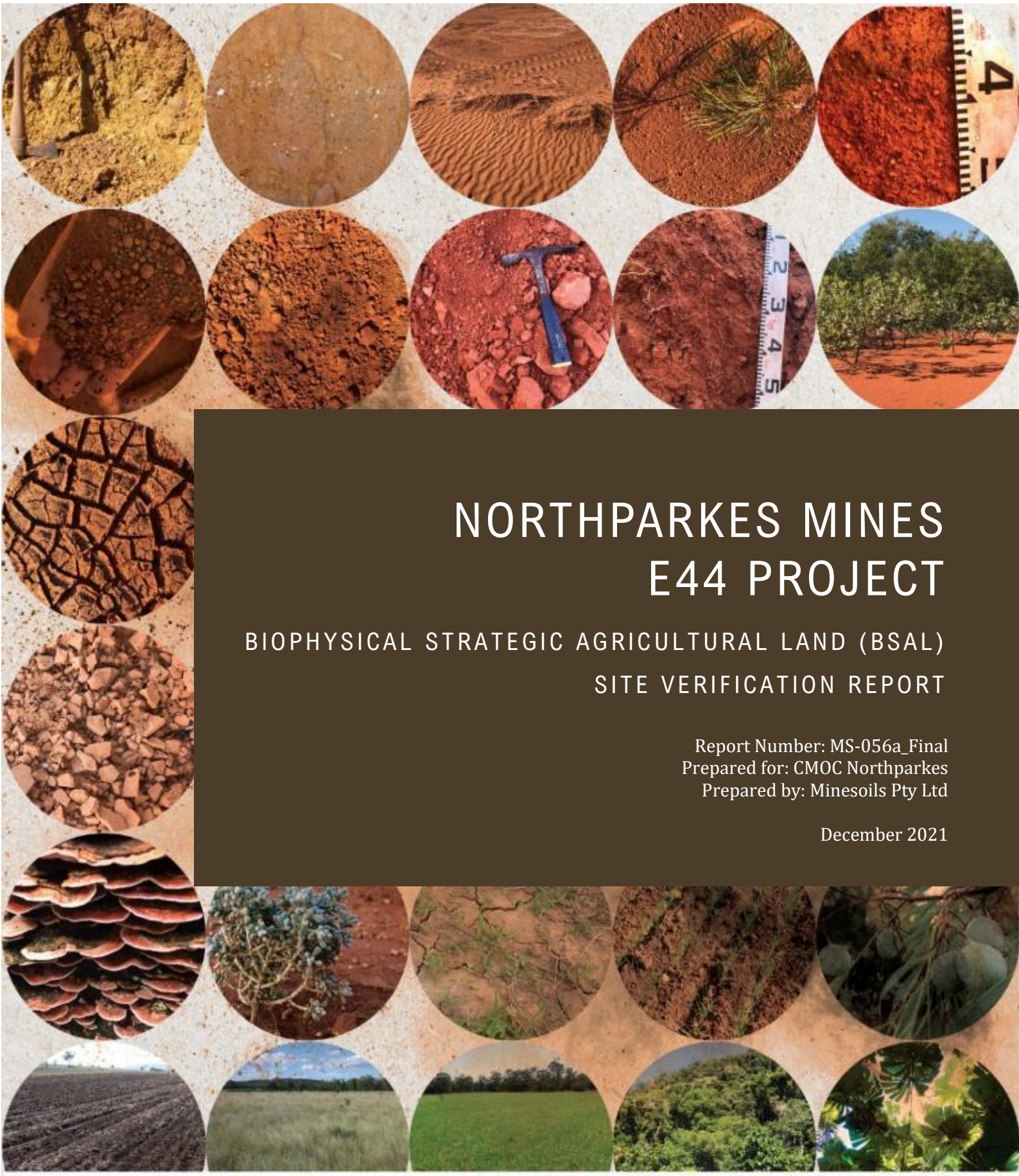


NORTHPARKES MINES E44 PROJECT

BIOPHYSICAL STRATEGIC AGRICULTURAL LAND (BSAL) SITE VERIFICATION REPORT

Report Number: MS-056a_Final
Prepared for: CMOC Northparkes
Prepared by: Minesoils Pty Ltd

December 2021

MINESOILS
LAND & REHABILITATION SPECIALISTS

PREPARED BY

Minesoils Pty Ltd
ABN 84 627 497 509

0408 474 248
clayton@minesoils.com.au
www.minesoils.com.au
PO Box 11034 Tamworth NSW 2340

DISCLAIMER

This report has been prepared by Minesoils Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of CMOC Northparkes. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from Minesoils. Minesoils disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared by	Approved
MS-056_Draft V1	19th November 2021	Matt Hemingway	Clayton Richards
MS-056_Final	23rd December 2021	Matt Hemingway	Clayton Richards

TABLE OF CONTENTS

List of Figures

Attachment 1

Reliable Rainfall in NSW (State Map)

Attachment 2

Groundwater Productivity in NSW (State Map)

1. INTRODUCTION

1.1 PROJECT BACKGROUND

North Mining Limited originally received development consent for Northparkes operations in 1992, 15 years after the first discovery of the onsite resource. In 2019, Project Approval 11_0060 was gazetted as a State Significant Development under section 4 of the EP&A Act and is now referred to as Development Consent 11_0060. Over the next five years, Northparkes is looking to diversify the ore stream to potentially include several open cut mines to supplement the existing underground operations. The E44 ore body is one of these potential open cut mining projects.

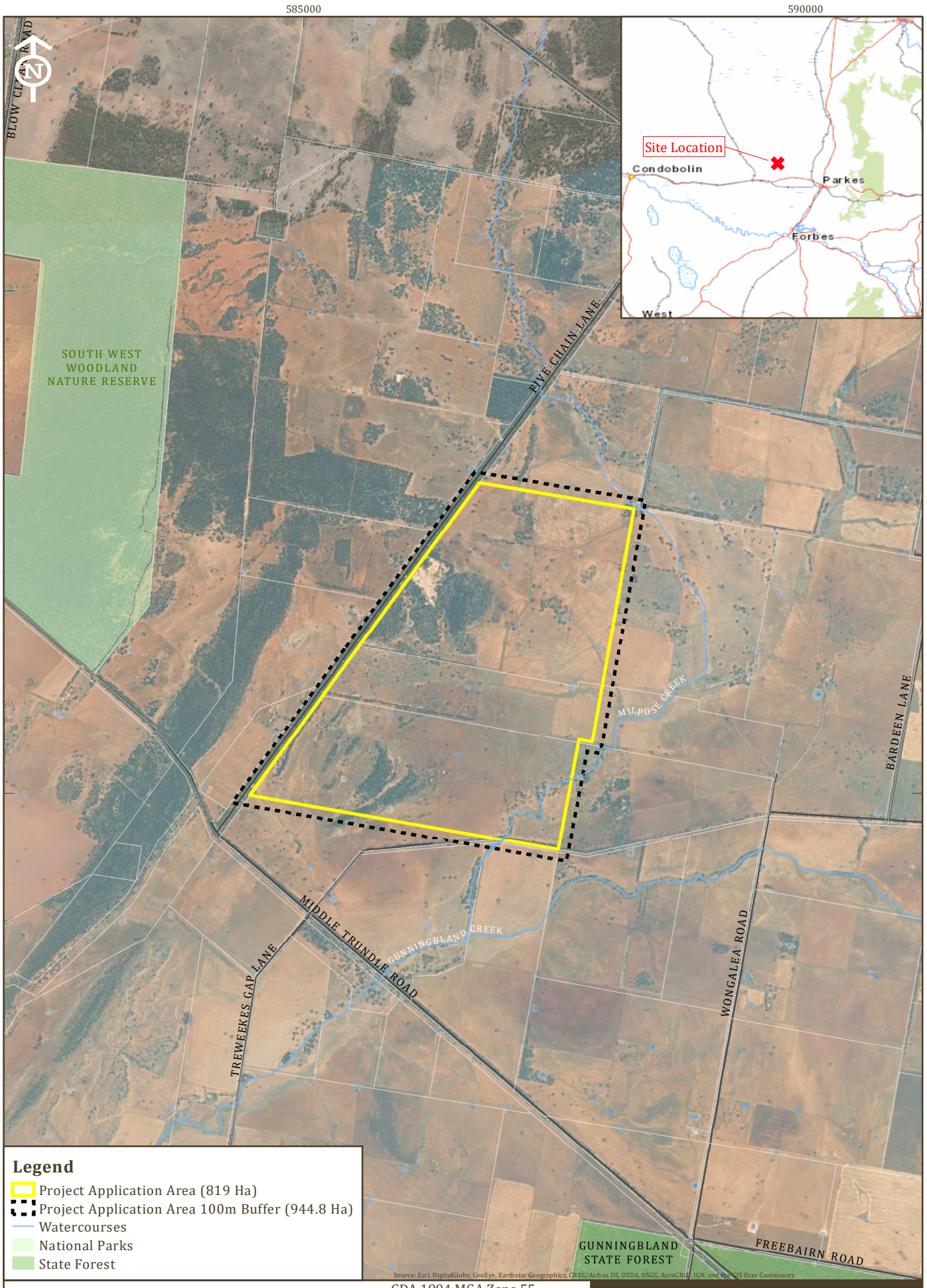
The CMOC Northparkes Mines E44 Prospect (the Project) is owned by CMOC Northparkes (Northparkes). The project area is located in the locality of Cooks Myall in the Central West Region of NSW. The project area is in a rural setting and consists of grazing paddocks and cropping cultivation areas. The area has been modified through vegetation clearing and conservation earthworks.

The Proponent is seeking a Site Verification Certificate (SVC) over an area of 819 ha herein referred to as the Project Application Area (PAA) of potential future mining and related activities (refer to **Figure 1**).

1.2 PROJECT OBJECTIVES AND SCOPE

The objective of this report is to define and assess the PAA to verify BSAL or Non-BSAL to support the application for an SVC. The verification program was undertaken in accordance with the *Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land* (Office of Environment & Heritage (OEH) and Department of Primary Industries - Office of Agricultural Sustainability and Food Security (DPI-OAS&FS), 2013); hereafter referred to as the Interim Protocol.

The purpose of this report is to provide the results of the BSAL verification program conducted in accordance with the Interim Protocol



GDA 1994 MGA Zone 55

MINESOILS
LAND & REHABILITATION SPECIALISTS

Meters
0 250 500 1,000
Scale 1:50000 at A4

Regional Context

FIGURE 1

E:\RST002_MineSoils\MS056_NorthParkes\MS056r4_001_RegionalContext.mxd 19/12/2021 4:23:38 PM

2 EXISTING ENVIRONMENT

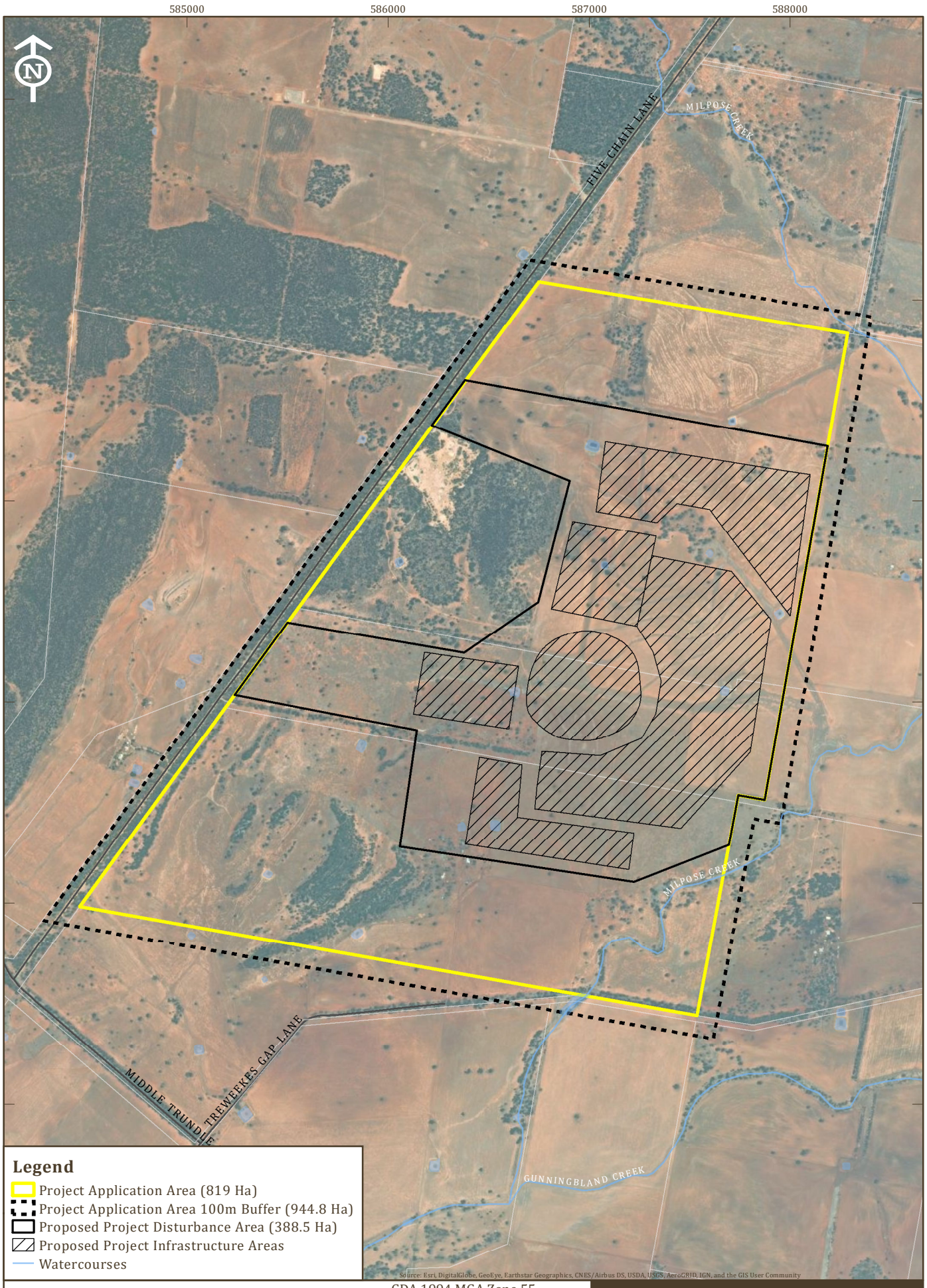
2.1 REGIONAL CONTEXT

The dominant land use in the area is grazing on modified pastures and dryland cropping. The dominant landform is undulating low hills to hills, with elevations between 260m and 300m. Slopes are from 0 to 10%, with local relief approximately 40-60m.

Vegetation in the area has been extensively cleared for agriculture. Existing remnant trees and native grasses remain in patches across the BSAL Assessment Area. This landscape is prone to moderate sheet erosion, with some gullies present.

2.2 SITE DESCRIPTION

The PAA covers an area of 819 ha, with a direct impact area within the PAA covering 330 ha (**Figure 2**). Milpose Creek runs from the North East and transects a section of the PAA to the South East, before joining Gunningbland Creek south of the PAA. Elevations range from 320m AHD in the north of the PAA to 250m AHD in lower areas associated with Milpose Creek (**Figure 3**). The Lachlan River is approximately 40km to the south of the PAA. The nearest non verified regional trigger mapped BSAL is along Lachlan River approximately 40km from the PAA.



GDA 1994 MGA Zone 55

MINESOILS
LAND & REHABILITATION SPECIALISTS

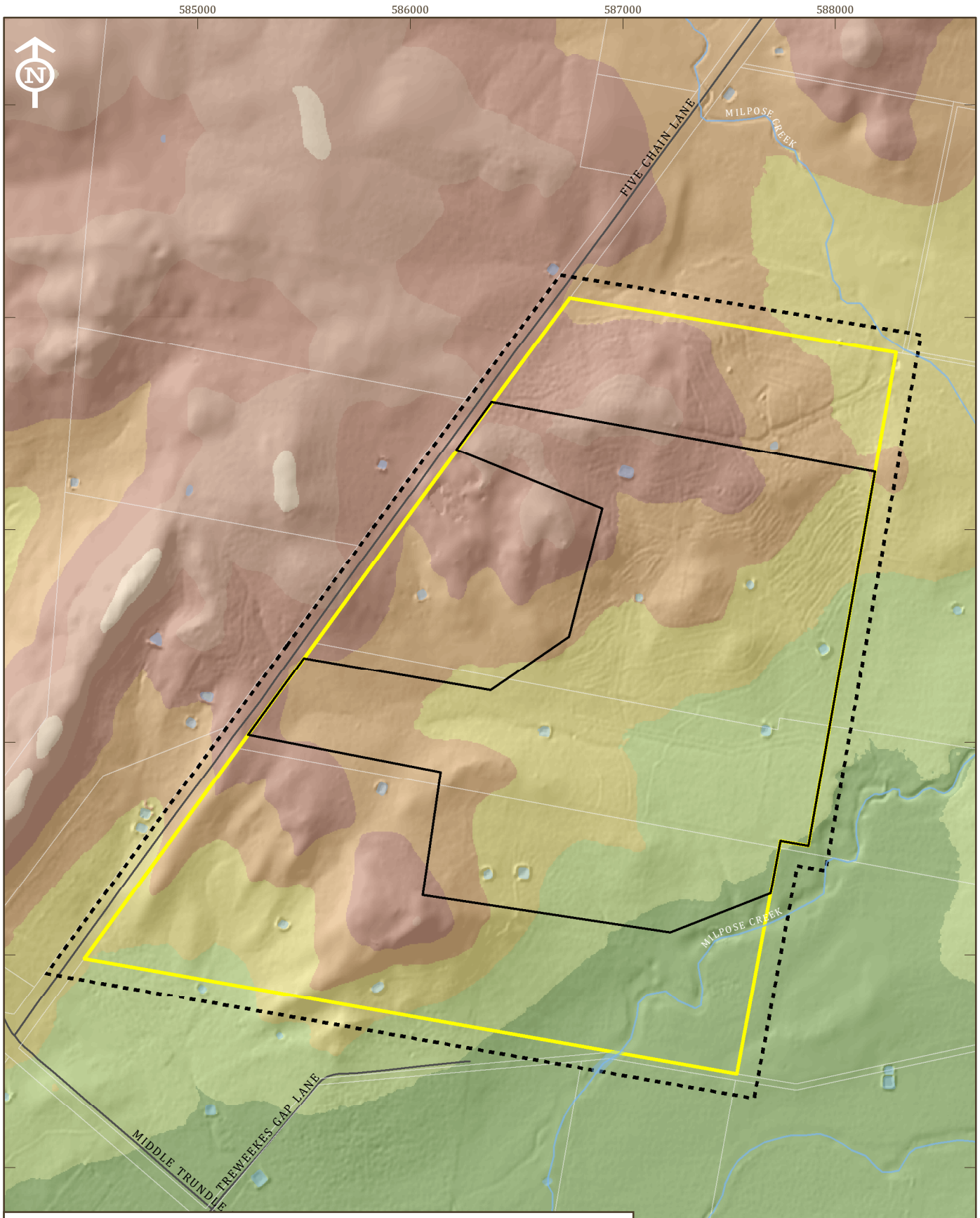
0 125 250 500 Meters

Scale 1:25000 at A4

Study Area

FIGURE 2

E:\RST002_MineSoils\MS056_NorthParkes\MS056r4_002_StudyArea.mxd 19/12/2021 4:22:55 PM



E:\RST002_MineSoils\MS056_NorthParkes\MS056r4_003_Topo.mxd 19/12/2021 4:26:17 PM

3 THE BSAL ASSESSMENT PROCESS

BSAL is land with a rare combination of natural resources, highly suitable for agriculture. These lands intrinsically have the best quality landforms, soil and water resources which are naturally capable of sustaining high levels of productivity and require minimal management practices to maintain this high quality.

The criteria used to measure BSAL under the original *New England North West Strategic Regional Land Use Plan* (SRLUP) (DP&I, 2012) were based on three regional scale parameters:

1. Soil Fertility – based on the regional scale *Draft Inherent General Fertility of NSW* (DP&I, 2012),
2. Land and Soil Capability – based on the regional scale *Land and Soil Capability Mapping of NSW* (OEH, 2012), and
3. Access to reliable water supply.

The application of the Strategic Agricultural Land (SAL) mapping is to 'trigger' the Gateway Process for new project development applications.

The *State Environmental Planning Policy (Mining, Petroleum Production and Extraction) 2007* (Mining SEPP) requires certain types of developments (i.e. mining or petroleum developments) to verify whether the proposed development is on BSAL. The Interim Protocol assists proponents and landholders to understand what is required to identify the existence of BSAL and outlines the technical requirements for the on-site identification and mapping of BSAL.

4 METHODOLOGY

The methodology reported in the following section has been undertaken based on the Interim Protocol (OEH 2013).

Step 1: Identify the project area which will be assessed for BSAL

"The assessment area should include the entire project area and include at least a 100 m buffer to take into account minor changes in design, surrounding disturbance and minor expansion. If BSAL is part of a larger contiguous mass of BSAL then the boundary of this area must also be identified".

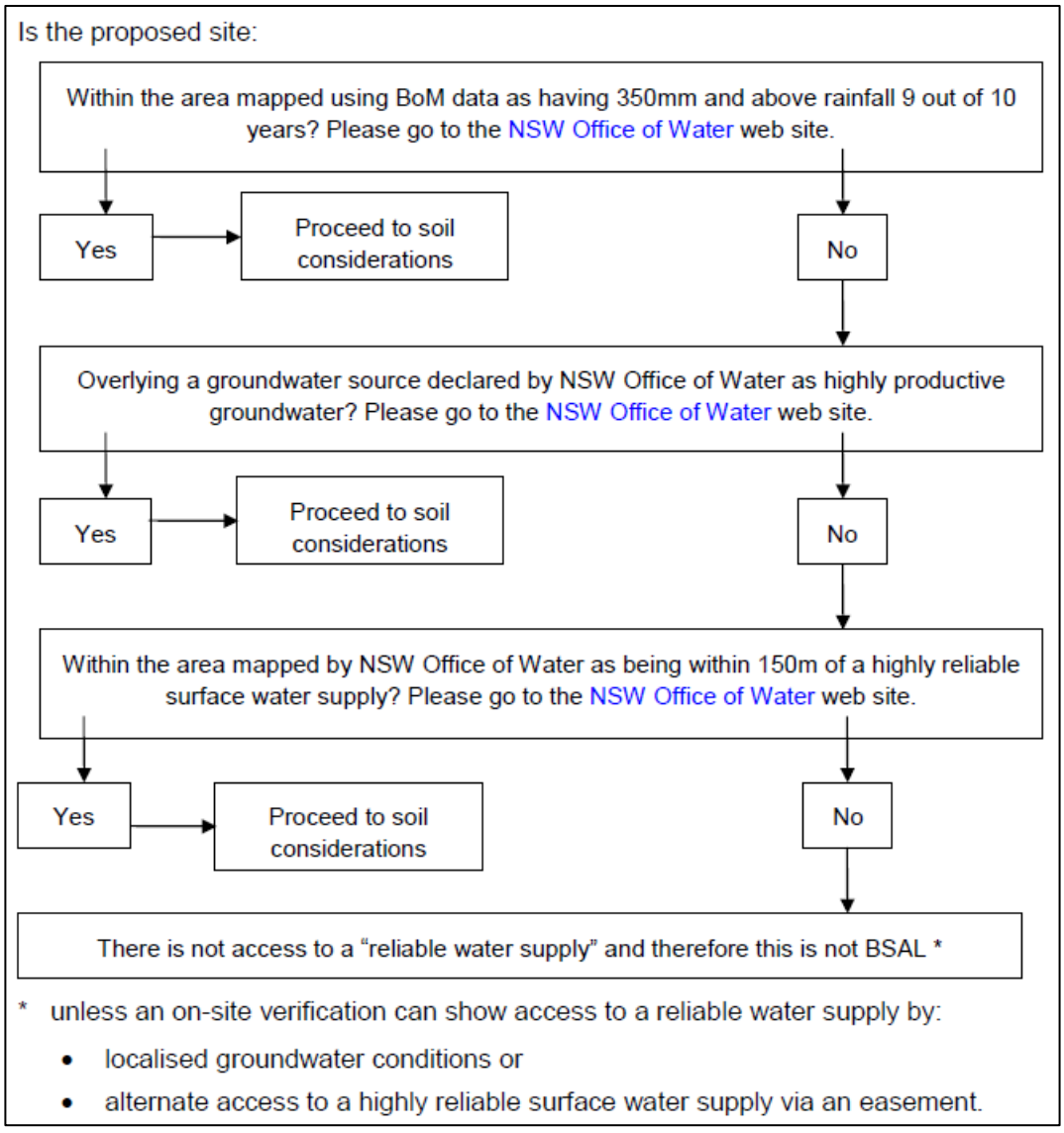
The PAA covers an area of 819 ha as identified in **Figure 1**. Due to the outcomes of Step 2 as detailed below, the 100m buffer surrounding the potential disturbance areas which is ordinarily included in verification assessments as per the Interim Protocol is considered extraneous to this assessment, and has therefore not been applied.

Step 2: Confirm access to a reliable water supply

"BSAL lands must have access to a "reliable water supply".

The Interim Protocol (OEH 2013) includes *Figure 1: Flow chart to verify water reliability*, as shown below:

Figure 4: Interim Protocol Insert



Minesoils has undertaken an assessment in accordance with this flow chart to determine if a reliable water supply can be accessed from or nearby the PAA.

Criteria 1: Reliable Rainfall.

Water NSW (Formerly DPI Water and NSW Office of Water) prepared a Map showing Reliable Rainfall in NSW and is shown in **Attachment 1**. The Interim Protocol requires the PAA to be inside this zone of Reliable Rainfall to be considered having access to reliable water supply. The PAA for the project is located outside this zone and therefore fails the criteria, as shown on **Figure 5**.

Criteria 2: Productive Groundwater.

Water NSW (Formerly DPI Water and NSW Office of Water) prepared a Map showing Groundwater Productivity in NSW and is shown in **Attachment 2**. The Interim Protocol requires the PAA to be inside this zone of highly productive groundwater to be considered having access to reliable water supply. The PAA for the project is located outside this zone and therefore fails the criteria, as shown on **Figure 6**.

Criteria 3: Reliable Surface Water.

The Interim Protocol requires the PAA to be inside or within 150m of:

1. a regulated river, or
2. a 5th order or higher unregulated river, or
3. an unregulated river which flows at least 95% of the time.

The water course within the PAA is Milpose Creek, an ephemeral Strahler 4th order stream (refer to **Figure 2**). The closest regulated river is the Lachlan River which is located approximately 40km to the South.

Therefore, there is no regulated river within 150m of the PAA. There is no Strahler 5th order or higher within 150m of the PAA and there is no unregulated river that flows at least 95% of the time within 150m of the PAA. Therefore, the PAA fails criteria 3 and does not have access to reliable surface water.

In accordance with the Interim Protocol, given the Project PAA does not have access to reliable water supply, it is verified non-BSAL. And no further assessment is required.

Step 3: Choose the appropriate approach to map the soils information

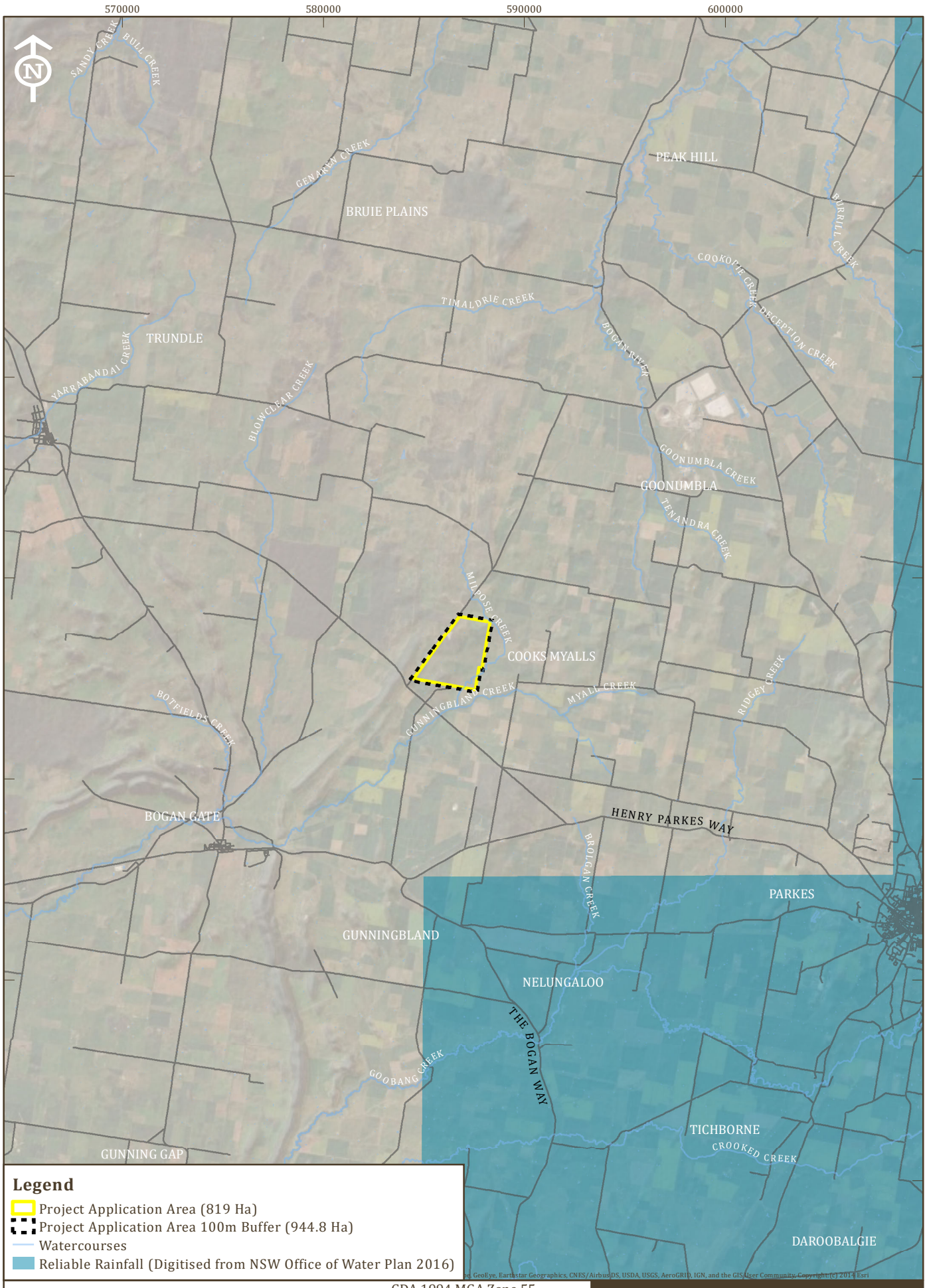
Verified Non BSAL and therefore not required.

Step 4: Risk assessment

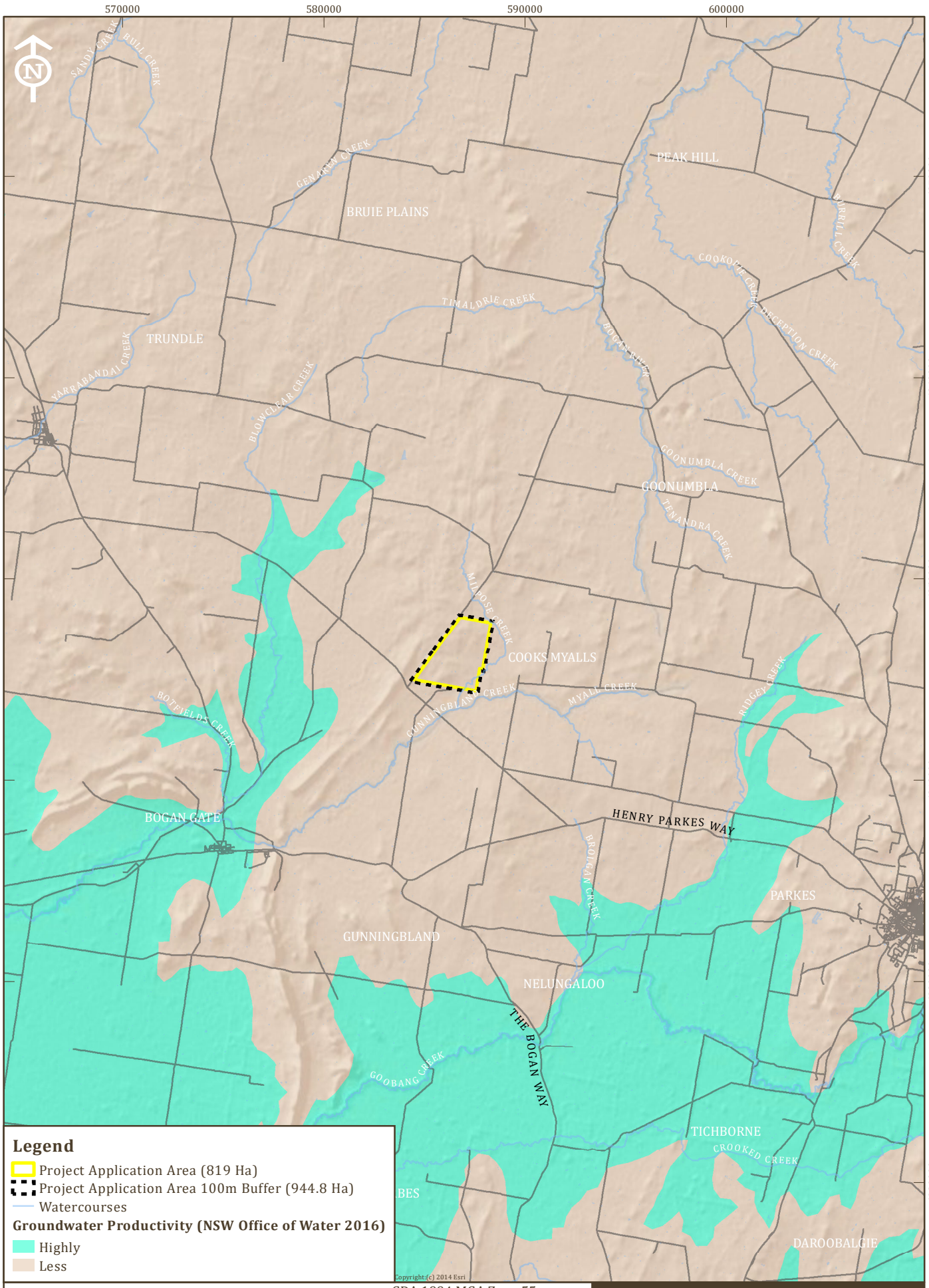
Verified Non BSAL and therefore not required.

Step 4: Soils and landscape verification criteria

Verified Non BSAL and therefore not required.



E:\RST002_MineSoils\MS056_NorthParkes\MS056r4_004_ReliableRainfall.mxd 19/12/2021 4:29:05 PM



Legend

- Project Application Area (819 Ha)
- Project Application Area 100m Buffer (944.8 Ha)
- Watercourses

Groundwater Productivity (NSW Office of Water 2016)

- Highly
- Less

GDA 1994 MGA Zone 55

MINESOILS
LAND & REHABILITATION SPECIALISTS

Kilometers
0 0.5 1 2

Scale 1:250000 at A4

Groundwater Productivity

FIGURE 6

E:\RST002_MineSoils\MS056_NorthParkes\MS056r4_005_ProductiveGroundWater.mxd 19/12/2021 4:32:35 PM

5 RESULTS

The BSAL site verification assessment resulted in no part of the BSAL Assessment Area satisfying the 'Access to Reliable Water' criteria. Therefore, the site is verified Non BSAL.

6 CONCLUSION

The Northparkes E44 Project BSAL Site Verification Assessment was undertaken in November 2021 by Minesoils' Matthew Hemingway and Clayton Richards (CPSS 2). The area subject to this assessment is defined as the PAA, covering 819 ha.

The PAA failed the access to reliable water supply criteria and therefore is considered verified Non BSAL. No further assessment is required.

The supporting documents including the reference mapping metadata have been provided to DPIE as part of the SVC Application.

7 REFERENCES

NSW Water (2016) Groundwater Productivity in NSW Map.

NSW Water (2016) Reliable Rainfall in NSW Map

NSW Water (2021) Waterfront land e-tool (Version 1 – 2020) and Strahler stream order criteria.

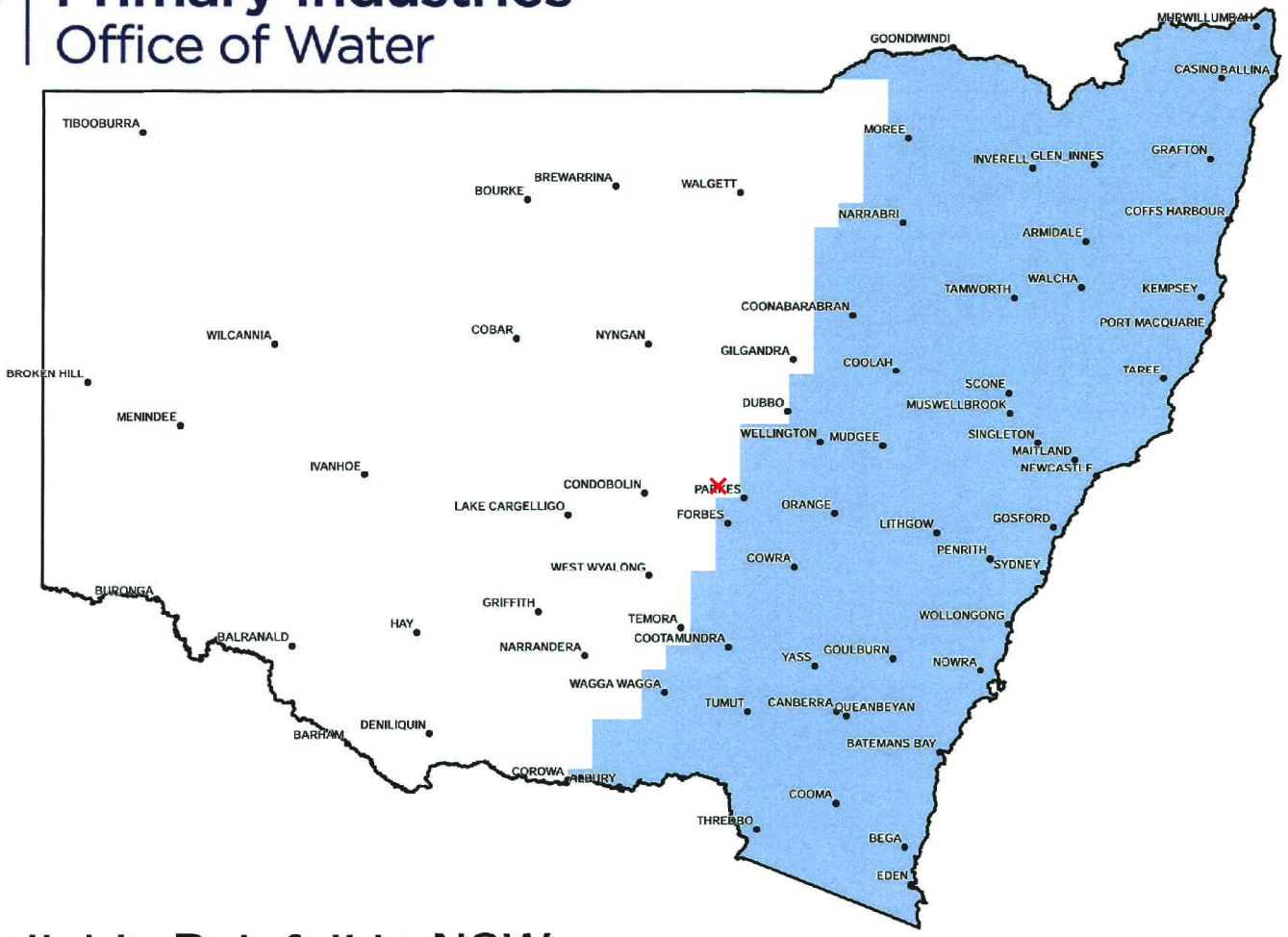
OEH and DPI-OAS&FS (2013) Interim Protocol for Site Verification and Mapping of Biophysical Strategic Agricultural Land.

ATTACHMENT 1

Reliable Rainfall in NSW (DPI 2016)

NSW GOVERNMENT

Department of Primary Industries
Office of Water



Reliable Rainfall in NSW

Legend

✕ Project Area Location

Legend

Rainfal 350mm or more per annum

MINESOILS
LAND & REHABILITATION SPECIALISTS

GCS GDA 1994

0 50 100 200 Kilometers

Scale 1:8250000 at A4

Reliable Rainfall in NSW

Attachment 1

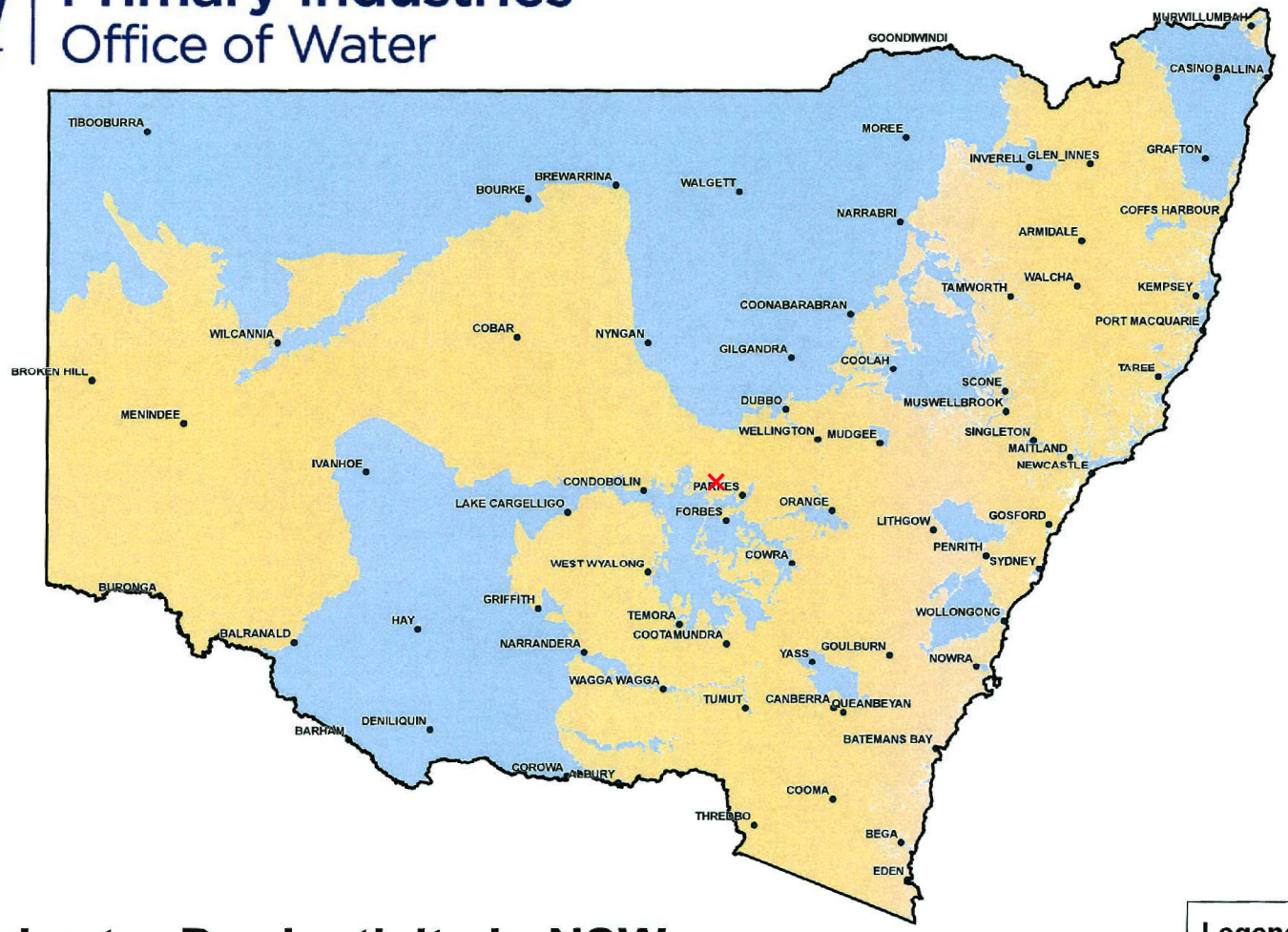
MS056r2_010_RelRain 15/11/2021 7:30:53 PM

ATTACHMENT 2

Groundwater Productivity in NSW (DPI 2016)

NSW GOVERNMENT

Department of Primary Industries
Office of Water



Groundwater Productivity in NSW

Legend

- ✕ BSAL Assessment Project Area

Legend

- Highly Productive Groundwater
- Less Productive Groundwater

MINESOILS
LAND & REHABILITATION SPECIALISTS

GCS GDA 1994

0 50 100 200 Kilometers

Scale 1:8250000 at A4

Groundwater Productivity in NSW

Attachment 2

MS056r2_011_ProductiveGW 15/11/2021 7:32:22 PM