	92			30-130	Pass	
2.6-Dichlorophenol	S22-My0035430	NCP	%	74			30-130	Pass	
4-Chloro-3-methylphenol	S22-My0035430	NCP	%	71			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Nitrophenol	S22-My0035430	NCP	%	72			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dimethylphenol	S22-My0035430	NCP	%	84			30-130	Pass	
2-Methylphenol (o-Cresol)	S22-My0035430	NCP	%	80			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-My0035430	NCP	%	79			30-130	Pass	
Phenol	S22-My0035430	NCP	%	92			30-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-My0038538	CP	%	88			75-125	Pass	
Cadmium	S22-My0038538	CP	%	100			75-125	Pass	
Lead	S22-My0038538	CP	%	97			75-125	Pass	
Mercury	S22-My0038538	CP	%	111			75-125	Pass	
Nickel	S22-My0038538	CP	%	89			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin aldehyde	S22-My0041423	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Methyl parathion	S22-My0041423	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S22-My0041423	NCP	%	93			70-130	Pass	
Aroclor-1260	S22-My0041423	NCP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-My0031993	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S22-My0037633	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-My0037633	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-My0037633	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S22-My0031993	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-My0031993	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S22-My0037633	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-My0037633	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-My0037633	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-My0031993	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-My0031993	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-My0031993	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-My0031993	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-My0031993	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-My0031993	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Fluorene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-No14141	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-No14141	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-No14141	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-No14141	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-No14141	NCP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Naled	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-No14141	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-No14141	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-My0036776	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-My0040221	NCP	%	14	12	13	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract at 25°C as rec.)	S22-My0038064	NCP	pH Units	3.8	3.9	<1	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	M22-My0037871	NCP	meq/100g	20	26	23	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S22-My0035429	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S22-My0035429	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S22-My0035429	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S22-My0035429	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S22-My0035429	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S22-My0035429	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S22-My0035429	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S22-My0035429	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S22-My0035429	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S22-My0035429	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	S22-My0035429	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S22-My0035429	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S22-My0035429	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S22-My0035429	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S22-My0035429	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S22-My0035429	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S22-My0035429	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S22-My0035429	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-My0038537	CP	mg/kg	3.3	4.6	34	30%	Fail	Q15
Cadmium	S22-My0038537	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-My0038537	CP	mg/kg	60	76	24	30%	Pass	
Copper	S22-My0038537	CP	mg/kg	13	15	16	30%	Pass	
Lead	S22-My0038537	CP	mg/kg	6.8	8.1	16	30%	Pass	
Mercury	S22-My0038537	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-My0038537	CP	mg/kg	52	62	18	30%	Pass	
Zinc	S22-My0038537	CP	mg/kg	34	47	31	30%	Fail	Q15
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-My0038539	CP	mg/kg	2.8	2.7	4.0	30%	Pass	
Cadmium	S22-My0038539	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-My0038539	CP	mg/kg	78	74	6.0	30%	Pass	
Copper	S22-My0038539	CP	mg/kg	16	17	1.0	30%	Pass	
Lead	S22-My0038539	CP	mg/kg	7.1	7.1	<1	30%	Pass	
Mercury	S22-My0038539	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-My0038539	CP	mg/kg	55	59	6.0	30%	Pass	
Zinc	S22-My0038539	CP	mg/kg	29	29	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Charl Du Preez	Senior Analyst-Sample Properties
Dilani Samarakoon	Senior Analyst-Inorganic
Gabriele Cordero	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Sayeed Abu	Senior Analyst-Asbestos
Scott Beddoes	Senior Analyst-Metal

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Victor Kirpichnikov (GEOTESTA)**

Report **897298-S**
Project name ADDITIONAL - LOT 7 DP223428 NARROMINE ROAD
Project ID ADDITIONAL - NE1295
Received Date Jun 14, 2022

Client Sample ID			**EBH1**	**EBH2**	**EBH6**	**EBH8**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Jn0030239**	**S22-Jn0030240**	**S22-Jn0030241**	**S22-Jn0030242**
Date Sampled			**Jun 08, 2022**	**Jun 08, 2022**	**Jun 08, 2022**	**Jun 08, 2022**
Test/Reference	LOR	Unit				
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
% Moisture	1	%	17	21	23	20

Client Sample ID			**EBH11**	**EBH12**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S22-Jn0030243**	**S22-Jn0030244**
Date Sampled			**Jun 08, 2022**	**Jun 08, 2022**
Test/Reference	LOR	Unit		
Chromium (hexavalent)	1	mg/kg	< 1	< 1
% Moisture	1	%	22	19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chromium (hexavalent)	Sydney	Jun 14, 2022	28 Days
- Method: In-house method E057.2			
% Moisture	Sydney	Jun 14, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: ADDITIONAL - LOT 7 DP223428 NARROMINE ROAD
Project ID: ADDITIONAL - NE1295

Order No.:
Report #: 897298
Phone: 1300852 216
Fax:

Received: Jun 14, 2022 2:59 PM
Due: Jun 15, 2022
Priority: 1 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Chromium (hexavalent)	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254							
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
Brisbane Laboratory - NATA # 1261 Site # 20794							
Mayfield Laboratory - NATA # 1261 Site # 25079							
Perth Laboratory - NATA # 2377 Site # 2370							
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	EBH1	Jun 08, 2022		Soil	S22-Jn0030239	X	X
2	EBH2	Jun 08, 2022		Soil	S22-Jn0030240	X	X
3	EBH6	Jun 08, 2022		Soil	S22-Jn0030241	X	X
4	EBH8	Jun 08, 2022		Soil	S22-Jn0030242	X	X
5	EBH11	Jun 08, 2022		Soil	S22-Jn0030243	X	X
6	EBH12	Jun 08, 2022		Soil	S22-	X	X

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261 Site # 25079

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IANZ # 1290

Company Name:	Geotesta Pty Ltd (NSW)	**Order No.:**	
Address:	Unit 6, 20/22 Foundry Road Seven Hills NSW 2147	**Report #:**	897298
		Phone:	1300852 216
		Fax:	
Project Name:	ADDITIONAL - LOT 7 DP223428 NARROMINE ROAD		
Project ID:	ADDITIONAL - NE1295		

Received:	Jun 14, 2022 2:59 PM	
Due:	Jun 15, 2022	
Priority:	1 Day	
Contact Name:	Victor Kirpichnikov (GEOTESTA)	

Eurofins Analytical Services Manager : Asim Khan

Sample Detail	Chromium (hexavalent)	Moisture Set
Melbourne Laboratory - NATA # 1261 Site # 1254		
Sydney Laboratory - NATA # 1261 Site # 18217	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794		
Mayfield Laboratory - NATA # 1261 Site # 25079		
Perth Laboratory - NATA # 2377 Site # 2370		
External Laboratory		
Jn0030244		
Test Counts	6	6

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chromium (hexavalent)			mg/kg	< 1			1	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	92			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Jn0030239	CP	%	17	18	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	S22-Jn0030241	CP	mg/kg	< 1	< 1	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Asim Khan	Analytical Services Manager
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Attention:	Victor Kirpichnikov (GEOTESTA)
Report	889035-AID
Project Name	LOT 7 DP223428 NARROMINE ROAD
Project ID	NE1295
Received Date	May 13, 2022
Date Reported	Jun 16, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

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Project Name LOT 7 DP223428 NARROMINE ROAD
Project ID NE1295
Date Sampled May 12, 2022
Report 889035-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
EBH1	22-My0038531	May 12, 2022	Approximate Sample 439g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH2	22-My0038532	May 12, 2022	Approximate Sample 382g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH3	22-My0038533	May 12, 2022	Approximate Sample 562g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH4	22-My0038534	May 12, 2022	Approximate Sample 465g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH5	22-My0038535	May 12, 2022	Approximate Sample 400g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH6	22-My0038536	May 12, 2022	Approximate Sample 426g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH7	22-My0038537	May 12, 2022	Approximate Sample 508g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH8	22-My0038538	May 12, 2022	Approximate Sample 563g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
EBH9	22-My0038539	May 12, 2022	Approximate Sample 513g Sample consisted of: Red- brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH10	22-My0038540	May 12, 2022	Approximate Sample 582g Sample consisted of: Red- brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH11	22-My0038541	May 12, 2022	Approximate Sample 604g Sample consisted of: Red- brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
EBH12	22-My0038542	May 12, 2022	Approximate Sample 550g Sample consisted of: Red- brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	May 17, 2022	Indefinite

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NATA # 1261 Site # 18217

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: LOT 7 DP223428 NARROMINE ROAD
Project ID: NE1295

Order No.:
Report #: 889035
Phone: 1300852 216
Fax:

Received: May 13, 2022 4:00 PM
Due: May 20, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	EBH1	May 12, 2022		Soil	S22-My0038531	X			X	X		X		
2	EBH2	May 12, 2022		Soil	S22-My0038532	X			X	X		X		
3	EBH3	May 12, 2022		Soil	S22-My0038533	X			X	X		X		
4	EBH4	May 12, 2022		Soil	S22-My0038534	X			X	X		X		
5	EBH5	May 12, 2022		Soil	S22-My0038535	X	X		X	X	X	X		
6	EBH6	May 12, 2022		Soil	S22-	X			X	X		X		

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Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
					My0038536									
7	EBH7	May 12, 2022		Soil	S22-My0038537	X			X	X		X		
8	EBH8	May 12, 2022		Soil	S22-My0038538	X			X	X		X		
9	EBH9	May 12, 2022		Soil	S22-My0038539	X			X	X		X		
10	EBH10	May 12, 2022		Soil	S22-My0038540	X			X	X		X		
11	EBH11	May 12, 2022		Soil	S22-My0038541	X			X	X		X		
12	EBH12	May 12, 2022		Soil	S22-My0038542	X			X	X		X		

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Received: May 13, 2022 4:00 PM
Due: May 20, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - WA guidelines	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7A	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254											X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
13	BD1	May 12, 2022		Soil	S22-My0038543			X		X				
14	EIL	May 12, 2022		Soil	S22-My0038544			X		X				
15	TRIP SPIKE	May 12, 2022		Soil	S22-My0038545									X
16	TRIP BLANK	May 12, 2022		Soil	S22-My0038546								X	
Test Counts						12	1	2	12	14	1	12	1	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

22-My0038531, 22-My0038532, 22-My0038534, 22-My0038535 and 22-My0038536: Samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Laxman Dias	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Attention: **- Mohammad Hossein Bazyar**

Report **888819-W**
Project name NARROMINE ROAD DUBBO
Project ID NE1295
Received Date May 13, 2022

Client Sample ID			**W-1**	**W-2**	**W-3**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**S22-My0036962**	**S22-My0036963**	**S22-My0036964**
Date Sampled			**May 12, 2022**	**May 12, 2022**	**May 12, 2022**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1
Organochlorine Pesticides					
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Toxaphene	0.005	mg/L	< 0.005	< 0.005	< 0.005

Client Sample ID			W-1	W-2	W-3
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S22-My0036962	S22-My0036963	S22-My0036964
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	< 0.002
Dibutylchlorendate (surr.)	1	%	60	135	104
Tetrachloro-m-xylene (surr.)	1	%	132	[Q09]INT	[Q09]INT
Organophosphorus Pesticides					
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02
Demeton-S	0.002	mg/L	< 0.002	< 0.002	< 0.002
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002
Omethoate	0.02	mg/L	< 0.02	< 0.02	< 0.02
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	143	[Q09]INT	[Q09]INT
Biochemical Oxygen Demand (BOD-5 Day)	5	mg/L	5.6	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	72	63	89
Dissolved Oxygen	0.01	mg/L	9.2	8.6	9.2
Dissolved Oxygen (% Saturation)		%	100	95	100
Nitrate & Nitrite (as N)	0.05	mg/L	0.19	0.20	0.12
pH (at 25 °C)	0.1	pH Units	6.8	6.9	7.2

Client Sample ID			W-1	W-2	W-3
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S22-My0036962	S22-My0036963	S22-My0036964
Date Sampled			May 12, 2022	May 12, 2022	May 12, 2022
Test/Reference	LOR	Unit			
Phosphate total (as P)	0.01	mg/L	0.39	< 0.01	0.31
Salinity (determined from EC)*	0.1	mg/L	39	35	46
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.4	0.3	0.4
Total Nitrogen (as N)*	0.2	mg/L	0.59	0.5	0.52
Turbidity	1	NTU	92	60	110
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.010	0.007	0.013
Copper	0.001	mg/L	0.005	0.004	0.007
Lead	0.001	mg/L	0.002	0.001	0.003
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.011	0.007	0.015
Zinc	0.005	mg/L	0.015	0.015	0.020
Pathogens					
E.coli (MPN)	1	MPN/100mL	see attached	see attached	see attached
Thermotolerant Coliforms (MPN)	1	MPN/100mL	see attached	see attached	see attached

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 20, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 19, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 20, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Organochlorine Pesticides	Sydney	May 20, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	May 20, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Biochemical Oxygen Demand (BOD-5 Day)	Melbourne	May 17, 2022	2 Days
- Method: LTM-INO-4010 Biochemical Oxygen Demand (BOD5) in Water			
Conductivity (at 25°C)	Sydney	May 19, 2022	28 Days
- Method: LTM-INO-4030 Conductivity			
Dissolved Oxygen	Melbourne	May 18, 2022	28 Days
- Method: APHA 4500-O B, C, G using Dissolved Oxygen analyser			
Dissolved Oxygen (% Saturation)	Melbourne	May 18, 2022	1 Days
- Method: APHA 4500-O B, C, G using Dissolved Oxygen analyser			
pH (at 25 °C)	Sydney	May 19, 2022	0 Hour
- Method: LTM-GEN-7090 pH in water by ISE			
Salinity (determined from EC)*	Sydney	May 19, 2022	0 Days
- Method: LTM-INO-4030			
Turbidity	Sydney	May 19, 2022	2 Days
- Method: LTM-INO-4140 Turbidity by Nephelometric Method			
Metals M8	Sydney	May 19, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Thermotolerant Coliforms (MPN)	WaterTestingVic	May 16, 2022	24 Hours
- Method: subcontracted to Eurofins Food Testing			
Total Nitrogen Set (as N)			
Nitrate & Nitrite (as N)	Melbourne	May 17, 2022	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Total Kjeldahl Nitrogen (as N)	Melbourne	May 17, 2022	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Eurofins Suite B19A: Total N (TKN, NOx), Total P			
Phosphate total (as P)	Sydney	May 19, 2022	28 Days
- Method: E052 Total Phosphate (as P)			

eurofins | Environment Testing

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Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: NARROMINE ROAD DUBBO
Project ID: NE1295

Order No.:
Report #: 888819
Phone: 1300852 216
Fax:

Received: May 13, 2022 3:00 PM
Due: May 20, 2022
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Biochemical Oxygen Demand (BOD-5 Day)	Conductivity (at 25°C)	Dissolved Oxygen	Dissolved Oxygen (% Saturation)	E.coli (MPN)	pH (at 25 °C)	Salinity (determined from EC)*	Thermotolerant Coliforms (MPN)	Turbidity	Metals M8	Suite B14: OCP/OPP	Total Recoverable Hydrocarbons	Eurofins Suite B19A: Total N (TKN, NOx), Total P
Melbourne Laboratory - NATA # 1261 Site # 1254						X		X	X								X	X
Sydney Laboratory - NATA # 1261 Site # 18217							X				X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794																		
Mayfield Laboratory - NATA # 1261 Site # 25079																		
Perth Laboratory - NATA # 2377 Site # 2370																		
External Laboratory										X			X					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	W-1	May 12, 2022		Water	S22-My0036962	X	X	X	X	X	X	X	X	X	X	X	X	X
2	W-2	May 12, 2022		Water	S22-My0036963	X	X	X	X	X	X	X	X	X	X	X	X	X
3	W-3	May 12, 2022		Water	S22-My0036964	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						3	3	3	3	3	3	3	3	3	3	3	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Biochemical Oxygen Demand (BOD-5 Day)	mg/L	< 5			5	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Dissolved Oxygen (% Saturation)	%	110				N/A	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	85			70-130	Pass	
TRH C10-C14	%	105			70-130	Pass	
Naphthalene	%	105			70-130	Pass	
TRH C6-C10	%	86			70-130	Pass	
TRH >C10-C16	%	106			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDT	%	125			70-130	Pass	
Endrin	%	118			70-130	Pass	
Endrin ketone	%	130			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Dimethoate	%	103			70-130	Pass	
Fenitrothion	%	122			70-130	Pass	
Mevinphos	%	129			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Biochemical Oxygen Demand (BOD-5 Day)	%	115			85-115	Pass	
Conductivity (at 25°C)	%	97			70-130	Pass	
Nitrate & Nitrite (as N)	%	91			70-130	Pass	
Phosphate total (as P)	%	96			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	86			70-130	Pass	
Turbidity	%	85			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	80			80-120	Pass	
Cadmium	%	106			80-120	Pass	
Chromium	%	83			80-120	Pass	
Copper	%	86			80-120	Pass	
Lead	%	84			80-120	Pass	
Mercury	%	114			80-120	Pass	
Nickel	%	84			80-120	Pass	
Zinc	%	86			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	N22-My0044665	NCP	%	116			70-130	Pass	
TRH >C10-C16	N22-My0044665	NCP	%	113			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	S22-My0038597	NCP	%	71			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M22-My0040271	NCP	%	70			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-My0042499	NCP	%	86			75-125	Pass	
Cadmium	S22-My0042499	NCP	%	87			75-125	Pass	
Chromium	S22-My0042499	NCP	%	90			75-125	Pass	
Copper	S22-My0042499	NCP	%	91			75-125	Pass	
Lead	S22-My0042499	NCP	%	85			75-125	Pass	
Mercury	S22-My0042499	NCP	%	118			75-125	Pass	
Nickel	S22-My0042499	NCP	%	90			75-125	Pass	
Zinc	S22-My0042499	NCP	%	95			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S22-My0047305	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S22-My0047305	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S22-My0047305	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C10-C16	S22-My0047305	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S22-My0047305	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S22-My0047305	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
d-HCH	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	N22-My0044656	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	N22-My0044656	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	N22-My0044656	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	N22-My0044656	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	N22-My0044656	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	N22-My0044656	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	N22-My0044656	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	S22-My0049239	NCP	uS/cm	320	320	<1	30%	Pass	
Dissolved Oxygen	R22-My0027658	NCP	mg/L	9.0	8.8	2.0	30%	Pass	
Dissolved Oxygen (% Saturation)	S22-My0036962	CP	%	100	100	3.0	30%	Pass	
Nitrate & Nitrite (as N)	M22-My0047157	NCP	mg/L	11	11	63	30%	Fail	Q15
Phosphate total (as P)	S22-My0039327	NCP	mg/L	0.06	0.05	19	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M22-My0035850	NCP	mg/L	1.1	0.4	14	30%	Pass	
Turbidity	S22-My0054803	NCP	NTU	3.3	3.4	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-My0042498	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S22-My0042498	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-My0042498	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S22-My0042498	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S22-My0042498	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S22-My0042498	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-My0042498	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S22-My0042498	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Biochemical Oxygen Demand (BOD-5 Day)	S22-My0036964	CP	mg/L	< 5	< 5	<1	30%	Pass	

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Comments

E.coli and Thermotolerant Coliforms analysed by: Eurofins Food Testing Australia Pty Ltd, NATA Accreditation number: 20293, report reference AR-22-NV-006265-01.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Robert Biviano	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Inorganic
Charl Du Preez	Senior Analyst-Metal
Dilani Samarakoon	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Inorganic

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.