

# Appendix 7

## Aboriginal Cultural Heritage and Historic Assessment Report

prepared by

OzArk Environment and  
Heritage Pty Ltd

(Total No. of pages including blank pages = 136)



This page has intentionally been left blank





View southwest across the study area.

## **ABORIGINAL CULTURAL HERITAGE & HISTORIC HERITAGE ASSESSMENT REPORT**

---

### **TOMINGLEY GOLD MINE MODIFICATION 5**

NARROMINE LOCAL GOVERNMENT AREA, NSW

DECEMBER 2020

Report prepared by  
OzArk Environment & Heritage  
for Alkane Resources Limited



### **OzArk Environment & Heritage**

145 Wingewarra St  
(PO Box 2069)  
Dubbo NSW 2830

Phone: (02) 6882 0118

Fax: (02) 6882 0630

[enquiry@ozarkehm.com.au](mailto:enquiry@ozarkehm.com.au)

[www.ozarkehm.com.au](http://www.ozarkehm.com.au)

This page has intentionally been left blank.





## ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

<b>Report Title</b>	Aboriginal Cultural Heritage Assessment Report: Tomingley Gold Mine Modification 5, Tomingley, NSW.
<b>Author(s) Name</b>	Stephanie Rusden
<b>Author(s)' Organisation Name (if applicable)</b>	OzArk Environment & Heritage
<b>Author(s) contact details</b>	145 Wingewarra St DUBBO NSW 2830 Email: <a href="mailto:stephanie@ozarkehm.com.au">stephanie@ozarkehm.com.au</a> Phone: 02 6882 0118
<b>Address of Subject Area</b>	Address: Lot 156 DP 755093 and Lot 1623 DP1178801, Tomingley, NSW Local Government Area: Narromine Local Government Area
<b>Report prepared for</b>	Company Name: Alkane Resources Limited Pty Ltd Contact Person: Michael Sutherland Address: Level 2, 21 Church Street, DUBBO NSW 2830 Email: <a href="mailto:msutherland@alkane.com.au">msutherland@alkane.com.au</a> Phone: (02) 6882 2866
<b>Date of Report</b>	December 2020
<b>Use of Report/ Confidentiality</b>	This report is not confidential <i>This report may be used by OEH in a number of ways including: placing it in a database generally making hard and electronic copies available to the public and communicating the report to the public.</i>
<b>Copyright owner of the report</b>	© OzArk Environment & Heritage 2020 and © Alkane Resources Limited Pty Ltd 2020
<b>Indemnity</b>	<i>If the person/entity who claims to be the copyright owner of the report is not entitled to claim copyright in the report, he/she/it indemnifies all persons using the report in accordance with the National Parks &amp; Wildlife Act 1974, against any claim, action, damage or loss in respect of breach of copyright</i>

I hereby confirm:

- That this report does not contain confidential information
- That copyright is held jointly by OzArk Environment & Heritage, RW Corkery & Co Pty Limited and Alkane Resources Limited 2020
- That the copyright owners indemnify all persons using the report in accordance with the *National Parks & Wildlife Act 1974*, against any claim, action, damage or loss in respect of breach of copyright.

Stephanie Rusden, OzArk Environment & Heritage Senior Archaeologist

This page has intentionally been left blank.

## DOCUMENT CONTROLS

Proponent	Alkane Resources Limited Pty Ltd	
Client	R.W. Corkery & Co.	
Document Description	Aboriginal Cultural Heritage Assessment Report: Tomingley Gold Development Modification 5 Project, Tomingley, NSW.	
File Location	OzArk Job No.	
S:\OzArk EHM Data\Clients\R.W. Corkery\Tomingley Gold Modification Project Oct2020\Report	2877	
Document Status: V3.1 FINAL		Date: 9 December 2020
Draft V1.1 Author to Editor OzArk 1 <sup>st</sup> Internal (Series V1._ = OzArk internal edits)	V1.0 author TF 21/10/20 V1.1 SR review and contribute 29/10/20 V1.2 BC edit 2/11/20	
Draft V2.0 Report Draft for release to client (Series V2._ = OzArk and Client edits)	V2.0 OzArk to Client 2/11/20 V2.1 OzArk incorporates edits 4/11/20	
FINAL V3._once latest version of draft approved by client	V3.0 OzArk finalises 5/11/20 V3.1 OzArk finalises 9/12/20	
Prepared For	Prepared By	
Mitchell Bland Director RW Corkery & Co Pty Ltd <a href="mailto:mitchell@rwcorkery.com">mitchell@rwcorkery.com</a>	Stephanie Rusden Senior Archaeologist OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 F: 02 6882 6030 <a href="mailto:stephanie@ozarkehm.com.au">stephanie@ozarkehm.com.au</a>	
COPYRIGHT		
© OzArk Environment & Heritage 2020, RW Corkery & Co Pty Limited and Alkane Resources Limited 2020		
All intellectual property and copyright reserved.		
Apart from any fair dealing for private study, research, criticism or review, as permitted under the Copyright Act, 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission.		
Enquiries should be addressed to OzArk Environment & Heritage.		

### **Acknowledgement**

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

## ABBREVIATIONS AND GLOSSARY

ACHAR	Aboriginal Cultural Heritage Assessment Report. As set out in the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> , all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> . Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
AHIMS	Aboriginal Heritage Information Management System. Administered by Department of Premier and Cabinet, AHIMS is the central register of all Aboriginal sites within NSW.
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> under Part 6 NPW Act. Issued by DECCW in 2010, the Code of Practice is a set of guidelines that allows limited test excavation without the need to apply for an AHIP.
Heritage Act	<i>Heritage Act 1977</i> . Provides for the protection and conservation of historical places and objects of cultural heritage significance and the registration of such places and objects.
Heritage Council	The Heritage Council makes decisions about the care and protection of heritage places and items that have been identified as being significant to the people of NSW.
HNSW	Heritage NSW. Government department tasked with ensuring compliance with the NPW and Heritage Acts. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC) and is part of the Department of Premier and Cabinet.
NPW Act	<i>National Parks and Wildlife Act 1974</i> . Primary legislation governing Aboriginal cultural heritage within NSW.
OEH	Office of the Environment and Heritage. Now HNSW.
RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the Proposed Modification.

## EXECUTIVE SUMMARY

---

OzArk Environment & Heritage (OzArk) has been engaged by R.W. Corkery, on behalf of Alkane Resources Limited (the Proponent) to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) and historic heritage assessment for the proposed Tomingley Gold Mine Modification 5 (the Proposed Modification). The Proposed Modification is within the Narromine Local Government Area.

Tomingley Gold Mine (the Mine Site) operates under Project Approval (PA) 09\_0155 issued under delegation for the Minister for Planning and Infrastructure (now the Department of Planning, Industry and Environment) on 24 July 2012. The Proponent is seeking to modify PA 09\_0155 for a fifth time under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to enable the following activities:

- Construction and use of Stages 1 and 2 of Residue Storage Facility (RSF) 2
- An extension of mine life from 31 December 2022 to 31 December 2025
- Extension of the Mine Site boundary to incorporate RSF2.

OzArk was engaged in March 2020 by the Proponent to undertake the assessment of the Tomingley Gold Expansion Project (previously referred to as the San Antonio, Roswell and El Paso [SAR] prospects). Following the field assessment completed between July and September 2020, the Proponent determined that the Tomingley Gold Expansion Project is unlikely to be approved in time to allow the scheduled construction of RFS2. As a result, the Proponent is seeking approval for the Proposed Modification separate to the Tomingley Gold Expansion Project.

The study area for the Proposed Modification encompasses approximately 89 hectares (ha) of flat land located immediately south of the Mine Site, west of the Newell Highway within Lot 156 DP 755093 and Lot 1623 DP1178801. The study area is currently utilised for agricultural purposes.

### Aboriginal Cultural Heritage

The Aboriginal cultural heritage assessment for the Proposed Modification has followed the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Field assessment and reporting followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*.

The survey of the study area was completed by OzArk on 1 September 2020 and was assisted by representatives of the Registered Aboriginal Parties.

No Aboriginal sites were recorded as a result of the field assessment. Further, no landform within the study area was seen as having potential to contain further, subsurface archaeological deposits due to the high level of disturbance and the undifferentiated landforms present. As such, no Aboriginal cultural heritage sites will be impacted.

Recommendations concerning Aboriginal cultural values within the study area are as follows:

1. All land and ground disturbance activities must be confined to within the defined study area, as this will eliminate the risk of harm to Aboriginal objects in adjacent landforms. Should the parameters of the Proposed Modification extend beyond the assessed areas, then further archaeological assessment may be required.
2. Work crews should undergo cultural heritage induction as per Section 16 of the *Tomingley Gold Operations Cultural Heritage Management Plan* (CHMP) to ensure they recognise Aboriginal artefacts and are aware of the legislative protection of Aboriginal objects under the *National Parks and Wildlife Act 1974*.
3. Should Aboriginal artefacts or human skeletal material be uncovered during works within the study area, all work should cease and Section 7.3.3 of the CHMP should be followed.

#### Historic Heritage

The assessment for historic heritage occurred at the same time as the Aboriginal cultural heritage assessment.

No historic heritage items were identified during the fieldwork. As no sites were recorded during the survey, it has been assessed that there are no likely impacts to historic heritage sites.

Recommendations concerning the historic values within the study area are as follows.

4. The activities associated with the Proposed Modification can proceed without further historic heritage investigation provided that all ground disturbance activities are confined to within the study area. If the parameters of the proposed activity extend beyond the study area, then further archaeological assessment may be required.
5. Work crews should undergo a heritage induction as per Section 8 of the CHMP to ensure they understand the legislative protection requirements for historic sites and items in NSW and the relevant fines for non-compliance.
6. Should historic heritage items or human skeletal material be uncovered during works within the study area, all work should cease and Section 7.3.3 of the CHMP should be followed.

## CONTENTS

<b>ABBREVIATIONS AND GLOSSARY.....</b>	<b>5</b>
<b>EXECUTIVE SUMMARY.....</b>	<b>6</b>
<b>1 INTRODUCTION .....</b>	<b>13</b>
1.1 Description of the Proposed Modification .....	13
1.2 Background.....	15
1.3 Proposed work.....	17
1.4 Study area .....	17
1.5 Report format.....	18
<b>2 LANDSCAPE CONTEXT .....</b>	<b>19</b>
2.1 Topography.....	19
2.2 Geology and soils .....	19
2.3 Hydrology .....	20
2.4 Vegetation .....	21
2.5 Climate .....	21
2.6 Land use history and existing levels of disturbance.....	22
2.7 Conclusion.....	23
<b>ABORIGINAL CULTURAL HERITAGE ASSESSMENT .....</b>	<b>24</b>
<b>3 ASSESSMENT INTRODUCTION .....</b>	<b>26</b>
3.1 Date of archaeological assessment .....	26
3.2 OzArk involvement.....	26
3.2.1 Field assessment.....	26
3.2.2 Reporting .....	26
3.3 Relevant legislation.....	26
3.3.1 State legislation .....	26
3.3.2 Commonwealth legislation .....	28
3.3.3 Applicability to the Proposed Modification .....	28
3.4 Purpose and objectives.....	28
3.4.1 Aboriginal archaeological assessment objectives .....	28
3.5 Report compliance with the Code of Practice.....	29



3.6	Assessment approach .....	30
<b>4</b>	<b>ABORIGINAL COMMUNITY CONSULTATION .....</b>	<b>31</b>
4.1	Aboriginal community consultation.....	31
4.1.1	ACHCRs Stage 1 .....	31
4.1.2	ACHCRs Stages 2 and 3 .....	31
4.1.3	Project update.....	32
4.1.4	ACHCRs Stage 4.....	32
4.2	Aboriginal community involvement in the assessment .....	32
4.2.1	Comments arising from the assessment .....	32
<b>5</b>	<b>ABORIGINAL ARCHAEOLOGY BACKGROUND .....</b>	<b>33</b>
5.1	Ethno-historic sources of regional Aboriginal culture.....	33
5.2	Regional archaeological context .....	35
5.3	Previous assessments near the study area.....	38
5.3.1	McPhail Mine .....	38
5.3.2	Marsden-Parkes Natural Gas Pipeline .....	38
5.3.3	Newell Highway Pavement Rehabilitation at Tomingley.....	39
5.3.4	Tomingley Gold Project.....	39
5.3.5	HW17 Newell Highway, Trewilga Realignment .....	41
5.3.6	Parkes to Narromine Inland Rail Project .....	41
5.3.7	Tomingley Gold Extension Project .....	42
5.4	Local archaeological context.....	42
5.4.1	Desktop database searches conducted .....	42
5.5	Archaeological context: Conclusion .....	45
5.6	Predictive model for site location.....	45
5.6.1	Settlement strategies .....	46
5.6.2	Past land use .....	46
5.6.3	Previously recorded sites .....	46
5.6.4	Landform modelling .....	46
5.6.5	Previous studies .....	47
5.6.6	Conclusion.....	47

5.7	Research questions .....	49
<b>6</b>	<b>RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT .....</b>	<b>51</b>
6.1	Survey and field methods.....	51
6.2	Project constraints .....	52
6.3	Effective survey coverage .....	52
6.4	Aboriginal sites recorded.....	53
6.5	Discussion .....	53
6.5.1	Research questions .....	53
6.6	Likely impacts to Aboriginal heritage from the Proposed Modification .....	53
	<b>HISTORIC HERITAGE ASSESSMENT .....</b>	<b>54</b>
<b>7</b>	<b>HISTORIC HERITAGE ASSESSMENT: INTRODUCTION.....</b>	<b>56</b>
7.1	Brief description of the Proposed Modification .....	56
7.2	Relevant legislation.....	56
7.2.1	State legislation .....	56
7.2.2	Commonwealth legislation .....	56
7.2.3	Applicability to the Proposed Modification .....	56
7.3	Historic heritage assessment objectives .....	57
7.4	Date of historic heritage assessment .....	57
7.5	OzArk involvement.....	57
<b>8</b>	<b>HISTORIC HERITAGE ASSESSMENT: BACKGROUND .....</b>	<b>58</b>
8.1	History of Tomingley and surrounds.....	58
8.2	Local context.....	58
8.2.1	Desktop database searches conducted .....	58
<b>9</b>	<b>RESULTS OF HISTORIC HERITAGE ASSESSMENT .....</b>	<b>60</b>
9.1	Survey methodology .....	60
9.2	Recorded historic heritage sites .....	60
9.3	Discussion .....	60
9.4	Likely impacts to historic heritage from the Proposed Modification.....	60
<b>10</b>	<b>RECOMMENDATIONS .....</b>	<b>61</b>
10.1	Aboriginal cultural heritage.....	61

10.2 Historic heritage .....	61
<b>REFERENCES .....</b>	<b>63</b>
<b>PLATES.....</b>	<b>66</b>
<b>APPENDIX 1: COMMUNITY CONSULTATION .....</b>	<b>70</b>
<b>Consultation log.....</b>	<b>70</b>
<b>Appendix 1 Figure 1: Stage 1 advertisement in <i>Daily Liberal</i>, Thursday 26 March 2020</b> .....	<b>79</b>
<b>Appendix 1 Figure 2: Stage 1 agency letter (sample).....</b>	<b>80</b>
<b>Appendix 1 Figure 3: Stage 1 Aboriginal community letter (sample).....</b>	<b>82</b>
<b>Appendix 1 Figure 4: Stage 2/3 cover letter .....</b>	<b>84</b>
<b>Appendix 1 Figure 5: Stage 2/3 update letter .....</b>	<b>85</b>
<b>Appendix 1 Figure 6: Project update letter .....</b>	<b>87</b>
<b>Appendix 1 Figure 7: Stage 4 cover letter .....</b>	<b>88</b>
<b>APPENDIX 2: AHIMS SEARCH RESULT .....</b>	<b>89</b>
<b>APPENDIX 3: SURVEY METHODOLOGY .....</b>	<b>94</b>

## FIGURES

Figure 1-1: Location of the Mine Site boundary.....	14
Figure 1-2: Location of the Proposed Modification in relation to the Tomingley Gold Expansion area. ....	16
Figure 1-3: Aerial showing the study area. ....	17
Figure 2-1: Topography of the study area. ....	19
Figure 2-2: Location of the study area in relation to waterways. ....	21
Figure 5-1: Location of previously recorded AHIMS sites in relation to the study area.....	44
Figure 6-1: Pedestrian coverage of the study area. ....	51
Figure 8-1: Location of the village of McPhail and the McPhail Mine in relation to the study area. ....	59

## TABLES

Table 3-1: Report compliance with the Code of Practice. ....	29
Table 5-1: Association of all recorded sites to landscape units (OzArk 2016).....	37
Table 5-2: Frequency of site types in association with landscape types (OzArk 2016). ....	38
Table 5-3: Summary of the survey results within the three assessment areas.....	39
Table 5-4: Aboriginal cultural heritage: desktop-database search results. ....	43
Table 5-5: Site types and frequencies of AHIMS sites near the study area. ....	43
Table 6-1: Effective survey coverage within the study area. ....	52
Table 6-2: Landform summary—sampled areas.....	53
Table 8-1: Historic heritage: desktop-database search results. ....	58

## PLATES

Plate 1: View west across the study area showing an area with a moderate area of exposure. ....	66
Plate 2: View north along a corridor of mature and regrowth vegetation along the western boundary of the study area.....	66
Plate 3: View south to remnant trees surrounding a dam in the east of the study area.....	67
Plate 4: View west across the study area from the dam in the east. ....	67
Plate 5: View east across a flat, previously cultivated paddock in the north of the study area. .	68
Plate 6: View north west from the east of the study area showing the embankment of RSF1 in the background (behind tree line).....	68
Plate 7: View west across the study area towards the vegetated corridor in the west.....	69

# 1 INTRODUCTION

---

## 1.1 DESCRIPTION OF THE PROPOSED MODIFICATION

OzArk Environment & Heritage (OzArk) has been engaged by R.W. Corkery, on behalf of Alkane Resources Limited (Alkane) (the Proponent) to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) and historic heritage assessment for the proposed Tomingley Gold Mine Modification 5 (the Proposed Modification). The Proposed Modification is within the Narromine Shire Local Government Area (LGA).

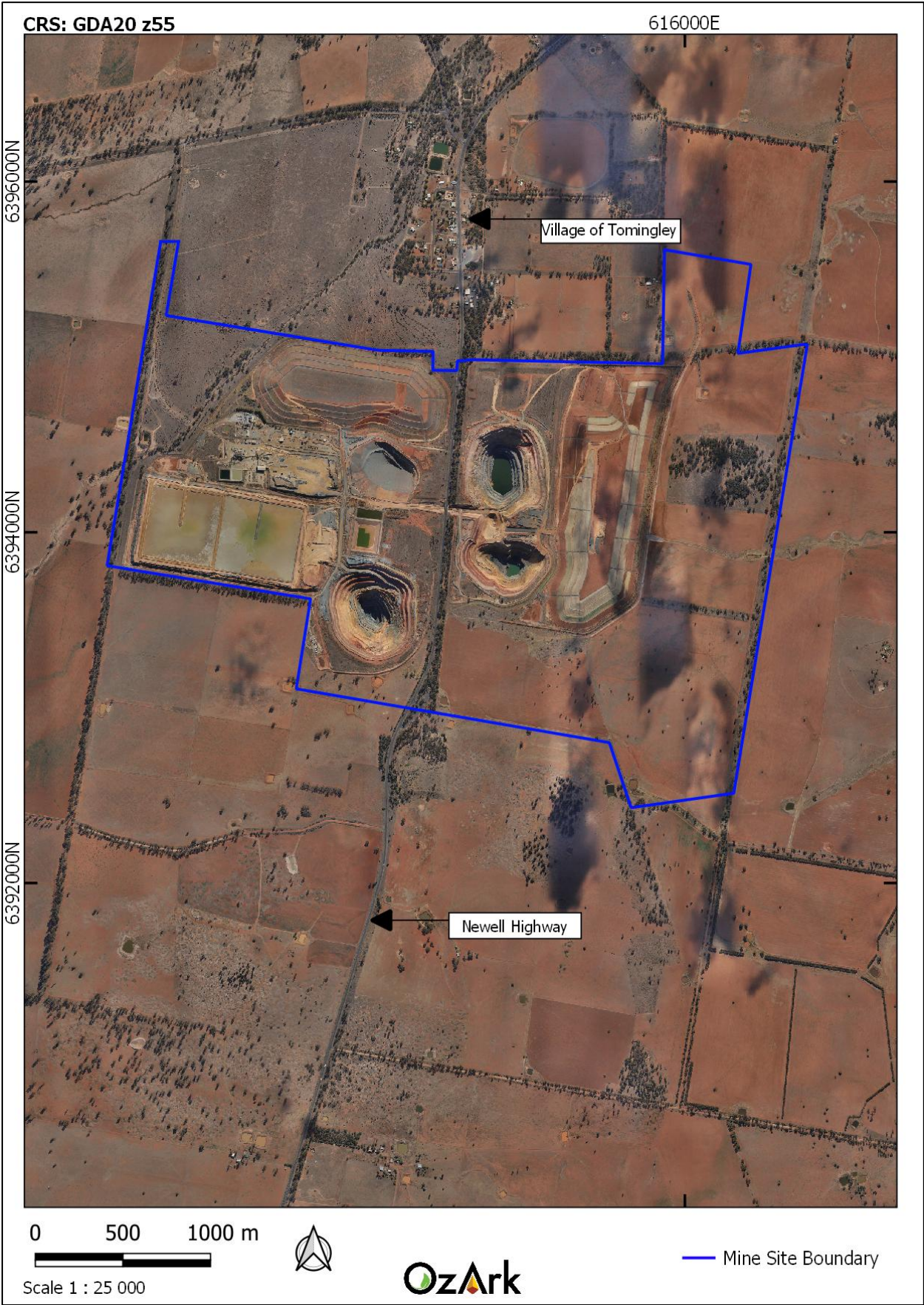
Tomingley Gold Operations Pty Limited, a wholly owned subsidiary of Alkane, operates the Tomingley Gold Mine (the Mine Site), located on both sides of the Newell Highway immediately south of the village of Tomingley in central western NSW (**Figure 1-1**).

Tomingley Gold Mine operates under Project Approval (PA) 09\_0155 issued under delegation for the Minister for Planning and Infrastructure (now the Department of Planning, Industry and Environment) on 24 July 2012. Since initial approval PA 09\_0155 has been modified four times, most recently on 25 May 2020.

The Proponent is now seeking to modify PA 09\_0155 under Section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to enable the following activities:

- Construction and use of Stages 1 and 2 of Residue Storage Facility (RSF) 2
- An extension of mine life from 31 December 2022 to 31 December 2025
- Extension of the Mine Site boundary to incorporate RSF2.

Figure 1-1: Location of the Mine Site boundary.



## 1.2 BACKGROUND

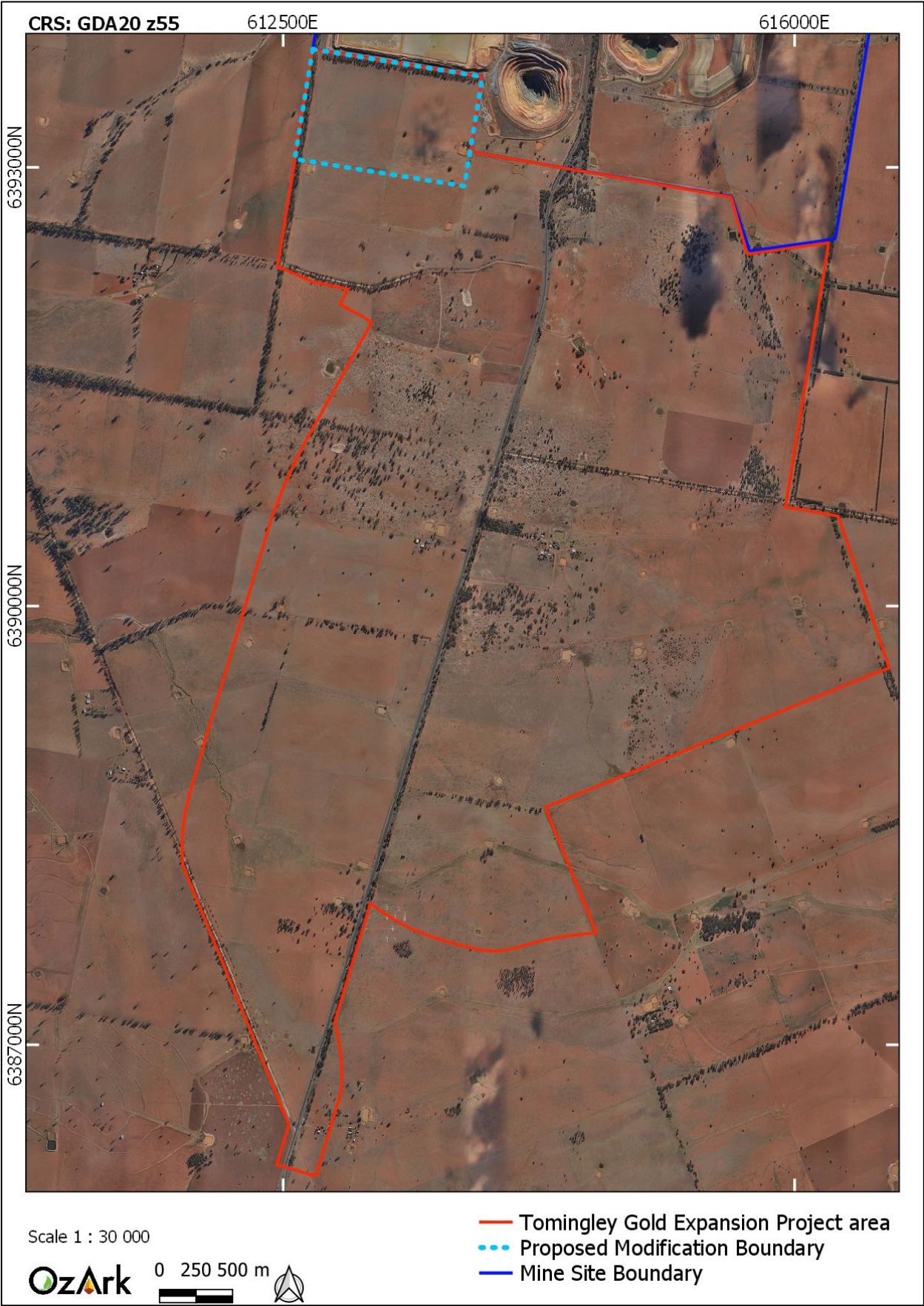
OzArk was engaged in March 2020 by the Proponent to undertake the assessment of the Tomingley Gold Expansion Project (previously referred to as the San Antonio, Roswell and El Paso [SAR] prospects) (**Figure 1-2**). Following the completion of the field assessment between July and September 2020, the Proponent determined that the Tomingley Gold Expansion Project is unlikely to be approved in time to allow the scheduled construction of RFS2 which is required by July 2021 to ensure mining operations.

As a result, the Proponent is seeking approval for the Proposed Modification separate to the Tomingley Gold Expansion Project. This ACHAR and historic heritage assessment has been prepared to assess potential impacts to Aboriginal and historic heritage from the Proposed Modification.

A forthcoming ACHAR and historic heritage assessment will address Aboriginal and historic heritage values associated with the Tomingley Gold Expansion Project as part of State Significant Development (SSD) application 9176045.



**Figure 1-2: Location of the Proposed Modification in relation to the Tomingley Gold Expansion area.**





### 1.3 PROPOSED WORK

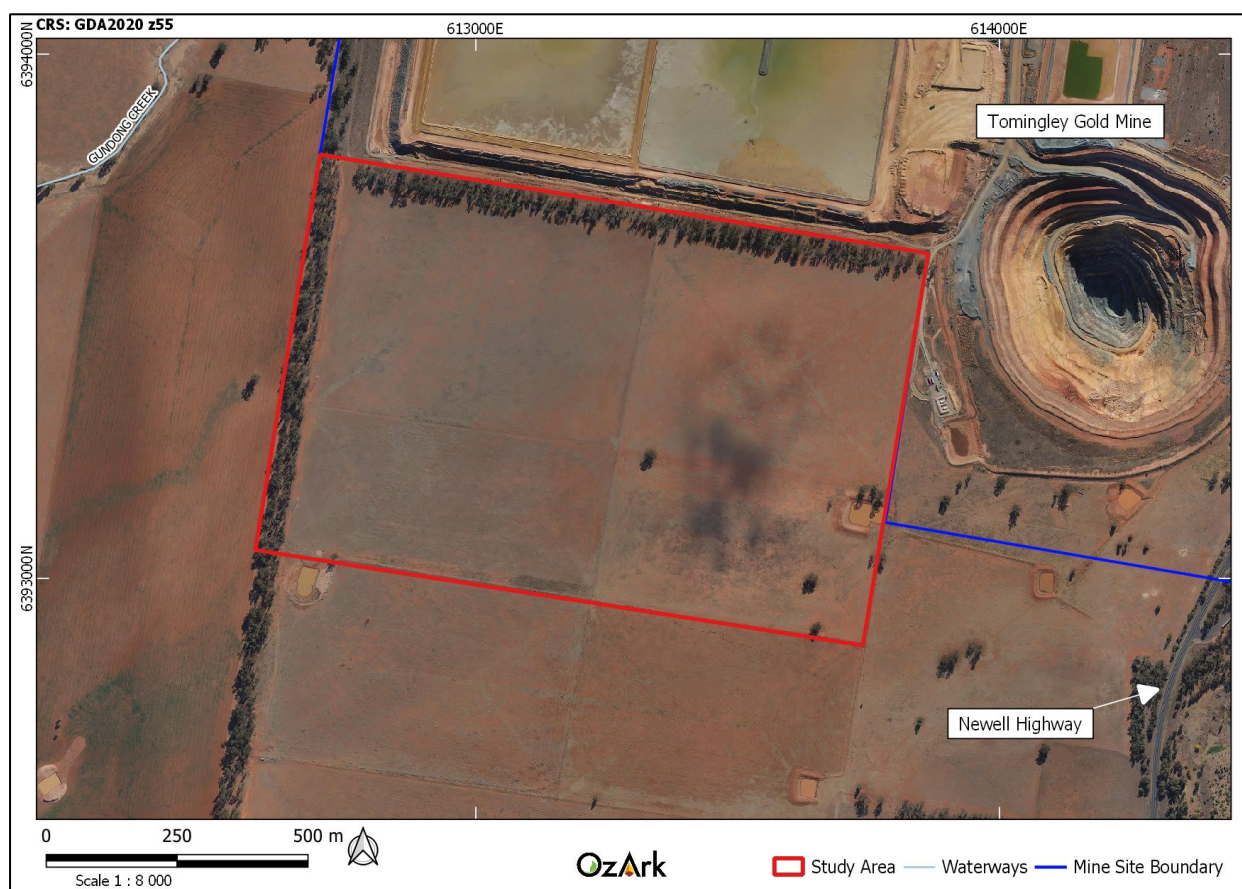
Proposed work within the study area will include the construction of RSF2. RSF2 is proposed to be constructed immediately south of RSF1. The exact impact footprint of the RSF2 has not yet been finalised, however, all ground disturbance associated with the Proposed Modification will be limited to within the study area.

### 1.4 STUDY AREA

The study area is located to the south of the village of Tomingley, approximately 17 kilometres (km) north of Peak Hill and 38 km south of Narromine, within the Narromine Shire LGA. The study area encompasses approximately 89 hectares (ha) of flat land located immediately south of the Mine Site, west of the Newell Highway within Lot 156 DP 755093 and Lot 1623 DP1178801 (**Figure 1-3**).

The study area is currently utilised for agricultural purposes, consistent with the historical land use since colonial settlement of the area. The study area is zoned part RU1 - Primary Production under the Narromine Shire Local Environmental Plan 2011 (LEP).

**Figure 1-3: Aerial showing the study area.**



## **1.5 REPORT FORMAT**

The ACHAR is presented in **Sections 3 to 6** of this report while the historic heritage assessment is presented in **Sections 7 to 9** of this report. The Proposed Modification background and environmental context of the study area presented in **Sections 1 and 2** are also applicable to both the Aboriginal and historic heritage assessments. Recommendations regarding Aboriginal cultural heritage and historic heritage are provided in **Section 10**.

## 2 LANDSCAPE CONTEXT

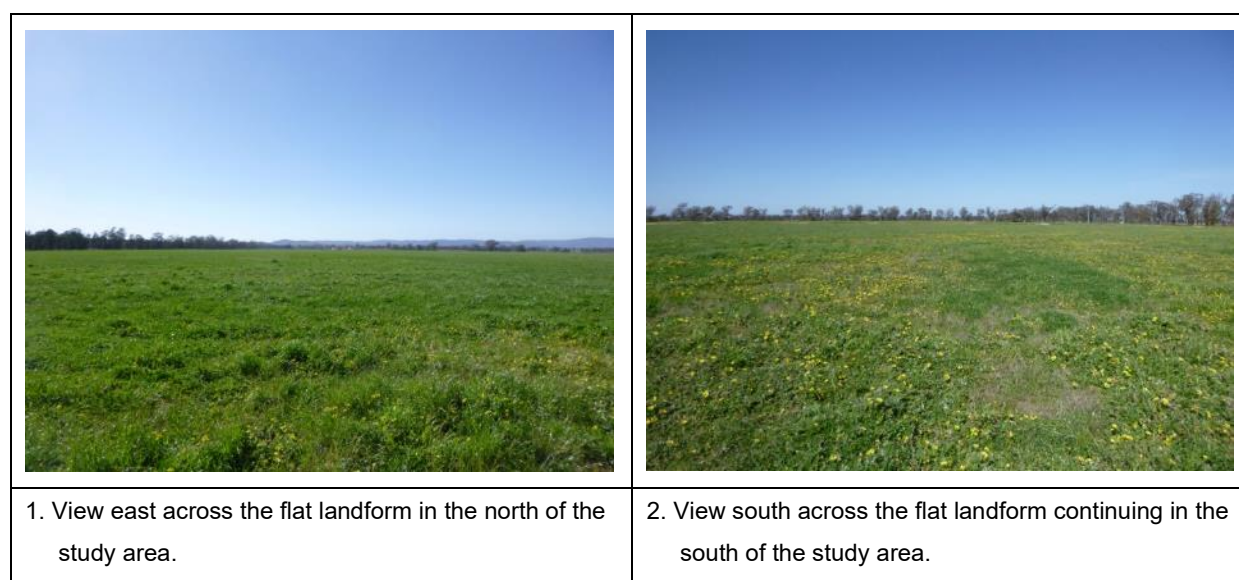
An understanding of the environmental contexts of a study area is requisite in any archaeological investigation (DECCW 2010). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as humanly activated landscape processes, influence the degree to which these material culture remains are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

### 2.1 TOPOGRAPHY

The Tomingley area is situated in the physiographic region known as the central-west slopes of NSW. It is located just west of the border between the Upper Macquarie River and the Western Plains which is a transitional zone between the Great Dividing Range to the east and the plains of the Darling River to the west (Koettig 1985: 12). The study area is located to the northwest of the Herveys Range on the western slopes of the Great Dividing Range.

The topography of the study area is largely flat and undifferentiated. While there are very minor variations in the topography of the study area these are not pronounced enough to be mapped in a way that is meaningful for the archaeological understanding of the study area.

**Figure 2-1: Topography of the study area.**



### 2.2 GEOLOGY AND SOILS

Understanding land formation processes is an important part of assessing the availability of exploitable resources in the landscape and predicting the ability of that landscape to preserve archaeological material (DECCW 2010).

The study area is located near the northern end of a narrow belt of early Ordovician to early Silurian-aged submarine volcanic and shallow intrusive rocks of the Junee-Narromine Volcanic Belt within the Lachlan Fold Belt. Within the study area, the basement geology is dominated by the late Ordovician to early Silurian Mingelo Volcanics. Gold occurs in quartz reefs within the subsurface slates of the Ordovician period.

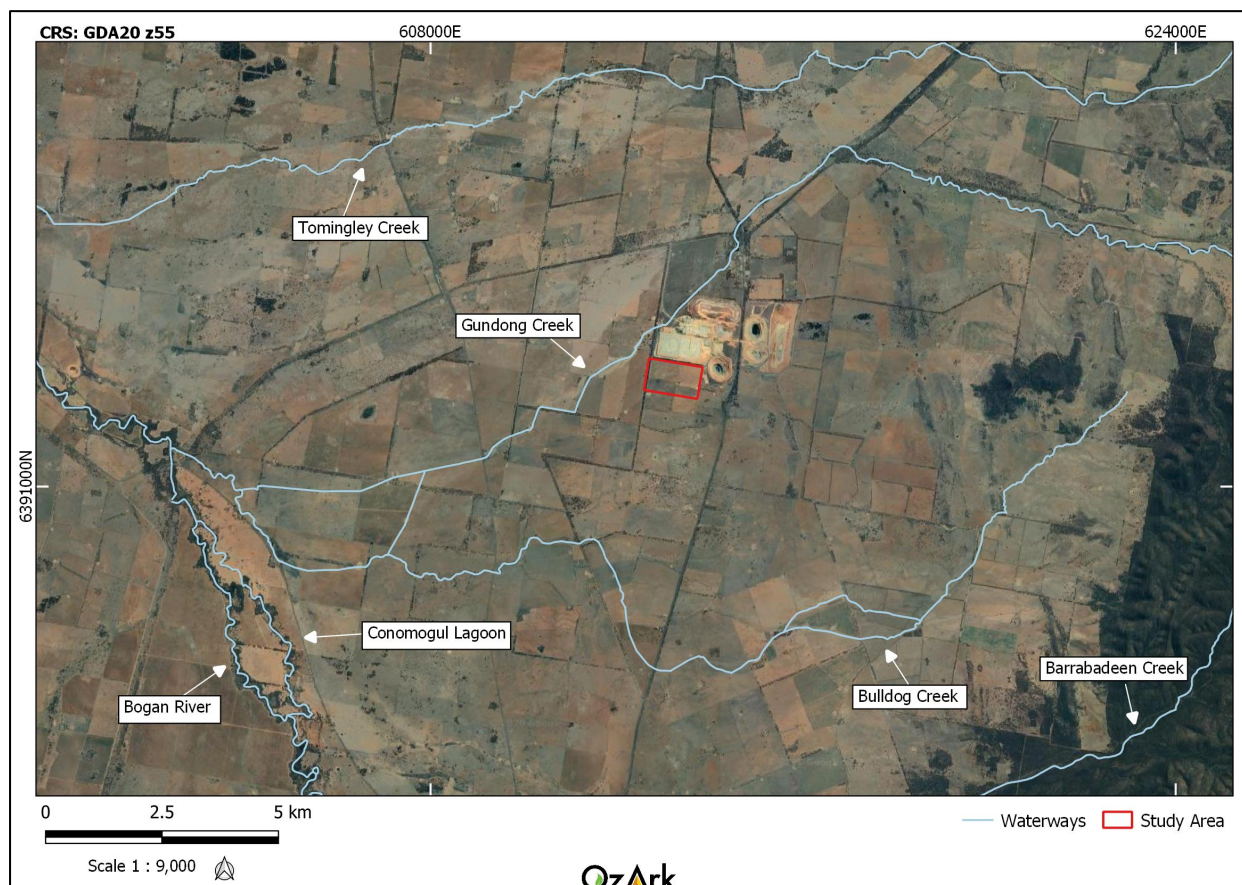
The Bogan Alluvial Plains consists of red-brown texture contrast soils on the plains with brown (**Plate 1**) and grey cracking clays on the backplains (Mitchell 2002: 49). The primary mode of geomorphic activity within the study area is erosion as a result of historical land clearing, cultivation and grazing.

### **2.3 HYDROLOGY**

The closest source of water to the study area is Gundong Creek, located just over 300 metres (m) northwest of the study area (**Figure 2-2**). It is noteworthy that historically Gundong Creek terminated in Tomingley as a spring but was diverted through channelling in the nineteenth century. Gundong Creek flows to the southwest and merges with the Bogan River approximately 11 km to the west of the study area. The Bogan River, a perennial watercourse, flows in a generally north-westerly direction before merging with the Darling River approximately 80 km upstream of Brewarrina.

The local area also includes numerous gilgai formations. Gilgai were seasonal sources of water for Aboriginal people (Bayly 1999), holding moisture within saturated clays, long after shallow surface sources would have evaporated (Neyland 2016). The closest area of gilgai is approximately 400 m to the south of the study area.



**Figure 2-2: Location of the study area in relation to waterways.**

## 2.4 VEGETATION

Native vegetation in the study area is highly disturbed due to previous land clearing for agricultural purposes. Isolated stands of remnant, mature trees are present in the southeast of the study area and corridors of mature and regrowth vegetation borders the western and northern extents of the study area (**Plate 2 to 4**).

Prior to historic clearance, vegetation within the study area and surrounds would have been consistent with the Floodplains Transitional Woodlands vegetative formation as described by Keith (2004). Tree species largely included *Eucalyptus microcarpa* (Grey Box), *E. populnea* subsp. *bimbil* (Bimble Box), *E. melliodora* (Yellow Box) and *E. conica* (Fuzzy Box).

## 2.5 CLIMATE

Climate statistics from the Peak Hill Post Office show the local area experiences warm to very warm (hot) summers, with an average rainfall of 561 millimetres (mm), predominately occurring in summer. The average summer maximum temperature is 33.5°C and maximum winter temperature 19.5°C (BoM 2020).

## 2.6 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

Disturbance, historical or natural, potentially alters the archaeologically record. It can do this in a variety of ways; either directly or indirectly. For example, land clearing directly removes a particular site type: usually scarred trees or stone arrangements. Indirectly, land clearing accelerates soil erosion, potentially resulting in previously buried occupation / activity sites becoming exposed and altered / damaged.

The study area has moderate to high levels of disturbance mostly consisting of impacts related to the area's agricultural use. Disturbances across the study area are summarised below:

- **Agriculture and Pastoralism.** Farming and grazing are fundamental to the local economy and dominate land-use throughout the area. The study area is wholly contained within farming and grazing land which has had the following impacts:
  - Vegetation removal: The study area has been subject to significant levels of vegetation removal. Culturally modified trees may have been removed during the land clearance phase in the area, thereby distorting the archaeological landscape by removing this site type
  - Cultivation: The entirety of the study area has been subjected to repeated cultivation. Repeated cultivation since the commencement of European settlement will have altered soil profiles and potentially disturbed the integrity of sites and any potential sub-surface archaeological deposits. Cultivation acts to redistribute artefacts both horizontally and vertically within the soil profile and ultimately destroys the integrity of artefact assemblages within the top 20 to 50 centimetres (cm) of the soil profile. Research into the impacts upon archaeological sites as a result of agricultural practices, termed plough zone archaeology, has demonstrated that artefacts can move in excess of 8 m per season of cultivation (Frink 1984; Gaynor 2001)
  - Grazing: The study area has been used historically and is currently used for low-intensity livestock grazing. The presence of hooved livestock is likely to have resulted in trampling and compaction of the ground surface which accelerates soil loss
  - Farm Infrastructure and remediation works: The study area has an overall low level of disturbance generated by the construction of dams (**Plate 3**), contour banks, and fencing. Earthworks associated with contour banking and dams can reveal lithic artefacts which may have been otherwise concealed by low ground surface visibility (GSV).
- **Erosion.** Erosion includes sometimes gully erosion and sheet wash erosion, primarily adjacent to waterways. Varying scales of erosion on the archaeological landscape has the capacity to completely remove archaeological sites. However, in the process of erosion, many archaeological sites can become freshly exposed.

## 2.7 CONCLUSION

The review of the environmental factors associated with the study area allows the following conclusions to be drawn in terms past Aboriginal occupation:

Topography and hydrology: The flat landforms which dominate the study area would not have been an impediment to movement or occupation (camping) in the past. However, occupation of this area in antiquity by Aboriginal people would most likely have been limited to transient inhabitation resulting from movement across the landscape to other areas which provide more stable resources, such as water provided by the surrounding creek lines and the Bogan River and the Herveys Ranges to the southeast.

Geology: Landforms which typically comprise outcropping rock i.e. hills and ridges, are not present within the study area and therefore no sources of stone procurement for tool manufacture have been identified.

Soils: The soils that characterise the majority of the study area are relatively stable. However, repeated ground surface disturbance by ploughing; grazing and vegetation clearing will have allowed the soil to become more susceptible to erosion.

Vegetation: Mature, native species which would have been present within the study area in antiquity would have provided resources for Aboriginal people in the past, however, resources likely to have supported a large population of people would have been present closer to the banks of more permanent water sources including the Bogan River. Vegetated corridors are present in the north and west of the study area which comprise both mature and regrowth trees. Further, scattered mature trees are present in the east. As such, culturally modified trees (scarred or carved) may be present, however the likelihood is low.

Climate: The climate would not have been an impediment to year-round occupation.

Land use: High levels of ground surface disturbance exist throughout the study area, with little undisturbed land considered to remain. Activities such as vegetation clearance, cultivation and grazing would have displaced Aboriginal objects and are likely to have reduced the potential for subsurface archaeological material. However, disturbance at a given location does not necessarily mean that there will be no cultural material present, as often a disturbed context will reveal objects which may have previously been at a subsurface level. As noted above, initial vegetation clearing would also have removed culturally modified trees.

## **ABORIGINAL CULTURAL HERITAGE ASSESSMENT**

---



This page has intentionally been left blank.

### **3 ASSESSMENT INTRODUCTION**

---

#### **3.1 DATE OF ARCHAEOLOGICAL ASSESSMENT**

The fieldwork component of this assessment was undertaken by OzArk on Tuesday 1 September 2020.

#### **3.2 OZARK INVOLVEMENT**

##### **3.2.1 Field assessment**

The fieldwork component of the heritage assessment was undertaken by:

- Fieldwork Director: Stephanie Rusden (OzArk Senior Archaeologist, BSc, University of Wollongong, BA, University of New England)
- Archaeologist: Taylor Foster (OzArk Archaeologist, BA [Hons], James Cook University).

##### **3.2.2 Reporting**

The reporting component of the heritage assessment was undertaken by:

- Report Author: Stephanie Rusden
- Contributor: Taylor Foster
- Reviewer: Ben Churcher (OzArk Principal Archaeologist, BA [Hons], University of Queensland; Dip Ed, University of Sydney).

#### **3.3 RELEVANT LEGISLATION**

Cultural heritage is managed by several state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Burra Charter 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

Several Acts of parliament provide for the protection of heritage at various levels of government.

##### **3.3.1 State legislation**

###### ***Environmental Planning and Assessment Act 1979* (EP&A Act)**

This Act established requirements relating to land use and planning. The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- **Part 4:** Local government development assessments, including heritage. May include schedules of heritage items;
  - Division 4.7: Approvals process for state significant development;
  - Section 4.55: Modification of consents—generally
    - (2) **Other modifications.** A consent authority may modify the consent if:
      - (a) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified, and

### ***National Parks and Wildlife Act 1974*** (NPW Act)

Amended during 2010, the NPW Act provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under the Act (Part 6), an Aboriginal object is defined as: any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

As of 1 October 2010, it is an offence under Section 86 of the NPW Act to ‘harm or desecrate an object the person knows is an Aboriginal object’. It is also a strict liability offence to ‘harm an Aboriginal object’ or to ‘harm or desecrate an Aboriginal place’, whether knowingly or unknowingly. Section 87 of the Act provides a series of defences against the offences listed in Section 86, such as:

- The harm was authorised by and conducted in accordance with the requirements of an *Aboriginal Heritage Impact Permit* (AHIP) under Section 90 of the Act
- The defendant exercised ‘due diligence’ to determine whether the action would harm an Aboriginal object; or
- The harm to the Aboriginal object occurred during the undertaking of a ‘low impact activity’ (as defined in the regulations).

Under Section 89A of the Act, it is a requirement to notify the Secretary of the Department of Premier and Cabinet of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS).

### 3.3.2 Commonwealth legislation

#### ***Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act)

The EPBC Act, administered by the Commonwealth Department of Agriculture, Water and Environment, provides a framework to protect nationally significant flora, fauna, ecological communities and heritage places. The EPBC Act establishes both a National Heritage List and Commonwealth Heritage List of protected places. These lists may include Aboriginal cultural sites or sites in which Aboriginal people have interests. The assessment and permitting processes of the EPBC Act are triggered when a proposed activity or development could potentially have an impact on one of the matters of national environment significance listed by the Act. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to national/commonwealth heritage places.

#### ***Other***

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* is aimed at the protection from injury and desecration of areas and objects that are of significance to Aboriginal Australians. This legislation has usually been invoked in emergency and conflicted situations.

### 3.3.3 Applicability to the Proposed Modification

The Proposed Modification is being sought pursuant to Section 4.55 (2) of the EP&A Act.

Any Aboriginal objects within the study area are afforded legislative protection under the NPW Act.

It is noted there are no Commonwealth or National heritage listed places within the study area, and as such, the heritage provisions of the EPBC Act do not apply.

## 3.4 PURPOSE AND OBJECTIVES

The purpose of the current study is to identify and assess heritage constraints relevant to the proposed works.

### 3.4.1 Aboriginal archaeological assessment objectives

The current assessment will apply the Code of Practice in the completion of an Aboriginal archaeological assessment to meet the following objectives:

**Objective One:** Undertake background research on the study area to formulate a predicative model for site location within the study area

**Objective Two:** Identify and record objects or sites of Aboriginal heritage significance within the study area, as well as any landforms likely to contain further archaeological deposits

**Objective Three:** Assess the likely impacts of the proposed work to Aboriginal cultural heritage and provide management recommendations.

### 3.5 REPORT COMPLIANCE WITH THE CODE OF PRACTICE

The Code of Practice establishes requirements that should be followed by all archaeological investigations where harm to Aboriginal objects may be possible. **Table 3-1** tabulates the compliance of this report with the requirements established by the Code of Practice.

**Table 3-1: Report compliance with the Code of Practice.**

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 1	Review previous archaeological work	<i>see subsections below</i>
Requirement 1a	Previous archaeological work	<b>Section 5.2 and 5.3</b>
Requirement 1b	AHIMS searches	<b>Section 5.4.1</b>
Requirement 2	Review the landscape context	<b>Section 2</b>
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	<b>Section 5.2 and 5.3</b>
Requirement 4	Predict the nature and distribution of evidence	<i>see subsections below</i>
Requirement 4a	Predictive model	<b>Section 5.6</b>
Requirement 4b	Predictive model results	<b>Section 5.6.6</b>
Requirement 5	Archaeological survey	<i>see subsections below</i>
Requirement 5a	Survey sampling strategy	<b>Section 6.1</b>
Requirement 5b	Survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Survey units	<b>Section 6.3</b>
Requirement 6	Site definition	Not applicable to this report as no new sites were recorded
Requirement 7	Site recording	<i>see subsections below</i>
Requirement 7a	Information to be recorded	Not applicable to this report as no new sites were recorded.
Requirement 7b	Scales for photography	All artefact photographs employed a centimetre scale bar.
Requirement 8	Location information and geographic reporting	<i>see subsections below</i>
Requirement 8a	Geospatial information	All artefact locations were logged using a non-differential handheld GPS.
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 55.
Requirement 9	Record survey coverage data	<b>Section 6.1</b>
Requirement 10	Analyse survey coverage	<b>Section 6.3</b>
Requirement 11	Archaeological Report content and format	This report adheres to this Requirement.
Requirement 12	Records	OzArk undertakes to maintain all survey records for at least five years.
Requirement 13	Notifying OEH and reporting	<i>see subsections below</i>
Requirement 13a	Notification of breaches	Not applicable
Requirement 13b	Provision of information	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	Test excavation was not required

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 15	Pre-conditions to carrying out test excavation	<i>see subsections below</i>
Requirement 15a	Consultation	Test excavation was not required
Requirement 15b	Test excavation sampling strategy	Test excavation was not required
Requirement 15c	Notification	Test excavation was not required
Requirement 16	Test excavation that can be carried out in accordance with this Code	<i>see subsections below</i>
Requirement 16a	Test excavations	Test excavation was not required
Requirement 16b	Objects recovered during test excavations	Test excavation was not required
Requirement 17	When to stop test excavations	Test excavation was not required

### 3.6 ASSESSMENT APPROACH

The current assessment follows the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010).

Field assessment and reporting followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

---

## 4 ABORIGINAL COMMUNITY CONSULTATION

---

### 4.1 ABORIGINAL COMMUNITY CONSULTATION

The Aboriginal cultural heritage assessment for the Proposed Modification has followed the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs) (DECCW 2010b). A log and copies of correspondence with Aboriginal community stakeholders is presented in **Appendix 1**.

The ACHCRs include four main stages and these will be detailed in the following sections.

#### 4.1.1 ACHCRs Stage 1

The aim of Stage 1 is to identify the Registered Aboriginal Parties (RAPs) who wish to be consulted about a project.

On 26 March 2020, an advertisement was placed in the *Daily Liberal* requesting expressions of interest in being consulted about the Proposed Modification (**Appendix 1 Figure 1**). In addition, the following agencies were contacted to identify potential stakeholders for the area: Biodiversity and Conservation Division (BCD; now Heritage NSW); Peak Hill Local Aboriginal Land Council (PHLALC); Office of The Registrar, ALRA; National Native Title Tribunal; NTSCORP; Narromine Shire Council; and Central West Local Land Services (**Appendix 1 Figure 2**). Groups or individuals identified by the agencies were contacted on seeking expressions of interest (**Appendix 1 Figure 3**).

As a result, the following groups or individuals registered to be consulted:

- PHLALC
- Stakeholder 1
- Tubba-Gah Aboriginal Corporation
- Paul Brydon
- Stakeholder 2
- Bogan River Peak Hill Wiradjuri Aboriginal Corporation
- Jay and Warren Daley.

#### 4.1.2 ACHCRs Stages 2 and 3

The aim of Stages 2 and 3 is provide information about a proposal to the RAPs and to acquire information regarding Aboriginal cultural values associated with the Proposed Modification either through consultation and/or field work. Often these two stages are run together, and the detailed project information is provided in the assessment methodology that is issued to all RAPs for their consideration.

On 29 April 2020, all RAPs were sent information about the Proposed Modification and a draft of the survey methodology (**Appendix 1: Community Consultation**). RAPs were provided the stipulated 28 days in which to review and comment on these documents as per Stage 3 of the ACHCRs (**Appendix 3**). The closing date for comment was 27 May 2020. An updated survey methodology was sent to all RAPs on 30 June 2020 following an increase in the assessment area (**Appendix 1 Figure 5**).

No comments were received from the RAPs on the survey methodology.

#### **4.1.3 Project update**

A project update letter was sent to RAPs on 20 October 2020 (**Appendix 1 Figure 6**). This letter was sent to notify RAPs that the Tomingley Gold Expansion Project is unlikely to be approved in time to allow the scheduled construction of RFS2, and approval is required by July 2021 to ensure operations of the mine can continue. As a result, an application to modify the current approval for the Mine Site will be sought first.

#### **4.1.4 ACHCRs Stage 4**

Stage 4 involves the production of a draft ACHAR that is issued to all RAPs for their consideration. The ACHAR will document the results of the assessment, outline opportunities for the conservation of Aboriginal cultural values, and suggest recommendations for the management of Aboriginal objects should impacts to these objects be unavoidable.

A copy of the draft ACHAR was sent to all RAPs on 5 November 2020 with a 28-day review period closing 3 December 2020 (**Appendix 1 Figure 7**). No comments were received on the draft ACHAR from any of the RAPs.

### **4.2 ABORIGINAL COMMUNITY INVOLVEMENT IN THE ASSESSMENT**

The following RAPs participated in the fieldwork:

- Karryn Keed - Bogan River Peak Hill Wiradjuri Aboriginal Corporation
- Lyn Bell - Peak Hill Local Aboriginal Land Council
- Jay and Warren Daley.

#### **4.2.1 Comments arising from the assessment**

No specific cultural values pertaining to the study area were received during the fieldwork.



## 5 ABORIGINAL ARCHAEOLOGY BACKGROUND

### 5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

At the time of colonial settlement, the study area was within the territory of people belonging to the Wiradjuri tribal and linguistic group (Tindale 1974 and Horton 1994). The Wiradjuri tribal area is situated within the Murray Darling Basin, covering three primary physiographic divisions: the riverine plains in the west, the transitional western slopes in between and the highlands or central tablelands in the east (White 1986).

The study area falls within the central division, being the transitional western slopes into the central tablelands, the heart of Wiradjuri territory. More specifically, the local landscape of the study area is considered to be that of the Bogan River Wiradjuri people, whose range included Tomingley and was bounded to the east by the Hervey Ranges (as named by Oxley) now known as Goobang, from the Aboriginal original name for ranges.

While it is most likely that the name—Tomingley—was a variant on the name Tom Inglis, who was a stagecoach driver between Dubbo and Parkes, it is also possible it was a local Aboriginal word. Garnsey, an ethnographer, who recorded extensive details about Aboriginal people in Dubbo, noted the word Tomingley is an Aboriginal word for death adder, although; he had never seen or heard anyone refer to a death adder in the region (Garnsey 1942: 62).

Episodes of early contact between Aboriginal and colonial cultures from the nearby Lachlan Valley (around 30 km south) were documented by the explorers Oxley and Cunningham in May 1817. On the return journey from exploration of the Lachlan, the explorers tracked north of Lake Cargelligo and Condobolin to the west of Parkes before bearing more northeast towards Peak Hill and Tomingley (Whitehead 2003: 290–296). On the 10<sup>th</sup> and 11<sup>th</sup> of August the group set up camp west of the Bogan River near Gobundry Mountains along Genaren Creek, reaching almost the Bogan River by the 12<sup>th</sup> of August and arriving just north of Tomingley on 13<sup>th</sup> August.

Relating to the travels of August 10, Oxley writes:

*We have hitherto seen no other signs of this being inhabited country than the marks usually made by the natives in ascending the trees, and none of these were very recent. It is probable that they may see us without discovering themselves...*

(Whitehead 2003: 298)

While Cunningham (1817) reported that:

*...we halted and pitched our tent on the site of an old native encampment. Here we saw quantities of horse-mussel shells with which the creek had furnished them and some stones on which they had been sharpening some weapons or instruments, perhaps their mogos or stone hatchets.*

(Whitehead 2003: 299)

Heading east from Genaren Creek on the 11<sup>th</sup> August, Oxley notes that they came across many transitory encampments of the 'natives' that did not appear to have been used for four to six months and many with mussel shell scatters in association.

August 13 was spent traversing the landscape from Genaren Creek to Tomingley, hoping to intersect the Macquarie River at any moment (although they were further from it than they realised). It appears that it had rained in the preceding days and water still lay in creeks of the area and they camped just north of Gundong Creek near Tomingley Creek, where they note the presence of a spring. Oxley writes of their approach to the area that:

*On the banks of that burn (Scottish for creek), many heaps of the pearl muscle-shells were found, and marks of flood about eight feet. We have for several days past seen no signs of any natives being recently in this part of the country; the marks on the trees, which were the only marks we saw, being several months old, and never seen except in the vicinity of water. Marks of the natives' tomahawks were to us certain signs of approaching water...*

(Whitehead 2003: 303)

To the south of the study area and somewhat later (1835) are accounts of contact with native groups by the Mitchell expedition, which had set out to explore the Bogan River in 1835 (Unger undated: 3; Kass 2003: 6). In April 1835 Mitchell's party encountered a group of natives on the eastern outskirts of what is today the town of Parkes. From this meeting, Mitchell learned that what had been named the Hervey Range by Oxley in 1817 was in fact known to the locals as 'Goobang', which derived from the Aboriginal word *Coleong Coobung*, which meant place of many wattles (Kass 2003: 9). Mitchell's group camped within earshot of the Aboriginal camp and his account is quoted by Unger (nd: 4):

*The natives who we met here were fine looking men, enjoying contentment and happiness within the precincts of their native woods. Their enjoyment seemed so derived from nature, that it almost excited a feeling of regret, that civilised men, enervated by luxury and all its concomitant diseases, should ever disturb the haunts of these rude happy beings. The countenance of the first man who came up to me, was a fine specimen of man in an independent state of nature. He had nothing artificial about him, save the badge of mourning for the dead, a white band (his was very white), round his brow. His manner was grave, his eye keen and intelligent, and, as our people were encamping, he seemed to watch the moment when they wanted fire, when he took a burning stick, which one of the natives had brought, and presented it in a manner expressive of welcome, and an unaffected wish to contribute to our wants. Sat a distance, their gins sat at fires, and we heard the domestic sounds of squalling children.*

When Mitchell's party left their camping spot, several natives reportedly followed them, one of whom speared a large kangaroo, while others used new tomahawks to extract honey from tree branches. It is recorded that the natives accompanied the expedition for four days before retreating upon the appearance of further natives. This was interpreted by Mitchell as the original group of natives having reached their tribal boundary (Unger nd: 5).

Upon reaching the headwaters of the Bogan (southwest of Peak Hill), Mitchell records encountering the tribe of 'Bultje', said to be composed of up to 120 natives of considerable intelligence who could speak some English. He describes that this tribe remove one of the two front teeth of males aged over 14 (Unger nd: 5). Mitchell's accounts of the 'Bogan blacks' provide excellent detail on subsistence, describing this tribe to be reliant more on possums, kangaroo and emus than the lower Darling Aboriginal groups, but with a significant input from freshwater mussels. The root of the 'tao' plant are said to have comprised much of the children's diet.

Anthropological or ethnographic research ceased in the Peak Hill and Tomingley region during the 20<sup>th</sup> century.

## **5.2 REGIONAL ARCHAEOLOGICAL CONTEXT**

The most relevant research-based studies over the central west and Lachlan Valley were undertaken by Kelton (1996), English et al (1998) and OzArk (2016). These studies provide baseline data for placing past Aboriginal sites within a regional landscape context. The following is a summary of the salient points learned from these studies.

In 1996, Kelton completed research-based assessment of Aboriginal scarred trees and other archaeological sites in the Lachlan Valley region. Kelton highlighted that sites found within the Lachlan Valley reflect diversity and different levels of past Aboriginal occupation, hunter-gatherer lifestyle and technology, as well as varying forms of resource extraction. Research into site registrations in the Lachlan Valley display that those with the greatest frequency are open campsites and scarred trees. Around 220 Aboriginal scarred and carved trees were recorded in the Lachlan Valley by 1996, commonly found on yellow box, grey box, river red gum, fuzzy box and bumble box (Kelton 1996). According to Kelton, scarred trees can be expected to occur over almost all landform units, however, frequency tends to increase with proximity to water. Kelton also noted differences in the types of culturally modified trees concluding that scars result from what may be considered 'normal' routine domestic purposes associated with the hunter-gatherer lifestyle, and carving which results from more culturally complex traditions, including the marking of burials and or ceremonial sites (also known as Bora Grounds). The second most numerous site type, the open campsite, was noted at 210 locations in 1996 (Kelton 1996). Within the Lachlan Valley, open campsites tend to be located in close proximity to reliable water sources such as rivers, creeks, billabongs and lakes, and gilgai formations, playa lakes, ephemeral drainages, and

usually at elevated terrace locations, or along non-flood prone, elevated ground nearby these formations.

In 1998, English et al undertook survey of Goobang National Park which includes the Hervey Ranges, located 8 km east of the study area, and described a settlement pattern similar to the ones described above (English et al 1998: 196). Results of this assessment recorded 30 open camp sites representing both short- and long-term occupation sites. Artefacts from these sites numbered 928 and were predominantly made from volcanic stone and quartz. Also recorded were 28 modified trees, thought to not represent all likely to be present considering the wooded nature of Goobang National Park and therefore reflecting the amount of coverage feasible over such a large area (42,080 ha). One large axe grinding groove site was recorded comprising 13 elongated grinding grooves over three outcropping boulders, assessed as a significant site as it is the only one recorded in Goobang National Park and is in good condition. A quarry site accessing volcanic stone identified as rhyolite was also found. A 2001 report issued by the NSW National Parks and Wildlife Service (NPWS) details the findings of this survey, shedding some insight to the nature of settlement patterns in the region and noting the importance of the Hervey Ranges. These investigations note a widespread use of the resources in the Hervey Ranges with the watercourses of the lower slopes and undulating plains seeing the most extended and repeated occupation. It also records the importance of the Hervey Ranges to the Wiradjuri as a travelling route, landmark and its possibility of having important ceremonial value.

More recently in 2016, OzArk was engaged by the Central West Local Land Services (CWLLS) to formulate and test a predictive model for Aboriginal site location within Travelling Stock Reserves (TSRs) across the CWLLS area. In formulating a predictive model for site location, Mitchell (2002) landscapes were used to understand the underlying landform type. The resolution of the Mitchell landscape units was too fine to be of use and OzArk (2016) used a higher-level classification within the Mitchell landscape units to describe the landscapes within the CWLLS area. Landscapes were divided into the following types:

- Channels and floodplains
- Alluvial plains
- Slopes
- Uplands
- Downs.

Previously recorded AHIMS sites were plotted against these landscape types and the following observations made:

- A high number of sites (n=876) were located within slopes landscapes, however, this result could be due to the fact that Dubbo is located within a slopes landscape and the highest number of sites in the CWLLS area is recorded in and around Dubbo
- The highest density of sites is within channels and floodplains landscapes (n=927)
- Alluvial plains landscapes have the third highest density of sites (n=770)
- Relatively small numbers of sites are recorded in uplands (n=5) and plateau (n=34) landscapes
- A moderate number of sites are recorded in downs landscapes (n=255). Three or four clusters of sites exist in downs landscapes, which may have skewed the data. If the veracity of all site recordings in this category could be verified, it is suspected that the actual number of sites in downs landscapes would be lower.

OzArk (2016) divided the CWLLS area into two stream orders—major watercourses (normally named rivers) and minor watercourses (normally named creeks and their larger tributaries)—and buffers were established for each watercourse type as follows:

- Drainage 1 buffer: 200 m either side of a major watercourse
- Drainage 2 buffer: 100 m either side of a minor watercourse.

As such, the OzArk (2016) CWLLS predictive model made predictions based on the landscape type and distance to watercourses. The predictive model was tested by assessing 32 TSRs within the CWLLS area located in a variety of landscape types with variable distances to water. As a result of the assessment, 59 sites were recorded. Twenty-six (44%) of the recorded sites were modified trees, 22 (37%) were artefact scatters and 11 (19%) were isolated finds. The majority of recorded sites were located in channels and floodplains landscapes (35 sites or 59% of all sites), followed by 10 in slopes landscapes, four in alluvial plains landscapes and one in a downs landscape. No sites were recorded in uplands or plateau landscapes.

**Table 5-1** demonstrates that the most archaeologically sensitive landscape in the CWLLS area is channels and floodplains, followed by slopes landscapes. Other landscape types have a low representation but demonstrate that low densities of sites exist in other landscape types.

**Table 5-1: Association of all recorded sites to landscape units (OzArk 2016).**

Landscape unit	Number of sites	Percentage of total (n=59)
Channels and floodplains	36	61
Alluvial plains	6	10
Slopes	14	23
Downs	1	2
Uplands	2	4
Plateau	0	0

Site types associated with the landscapes most-frequently recording sites (channels and floodplains and slopes) show that channels and floodplains landscapes are more likely to contain modified trees and that slopes landscapes are more likely to contain artefact scatters and isolated finds (**Table 5-2**).

**Table 5-2: Frequency of site types in association with landscape types (OzArk 2016).**

Site type	Channels and floodplains	Slopes	Alluvial Plains
Artefact scatter	11 (30.5%)	7 (50%)	3 (50%)
Isolated finds	4 (11%)	3 (21%)	3 (50%)
Modified trees	21 (58.5%)	4 (29%)	0 (0%)

In terms of drainage buffers, OzArk (2016) found that 27 sites (or 46% of all sites) were recorded with the Drainage 1 buffer and 10 sites (or 17% of all sites) were recorded within the Drainage 2 buffer. Therefore, more than 63% of all sites were recorded within the two drainage buffers, with a clear bias toward Drainage 1 buffers.

### 5.3 PREVIOUS ASSESSMENTS NEAR THE STUDY AREA

Wiradjuri heritage in the surrounding region has been documented through many development-related heritage assessment projects. The following review of studies undertaken over this region help to provide a backdrop for the type of sites likely to occur within the study area.

#### 5.3.1 McPhail Mine

An Environmental Impact Statement was prepared in 1995 for the proposed reprocessing of tailings from the original McPhail Mine (Cook 1995), located to the east study area. No physical heritage assessment was undertaken in the face of this project due to the conclusion that the site of the tailings had already been substantially disturbed during original mining operations hence leaving a low likelihood for the presence of archaeological remains (Cook 1995: 21). The fact that the site contained no surface water and no evidence of ‘native activity’ (Cook 1995: 21) was also mentioned.

#### 5.3.2 Marsden-Parkes Natural Gas Pipeline

A series of 11 sites recorded by Navin Officer (1997) extend along the Marsden to Dubbo natural gas pipeline, which follows the Narromine to Parkes rail line. These sites comprise six isolated finds and five artefact scatters. One of the artefacts scatters, 35-6-0070, was recorded in association with a possible hearth. Recorded materials included quartz, silcrete and chert. All artefact scatters were recorded within 200 m of a creek line, including Gundong and Burrabadine Creeks.

### 5.3.3 Newell Highway Pavement Rehabilitation at Tomingley

OzArk (2003) completed an archaeological assessment for the Roads and Traffic Authority (now Transport for NSW [TfNSW]) along a 4.5 km section of the Newell Highway immediately south of Tomingley. The assessment area was described as being flat, and low-lying with no hydrological features and over 500 m from a permanent water source. Four Aboriginal sites were located during the survey. All sites included scarred trees on grey box (*E. microcarpa*) located on the eastern side of the Newell Highway. The recording of scarred trees was unexpected, as they are outside their expected zone of location (i.e. close to creek lines) being found on flat plains approximately 0.5 to 1 km from reliable water.

### 5.3.4 Tomingley Gold Project

OzArk (2011) completed an archaeological assessment for the Tomingley Gold Project. The assessment area encompassed 776 ha of land to the north of the study area (referred to as the Mine Site study area), as well as a 46 km pipeline extending from mine site to Narromine (the TNWP study area) and a 20 km electricity transmission line extending to Peak Hill (the PHTETL study area). The landform of the three assessment areas is flat and relatively low-lying. Creeks of the area tend to be temporary and from the southern portions of the Mine Site study area, flow west into the Bogan catchment and closer to Narromine begin to flow north / northeast into the Macquarie catchment. Overlaying site locations with the general landform unit divisions across the broader region shows most open sites are associated with the alluvial valley floors (close to a drainage features) and the gentle toe slopes of the adjacent flat to undulating plains. They are generally located close to drainage lines and, where distant to water, are more likely to be smaller camp sites or one-off activity sites.

#### Survey results

A total of 60 Aboriginal sites were recorded during survey including 54 culturally modified trees (43 scarred, nine possibly scarred, one resource gathering and one carved); three artefact scatters (one with associated potential archaeological deposit [PAD]), two isolated finds and one ceremonial / dreaming site) (**Table 5-3**).

**Table 5-3: Summary of the survey results within the three assessment areas.**

	Culturally modified trees	Artefact scatter	Isolated find	Ceremonial and dreaming site
<b>Mine Site study area</b>	15 (11 scarred, three possibly scarred, one resource gathering and one carved).	2	2	0
<b>TNWP study area</b>	36 (29 scarred, six possibly scarred, one scarred tree and possible ceremonial and dreaming site)	1 (with PAD)	0	1

	Culturally modified trees	Artefact scatter	Isolated find	Ceremonial and dreaming site
<b>PHTEL study area</b>	Three scarred trees	0	0	0

### Test excavation

TWNP-OS1 with PAD was identified on a river terrace / aeolian dune landform 50 m south of an old Macquarie River palaeochannel. Aboriginal artefacts were found on the eroding edge of this landform closest to the palaeochannel and included including flakes, cores and scrapers manufactured from quartz, indurated mudstone, chert and granite. The uniform appearance of the sands suggested that the crest of the terrace may have been an aeolian, source bordering sand sheet, that may have been active when the climate was drier during the last glacial.

A test excavation program was completed 1–2 February 2011 over six excavation pits confined to the area of TNWP-OS1 with PAD that will be impacted by the TGP water pipeline.

Major findings of the archaeological test program were:

- The lithic assemblage of the excavation consists of a total of 121 artefacts. One hammer stone was recorded, along with several cores
- No archaeological stratification was noted in any of the excavation pits
- Artefact densities ranged from medium to very low across the excavation area with maximum densities of 27.2 artefacts per cubic metre of excavated material
- The excavation assemblage is dominated by quartz with 71.1% of all excavated artefacts of this material. The other dominant raw material used was chert with 14% of the artefacts being from this material. The remaining 14.9% of material came from a mix of silcrete, rhyolite, mudstone, and other fine-grained siliceous materials
- In most cases, the artefacts recorded in the excavations came from Spit 1 (0–20 cm) with a few artefacts from spits 2 and 3. Therefore it is evident that most of the material was concentrated close to the surface
- None of the test excavation squares excavated at site TWNP-OS1 displayed evidence of a complex site features. No features were recorded from the excavations
- The test excavation program has established that site NTWP-OS1 with PAD has, at its eastern margins, a low artefact density, shallow deposits and a high likelihood of prior disturbance
- As such, in the area where the TGP water pipeline is proposed to be located, the site possesses low scientific significance and the findings demonstrate that further archaeological investigation is unwarranted

The test excavations did establish that there is a likelihood of further Aboriginal artefacts in the area of TNWP-OS1 with PAD beyond those areas that were test excavated, including in the area of the water pipeline (i.e. between the test excavation pits). These artefacts are likely to be in the top 20 cm of soil.



## Discussion

The sites recorded during the survey were consistent with the predictive model. The largest open site (TNWP-OS1 with PAD), which displayed a diversity of raw material and artefact types, was identified close to the Macquarie River palaeochannel, while smaller sites (TGP-OS1 and OS2) were identified adjacent to the area thought to have been a spring at Tomingley in prehistory. Aboriginal modified trees were most prevalent in locations close to drainage features, with between 60% and 63% recorded within 100 m of drainage features or water sources.

The lack of artefact scatters in the Mine Site study area close to more permanent water sources, such as the northern portion of Gundong Creek was attributed to the fact that the majority of this creek line within the Mine Site study area is in fact a post-contact period channel. It was considered likely that the northern portion of this creek may be more original as scarred trees are certainly clustered in that area.

The high frequency of scarred trees was somewhat unexpected, comprising 90% of recorded sites. This predominance was thought to reflect the practise of maintaining remnant, almost unmodified, roadside vegetation corridors and wind breaks along property fence lines. The frequency of modified trees (scarred, carved, boundary markers and women's birthing trees) indicates both significant use of the practice of scarring, as well as providing evidence of a densely occupied area, at least in the last 500 years.

### **5.3.5 HW17 Newell Highway, Trewilga Realignment**

OzArk (2012) was commissioned by Roads and Maritime (TfNSW) to conduct an Aboriginal heritage assessment of several sections of the Newell Highway between Parkes and Peak Hill. One Aboriginal site (Trewilga–Open Site 1 [T-OS1] with potential archaeological deposit [PAD]) was re-recorded as part of the 2012 assessment and was noted as extending the full width of the proposed impact corridor, both north and south of Ten Mile Creek. The PAD associated with this site was thought to include the presence of further artefactual material, despite the fact that the site was assessed as being disturbed by ploughing. The PAD was subject to a three-day test-excavation program from 26 March–28 March 2013. No *in situ* archaeological deposits were encountered in the excavation, with the few artefacts retrieved coming from disturbed contexts. As such, no further investigation or sub-surface salvage program was recommended. The findings of the investigation indicated that there was a very low-density artefact scatter at T-OS1.

### **5.3.6 Parkes to Narromine Inland Rail Project**

Umwelt Australia Pty Limited (Umwelt 2017) completed the Aboriginal cultural heritage assessment for the Parkes to Narromine Inland Rail project. The assessed area was 106 km long and the rail corridor is general 40 m wide. The majority of the assessment area is located within the Bogan Alluvial Plains landscape, with the Goonumbla Hills landscape concentrated primarily

in the southern portion of the assessment area. The Boggy Cowal landscapes are present within the northern portion of the assessment area as are the Narromine Hills, with the Bimbi Plains comprising a very small proportion of the northern part of the assessment area.

As a result of previous archaeological investigations undertaken in the region, a total of 19 archaeological sites have been recorded within 50 m of the assessment area. The majority of the sites contain stone artefacts. In general terms, the numbers of artefacts identified within these sites are low and typically contain less than five artefacts. The two largest sites (in terms of quantity of artefacts) are associated with Ten Mile Creek and Burrabadine Creek, both of which are relatively major watercourses in the area. An artefact scatter at Ten Mile Creek was also assessed as having the potential to contain additional artefacts in a sub-surface context. Other sites including three scarred trees and a potential quarry for basalt located outside the assessment area.

During the survey, it was noted that the current rail corridor has been subject to extensive disturbance, with areas within the rail corridor assessed as having low archaeological potential. However, eight areas were identified as having moderate or higher archaeological potential within the sections of the assessment area outside the current rail corridor. These areas include the four previously recorded archaeological sites identified during the survey.

### **5.3.7 Tomingley Gold Extension Project**

OzArk (2020) completed the archaeological assessment for the proposed Tomingley Gold Extension Project which formerly encompassed the study area. The assessment area for the project encompassed 2,000 ha of flat to gently undulating land located to the south of the Tomingley Gold Mine, on either side of the Newell Highway.

The survey identified 39 previously unrecorded Aboriginal cultural heritage sites within the study area and ground-truthed the location of three previously recorded scarred trees (35-6-0142, 35-6-0184 and 35-6-0185).

The 39 newly recorded sites identified during the survey include two scarred trees, eight low-density artefact scatters and 29 isolated finds. None of the recorded sites are considered to be associated with subsurface deposits.

## **5.4 LOCAL ARCHAEOLOGICAL CONTEXT**

### **5.4.1 Desktop database searches conducted**

A desktop search was conducted on the following databases to identify any potential previously recorded heritage within the study area. The results of this search are summarised in **Table 5-4** and presented in detail in **Appendix 2**.

**Table 5-4: Aboriginal cultural heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	1/7/2020	Narromine LGA	No places listed on either the National or Commonwealth heritage lists are located within the study area.
National Native Title Claims Search	1/7/2020	NSW	No Native Title Claims cover the study area.
AHIMS	14/4/2020	30 x 30 km centred on the study area	98 sites were returned in the designated search. None of these are located within the study area.
Local Environmental Plan (LEP)	1/7/2020	Narromine LEP of 2011	None of the Aboriginal places noted occur near the study area.

A search of the AHIMS database on 14 April 2020 returned 98 records for Aboriginal heritage sites within a 30 km x 30 km search area over the study area (GDA Zone 55 Eastings: 599493–629493; Northings: 6378338–6408338) (**Figure 5-1**).

None of the recorded 98 sites, are located within the study area. Site 31-6-0036 has been erroneously registered with AHIMS and plots relatively close to the study area when it is in fact in the Menindee Lakes area<sup>1</sup>. This site will be omitted from further analysis and it will be considered that the search area contains a total of 97 previously recorded sites.

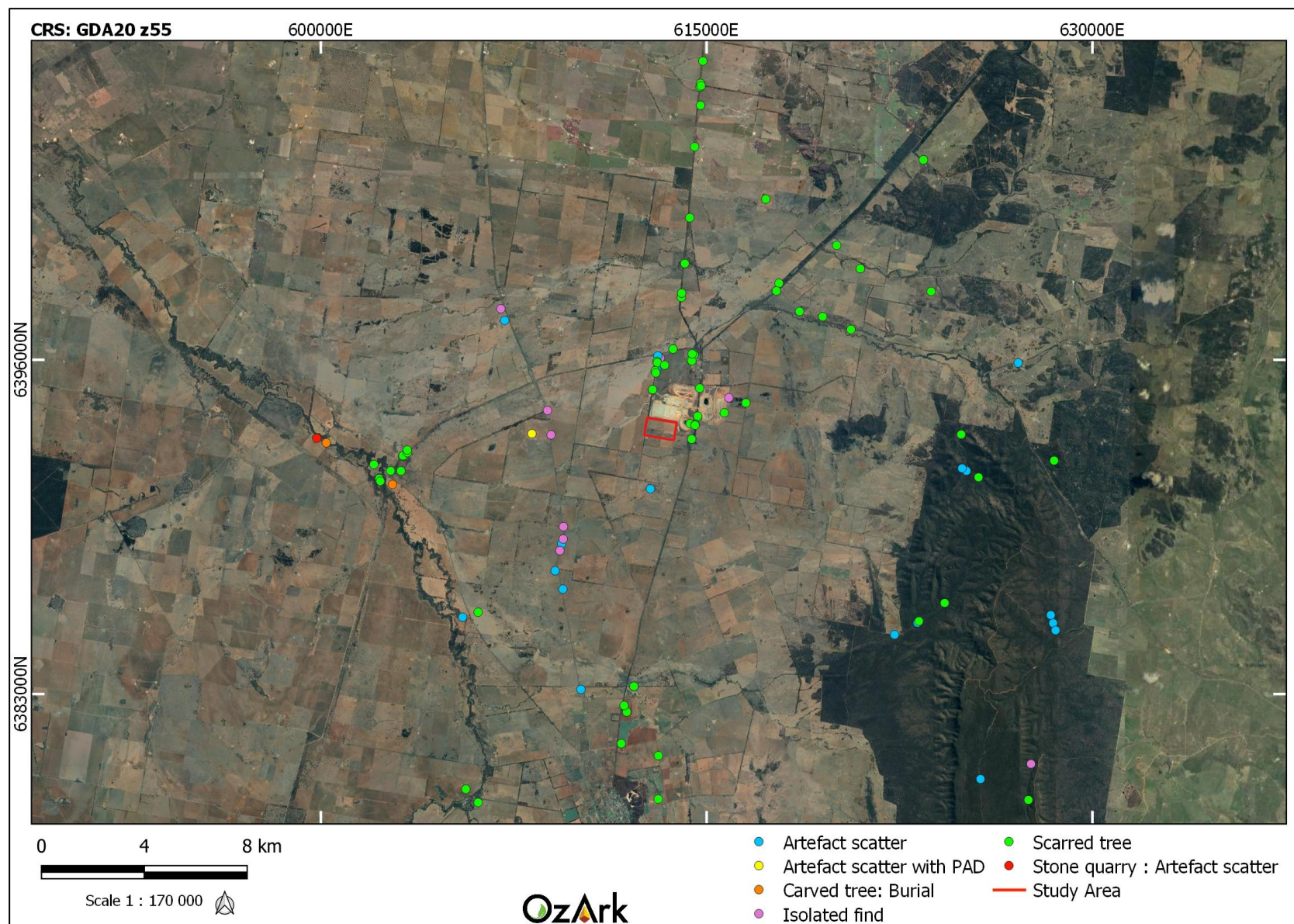
As shown in **Table 5-5**, culturally modified trees are the dominant recorded site type in the local area. Of the culturally modified trees, 66 are scarred trees and seven are carved trees. Two of the carved trees have been recorded in association with potential burials.

**Table 5-5: Site types and frequencies of AHIMS sites near the study area.**

Site Type	Number	% Frequency
Culturally modified trees (scarred or carved)	73	75%
Stone artefact scatter	12	13%
Isolated finds	8	8%
Culturally modified trees; burial	2	2%
Stone artefact scatter with PAD	1	1%
Stone quarry with artefacts	1	1%
<b>Total</b>	<b>97</b>	<b>100%</b>

<sup>1</sup> OzArk has contacted AHIMS to ensure the coordinates of this site are corrected on the database.

Figure 5-1: Location of previously recorded AHIMS sites in relation to the study area.



## 5.5 ARCHAEOLOGICAL CONTEXT: CONCLUSION

Due to the history of archaeological investigation near the study area, there have been a number of sites recorded in the Tomingley area (**Figure 5-1**). These research and development driven studies show that the region's most frequently occurring evidence of Aboriginal activity are culturally modified trees, particularly scarred trees. To a lesser extent, a number of carved trees have also been recorded. The previous studies have shown in a number of cases that culturally modified trees are more likely to be located closer to substantial watercourses and drainage lines, however, as noted by Kelton (1996) and confirmed by OzArk 2003 and 2011, they can be found over almost all landform units, even those distant from water.

Artefact scatters are more likely to be located near permanent and semi-permanent watercourses, particularly on flat or gently sloping landforms, terraces, or on the crests saddles and benches of ridge and spur landforms. Artefact scatters in the area range considerably in size and density from manifestations of several artefacts through to sites containing in excess of 50 artefacts. Larger, more complex scatters are more common within 200 m of the Bogan River, while low-density sites are more common within 100 m of semi-permanent creeks. Scatters found on landforms similar to the study area are generally low-density with 10 or less artefacts and consist largely of un-modified flakes.

To date, the dominant raw lithic material at identified sites is quartz, with additional materials recorded including sandstone, silcrete, chert, granite, volcanic and fine-grained siliceous materials.

Quarries for the procurement of raw materials used to manufacture stone tools are possible if suitable sources of outcropping stone exist, however, this site type is recorded in a low frequency in the region. Quarries in this area are more likely to be basalt quarries.

## 5.6 PREDICTIVE MODEL FOR SITE LOCATION

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including: plant and animal foods; stone and ochre resources and rock shelters; as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral

Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these, however, may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of European farming practices including grazing and cropping, land degradation, and farm related infrastructure. Scarred trees, due to their nature, may survive for up to several hundred years but rarely beyond.

#### **5.6.1 Settlement strategies**

The large number of archaeological studies undertaken within the vicinity of the study area provides information to obtain a sound understanding of the nature and distribution of archaeological sites within the area. Although there is some conjecture about the relationship between stream order, site numbers and densities, the general pattern is that most sites are present close to watercourses and located most commonly on channel and floodplain landforms. Other common landscape types that correlate with the presence of Aboriginal sites are gentle slope landforms and alluvial plain landforms.

#### **5.6.2 Past land use**

Crucial for the preservation of archaeological deposits is the history of past land use in an area. Primary use of the study area is for agricultural practices (grazing and cultivation). Cultivation acts to redistribute artefacts both horizontally and vertically within the soil profile and ultimately destroys the integrity of artefact assemblages within the top 20 to 50 cm of the soil profile. Therefore, any stone artefact sites within the study area are likely to have low integrity.

#### **5.6.3 Previously recorded sites**

The results of past archaeological investigations near the study area indicates that the most common site type will be modified trees, mostly scarred trees, or open camp sites (artefact scatters and/or isolated finds), both of which can occur on a large variety of landforms and are extremely prevalent in region.

#### **5.6.4 Landform modelling**

The OzArk (2016) CWLLS predictive model is most relevant to the study area in determining its archaeological potential. In terms of landscape types, the study area is composed of plains (Bogan Alluvial Plains). The CWLLS predictive model predicts lower numbers of sites within the plains landscapes when compared to the channels and floodplains and slopes landscapes with surround the study area. Artefact sites (including isolated finds and artefact scatters) are the most likely site types to be encountered within the study area.



### 5.6.5 Previous studies

Previous archaeological studies indicate that modified trees and open camp site types are the most likely to be recorded within the area. It has been seen in a number of studies that modified trees are the most common site type in the Lachlan Valley (Kelton 1996, English et al. 1998, OzArk 2016). Modified trees can occur over almost all landforms but increase in likelihood with proximity to a water source. Open camp sites are the second most common site type in the Lachlan Valley and are generally situated within close proximity to water. In the Lachlan Valley sites are most likely to be located in channels and floodplains, followed by slope landforms and followed again by alluvial plain landforms. It is predicted that the most likely site type within the study area are modified trees, specifically along the northern and eastern edges of the study area where the land has not yet been subject to clearing for agricultural purposes. Based on previous findings in the area it is believed there is also a possibility of identifying open camp sites or artefact scatters.

### 5.6.6 Conclusion

Based on knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded within the study area:

- Isolated finds may be indicative of: random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
  - As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the study area.
- Open artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of a background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Artefact scatters comprise only 14% of recorded sites within 15 km of the study area, however, according to OzArk (2016), this site type is the most likely site to be recorded within the plains landscape unit which encompasses the study area.

Findings from the historical documents, largely the journals of early explorers including Oxley, describe larger camps of up to 100 Aboriginal people along the Bogan River, and 'transitory encampments' along semi-permanent creek lines. As the study area's nearest waterway is Gundong Creek (a tributary of Bogan River located over 300 m away) the ethnographic information suggests that only small, less-complex artefact scatters have the likelihood of being recorded.

Artefact scatters are likely to be in a secondary context from disturbances such as erosion and ploughing. It is likely that any sites associated with such landforms are likely to have a low artefact density and a low complexity of tool types as the sites are either one-off events or only infrequently used due to the lack of a permanent or semi-permanent water source and the undifferentiated landforms present. Artefacts are most likely to be manufactured from a variety of materials including quartz, chert, sandstone, silcrete, granite, volcanic and fine-grained siliceous materials.

- Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed because of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.
  - Vegetation within the study area includes remnant eucalypt species. These stands of native vegetation may include trees of a type, age and size well suited to scar-producing activities. While the likelihood of recording this site type increases with proximity to water, Kelton (1996) found that modified trees can be found within all landforms. This site type therefore may be encountered, and it is also noted that this site type was the predominant site type recorded in landforms immediately north of the study area that are distant from water (OzArk 2003 and OzArk 2011).



- Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.
  - One quarry site has been identified within 12 km of the study area (**Figure 5-1**). This site type is not considered likely to be recorded within the Survey Area due to a lack of geological formations.
- Hearths/ovens are often used by Aboriginal people for the preparation of food and would generally be located in the vicinity of available resources, such as water sources to procure fish and shellfish, and on elevated ground to avoid impact from environmental threats.
  - This site type is considered possible in areas where A-Horizon soils are relatively undisturbed. However, given the high levels of disturbance across the study area, the likelihood of identifying this site type is significantly reduced.
- Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.
  - This site type does not necessarily follow landform predictability and are, overall, a rare site type with a low likelihood of being present and remaining extant.
- Burials are generally found in soft sediments such as aeolian sand, alluvial silts and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.
  - Potential burials have been identified in the local area in association with carved trees along the banks of the Bogan River (**Figure 5-1**). These sites are more likely to be found on elevated sandy contexts or in association with rivers and major creeks. No such landscape features exist with the study area and therefore burials are unlikely to occur.

## 5.7 RESEARCH QUESTIONS

Several research questions can meaningfully be applied to the investigation of the study area. These research questions include:

- What resources were available to the Aboriginal people within the study area (food, stone and water)? And what resources were transported into the study area
- What tasks were Aboriginal people undertaking at the sites?
- Did the Aboriginal people use the study area at any particular time of the year?
- Are there hearths in the area? And if so, do they contain remains (animal/plant) that may indicate what people were cooking/eating?

- Are there burials in the area?
- Is there evidence to suggest that Aboriginal people were using the area earlier than the mid to late Holocene?
- Can dates be obtained for the Aboriginal use of the area?

## 6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

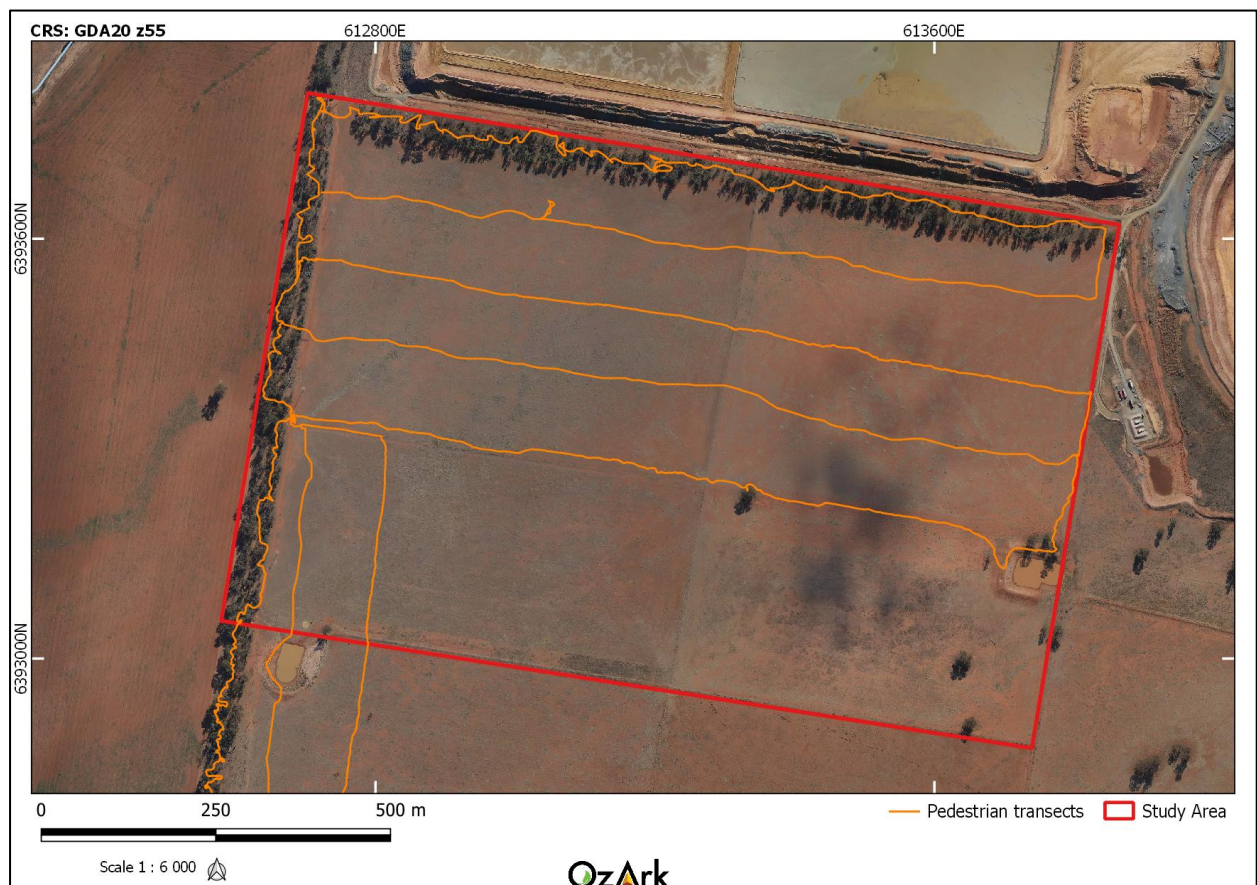
### 6.1 SURVEY AND FIELD METHODS

The archaeological methods utilised in the Aboriginal archaeological assessment followed the Code of Practice. Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004).

The survey of the study area was completed during the assessment for the Tomingley Gold Expansion Project on 1 September 2020. Survey of the study area followed the sampling strategy outlined in the survey methodology (**Appendix 3**).

The majority of the study area was assessed by systematic transects with surveyors spaced approximately 15 to 20 m apart. **Figure 6-1** shows the survey tracks of the two OzArk archaeologists during the survey. As well as the archaeologists, there were four Aboriginal site officers undertaking the survey, so the actual area of survey coverage was greater than is indicated on this figure.

**Figure 6-1: Pedestrian coverage of the study area.**



## 6.2 PROJECT CONSTRAINTS

There were no constraints to the successful completion of the survey. All portions of the study area were able to be accessed and as the study area is primarily grass paddocks across a flat plain, there were no physical impediments to the survey within the study area.

## 6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are ground surface visibility (GSV) and ground surface exposure (GSE). These factors are quantified to ensure that the survey data provides adequate evidence for the evaluation of the archaeological materials across the landscape. For the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice.

GSV is defined as:

*... the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stone ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals' (DECCW 2010: 39).*

GSE is defined as:

*... different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals' (DECCW 2010: 37).*

**Table 6-1** calculates the effective survey coverage within the study area. In general, **Table 6-1** presents an approximation of the amount of ground surface able to be seen at any location within particular landform units. For example, at any one location within the flat landforms of the study area approximately 11% of the ground surface could be seen. Exposures across this landform were generally confined to the tree lines, along fence lines, areas of disturbance such as around the dam and along contour banks and farm tracks (**Plate 1 to 4**). Across the open paddocks there were generally very small to no areas of exposure (**Plate 5 to 7**).

**Table 6-1: Effective survey coverage within the study area.**

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)
1	Flat	890,000	70	15	93,450	10.5%

**Table 6-2** demonstrates that although the survey efficacy was reasonable at approximately 11%, no sites were recorded. As such, the lack of site recordings is due to factors other than survey efficacy (such as landform type, distance to water, past land use etc.).

**Table 6-2: Landform summary—sampled areas.**

Survey Unit	Landform	Landform area (sq m)	Area Effectively Surveyed (sq m) (= Effective Coverage Area)	% of Landform Effectively Surveyed (= Area Effectively Surveyed / Landform x 100)	Number of Sites	Number of Artefacts or Features
1	Plain	890,000	93,450	10.5%	0	0

## 6.4 ABORIGINAL SITES RECORDED

No Aboriginal sites were recorded as a result of the field assessment. Further, no landform within the study area was seen as having potential to contain further, subsurface archaeological deposits due to the high level of disturbance and the undifferentiated landforms present.

## 6.5 DISCUSSION

The predictions based on landform modelling for the study area concluded that isolated finds and artefact scatters were the most likely site types to be identified, although the overall incidence of these sites was predicted to be low due to a number of environmental factors.

The lack of Aboriginal sites within the study area highlight that occupation of this area in antiquity by Aboriginal people would most likely have been limited to transient inhabitation resulting from movement across the landscape. This result and lack of occupational evidence found is unsurprising given the study area is situated on flat terrain significantly distant from permanent or semi-permanent water sources and homogeneity of the landforms and geological resources; i.e. there are no distinctive or 'special' resources as compared with much of the wider landscape. As described in the regional and local archaeological contexts and the predictive model for site location, watercourses formed an important focus for traditional Aboriginal activities and the study area does not possess any water sources that would have attracted repeated occupation.

### 6.5.1 Research questions

As no Aboriginal sites were recorded in the study area, the research questions posed in **Section 5.7** are unable to be addressed due to lack of evidence.

## 6.6 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROPOSED MODIFICATION

No Aboriginal sites were identified during the fieldwork. Therefore, there will be no impact to Aboriginal cultural heritage from the Proposed Modification.

## **HISTORIC HERITAGE ASSESSMENT**

---

This page has intentionally been left blank.

---

## 7 HISTORIC HERITAGE ASSESSMENT: INTRODUCTION

---

### 7.1 BRIEF DESCRIPTION OF THE PROPOSED MODIFICATION

Please refer to **Sections 1** and **2** for a description of the Proposed Modification and the environmental context of the study area.

### 7.2 RELEVANT LEGISLATION

#### 7.2.1 State legislation

##### ***Environmental Planning and Assessment Act 1979*** (EP&A Act)

Please refer to **Section 3.3.1** for a description of the EP&A Act.

##### ***Heritage Act 1977*** (Heritage Act)

The *Heritage Act 1977* (Heritage Act) is applicable to the current assessment. This Act established the Heritage Council of NSW. The Heritage Council's role is to advise the government on the protection of heritage assets, make listing recommendations to the Minister in relation to the State Heritage Register (SHR), and assess/approve/decline proposals involving modification to heritage items or places listed on the SHR. Most proposals involving modification are assessed under Section 60 of the Heritage Act.

Automatic protection is afforded to 'relics', defined as 'any deposit or material evidence relating to the settlement of the area that comprised New South Wales, not being Aboriginal settlement, and which holds state or local significance' (note: formerly the Act protected any 'relic' that was more than 50 years old. Now the age determination has been dropped from the Act in 1999 and relics are protected according to their heritage significance assessment rather than purely on their age). Excavation of land on which it is known or where there is reasonable cause to suspect that 'relics' will be exposed, moved, destroyed, discovered or damaged is prohibited unless ordered under an excavation permit.

#### 7.2.2 Commonwealth legislation

##### ***Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act)

Please refer to **Section 3.3.2** for a description of the EPBC Act.

#### 7.2.3 Applicability to the Proposed Modification

The Proposed Modification will be assessed under Section 4.55(2) of the EP&A Act.

Any items of local or state historical heritage significance within the study area are afforded legislative protection under the Heritage Act.



It is noted there are no Commonwealth or National heritage listed places within the study area, and as such, the heritage provisions of the EPBC Act do not apply.

### **7.3 HISTORIC HERITAGE ASSESSMENT OBJECTIVES**

The current assessment will apply the Heritage Council's *Historical Archaeology Code of Practice* (Heritage Council 2006) in the completion of a historical heritage assessment, including field investigations, to meet the following objectives:

- Objective One:** To identify whether historical heritage items or areas are, or are likely to be, present within the study area
- Objective Two:** To assess the significance of any recorded historical heritage items or areas
- Objective Three:** Determine whether the Proposed Modification is likely to cause harm to recorded historical heritage items or areas
- Objective Four:** Provide management recommendations and options for mitigating impacts.

### **7.4 DATE OF HISTORIC HERITAGE ASSESSMENT**

The historic heritage assessment took place at the same time as the Aboriginal heritage assessment. Please refer to **Section 3.1** for the date of the fieldwork.

### **7.5 OZARK INVOLVEMENT**

The fieldwork and reporting of the historic heritage assessment are the same personnel involved with the Aboriginal heritage assessment. Please see **Section 3.2** for details.

## 8 HISTORIC HERITAGE ASSESSMENT: BACKGROUND

### 8.1 HISTORY OF TOMINGLEY AND SURROUNDS

The name 'Tomingley' first appears in the Government Gazette of 1848 naming a run of 22,400 acres claimed by J. Gilmore and covering the entirety of modern Tomingley (Mewburn 1982: 8). The name Tomingley is said to have been after an early settler of the area, Tom Ingley (Cook and Garvey 1999: 271).

The earliest roads in the area followed waterways where possible, and the road from the Bulgandramine on the Bogan River to the east towards Obley and onto Wellington had as its first stop, at place called Ten Mile Holes on Gundong Creek. This was the first place after leaving the Bogan where water could predictably be found on the journey east. Ten Mile Holes, therefore, provided a camping place for travellers and later for teams who were carting ore from the Cobar mines to Orange before the railway (Mewburn 1982: 11).

Gold was discovered in Tomingley in 1879, ten years before it was found in Peak Hill. By 1883, Bill Reakes and Jim Smith had two sunk exploration shafts that found reefs at 65 feet and 25 feet depth respectively and the quality of the gold was high enough for the establishment of a community to service the gold mining (Mewburn 1982: 12). In 1883 the Tomingley Gold Mining Company was established and installed a 15 head stamper (crusher) and once some rain had come to fill the dams they had created (immediately west of the edge of Modern Tomingley) it and the Star Gold Mining Company had excellent returns (Cook and Garvey 1999: 271). Although Tomingley was then proclaimed a village in 1884 (Chappel 1989:19), mining did slow somewhat in this year, forcing the closure of one store, although two hotels, two stores and school remained open, the latter educating 33 children in 1884 (Cook and Garvey 1999: 272).

### 8.2 LOCAL CONTEXT

#### 8.2.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously recorded heritage within the study area. The results of this search are summarised in **Table 8-1**.

**Table 8-1: Historic heritage: desktop-database search results.**

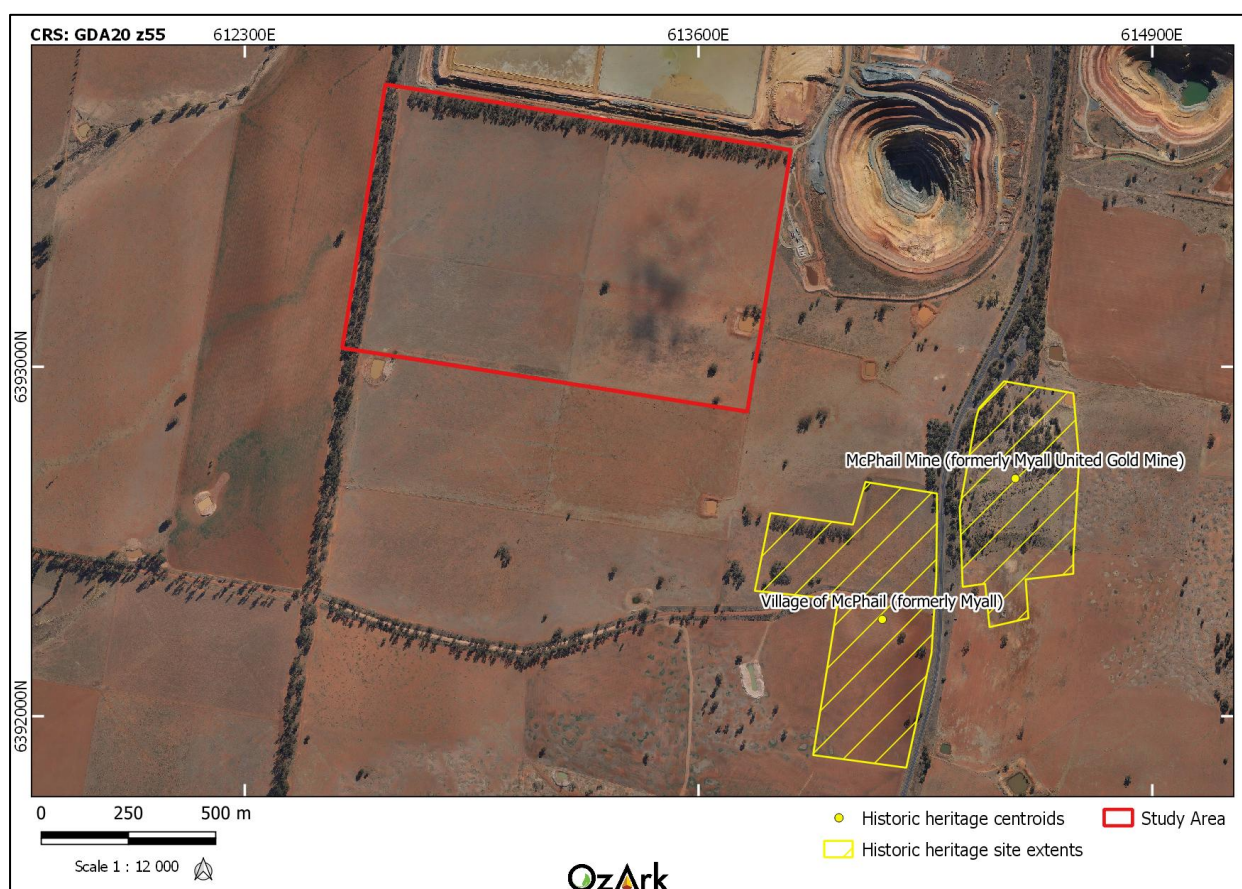
Name of Database Searched	Date of Search	Type of Search	Comment
National and Commonwealth Heritage Listings	1/7/2020	Narromine LGA	No places listed on either the National or Commonwealth heritage lists are located within the study area.
State Heritage Listings	1/7/2020	Narromine LGA	No items on the SHR are located within or near the study area.

Name of Database Searched	Date of Search	Type of Search	Comment
Section 170 Heritage and Conservation Register	1/7/2020	Narromine LGA	No items on the Section 170 Register are located within or near the study area.
Local Environmental Plan (LEP)	1/7/2020	Narromine LEP of 2011	None of the listed items occur near the study area.

A search of the Heritage Council of NSW administered heritage databases and the Narromine LEP returned no records for historical heritage sites within the designated search area.

Despite no historic heritage sites being listed within or near to the study area, two historic heritage sites which have been assessed as having local heritage values are located near to the study area: the village of McPhail and the McPhail Mine (OzArk 2011 and OzArk 2020). The closest of these two sites is the village of McPhail, 300 m to the south east of the study area (**Figure 8-1**). Due to the proximity of local historic heritage sites to the study area there is a possibility for the occurrence of historic heritage sites within the study area which might be associated with some historic themes related to these sites (i.e. the development of local and/or regional economy through channels such as mining or agriculture).

**Figure 8-1: Location of the village of McPhail and the McPhail Mine in relation to the study area.**



## **9 RESULTS OF HISTORIC HERITAGE ASSESSMENT**

---

### **9.1 SURVEY METHODOLOGY**

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004). The historic heritage assessment occurred concurrently with the Aboriginal heritage survey. Refer to **Section 6.1** for full details of survey coverage. No historic heritage sites were identified during the survey.

### **9.2 RECORDED HISTORIC HERITAGE SITES**

No historic heritage items were identified during the fieldwork.

### **9.3 DISCUSSION**

Due to the proximity of local historic heritage sites to the study area it was assessed there was a possibility for the occurrence of historic heritage sites within the study area and that it might be associated with some historic themes (i.e. the development of local and/or regional economy through channels such as mining or agriculture). However, no historic heritage sites were identified as a result of the field survey.

The lack of historic heritage sites within the study area is likely attributed to the past use and nature of the study area which includes agricultural and pastoral activities. Aside from modifications to the environment (most visibly, vegetation clearing and ploughing), enclosure of land, and the establishment of farm infrastructure, farming leaves few traces in the form of artefacts dispersed throughout the area. Artefacts, when located, are more likely to consist of dropped/discarded equipment rather than extensive concentrations of artefacts. Such items are relatively unobtrusive, and their identification is subject to factors such as GSV. While GSV was low to moderate across the study area (**Section 6.3**), it is unlikely that artefacts of local or state significance are present.

### **9.4 LIKELY IMPACTS TO HISTORIC HERITAGE FROM THE PROPOSED MODIFICATION**

As no sites were recorded during the survey, it has been assessed that there are no likely impacts to historic heritage sites.

---

## 10 RECOMMENDATIONS

---

### 10.1 ABORIGINAL CULTURAL HERITAGE

Under Section 89A of the NPW Act it is mandatory that all newly-recorded Aboriginal sites be registered with AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that no Aboriginal sites were recorded during the assessment.

The following recommendations are made based on these impacts and with regard to:

- Legal requirements under the terms of the NPW Act whereby it is illegal to damage, deface or destroy an Aboriginal place or object without the prior written consent of Heritage NSW
- The findings of the current investigations undertaken within the study area
- The interests of the Aboriginal community.

Recommendations concerning Aboriginal cultural values within the study area are as follows:

1. All land and ground disturbance activities must be confined to within the defined study area, as this will eliminate the risk of harm to Aboriginal objects in adjacent landforms. Should the parameters of the Proposed Modification extend beyond the assessed areas, then further archaeological assessment may be required.
2. Work crews should undergo cultural heritage induction as per Section 16 of the *Tomingley Gold Operations Cultural Heritage Management Plan* (CHMP) to ensure they recognise Aboriginal artefacts and are aware of the legislative protection of Aboriginal objects under the NPW Act.
3. Should Aboriginal artefacts or human skeletal material be uncovered during works within the study area, all work should cease and Section 7.3.3 of the CHMP should be followed.

### 10.2 HISTORIC HERITAGE

The following recommendations are made based on the impacts associated with the Proposed Modification and with regard to:

- Legal requirements under the terms of the Heritage Act
- Guidelines presented in the *Burra Charter*
- The findings of the current assessment
- The interests of the local community.

Recommendations concerning the historic values within study area are as follows.

4. The activities associated with the Proposed Modification can proceed without further historic heritage investigation provided that all ground disturbance activities are confined to within the study area. If the parameters of the proposed activity extend beyond the study area, then further archaeological assessment may be required.
5. Work crews should undergo a heritage induction as per Section 8 of the CHMP to ensure they understand the legislative protection requirements for historic sites and items in NSW and the relevant fines for non-compliance.
6. Should historic heritage items or human skeletal material be uncovered during works within the study area, all work should cease and Section 7.3.3 of the CHMP should be followed.

## REFERENCES

- Bayly 1999 Bayly, I. A. E. 1999. Review of how indigenous people managed for water in desert regions of Australia. *Journal of the Royal Society of Western Australia* 82.1: 17-25.
- BoM 2020 Bureau of Meteorology. 2020. [www.bom.gov.au](http://www.bom.gov.au). Accessed online 15 April 2020.
- Burke & Smith 2004 Burke, H. and Smith, C. 2004. *The Archaeologist's Field Handbook*, Blackwell, Oxford.
- Burra Charter 2013 International Council on Monuments and Sites 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*.
- Chappel 1989 Chappel, C.B. 1989. *A History of Peak Hill and District*. NSW Bicentennial Council.
- Cook 1995 J.M. Cook P/L 1995. *Environmental Impact Statement for Proposed Tailings Reprocessing Operation at Tomingley, NSW*. A Report for Tailings Treatment P/L.
- Cook and Garvey 1999 Cook, K. and Garvey, D. 1999 *The Glint of Gold: A History and Tourist Guide of the Gold Fields of Central West NSW*. Genlin Investments, Pymble, Sydney, Australia.
- DECCW 2010 Department of Environment, Climate Change and Water, Sydney (now OEH). *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.
- DECCW 2010b Department of Environment, Climate Change and Water, Sydney (now OEH). *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.
- English et al 1998 English, Anthony, Sharon Veale, Jo Erskine and John Robinson 1998. *Goobang National Park Cultural Heritage Assessment*. Cultural Heritage Services Division, NSW National Parks and Wildlife Service.
- Etheridge 1918 Etheridge, R. 1918. *The Dendroglyphs, or "Carved Trees" of New South Wales*. Memoirs of the Geological Survey of NSW, Ethnological Series 3.
- Frink 1984 Frink, DS. 1984, "Artifact Behaviour within the Plow Zone", *Journal of Field Archaeology*, Vol. 43, pp. 734-740.
- Garnsey 1942 Garnsey, E. J., 1942. *A treatise on the Aborigines of Dubbo and District: their camp life, habits and customs*. Dubbo Museum and Historical Society. Horton 2007.

Gaynor 2001	Gaynor, P.J. 2001. <i>Three seasons of cultivating stone artefacts with farming implements in NSW</i> . < <a href="http://www.archeo.biz/fxp.html">http://www.archeo.biz/fxp.html</a> >, Accessed 14 June 2013.
Heritage Council 2006	Heritage Office of the Department of Planning (now OEH). <i>Historical Archaeology Code of Practice</i> .
Heritage Office 2001	<i>Assessing Heritage Significance</i> .
Horton 1994	Horton, David (ed.). 1994. <i>The Encyclopaedia of Aboriginal Australia</i> . Canberra: Aboriginal Studies Press.
Kelton 1996	Kelton, J. 1996. <i>Aboriginal Archaeological Sites in the Lachlan Valley</i> . Report to National Parks and Wildlife Services.
Koettig 1985	Koettig, M. 1985. <i>Assessment of Aboriginal sites in the Dubbo City area</i> . Report to Dubbo City Council.
Mewburn 1982	Mewburn, C.H. 1982. <i>Tomingley Centenary: A History of Tomingley and District</i> . Tomingley Centenary Committee.
Mitchell 2002	Mitchell, Dr. P. 2002. <i>Description for NSW (Mitchell) Landscapes Version 2</i> . Department of Environment and Climate Change NSW.
Navin Officer 1997	Navin Officer. 1997. <i>Marsden – Parkes Natural Gas Pipeline</i> . Report to AGL.
Neyland 2016	Neyland, A.K. 2016. <i>Lost in Time but not in Space: High Resolution Geoarchaeology of Knapping Floors and Artefact Scatters in the Roxby Dunefield, Arid South Australia</i> . Unpublished PhD Thesis.
OEH 2011	Office of Environment and Heritage 2011. <i>Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW</i> .
OzArk 2003	OzArk Environment & Heritage. 2003. <i>Newell Highway Pavement Rehabilitation at Tomingley</i> . Report to Roads and Traffic Authority.
OzArk 2011	OzArk Environment & Heritage. 2011. <i>Tomingley Gold Project Cultural Heritage Assessment</i> . Report to Alkane Resources Pty Limited.
OzArk 2012	OzArk Environment & Heritage. 2012. <i>Aboriginal Heritage Assessment: HW17 Newell Highway, Trewilga Realignment</i> . Report to Roads and Maritime Services, Parkes.
OzArk 2016	OzArk Environment and Heritage. 2016. <i>Central West Local Land Services Travelling Stock Reserves Study</i> . Report to Central West Local Land Services.



OzArk 2020	OzArk Environment & Heritage. 2020. <i>Aboriginal Cultural and Historic Heritage Opportunities and Constraints Report: Tomingley Gold Extension Project</i> . Report to Alkane Resources Pty Limited.
Tindale 1974	Tindale, A. 1974. <i>Aboriginal Tribes of Australia</i> . University of California Press.
Tindall 1982	Tindall, 1982. <i>Parkes: One Hundred Years of Local Government</i> . Griffin Press Limited, Netley, South Australia.
Umwelt 2017	Umwelt Australia Pty Ltd. 2017. <i>Inland Rail- Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment</i> . Report to ARTC.
Unger (ND)	Unger, L.A. No Date. <i>Aboriginal activity in the Parkes district</i> . Parkes & District Historical Society.
White 1986	White, I. 1986. <i>Dimensions of Wiradjuri</i> . Unpublished Thesis. Department of Prehistory and Anthropology. Australian National University.
Whitehead 2003	Whitehead, J. 2003, <i>Tracking and Mapping The Explorers Volume 1 The Lachlan River Oxley, Evans, and Cunningham</i> , Southern Cross University Printery: Lismore.

## PLATES



Plate 1: View west across the study area showing an area with a moderate area of exposure.



Plate 2: View north along a corridor of mature and regrowth vegetation along the western boundary of the study area.





Plate 3: View south to remnant trees surrounding a dam in the east of the study area.



Plate 4: View west across the study area from the dam in the east.



Plate 5: View east across a flat, previously cultivated paddock in the north of the study area.



Plate 6: View north west from the east of the study area showing the embankment of RSF1 in the background (behind tree line).





Plate 7: View west across the study area towards the vegetated corridor in the west.

## APPENDIX 1: COMMUNITY CONSULTATION

### Consultation log

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
24.3.20	Daily Liberal	Rebecca Hardman (RH) rang - newspaper is printed daily, Proof needs to be finalised by 1pm the day prior.	phone
24.3.20	Daily Liberal	RH sent ad off to the newspaper	email
24.3.20	BCD	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
24.3.20	Peak Hill Local Aboriginal Land Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
24.3.20	Office of The Registrar, ALRA	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
24.3.20	National Native Title Tribunal	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
24.3.20	NTSCORP	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
24.3.20	Narromine Shire Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
24.3.20	Central West Local Land Services	RH sent stage1 agency letter requesting potential stakeholders. Closing date 7.4.20	email
25.3.20	Daily Liberal	RH received proof	email
25.3.20	Daily Liberal	RH phoned, approved advert and paid over phone. Tammy will send copy of receipt and tear sheet	phone
25.3.20	Daily Liberal	RH received receipt	email
26.3.20	Daily Liberal	RH received tear sheet	email
26.3.20	Daily Liberal	RH thanked Tammy	email
26.3.20	National Native Title Tribunal	RH received notification <i>Records held by the National Native Title Tribunal as at 25 March 2020 indicate that the identified parcel Lot 43 on DP755093 appears to be freehold, and freehold tenure extinguishes native title</i>	email
7.4.20	BCD	RH received stakeholder list	email
8.4.20	Stakeholder 1	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	email
8.4.20	John Shipp	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Peak Hill Local Aboriginal Land Council	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	email
8.4.20	Paul Brydon	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	email
8.4.20	Peter Peckham	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Wiradjuri Council of Elders	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	email
8.4.20	Trevor Robinson	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Wiradjuri Interim Working Party	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	David Smith	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
8.4.20	Gary Smith	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Michael Smith	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Peter Chatfield	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Raymond Thomas Smith	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	William Smith	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	Post
8.4.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	email
8.4.20	Tubba-Gah Aboriginal Corporation	RH sent EOI. RSVP closes 27.4.20 - Extended for Easter	email
8.4.20	Tubba-Gah Aboriginal Corporation	RH received email registering as a RAP	email
8.4.20	Stakeholder 1	RH received email registering as a RAP	email
9.4.20	Tubba-Gah Aboriginal Corporation	RH thanked Geoff	email
9.4.20	Stakeholder 2	RH received email registering as a RAP	email
14.4.20	Stakeholder 2	RH confirmed registration	email
15.4.20	Paul Brydon	Registered as a RAP	email
22.4.20	Jay & Warren Daley	RH received letter they sent to Narramine Shire Council expressing interest to register as a RAP.	email
27.4.20	Jay & Warren Daley	RH phoned to register and confirm contact details - Left message	Phone
27.4.20	Jay & Warren Daley	RH received call back, confirmed contact details	Phone
29.4.20	Tubba-Gah Aboriginal Corporation	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	Peak Hill Local Aboriginal Land Council	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	Stakeholder 1	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	Stakeholder 2	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	Paul Brydon	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	Jay & Warren Daley	RH sent Stage 2. Feedback ends 27.5.20	email
29.4.20	BCD	RH sent notification of RAPs	email
29.4.20	Peak Hill Local Aboriginal Land Council	RH sent notification of RAPs	email
29.4.20	BCD	RH received thanks	email
30.4.20	Jay & Warren Daley	RH received call from Jay, has not received stage 2 pkg yet. Rh advised has been sent, clarified email address, all ok. Jay to check junk mail and call RH back on Monday if cannot find	phone
5.5.20	Tubba-Gah Aboriginal Corporation	RH received feedback	email
20.5.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email registering as a RAP	email
21.5.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent stage 2 for feedback and confirmed registration	email
21.5.20	BCD	RH sent updated notification of RAPs	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
21.5.20	Peak Hill Local Aboriginal Land Council	RH sent updated notification of RAPs	email
23.5.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email asking why not contacted to register and where project is up to	email
25.5.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned - left message saying will reply to email instead	phone
25.5.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH emailed explaining process and where project is up to, also noted they were not listed on BCD stakeholder list. Recommended to contact BCD	email
25.5.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH had phone call from Karry clarifying process and why left off list	Phone
22.6.20	Tubba-Gah Aboriginal Corporation	RH sent invite to fieldwork. RSVP 29.6.20	email
22.6.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH sent invite to fieldwork. RSVP 29.6.20	email
22.6.20	Peak Hill Local Aboriginal Land Council	RH sent invite to fieldwork. RSVP 29.6.20	email
22.6.20	Paul Brydon	RH sent invite to fieldwork. RSVP 29.6.20	email
22.6.20	Jay & Warren Daley	RH sent invite to fieldwork. RSVP 29.6.20	email
22.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent invite to fieldwork. RSVP 29.6.20	email
22.6.20	Peak Hill Local Aboriginal Land Council	RTS	RTS
22.6.20	Peak Hill Local Aboriginal Land Council	RH phoned landline - N/A	Phone
22.6.20	Peak Hill Local Aboriginal Land Council	RH phoned Mobile - N/A	Phone
22.6.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH received response from Lewis: <i>Workers Compensation "Statement of Cover" to June 30th 2021 is attached as requested.</i>  <i>FYI - All emails sent to info@tubba-gah.org will automatically be forwarded to all board members with an email address.</i>	email
22.6.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH thanked Lewis and asked when site officer assigned to send name and contact number	email
22.6.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH received email from Coral: <i>Tomingly is not on Tubba Gah Maine Wiradjuri homelands.</i>  <i>Therefore you should be consulting with the Peak Hill mob, maybe Karryn Schaefer can help you there.</i>	email
22.6.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH thanked Coral and noted to disregard invite	email
23.6.20	Paul Brydon	RH received email noting he has sickness and accident policy as a sole trader	email
23.6.20	Paul Brydon	RH received copy of sickness and accident policy	email
23.6.20	Jay & Warren Daley	SR received call re workers insurance, RH to call back	email
23.6.20	Peak Hill Local Aboriginal Land Council	RH phoned landline - N/A	Phone
23.6.20	Peak Hill Local Aboriginal Land Council	RH phoned Mobile - N/A	Phone



Aboriginal Consultation Log			
Date	Organisation	Comment	Method
23.6.20	Western Zone NSW Aboriginal Land Council	RH phoned to ask for contact details for Peak Hill LALC. Did not have alternative number, suggested RH call head office	Phone
23.6.20	Head Office NSW Aboriginal Land Council	RH phoned to ask for contact details for Peak Hill LALC.	Phone
23.6.20	Peak Hill Local Aboriginal Land Council	RH phoned previous sit officer, Anthony. He will chase someone up and ask them to call us	Phone
23.6.20	Peak Hill Local Aboriginal Land Council	RH phoned previous sit officer, Anthony. He will chase someone up and ask them to call us	Phone
23.6.20	Peak Hill Local Aboriginal Land Council	Anthony phoned back, said Keesha is looking after LALC and will check email. RH mentioned may not have received as email bounced back. Anthony asked for it to be sent to him and he will chase up	Phone
23.6.20	Peak Hill Local Aboriginal Land Council	RH sent invite to fieldwork to Anthony	email
23.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received response to tubba -gah maing email: <i>Thanks Aunt We are already in consultations with Rebecca, I've already expressed that Tomingley is within the Peak Hill community. not sure if Rebecca was listening though!.</i>	email
23.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received phone call from Karryn, asking why not consulted. RH explained had sent same invite on the same day to her. Check Junk emails and advise if cannot find	phone
23.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email noting cannot find	email
23.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH checked email against the registered email address, Karryn is using different email address to the one she registered. RH forwarded invite top both emails and requested Karryn confirm which email address she would like future correspondence sent to	email
23.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email noting received	email
23.6.20	Tubba-Gah Aboriginal Corporation	RH received confirmation of attendance	email
24.6.20	Jay & Warren Daley	RH received call from Leanne, will be going through GetSet	email
25.6.20	GetSet	RH sent copy of fieldwork invite to Frank at GetSet	email
25.6.20	GetSet	RH phoned to confirm with Frank, he is happy to cover	Phone
25.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received apology	email
25.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email: <i>Our organisation does not have a current workers compensation certificate as we do not have anyone employed. It is our belief that we would be exempt under the \$7,500 threshold, below are our details if you need verification.  I haven't really dealt with this before so Im not real sure about "Where to from here" ? Please contact me ASAP if there is anything further that we need to discuss or provide</i>	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
25.6.20	Tubba-Gah Aboriginal Corporation	Stephanie Rusden (SR) received a call from Geoff. Greg Nolan will be the site officer. Geoff will send through contact details.	email
30.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent email: <i>Thank you for confirming that, for this particular job we have been requesting that if an organisation cannot supply workers compensation that they be engaged under a third party employer. We are happy for you to seek your own for workers compensation coverage, however one we regularly use and is currently being used by other RAPs for this project is SMGT.</i>  <i>Should you like to go through SMGT, we generally talk to Frank, his number is 0447 538 700 or 6953 8727.</i>  <i>Please let me know if you need any help getting this organised.</i>	email
30.6.20	Tubba-Gah Aboriginal Corporation	RH sent survey methodology update for their information	email
30.6.20	Peak Hill Local Aboriginal Land Council	RH sent survey methodology update for their information	email
30.6.20	Stakeholder 1	RH sent survey methodology update for their information	email
30.6.20	Stakeholder 2	RH sent survey methodology update for their information	email
30.6.20	Paul Brydon	RH sent survey methodology update for their information	email
30.6.20	Jay & Warren Daley	RH sent survey methodology update for their information	email
30.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent survey methodology update for their information	email
30.6.20	Peak Hill Local Aboriginal Land Council	RH phoned landline - disconnected	phone
30.6.20	Peak Hill Local Aboriginal Land Council	RH phoned mobile - disconnected	phone
30.6.20	Peak Hill Local Aboriginal Land Council	RH phoned Anthony confirmed he will be attending fieldwork and that he will chase up copy of workers comp tomorrow. RH also confirmed he is able to answer no to all the COVID 19 questions	phone
30.6.20	Paul Brydon	RH phone Paul, confirmed fieldwork days, had to change days as unavailable on 8th and 9th. RH to send updated fieldwork invite.	Phone
30.6.20	Jay & Warren Daley	RH phoned and spoke to leanne, confirmed will be ok to answer No for all COVID questions. Offered extra days, put as confirmed Jay will call if not available. RH to send updated letter to 3rd party employer	Phone
30.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned and confirmed attendance, discussed workers comp requirements and 3rd party employer. RH to send updated letter to Karry and Frank. Karryn will look into costs for workers comp for group rather than 3rd party. RH to call tomorrow to find out which way wants to go.	Phone
30.6.20	Tubba-Gah Aboriginal Corporation	RH phoned and spoke to Geoff, unsure if will be able to do extra day, will confirm mid-week with SR on site.	Phone
30.6.20	Paul Brydon	RH sent updated fieldwork invite	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
30.6.20	Jay & Warren Daley	RH sent updated fieldwork invite	email
30.6.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent updated fieldwork invite	email
2.7.20	Peak Hill Local Aboriginal Land Council	SR received phone call asking what they need to send through	phone
2.7.20	Peak Hill Local Aboriginal Land Council	Harrison Rochford (HR) received call, RH to call back	phone
2.7.20	Peak Hill Local Aboriginal Land Council	RH phoned back, Keesha noted is trying to get copy of workers comp but not yet received, RH advised cannot go on site without copy. Keesha to chase up and send through ASAP	phone
2.7.20	Paul Brydon	RH received call advising that he was withdrawing from fieldwork.	email
2.7.20	Peak Hill Local Aboriginal Land Council	RH phoned Keesha - N/A	phone
2.7.20	Peak Hill Local Aboriginal Land Council	RH phoned Anthony, he advised Lyn will be the site officer as he has to work. Anthony was under the impression Keesha had sent workers comp to OzArk. RH advised had not received and when spoke to Keesha she was still chasing. RH advised Anthony Lyn cannot attend without a copy being received. Anthony said will chase up tomorrow and have Lyn call us, to give her contact number. RH offered to give contact details for 3rd party employer as an alternative, Lyn to advise tomorrow if she would like to go ahead with that option	phone
2.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned and spoke to Karryn, confirmed she is attending and will be covered under Tubba-Gah Maing workers compensation. RH requested an email from the Tubba-Gah maing group confirming they are happy to cover her. Karryn will get that through today	email
2.7.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH received email from Nathan: <i>The majority of Directors have agreed that on this occasion we are happy for Karryn to be engaged to conduct the site survey in Tomingley.</i>  <i>I will ask our accountant to initiate to process in terms of her engagement.</i>	email
3.7.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH thanked Nathan and sent copy of fieldwork invite for Karryn with invoicing details	email
3.7.20	Paul Brydon	RH phoned Paul to confirm if he would like to attend or not. Paul declined offer	email
3.7.20	Tubba-Gah Aboriginal Corporation	RH phoned Geoff - N/A	Phone
3.7.20	Jay & Warren Daley	RH phoned Leanne to ask if they had received a letter from Karry and confirm attendance. Offered extra fieldwork days. Leanne confirmed available. RH to send updated letter	email
3.7.20	Tubba-Gah Aboriginal Corporation	RH phoned Geoff confirmed he had not received a letter and will be attending	Phone
3.7.20	Peak Hill Local Aboriginal Land Council	RH phoned, spoke to receptionist, asked to pass on message asking for update on workers comp and Keesha to call RH back	phone
3.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH emailed Karry confirming Tubba Gah Maing will cover her for workers comp and that we will pay the Tubba Gah Maing and they will pay her.	email
3.7.20	Peak Hill Local Aboriginal Land Council	RH received call to confirm email address and contact number for site officer	phone

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
3.7.20	Peak Hill Local Aboriginal Land Council	RH received copy of workers compensation	email
3.7.20	Peak Hill Local Aboriginal Land Council	RH phoned site officer and confirmed days and extra days. RH to send updated letter to LALC only.	email
3.7.20	Peak Hill Local Aboriginal Land Council	RH sent updated fieldwork invite letter	email
3.7.20	Jay & Warren Daley	RH sent updated fieldwork invite letter with Frank copied in	email
3.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received thanks	email
8.7.20	GetSet	RH received call asking to confirm attendance for Jay or Warren	Phone
8.7.20	GetSet	RH phoned back and Confirmed Jay attended both Monday and Tuesday of the first week	Phone
8.7.20	GetSet	Sheridan Baker (SB) received invoice	email
12.7.20	Peak Hill Local Aboriginal Land Council	SR called Lyn to advise fieldwork would be postponed due to rain. SR would advise revised dates	Phone
12.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	SR called Karryn to advise fieldwork would be postponed due to rain. SR would advise revised dates	Phone
12.7.20	Jay & Warren Daley	SR called Lee-anne to advise fieldwork would be postponed due to rain. SR would advise revised dates	Phone
13.7.20	Tubba-Gah Aboriginal Corporation	RH received invoice	email
13.7.20	Tubba-Gah Aboriginal Corporation	RH thanked Geoff	email
13.7.20	Jay & Warren Daley	SR sent Jay an email advising that fieldwork had not yet been rescheduled and would advise when a date had been set	email
13.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	SR emailed Karryn asking what her availability was for the rest of the week	email
13.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	SR received an email from Karryn saying she was free to work the rest of the week depending on the date of the funeral. She advised she would let us know when the date is set but thought it would be early next week.	email
13.7.20	Jay & Warren Daley	SR sent Jay an email advising that fieldwork had not yet been rescheduled and would advise when a date had been set	email
15.7.20	Jay & Warren Daley	RH phoned Leanne - N/A	Phone
15.7.20	Jay & Warren Daley	RH phoned Jay and confirmed both he and Warren will attend fieldwork on Friday	Phone
15.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned - N/A	email
15.7.20	Peak Hill Local Aboriginal Land Council	RH phoned Lyn and confirmed will attend fieldwork this Friday	Phone
15.7.20	GetSet	RH received call asking to confirm attendance for Jay or Warren	Phone
15.7.20	GetSet	RH phoned back and Confirmed Jay attended Wed, Thurs and half of Friday	Phone
15.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	Karry called and confirmed will attend fieldwork for this Friday	email
15.7.20	GetSet	RH received invoice	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
21.7.20	Peak Hill Local Aboriginal Land Council	RH phoned and spoke to Lyn, confirmed she will be available for Tues 28th and Wed 29th to attend fieldwork	Phone
21.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	Emailed to see if available for Fieldwork 28th and 29th	email
21.7.20	Jay & Warren Daley	Emailed to see if available for Fieldwork 28th and 29th	email
21.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	Karryn confirmed will attend	email
22.7.20	Jay & Warren Daley	RH phoned and confirmed will attend fieldwork 28th and 29th	email
22.7.20	GetSet	RH received call asking to confirm attendance for Jay or Warren	Phone
22.7.20	GetSet	RH received invoice	email
27.7.20	Jay & Warren Daley	RH phoned and cancelled fieldwork for 28th and 29th	email
27.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned and left message for call back to cancelled fieldwork for 28th and 29th	email
27.7.20	Peak Hill Local Aboriginal Land Council	RH phoned and cancelled fieldwork for 28th and 29th	Phone
27.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned and cancelled fieldwork for 28th and 29th	email
28.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email clarifying invoice	email
28.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent info for invoicing	email
30.7.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received thanks	email
5.8.20	Peak Hill Local Aboriginal Land Council	RH received invoice to date	email
6.8.20	Peak Hill Local Aboriginal Land Council	RH sent back edits to invoice	email
6.8.20	Peak Hill Local Aboriginal Land Council	RH received invoice	email
6.8.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH received invoice for Karryn	email
13.8.20	Peak Hill Local Aboriginal Land Council	RH phoned and confirmed attending fieldwork 1& 2 Sept 2020. asked to be reminded closer to the date.	Phone
13.8.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH phoned and confirmed attending fieldwork 1& 2 Sept 2020.	email
13.8.20	Jay & Warren Daley	RH phoned and confirmed attending fieldwork 1& 2 Sept 2020.	email
13.8.20	Peak Hill Local Aboriginal Land Council	RH sent copy of fieldwork invite	Phone
13.8.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent copy of fieldwork invite	email
13.8.20	Tubba-Gah (Maing) Wiradjuri Aboriginal Corporation	RH copied into fieldwork invite for Karryn from Bogan River Peak Hill Wiradjuri Aboriginal Corporation	email
13.8.20	Jay & Warren Daley	RH sent copy of fieldwork invite	email
13.8.20	GetSet	RH copied in Frank to the fieldwork invite for Jay & Warren Daily	email
14.8.20	Jay & Warren Daley	RH received: Warren and Jay are both right for the 1 and 2 September	email


Aboriginal Consultation Log			
Date	Organisation	Comment	Method
17.8.20	Jay & Warren Daley	RH thanked Leanne	email
17.8.20	Peak Hill Local Aboriginal Land Council	RH received email confirming fieldwork attendance	email
3.9.20	Peak Hill Local Aboriginal Land Council	RH received invoice for fieldwork	email
3.9.20	Peak Hill Local Aboriginal Land Council	RH sent thanks	email
9.9.20	GetSet	RH received call and confirmed work for Warren and Jay	email
9.9.20	GetSet	RH received INV	Email
21.10.20	Tubba-Gah Aboriginal Corporation	Brendan Fisher (BF) sent project update email for TGEP MOD5	Email
21.10.20	Peak Hill Local Aboriginal Land Council	BF sent project update email for TGEP MOD6	Email
21.10.20	Corroboree Aboriginal Corporation	BF sent project update email for TGEP MOD7	Email
21.10.20	Gunjeewong Cultural Heritage Corporation Heritage Preservation	BF sent project update email for TGEP MOD8	Email
21.10.20	Paul Brydon	BF sent project update email for TGEP MOD9	Email
21.10.20	Jay & Warren Daley	BF sent project update email for TGEP MOD10	Email
21.10.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	BF sent project update email for TGEP MOD11	Email
21.10.20	Jay & Warren Daley	Jay Daley thanked BF and OzArk team for project update email	Email
5.11.20	Tubba-Gah Aboriginal Corporation	RH sent stage 4. Feedback ends 3.12.2020	Email
5.11.20	Peak Hill Local Aboriginal Land Council	RH sent stage 4. Feedback ends 3.12.2020	Email
5.11.20	Corroboree Aboriginal Corporation	RH sent stage 4. Feedback ends 3.12.2020	Email
5.11.20	Gunjeewong Cultural Heritage Corporation Heritage Preservation	RH sent stage 4. Feedback ends 3.12.2020	Email
5.11.20	Paul Brydon	RH sent stage 4. Feedback ends 3.12.2020	Email
5.11.20	Jay & Warren Daley	RH sent stage 4. Feedback ends 3.12.2020	Email
5.11.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH sent stage 4. Feedback ends 3.12.2020	Email
7.11.20	Bogan River Peak Hill Wiradjuri Aboriginal Corporation	RH received email confirming documents received	Email

Appendix 1 Figure 1: Stage 1 advertisement in *Daily Liberal*, Thursday 26 March 2020

dailyliberal.com.au
Thursday, March 26, 2020
DAILY LIBERAL
15

# Connect with Classifieds

Phone: 02 6883 2900  
classifieds@dailyliberal.com.au



## Liberal

### Connect with Classifieds

**Place a Classifieds ad**

- 02 6883 2900
- classifieds@dailyliberal.com.au
- Save time, submit online 24/7 [advertisers.com.au](http://advertisers.com.au)

Print and online packages available throughout Australia

Ongoing business advertising self service enquiries:  
[acmadonline@austcommunitymedia.com.au](mailto:acmadonline@austcommunitymedia.com.au)

Emoji now available 😊

### Death Notices

**MRS MARGARET BARRINGTON SAMUELS**  
**Nee HUGHES**  
Late of Dubbo.  
**Passed away on 22<sup>nd</sup> March 2020**  
**Aged 95 years**

Wife of Albert (Sammy).  
Mother of Greg, Lou, Ro and Katie.  
Grandmother of Stella, Bea, Millie, Edvina, Becky, Lucy, James and Tillman.  
She will miss all activities cultural, educational, church and dear lifelong friendships to all ages.  
Proud member of Dubbo's oldest pioneering family, loved her life in Dubbo.

A private, family only burial will take place with a Memorial Service to be held in the future, when appropriate.  
*Funeral arrangements are in the caring hands of*

**W. Larcombe & Son**  
Dubbo's Premier Funeral Home  
FDA Approved  
(02) 6882 3199

### Public Notices

**Expression of Interest Cultural Heritage Management**

On behalf of Alkane Resources Limited, OzArk Environment & Heritage have been engaged to seek registration of Aboriginal groups or individuals who are interested in being consulted with regard to an Aboriginal cultural heritage assessment for the proposed expansion of the Tomingley Gold Operations, located within the Narramine Local Government Areas (LGA).

This consultation will form part of an Aboriginal Cultural Heritage Assessment Report and will assist the Secretary of the Department of Planning, Industry and Environment in their consideration and determination of the Project.

If you hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects or places in the proposed study area, please register your interest. Registrations can be made by post: OzArk EHM PO Box 2069 Dubbo NSW 2830; email: [rebecca@ozarkehm.com.au](mailto:rebecca@ozarkehm.com.au); or by phoning OzArk on 02 6882 0118. All submissions should be received no later than **Thursday 9<sup>th</sup> April 2020**.

### Adult Services

**GIGI**  
New to Dubbo  
Great Personality  
No Rush, Call me  
**0410 756 826**

**SIZZLING HOT**  
In/out, quality service,  
curvy, independent  
**0452 074 559**

**Apply now, drive away today**

Compare 70+ vehicle lenders with one application

[lendingpro.com.au](http://lendingpro.com.au)  
1300 998 555


**lendingpro**


Rural Press Pty Limited (ABN 47 020 010 382) will receive a commission for publishing this advertisement which is calculated based on the value of loans written by the Capital Pty Ltd (ABN 26 161768 680) under the LendingPro brand. Authorised credit rep 471039.

**FOREVER IN OUR HEARTS**

Pet Death and Tributes notices now available in Classifieds


Connect with **Classifieds**







## Appendix 1 Figure 2: Stage 1 agency letter (sample)

	<p style="text-align: center;"><b>OzArk Environment &amp; Heritage</b></p> <p>             Dubbo      T: 02 6882 0118              Queanbeyan      enquiry@ozarkehm.com.au              Newcastle      www.ozarkehm.com.au         </p>	<p>ABN 59 104 582 354</p> <p>145 Wingewarra St PO Box 2069 DUBBO NSW 2830</p>
---	---	---

23<sup>rd</sup> March 2020

Address1  
Address2  
Address3  
Address4  
Address5  
Address6

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE SAN ANTONIO, ROSWELL AND  
EL PASO PROSPECTS, TOMINGLEY NSW***

---

Dear XXX,

OzArk Environment & Heritage (OzArk) has been engaged by RW Corkery & Co Pty Ltd on behalf of Alkane Resources Limited (the proponent) to undertake Aboriginal community consultation as per the '*Aboriginal cultural heritage consultation requirements for proponents 2010' (the Guidelines)* to inform an *Aboriginal Cultural Heritage Assessment Report (ACHAR)* which will form part of an *Environmental Impact Statement*.

The proponent intends to seek development consent under Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to expand into the San Antonio, Roswell and El Paso (SAR) prospects located to the south of the Tomingley Gold Operations (TGO), located in the Narromine Local Government Area (LGA) (Figure 1).

Consistent with Section 4.1 of the Guidelines, we are seeking Expressions of Interest from relevant Aboriginal groups and individuals in the local area who wish to be consulted in relation to the Project. This consultation is to assist OzArk and the proponent in preparing the ACHAR, and to assist the Secretary of the Department of Planning, Industry and Environment (DPIE) in its assessment of the Project.

If your organisation can recommend and provide contact details for any known Aboriginal groups or individuals with cultural knowledge relevant to determining the impacts to the cultural significance of the Project, please advise our office. We would appreciate it if you could provide any feedback regarding these Aboriginal stakeholder groups to the contact details provided at the top of the page within **two weeks from date sent**, or sooner if possible.



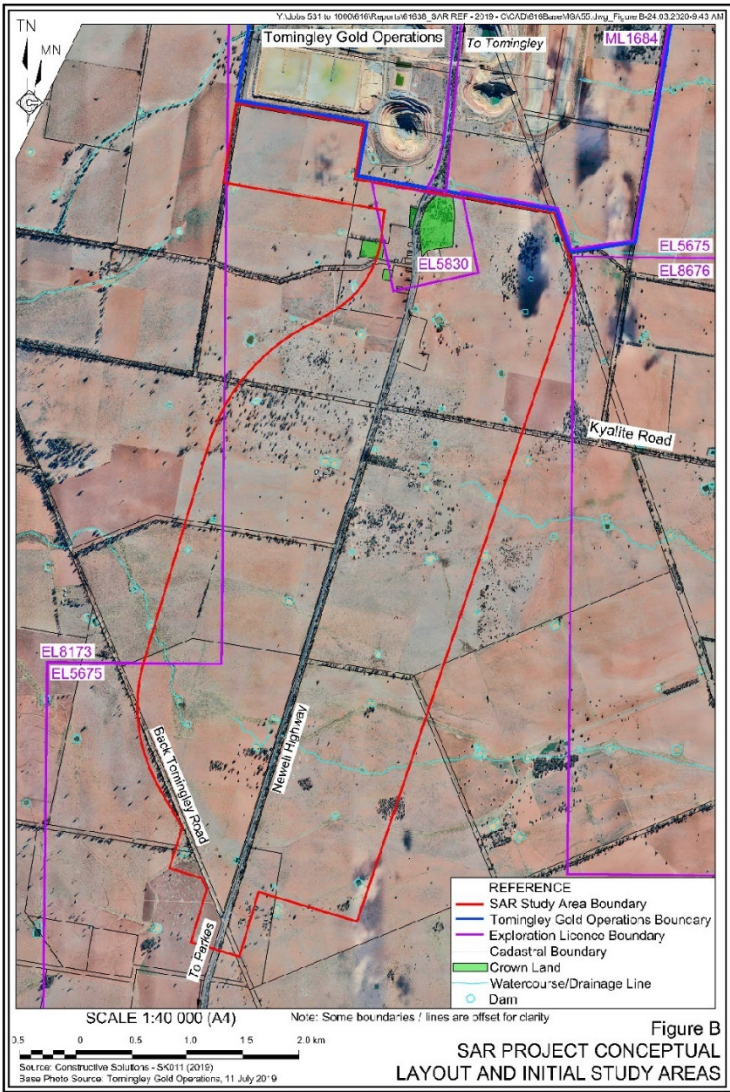
Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the Project.

Kind regards,




Rebecca Hardman  
**Community Liaison & Administration**

Figure 1. Indicative Project Layout



## Appendix 1 Figure 3: Stage 1 Aboriginal community letter (sample)

	<p style="text-align: center;"><b>OzArk Environment &amp; Heritage</b></p> <p>Dubbo      T: 02 6882 0118        Queanbeyan      enquiry@ozarkehm.com.au        Newcastle      www.ozarkehm.com.au</p>	<p style="text-align: center;"><b>ABN 59 104 582 354</b></p> <p>145 Wingewarra St        PO Box 2069        DUBBO NSW 2830</p>
---	---	--

8<sup>th</sup> April 2020

Members  
 Peak Hill Local Aboriginal Land Council  
 C/- Cherie Keed  
 PO Box 63  
 PEAK HILL NSW 2869  
 phlala@yahoo.com.au

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE SAN ANTONIO, ROSWELL AND EL PASO PROSPECTS, TOMINGLEY NSW.***

---

Dear Members,

OzArk Environment & Heritage is undertaking Aboriginal community consultation as per the “*Aboriginal cultural heritage consultation requirements for proponents 2010*”, on behalf of the proponent; Alkane Resources Limited (the proponent).

The proponent intends to seek development consent under Division 4.7 of the Environmental Planning and Assessment Act 1979 (EP&A Act) to expand into the San Antonio, Roswell and El Paso (SAR) prospects located to the south of the Tomingley Gold Operations (TGO), located in the Narromine Local Government Area (LGA) (Figure 1).

Accordingly, we are seeking Expressions of Interest from relevant Aboriginal groups and individuals in the area, to form a consultation group. This consultation is to assist OzArk and the proponent, in preparation of an Aboriginal Cultural Heritage Assessment and potential AHIP application, and to assist the Secretary of the Department of Planning, Industry and Environment in their consideration and determination of the Project.

If you hold cultural knowledge relevant to determining the impacts to the cultural significance of this project area, please register your interest by contacting our office. The closing date for expressions of interest is **COB Monday 27<sup>th</sup> April 2020**.

If you wish to register interest it is noteworthy that as per the DPIE guidelines we are required to provide your details to the DPIE unless advised, you do not wish your details to be released.

Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the project.

Kind regards,


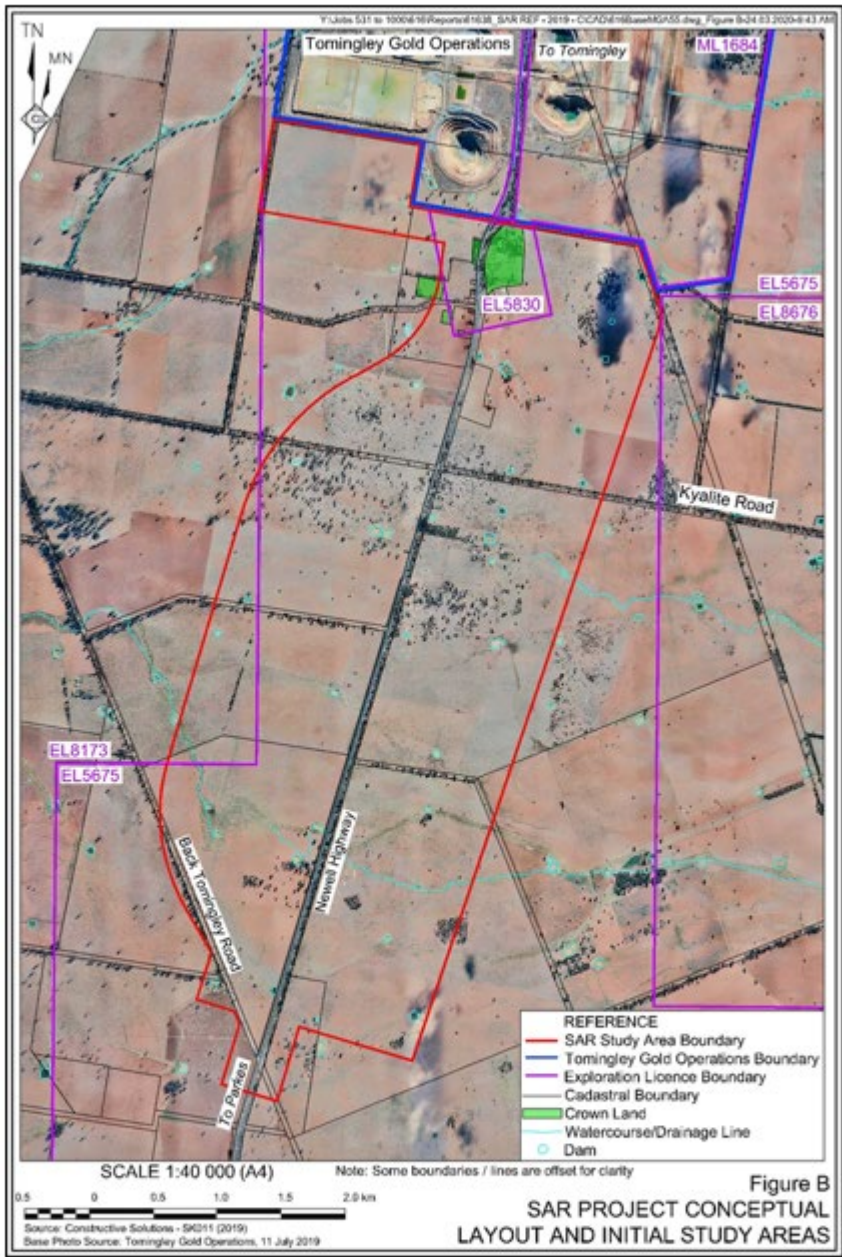

  
**Rebecca Hardman**  
**Consultation Officer**

Figure 1: Indicative Project Layout.





## Appendix 1 Figure 4: Stage 2/3 cover letter



<b>OzArk Environment &amp; Heritage</b>		<b>ABN 59 104 582 354</b>
Dubbo	T: 02 6882 0118	145 Wingewarra St
Queanbeyan	enquiry@ozarkehm.com.au	PO Box 2069
Newcastle	www.ozarkehm.com.au	DUBBO NSW 2830

29 April 2020

Members  
Peak Hill Local Aboriginal Land Council  
C/- Cherie Keed  
PO Box 63  
PEAK HILL NSW 2869  
phlala@yahoo.com.au

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE SAN ANTONIO,  
ROSWELL AND EL PASO PROSPECTS, TOMINGLEY NSW.***

---

Dear Members,


Thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) to be consulted for the proposed expansion of the San Antonio, Roswell and El Paso (SAR) prospects located to the south of the Tomingley Gold Operations (TGO), located in the Narromine Local Government Area (LGA).

The purpose of this letter is to invite you to comment on the enclosed draft methodology for the Aboriginal Cultural Heritage Survey Methodology, San Antonio, Roswell And El Paso Prospects: Tomingley Gold Operations Narromine LGA, April 2020. This assessment will support a potential AHIP application when lodged with the Office of Environment and Heritage (OEH).

In addition to comments on the draft report, if you can share any Aboriginal cultural heritage knowledge relevant to the proposed study area, we welcome this input so as to improve our assessment outcomes and to ensure Aboriginal cultural values are considered. OzArk is required to give you 28 days to supply feedback on the attached document. This period closes 5pm on **Wednesday 27<sup>th</sup> May 2020**. If you need any help supplying feedback, please do not hesitate to contact our office.


Should you have any queries in relation to the enclosed information please do not hesitate to contact our office.

Kind regards,



**Rebecca Hardman**  
**Community Liaison & Administration**

## Appendix 1 Figure 5: Stage 2/3 update letter



**OzArk Environment & Heritage**

Dubbo T: 02 6882 0118  
 Queanbeyan enquiry@ozarkehm.com.au  
 Newcastle www.ozarkehm.com.au

ABN 59 104 582 354  
 145 Wingewarra St  
 PO Box 2069  
 DUBBO NSW 2830

30 June 2020

Members  
 Peak Hill Local Aboriginal Land Council  
 C/- Cherie Keed  
 PO Box 63  
 PEAK HILL NSW 2869  
 phlala@yahoo.com.au

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE SAN ANTONIO,  
 ROSWELL AND EL PASO PROSPECTS, TOMINGLEY NSW.***

---

Dear Members,

On 29 April 2020, OzArk Environment & Heritage (OzArk) circulated the *Aboriginal Cultural Heritage Survey Methodology: San Antonio, Roswell and El Paso Prospects, Tomingley Gold Operations, Narromine NSW* to all Registered Aboriginal Parties (RAPs) in accordance with Stage 3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs).

Since the closure of Stage 3, the Study Area for the Project has increased in size from approximately 1,600 hectares (ha) to 2,000 ha. As a result, OzArk has amended the sample strategy to consider the revised Study Area.

Based on the revised Study Area (Figure 1), the field assessment will include:

- Full pedestrian survey of approximately 900 ha. This will occur in areas with minimal disturbance and good ground surface visibility within landforms possessing Aboriginal archaeological potential, i.e. areas within 200 m of Bulldog Creek, elevated landforms and areas with remnant vegetation (Figure 1)
- Targeted pedestrian survey of approximately 225 ha. This will occur in all other areas: i.e. areas more than 200 m from watercourses; areas with poor ground surface visibility; landforms with low archaeological potential; areas of gilgai and areas with significant prior disturbance (Figure 1)
- All trees deemed to be of sufficient maturity to contain cultural modification will be inspected, as well as any areas with outcropping rock
- Some areas may not be physically surveyed if the RAPs and OzArk staff agree they are too disturbed or possess a very low likelihood of sites.

Should you have any queries in relation to the updated Study Area and sample strategy please do not hesitate to contact our office on (02) 6882 0118 or at [rebecca@ozarkehm.com.au](mailto:rebecca@ozarkehm.com.au).

Kind regards,


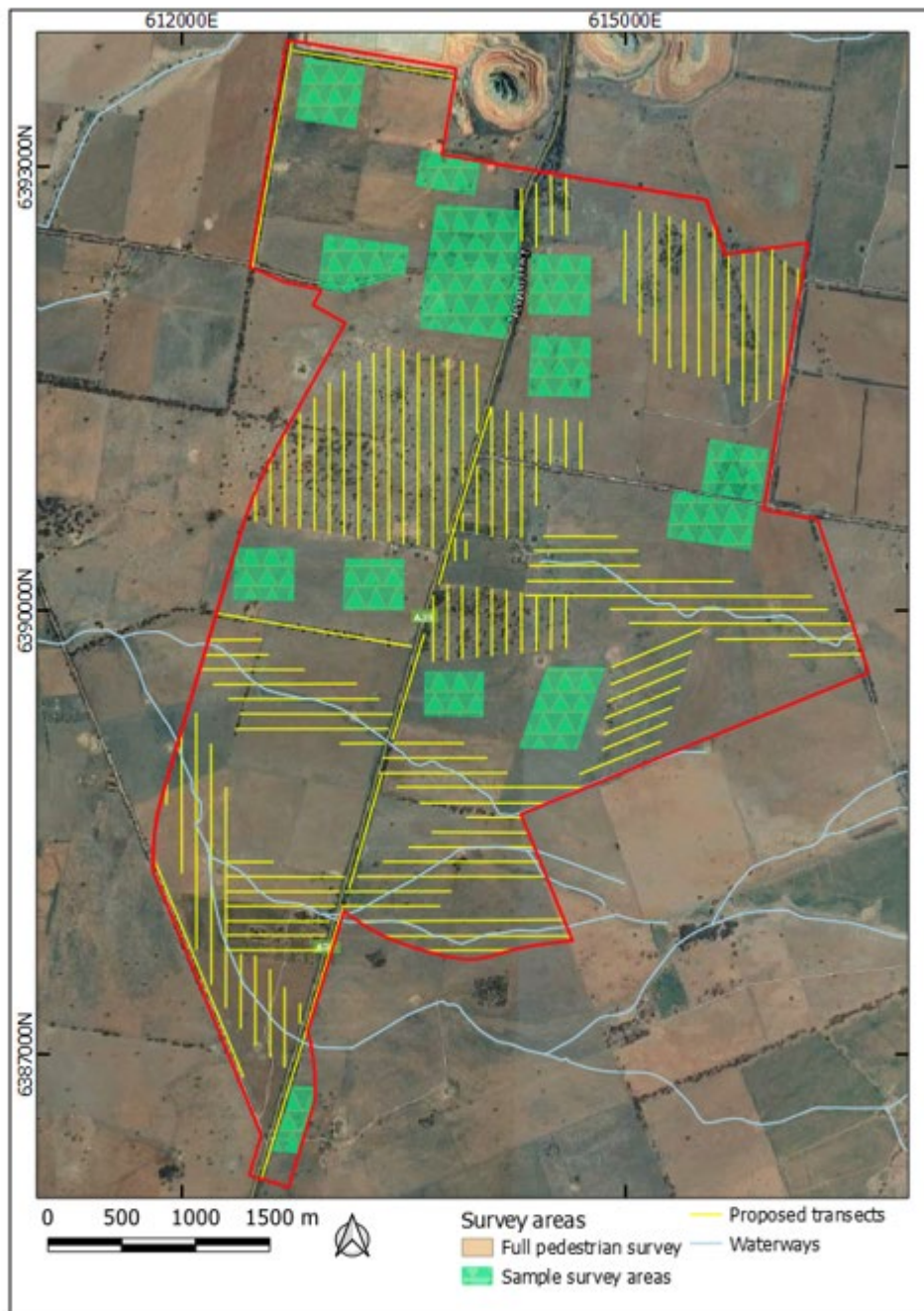

  
 Rebecca Hardman  
 Community Liaison & Administration

Figure 1: Aerial showing the revised Study Area and proposed survey areas.



## Appendix 1 Figure 6: Project update letter



**OzArk Environment & Heritage**

Dubbo T: 02 6882 0118  
 Queanbeyan enquiry@ozarkehm.com.au  
 Newcastle www.ozarkehm.com.au

**ABN 59 104 582 354**

145 Wingewarra St  
 PO Box 2069  
 DUBBO NSW 2830

20<sup>th</sup> October 2020

**UPDATE FOR THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED  
TOMINGLEY GOLD DEVELOPMENT PROJECT, TOMINGLEY NSW**

---

Dear Members,

As you are a Registered Aboriginal Party (RAP) of the Tomingley Gold Expansion Project (TGEP), previously referred to as the San Antonio, Roswell and El Paso (SAR) prospects, we are writing to update you on the status of the project.

As you are aware this project commenced in March 2020 leading into the field survey work that took place in August and September this year. The surveys undertaken cover the area of the proposed extension project as shown in **Figure 1**.

The proponent, Alkane Resources, have now determined that the TGEP is unlikely to be approved in time to allow the scheduled construction of Residue Storage Facility 2 (RFS2), and approval for that facility is required by July 2021 to ensure operations of the mine can continue. As a result, an application to modify the current approval for Tomingley Gold Operations, to be referred to as Modification 5 (MOD5) is now being prepared.

This means that a block of land in the north of the extension study area, shown in blue on **Figure 1** and labelled in green as *Residue Storage Facility 2*, will be brought forward for development approval under the MOD5.


From the perspective of the Aboriginal heritage assessment, survey over this block was extensive and no further survey is needed. Furthermore, no Aboriginal sites were recorded over this block. To enable Alkane to progress the MOD5 application, OzArk will prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) that will just cover this block, with the larger expansion project ACHAR to come later this year or early next year.

As a result you will be receiving a draft ACHAR for this smaller area within the next couple of weeks for your review as per Stage 4 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs). You will have **28 days** to review this document and get back to us with any feedback.

There is no need for you to undertake any specific action in relation to this letter, it was just to provide this update and alert you to the fact that you will soon be receiving the ACHAR.

Please do not hesitate to get in touch if you have any queries and we will be in touch soon.

Kind regards,



**Rebecca Hardman**  
**Community Liaison & Administration**

## Appendix 1 Figure 7: Stage 4 cover letter

	<p style="text-align: center;"><b>OzArk Environment &amp; Heritage</b></p> <table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Dubbo</td> <td style="width: 33%;">T: 02 6882 0118</td> <td style="width: 33%;">ABN 59 104 582 354</td> </tr> <tr> <td>Queanbeyan</td> <td>enquiry@ozarkehm.com.au</td> <td>145 Wingewarra St</td> </tr> <tr> <td>Newcastle</td> <td>www.ozarkehm.com.au</td> <td>PO Box 2069</td> </tr> <tr> <td></td> <td></td> <td>DUBBO NSW 2830</td> </tr> </table>	Dubbo	T: 02 6882 0118	ABN 59 104 582 354	Queanbeyan	enquiry@ozarkehm.com.au	145 Wingewarra St	Newcastle	www.ozarkehm.com.au	PO Box 2069			DUBBO NSW 2830	
Dubbo	T: 02 6882 0118	ABN 59 104 582 354												
Queanbeyan	enquiry@ozarkehm.com.au	145 Wingewarra St												
Newcastle	www.ozarkehm.com.au	PO Box 2069												
		DUBBO NSW 2830												

5 November 2020

Members  
Peak Hill Local Aboriginal Land Council  
C/- Cherie Keed  
PO Box 63  
PEAK HILL NSW 2869  
phlalc@yahoo.com.au

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE SAN ANTONIO, ROSWELL AND EL PASO PROSPECTS, TOMINGLEY NSW.***

---

Dear Members,

Thank-you for your continued participation as a Registered Aboriginal Party (RAP) and involvement in the above-mentioned project.

Alkane Resources Limited (the Proponent) would like to offer you the opportunity to provide feedback on the draft report that has been undertaken in accordance with stage four (4) of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCR).

As per the ACHCRs we are required to give you twenty-eight (28) days to supply feedback on the attached documents. This period closes on the **Thursday 3<sup>rd</sup> December 2020**. Should our office not be contacted within this time frame, we will presume that you are satisfied with the contents of the report as it stands.

Should you need any help supplying feedback or have any queries, please do not hesitate to contact our office.


Kind regards,



Rebecca Hardman  
**Community Liaison & Administration**



## APPENDIX 2: AHIMS SEARCH RESULT



**Office of Environment & Heritage**


**AHIMS Web Services (AWS)**  
 Extensive search - Site list report

Your Ref/PO Number : Tomingley  
 Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0104	Goobang OS-3 Goobang National Park	AGD	55	623087	6385592	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	Anthony English						
35-6-0105	OC-6 Goobang National Park	AGD	55	622196	6385128	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	Bill Allen,Anthony English						
35-6-0062	MD 45 Tomingley CK1:Parkes-Narramine Railway;	GDA	55	607150	6397540	Open site	Destroyed	Artefact :-	Open Camp Site	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer,Artefact - Cultural Heritage Management - Rose Bay I						
35-6-0063	MD 46 Tomingley CK2:Parkes-Narramine Railway;	GDA	55	607000	6397990	Open site	Destroyed	Artefact :-	Isolated Find	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer,Artefact - Cultural Heritage Management - Rose Bay I						
35-6-0064	MD 41 Bulldog CK3:Parkes-Narramine Rail line;	AGD	55	609250	6388670	Open site	Valid	Artefact :-	Open Camp Site	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0065	MD 43 Bulldog CK5:Parkes-Narramine Rail line;	GDA	55	609110	6387800	Open site	Destroyed	Artefact :-	Open Camp Site	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer,Artefact - Cultural Heritage Management - Rose Bay I						
35-6-0066	MD 40 Bulldog CK2:Parkes-Narramine Rail line;	AGD	55	609310	6388850	Open site	Valid	Artefact :-	Isolated Find	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0067	MD 38 Tomingley West Rail 1:Parkes-Narramine Rail line;	AGD	55	608940	6392900	Open site	Valid	Artefact :-	Isolated Find	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0068	MD 39 Bulldog CK 1:Parkes-Narramine Railway;	AGD	55	609320	6389330	Open site	Valid	Artefact :-	Isolated Find	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0069	MD 37 Tomingley West Rail 2:Parkes-Narramine Rail Line;	AGD	55	608700	6393850	Open site	Valid	Artefact :-	Isolated Find	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0070	MD 20 Burrabadine Creek Parkes-Narramine Railway	AGD	55	610000	6383000	Open site	Valid	Artefact :-	Open Camp Site	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0071	MD 44 Bulldog CK 6:Parkes-Narramine Rail Line;	AGD	55	609300	6386900	Open site	Valid	Artefact :-	Open Camp Site	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0072	MD 42 Bulldog CK 4:Parkes-Narramine Rail Line easement;	AGD	55	609180	6388400	Open site	Valid	Artefact :-	Isolated Find	1997
	<b>Contact</b>		<b>Recorders</b>	Kerry Navin,Mr Kelvin Officer						
35-6-0073	ST 18 Goobang National Park	AGD	55	623143	6385653	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	4641
	<b>Contact</b>		<b>Recorders</b>	Anthony English						
35-6-0074	ST 17 Goobang National Park	AGD	55	624142	6386362	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	4641
	<b>Contact</b>		<b>Recorders</b>	Anthony English						
35-6-0075	Goobang OS-6 Goobang National Park	AGD	55	628360	6385580	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	Bill Allen						

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum:GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6406338 with a Buffer of 0 meters. Additional Info : Survey: Number of Aboriginal sites and Aboriginal objects found is 98  
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NEHW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omissions.

Page 1 of 9



**Office of Environment & Heritage**

**AHIMS Web Services (AWS)**  
 Extensive search - Site list report

Your Ref/PO Number : Tomingley  
 Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0076	Goobang OS-7 Goobang National Park	AGD	55	628456	6385290	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	C Wall						
35-6-0077	Goobang OS-4 Goobang National Park	AGD	55	625537	6379513	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	Anthony English						
35-6-0078	Goobang OS-5 Goobang National Park	AGD	55	628270	6385890	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	C Peckham						
35-6-0079	Goobang OS-2 Goobang National Park	AGD	55	624990	6391500	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	Anthony English,C Wall						
35-6-0080	Goobang OS-1 Goobang National Park	AGD	55	624820	6391600	Open site	Valid	Artefact :-	Open Camp Site	4641
	<b>Contact</b>		<b>Recorders</b>	Bill Allen						
35-6-0081	IF-1:Goobang National Park;	AGD	55	627500	6380100	Open site	Valid	Artefact :-	Isolated Find	
	<b>Contact</b>		<b>Recorders</b>	Bill Allen						
35-6-0095	ST-13 Goobang National Park	AGD	55	624788	6392917	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	4641
	<b>Contact</b>		<b>Recorders</b>	Anthony English						
35-6-0096	ST-16 Goobang National Park	AGD	55	625460	6391250	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	4641
	<b>Contact</b>		<b>Recorders</b>	C Wall						
35-6-0138	Bulgandramine, Bogan Floodplain	AGD	55	602160	6391199	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	<b>Contact</b>		<b>Recorders</b>	Rosemary Stapleton						
35-3-0148	Momo Road	AGD	55	623316	6403598	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	<b>Contact</b>		<b>Recorders</b>	Rosemary Stapleton						
35-6-0129	Bogan River-Tomingley	AGD	55	603063	6392077	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	<b>Contact</b>		<b>Recorders</b>	Miss Rebecca Ogden-Brunell						
35-6-0130	Bogan River-Tomingley 2	AGD	55	603081	6392089	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	<b>Contact</b>		<b>Recorders</b>	Miss Rebecca Ogden-Brunell						

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum:GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6406338 with a Buffer of 0 meters. Additional Info : Survey: Number of Aboriginal sites and Aboriginal objects found is 98  
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NEHW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omissions.

Page 2 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley  
Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0131	Bogan River-Tomingley 3	AGD	55	603252	6392211	Open site	Valid	Modified Tree (Carved or Scarred): 1		
<b>Contact</b>		<b>Recorders</b>		Mrs Rebecca Ogden-Brunell						
35-6-0136	BC ST-4	AGD	55	611780	6382120	Open site	Valid	Modified Tree (Carved or Scarred): -		
<b>Contact</b>		<b>Recorders</b>		Mrs Robynne Mills						
35-6-0139	NHT-ST3	AGD	55	614531	6393577	Open site	Valid	Modified Tree (Carved or Scarred): -		98723
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0140	NHT-ST2	AGD	55	614542	6393630	Open site	Valid	Modified Tree (Carved or Scarred): -		98723
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0141	NHT-ST1	AGD	55	614618	6394718	Open site	Valid	Modified Tree (Carved or Scarred): -		98723
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0142	NHT-ST4	AGD	55	614306	6392735	Open site	Valid	Modified Tree (Carved or Scarred): -		98723
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0144	St 2 Peak Hill	AGD	55	627400	6378700	Open site	Valid	Modified Tree (Carved or Scarred): -		
<b>Contact</b>		<b>Recorders</b>		Mike Nolan, C Wall						
43-3-0028	Connors Lagoon	AGD	55	605400	6385810	Open site	Valid	Artefact :-	Open Camp Site	98332
<b>Contact</b>		<b>Recorders</b>		L. Kingham						
35-6-0060	TWST1:	AGD	55	613580	6396240	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Mike Nolan, C Wall						
35-6-0061	TWST2:	AGD	55	613580	6396240	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Mike Nolan, C Wall						

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum: GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6408338 with a Buffer of 0 meters. Additional Info : Survey Number of Aboriginal sites and Aboriginal objects found is 98  
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NEW) and its employees disclaim liability for any act done or omission made on the information and consequences of such act or omission.

Page 3 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley  
Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-3-0048	Bulgandramine 2	AGD	55	602200	6391100	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1333
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-6-0004	Bulgandramine Bridge	AGD	55	602572	6390972	Open site	Valid	Modified Tree (Carved or Scarred): - Burial :-	Burial/s Carved Tree	65,98332
<b>Contact</b>		<b>Recorders</b>		David Bell, Harry Keed						
35-6-0016	Bulgandramine 3	AGD	55	599731	6392772	Open site	Valid	Stone Quarry :- Artefact :-	Quarry	98332
<b>Contact</b>		<b>Recorders</b>		Gen Morris						
43-3-0029	Bulgandramine 7	AGD	55	601950	6391750	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		L. Kingham						
35-3-0058	Obley Turnoff	AGD	55	617700	6398800	Open site	Valid	Modified Tree (Carved or Scarred): 1	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-3-0059	Obley Turnoff 2	AGD	55	617600	6398500	Open site	Valid	Modified Tree (Carved or Scarred): 1	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-6-0003	Pine Lagoon/Hazelbeam	AGD	55	600098	6392592	Open site	Valid	Modified Tree (Carved or Scarred): - Burial :-	Burial/s Carved Tree, Scarred Tree	65,98332
<b>Contact</b>		<b>Recorders</b>		David Bell, Fred McCarthy, Lindsay Black, Carl Von Schill, RJ Agnew, Harry Keed						
35-6-0006	Tomingley/Meroo	AGD	55	623617	6398479	Open site	Valid	Modified Tree (Carved or Scarred): -	Carved Tree	65
<b>Contact</b>		<b>Recorders</b>		Liz Edmondson						
35-6-0012	Tomingley Creek	AGD	55	620867	6399367	Open site	Valid	Modified Tree (Carved or Scarred): -	Carved Tree	65
<b>Contact</b>		<b>Recorders</b>		David Bell						
35-6-0013	Tomingley Creek	AGD	55	619945	6400272	Open site	Valid	Modified Tree (Carved or Scarred): -	Carved Tree	65
<b>Contact</b>		<b>Recorders</b>		David Bell						

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum: GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6408338 with a Buffer of 0 meters. Additional Info : Survey Number of Aboriginal sites and Aboriginal objects found is 98  
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NEW) and its employees disclaim liability for any act done or omission made on the information and consequences of such act or omission.

Page 4 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley  
Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0021	Riddlers Creek:	AGD	55	617187	6402073	Open site	Valid	Modified Tree (Carved or Scarred): -	Carved Tree	
<b>Contact</b>		<b>Recorders</b>		David Bell						
35-6-0022	Mingelo:	AGD	55	605525	6379120	Open site	Valid	Modified Tree (Carved or Scarred): -	Carved Tree	
<b>Contact</b>		<b>Recorders</b>		David Bell						
35-6-0046	Kangaroo Pool:	AGD	55	620400	6391900	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1333
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-6-0047	Bogan River:	AGD	55	606000	6386000	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1333
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-3-0047	Bulgandramine 1	AGD	55	603000	6391500	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1333
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-3-0049	Tanners Creek:	AGD	55	627000	6395700	Open site	Valid	Artefact: -	Open Camp Site	1333
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
31-6-0036	KALB:	AGD	55	612700	6390800	Open site	Valid	Artefact: -	Open Camp Site	1352
<b>Contact</b>		<b>Recorders</b>		Doctor Jeannette Hope						
35-6-0048	Bulgandramine 5	AGD	55	602600	6391500	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1333
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-3-0101	Obley Road:	AGD	55	620500	6397000	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-3-0102	Obley Road:	AGD	55	619400	6397500	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-3-0103	Obley Road:	AGD	55	618500	6397700	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum: GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6408338 with a Buffer of 0 meters. Additional Info : Survey. Number of Aboriginal sites and Aboriginal objects found is 98  
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NEW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omissions.

Page 5 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley  
Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-3-0104	Bogan Road:	AGD	55	606000	6378600	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
<b>Contact</b>		<b>Recorders</b>		Warren Bluff						
35-6-0132	Bogan River - Tomingley 4	AGD	55	603248	6392309	Open site	Valid	Modified Tree (Carved or Scarred): 1		
<b>Contact</b>		<b>Recorders</b>		Miss Rebecca Ogden-Brunell						
35-6-0133	BQ/1	AGD	55	612060	6383120	Open site	Valid	Modified Tree (Carved or Scarred): -		
<b>Contact</b>		<b>Recorders</b>		Mrs Robynne Mills						
35-6-0134	BQ/07/2	AGD	55	611680	6382370	Open site	Valid	Modified Tree (Carved or Scarred): -		
<b>Contact</b>		<b>Recorders</b>		Mrs Robynne Mills						
35-6-0135	BQ/07/3	AGD	55	611570	6380890	Open site	Valid	Modified Tree (Carved or Scarred): -		
<b>Contact</b>		<b>Recorders</b>		Mrs Robynne Mills						
35-6-0173	TGP-IP1	GDA	55	613197	6396077	Open site	Valid	Artefact: 1		
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0174	TGP-IP2	GDA	55	615867	6394529	Open site	Valid	Artefact: 1		
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0175	TGP-OG1	GDA	55	613105	6396157	Open site	Valid	Artefact: 1		
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0176	TGP-OG2	GDA	55	613056	6395630	Open site	Valid	Artefact: 1		
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0177	TGP-ST1	GDA	55	613071	6395945	Open site	Valid	Modified Tree (Carved or Scarred): 1		
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0178	TGP-ST2	GDA	55	613087	6395894	Open site	Valid	Modified Tree (Carved or Scarred): 1		
<b>Contact</b>		<b>Recorders</b>		Doctor Jodie Benton						
35-6-0179	TGP-ST3	GDA	55	613368	6395798	Open site	Valid	Modified Tree (Carved or Scarred): 1		

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum: GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6408338 with a Buffer of 0 meters. Additional Info : Survey. Number of Aboriginal sites and Aboriginal objects found is 98  
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NEW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omissions.

Page 6 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley  
Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0180	Contact TGP-ST4	Recorders GDA	55	613004	6395579	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0181	Contact TGP-ST5	Recorders GDA	55	612901	6394846	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0182	Contact TGP-ST6	Recorders GDA	55	613026	6395498	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0183	Contact TGP-ST7	Recorders GDA	55	614364	6393524	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0184	Contact TGP-ST8	Recorders GDA	55	614553	6393485	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0185	Contact TGP-ST9	Recorders GDA	55	614551	6393461	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0186	Contact TGP-ST10	Recorders GDA	55	615687	6393944	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0187	Contact TGP-ST11	Recorders GDA	55	614517	6396210	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0188	Contact TGP-ST12	Recorders GDA	55	614515	6396204	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0189	Contact TGP-ST13	Recorders GDA	55	614382	6395982	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum: GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6408338 with a Buffer of 0 meters. Additional Info : Survey Number of Aboriginal sites and Aboriginal objects found is 98  
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such act or omission.

Page 7 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley  
Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0190	Contact TGP-ST14	Recorders GDA	55	614427	6395965	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0191	Contact TGP-ST15	Recorders GDA	55	616528	6394328	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0161	WETL-001 with PAD (same as 35-6-0113)	Recorders GDA	55	608208	6393131	Open site	Deleted	Artefact :- Potential Archaeological Deposit (PAD) :-	Permits	101691
35-3-0160	TNWP-ST11	Recorders AGD	55	614740	6407444	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-3-0165	TNWP-ACD1	Recorders AGD	55	614649	6406572	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0164	PHEYL-ST1	Recorders GDA	55	613118	6378910	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0165	PHEYL-ST2	Recorders GDA	55	613125	6380607	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0167	TNWP-ST1	Recorders GDA	55	614439	6396237	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0168	TNWP-ST2	Recorders AGD	55	613903	6398250	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	
35-6-0169	TNWP-ST3	Recorders AGD	55	613915	6398413	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum: GDA, Zone: 55, Eastings: 599493 - 629493, Northings: 6378338 - 6408338 with a Buffer of 0 meters. Additional Info : Survey Number of Aboriginal sites and Aboriginal objects found is 98  
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such act or omission.

Page 8 of 9



Office of  
Environment  
& Heritage

## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Tomingley

Client Service ID : 496975

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
35-6-0170	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	613915	6398412	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
35-6-0171	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614039	6399566	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
35-6-0172	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614230	6401347	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
35-3-0166	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614420	6404107	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
35-3-0167	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614632	6406434	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
35-3-0168	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614649	6405720	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
35-3-0169	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614673	6406480	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>
	<a href="#">Contact</a>	<a href="#">Recorders</a>	AGD	55	614673	6406480	Open site	Valid	Modified Tree (Carved or Scarred): 1	<a href="#">Permits</a>

Report generated by AHIMS Web Service on 14/04/2020 for Stephanie Rudden for the following area at Datum :GDA, Zone : 55, Eastings : 599493 - 629493, Northings : 6378338 - 6406338 with a Buffer of 0 meters. Additional Info : Survey Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NOW) and its employees disclaim liability for any act done or omission made on the information and consequences of such act or omission.

Page 9 of 9

## APPENDIX 3: SURVEY METHODOLOGY



View east from the Newell Highway across the south of the Study Area.

### ABORIGINAL CULTURAL HERITAGE SURVEY METHODOLOGY

#### SAN ANTONIO, ROSWELL AND EL PASO PROSPECTS: TOMINGLEY GOLD OPERATIONS

NARROMINE LOCAL GOVERNMENT AREA

APRIL 2020

Report prepared by  
OzArk Environment & Heritage  
for Alkane Resources Limited



#### OzArk Environment & Heritage

145 Wingewarra St  
(PO Box 2069)  
Dubbo NSW 2830  
Phone: (02) 6882 0118  
Fax: (02) 6882 0630  
enquiry@ozarkehm.com.au  
[www.ozarkehm.com.au](http://www.ozarkehm.com.au)

This page has intentionally been left blank.



**DOCUMENT CONTROLS**

Proponent	Alkane Resources Limited
Client	RW Corkery & Co
Document Description	<i>Aboriginal Cultural Heritage Survey Methodology. San Antonio, Roswell and El Paso Prospects, Tomingley Gold Operations, Narramine NSW.</i>
File Location	OzArk Job No.
S:\OzArk EHM Data\Clients\RW Corkery & Co	2550
Document Status <b>V3.0 Final</b>	Date 5 November 2020
Draft V1.0 Author to editor OzArk 1 <sup>st</sup> internal (Series V1 = OzArk internal edits)	V1.0 SR author 15/4/20 V1.1 BC edit 16/4/20
Draft V2.0 Report Draft for release to client (Series V2 = OzArk and client edits)	V2.0 OzArk to Client 20/4/20 V2.1 OzArk to RAPs 28/4/20
FINAL V3.0 = Final report	V3.0 Final with ACHAR 5/11/20
Prepared For	Prepared By
Alkane Resources Limited	Stephanie Rusden Senior Archaeologist OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 F: 02 6882 6030 stephanie@ozarkehm.com.au
<p style="text-align: center;">COPYRIGHT</p> <p style="text-align: center;">© OzArk Environment &amp; Heritage 2020 and © Alkane Resources Limited 2020</p> <p style="text-align: center;">All intellectual property and copyright reserved.</p> <p>Apart from any fair dealing for private study, research, criticism or review, as permitted under the Copyright Act, 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission.</p> <p style="text-align: center;">Enquiries should be addressed to OzArk Environment &amp; Heritage.</p>	



### **Acknowledgement**

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

## CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Preamble .....	1
1.2	Study Area .....	1
1.3	The Project .....	1
<b>2</b>	<b>ENVIRONMENTAL CONTEXT.....</b>	<b>4</b>
2.1	Topography.....	4
2.2	Geology and soils .....	4
2.3	Hydrology.....	4
2.4	Vegetation.....	5
2.5	Climate.....	6
2.6	Existing levels of disturbance .....	6
2.7	Conclusion .....	7
<b>3</b>	<b>ARCHAEOLOGICAL CONTEXT .....</b>	<b>8</b>
3.1	Introduction .....	8
3.2	Antiquity of Aboriginal occupation .....	8
3.3	Regional archaeological context.....	10
3.4	Previous assessments near the Study Area.....	13
3.4.1	McPhail Mine .....	13
3.4.2	Northparkes Mine .....	14
3.4.3	Marsden-Parkes Natural Gas Pipeline .....	16
3.4.4	Newell Highway Pavement Rehabilitation at Tomingley .....	16
3.4.5	Tomingley Gold Project .....	16
3.4.6	HW17 Newell Highway, Trewilga Realignment .....	18
3.4.7	Parkes to Narromine Inland Rail Project .....	19
3.5	Local archaeological context .....	19
3.6	Archaeological context: Conclusion.....	22
<b>4</b>	<b>PREDICTIVE MODEL .....</b>	<b>23</b>
4.1	Predictive model for the study area .....	23
4.2	Research questions .....	27
<b>5</b>	<b>SURVEY METHODOLOGY .....</b>	<b>28</b>
5.1	Assessment approach .....	28

5.2	Survey aims .....	28
5.3	Survey methodology .....	28
5.4	Test excavation.....	29
REFERENCES .....		31

## FIGURES

Figure 1-1. Map showing the location of the Study Area. ....	2
Figure 1-2. Study Area of the Project showing the location of the SAR prospects.....	3
Figure 2-1. Hydrology of the study area and surrounds. ....	5
Figure 3-1. AHIMS sites in relation to the Study Area. ....	20
Figure 4-1. Areas of the Study Area within 100 m of a Drainage 2 buffer. ....	24
Figure 5-1: Aerial showing the proposed survey areas. ....	30

## TABLES

Table 3-1: Association of all recorded sites to landscape units (OzArk 2016). ....	13
Table 3-2: Frequency of site types in association with landscape types (OzArk 2016). ....	13
Table 3-1: Summary of the survey results within the three assessment areas. ....	17
Table 3-5: AHIMS site types and frequencies.....	20

## 1 INTRODUCTION

### 1.1 PREAMBLE

OzArk Environment & Heritage (OzArk) has been engaged by Alkane Resources Limited (the proponent) to prepare a survey methodology for the proposed exploration of San Antonio, Roswell and El Paso (SAR) prospects (the Project) at Tomingley, NSW. This methodology is in accordance with Stage 3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs). The proposal information provided here also complies with Stage 2 of the ACHCRs.

### 1.2 STUDY AREA

The Study Area is located to the south of the village of Tomingley, approximately 17 kilometres (km) north of Peak Hill and 38 km south of Narromine, within the Narromine Shire Local Government Area (LGA) (Figure 1-1). The Study Area encompasses 1,600 hectares (ha) of flat to gently undulating land located to the south of the Tomingley Gold Operations, on either side of the Newell Highway (Figure 1-2).

The land is currently utilised for agricultural purposes, consistent with the historical land use since colonial settlement of the area. There is also a history of gold mining associated with the former McPhail Mine and Tomingley Gold Operations immediately north of the Study Area. The Study Area is currently zoned part RU1 - Primary Production and part SP2 - Infrastructure (the Newell Highway) under the Narromine Shire Local Environmental Plan 2011 (LEP).

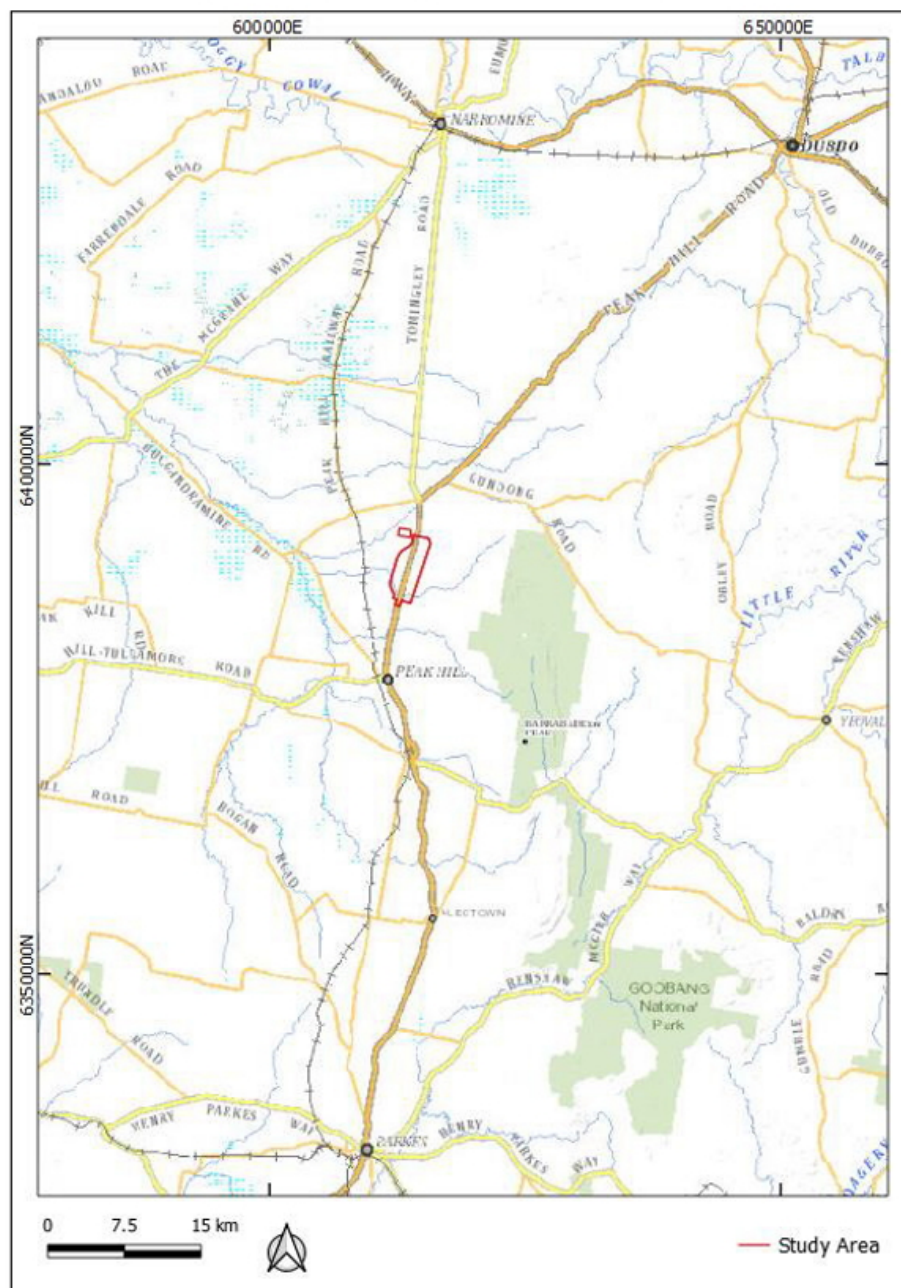
### 1.3 THE PROJECT

The Project will likely comprise both open cut mining and underground mining, with underground operations preceding open cut mining operations in a staged mining development. For underground mining operations, access will be obtained via a decline from the existing Wyoming 1 open cut within the Tomingley Gold Operations site, with a ventilation rise located to the northwest of the intersection of the Newell Highway and Kyalite Road. For open cut mining operations, a series of open cuts and waste rock emplacements (either in-pit or out-of-pit) would be constructed in the vicinity of the San Antonio and Roswell Prospects (Error! Reference source not found.). Layout of the Project has yet to be determined but will be fully contained within the Survey Area. The Project would require the realignment of sections of both the Newell Highway and Kyalite Road.

The proponent is currently defining the resource through drilling ahead of commencing the process of making an application for Development Consent, a Mining Lease and a range of other approvals required to enable mining of the identified resource. A *Review of Environmental Factors* (REF) for exploration activities in support of the SAR Project was submitted in November 2019.

The SAR project will be classified as a State Significant Development (SSD), however, the *Secretary Environmental Assessment Requirements* (SEARs) have not yet been applied for.

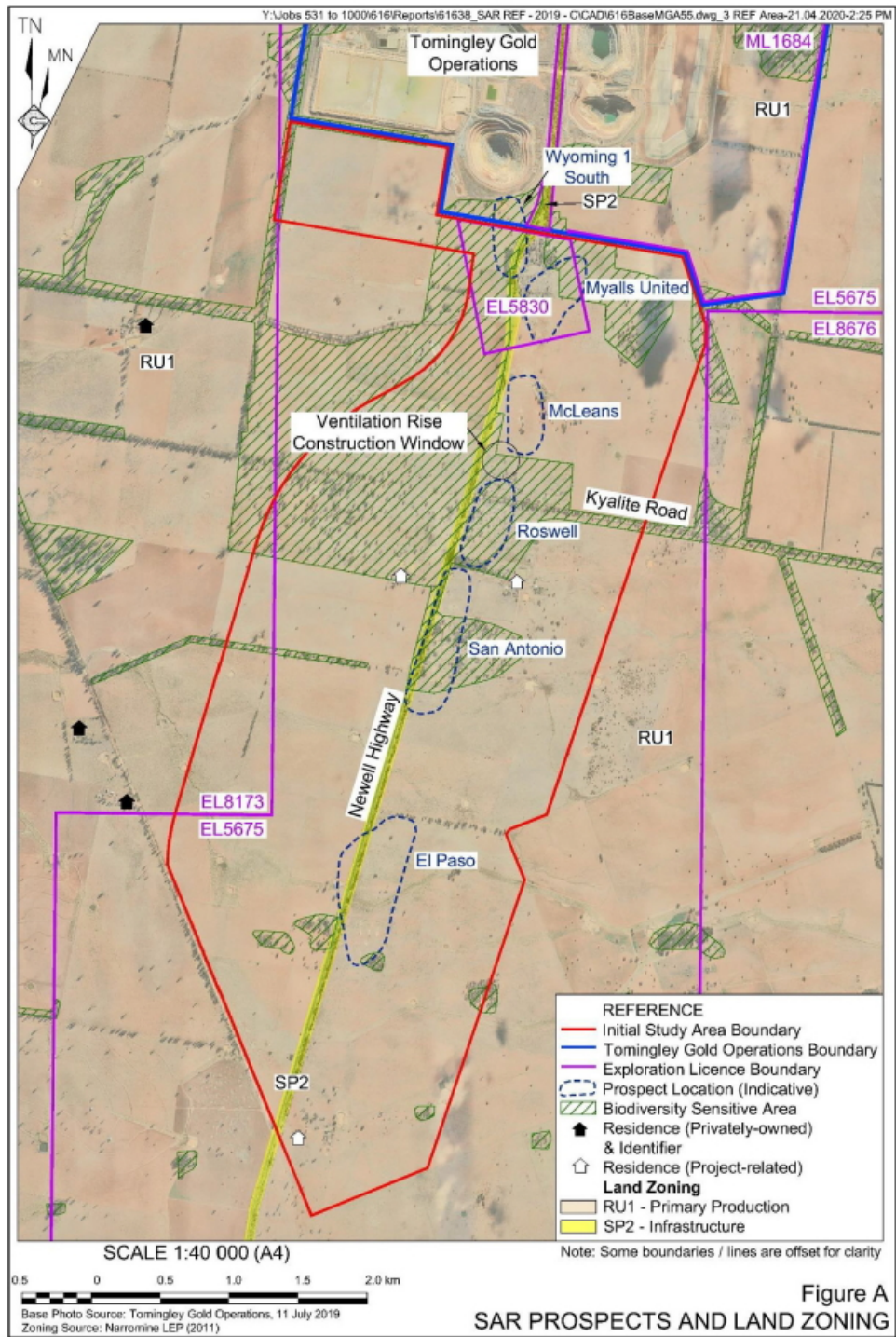
**Figure 1-1. Map showing the location of the Study Area.**



Aboriginal Cultural Heritage Survey Methodology: San Antonio, Roswell and El Paso Prospects, Tomingley Gold Operations.

2

Figure 1-2. Study Area of the Project showing the location of the SAR prospects.





## 2 ENVIRONMENTAL CONTEXT

### 2.1 TOPOGRAPHY

The Tomingley area is situated in the physiographic region known as the central-west slopes of New South Wales. It is located just west of the border between the Upper Macquarie River and the Western Plains which is a transitional zone between the Great Dividing Range to the east and the plains of the Darling River to the west (Koettig 1985: 12). The Study Area is located to the northwest of the Herveys Range on the western slopes of the Great Dividing Range.

The topography of the Study Area is typically flat to very gently undulating in the north and west, and undulating with low hills in the east and southeast, a terrain which provides no physical barriers to movement across the landscape. Areas in the central and northern portions of the Study Area consist of gilgai which creates a hummocky micro-relief pattern and therefore are areas with poor runoff.

### 2.2 GEOLOGY AND SOILS

Understanding land formation processes is an important part of assessing the availability of exploitable resources in the landscape and predicting the ability of that landscape to preserve archaeological material (DECCW 2010).

The Study Area is located near the northern end of a narrow belt of early Ordovician to early Silurian-aged submarine volcanic and shallow intrusive rocks of the Junee-Narromine Volcanic Belt within the Lachlan Fold Belt. Within the Study Area, the basement geology is dominated by the late Ordovician to early Silurian Mingelo Volcanics. Gold occurs in quartz reefs within the sub-surface slates of the Ordovician period.

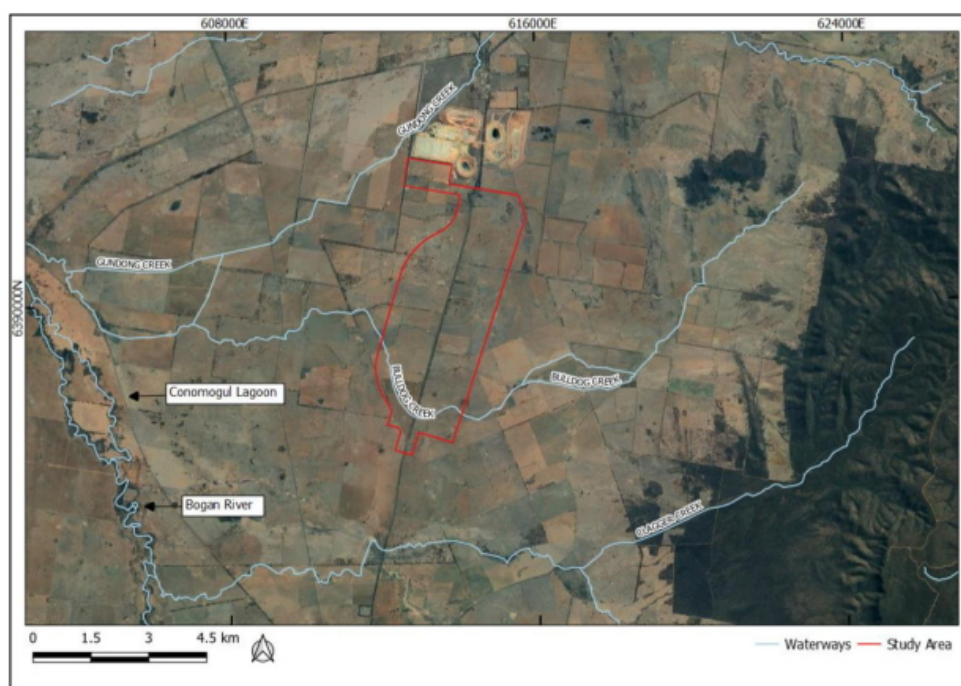
Sedimentology of the Goonumbla Hills is defined by stony yellow earths, thin brown structured loams on the hills merging with red-brown and red texture-contrast soils on the flats (Mitchell 2002: 60). The Bogan Alluvial Plains consists of red-brown texture contrast soils on the plains with brown and grey cracking clays on the backplains (Mitchell 2002: 49). The primary mode of geomorphic activity within the Study Area is erosion as a result of historical land clearing, cultivation and grazing.

### 2.3 HYDROLOGY

Bulldog Creek, an ephemeral drainage line, traverses the southern portion of the Study Area (Figure 2-1). Bulldog Creek is a tributary of Gundong Creek, located at its closest 330 meters (m) west of the north-western portion of the Study Area. It is noteworthy that historically Gundong Creek terminated in Tomingley as a spring but was diverted through channelling in the nineteenth century and it is this recent creek portion that is north of the Study Area (OzArk 2011).

Bulldog Creek and Gundong Creek, flow to the west and southwest and merge with the Bogan River approximately 11 km to the west of the Study Area. The Bogan River flows in a generally north-westerly direction before merging with the Darling River approximately 80 km upstream of Brewarrina.

**Figure 2-1. Hydrology of the study area and surrounds.**



## 2.4 VEGETATION

Native vegetation in the study area is highly disturbed due to previous land clearing for agricultural purposes. The majority of the Study Area is currently used for intensive cropping farming. There are, however, several areas with remnant trees across the Study Area generally along transport routes, along drainage lines and on crests.

Prior to historic clearance, vegetation within the Study Area and surrounds would have been consistent with the Floodplains Transitional Woodlands vegetative formation as described by Keith (2004). Tree species included *Eucalyptus microcarpa* (Grey Box) and *E. populnea* subsp. *bimbil* (Bimble Box) throughout with *E. melliodora* (yellow box) and *E. conica* (Fuzzy Box) occurring in the 'damper areas', and *E. camaldulensis* (river red gum) occurring on creek banks. Elevated red soiled gravel ridges supported *E. dwyeri* (Dwyer's red gum), whilst drier soils may support an occasional *Brachychiton populneus* (kurrajong), *Allocasuarina cristata* (belah) or



*Allocasuarina luehmannii* (bullock) but are mostly dominated by *Callitris glaucophylla* (white cypress pine).

## 2.5 CLIMATE

Climate statistics from the Peak Hill Post Office show the area experiences warm to very warm (hot) summers, with an average rainfall of 561 millimetres (mm), predominately occurring in summer. The average summer maximum temperature is 33.5°C and maximum winter temperature 19.5°C (BoM 2020).

## 2.6 EXISTING LEVELS OF DISTURBANCE

Disturbance, historical or natural, potentially alters the archaeological record. It can do this in a variety of ways; either directly or indirectly. For example, land clearing directly removes a particular site type: usually scarred trees or stone arrangements. Indirectly, land clearing accelerates soil erosion, potentially resulting in previously buried occupation / activity sites becoming exposed and altered / damaged.

The Study Area has moderate to high levels of disturbance mostly consisting of impacts related to the area's agricultural use. Disturbances across the Study Area are summarised below:

- **Agriculture and Pastoralism.** Farming and grazing are fundamental to the local economy and dominate land-use throughout the area. The Study Area is wholly contained within farming and grazing land which has had the following impacts:
  - **Vegetation removal.** The Study Area has been subject to significant levels of vegetation removal. Culturally modified trees may have been removed during the land clearance phase in the area, thereby distorting the archaeological landscape by removing this site type
  - **Cultivation.** The entirety of the Study Area has been subjected to repeated cultivation. Repeated cultivation since the commencement of European settlement will have altered soil profiles and potentially disturbed the integrity of sites and any potential sub-surface archaeological deposits. Cultivation acts to redistribute artefacts both horizontally and vertically within the soil profile and ultimately destroys the integrity of artefact assemblages within the top 20 to 50 centimetres (cm) of the soil profile. Research into the impacts upon archaeological sites as a result of agricultural practices, termed plough zone archaeology, has demonstrated that artefacts can move in excess of 8 m per season of cultivation (Frink 1984; Gaynor 2001)
  - **Grazing.** The Study Area has been used historically and is currently used for low-intensity livestock grazing. The presence of hooved livestock is likely to have resulted in trampling and compaction of the ground surface which accelerates soil loss
  - **Farm Infrastructure and remediation works.** The Study Area has an overall low level of disturbance generated by the construction of dams, contour banks, agricultural buildings and fencing. Earthworks associated with contour banking

and dams can reveal lithic artefacts which may have been otherwise concealed by low ground surface visibility (GSV).

- **Dwellings.** A low level of disturbance is generated by the construction of dwellings and associated farming structures located within the Study Area at three locations
- **Transport.** The Newell Highway traverses the central portion of the Study Area. Additional graded roads which traverse the Study Area include McNivens Lane, Back Tomingley West Road and Kyalite Road. A limited number of farm tracks also intersect the Study Area. In the case of unsealed tracks, this disturbance tends to provide exposures, thus enabling the identification of otherwise obscured artefacts
- **Erosion.** Erosion includes sometimes gully erosion and sheet wash erosion, primarily adjacent to waterways. Varying scales of erosion on the archaeological landscape has the capacity to completely remove archaeological sites. However, in the process of erosion, many archaeological sites can become freshly exposed.

## 2.7 CONCLUSION

The landscape of the survey area is likely to have been hospitable to Aboriginal people, given the temperate climate, accessible topography; however, relative to surrounding landscapes, it does not contain features, such as a permanent water supply (the Bogan River) or shelter (Hervey Ranges) that are most likely to encourage substantial Aboriginal occupation of the landscape. As such, the size and density of sites located within the Study Area are likely to be smaller and sparser than those to the west and south which are in closer proximity to the Bogan River and to the east around the Hervey Ranges.

The high level of ground surface disturbance across the Study Area from activities associated with European occupation such as vegetation clearance, cultivation and grazing would have affected the integrity of any deposit based archaeological sites. As such, unobtrusive sites such as open artefact scatters, if present, are likely to be disturbed. Broad-scale vegetation clearance characteristic of the area reduces the likelihood that culturally or historically modified trees remain *in-situ*; however, the presence of a number of standing mature eucalypts across the Study Area increases the possibility of this site type.

### 3 ARCHAEOLOGICAL CONTEXT

#### 3.1 INTRODUCTION

The Study Area is located in an area where the nearby archaeological values are largely known due to the considerable number of previous assessments completed in adjacent landforms.

This survey methodology will summarise limited studies that are most applicable to the Study Area although the predictive model for site location will consider the broader archaeological context of the district.

#### 3.2 ANTIQUITY OF ABORIGINAL OCCUPATION

At the time of colonial settlement, the Study Area was within the territory of people belonging to the Wiradjuri tribal and linguistic group (Tindale 1974 and Horton 1994). The Wiradjuri tribal area is situated within the Murray Darling Basin, covering three primary physiographic divisions: the riverine plains in the west, the transitional western slopes in between and the highlands or central tablelands in the east (White 1986).

The Study Area falls within the central division, being the transitional western slopes into the central tablelands, the heart of Wiradjuri territory. More specifically, the local landscape of the Study Area is considered to be that of the Bogan River Wiradjuri people, whose range included Tomingley and was bounded to the east by the Hervey Ranges (as named by Oxley) now known as Goobang, from the Aboriginal original name for ranges.

While it is most likely that the name—Tomingley—was a variant on the name Tom Inglis, who was a stagecoach driver between Dubbo and Parkes, it is also possible it was a local Aboriginal word. Garnsey, an ethnographer, who recorded extensive details about Aboriginal people in Dubbo, noted the word Tomingley is an Aboriginal word for death adder, although; he had never seen or heard anyone refer to a death adder in the region (Garnsey 1942: 62). It is most likely he found this information in Walker, who recorded the Wiradjuri language in this region. Walker noted that 'Tomingley' means 'deaf adder country' (Walker 1904: 90).

Episodes of early contact between Aboriginal and colonial cultures from the nearby Lachlan Valley (around 30 km south) were documented by the explorers Oxley and Cunningham in May 1817. On the return journey from exploration of the Lachlan, the explorers tracked north of Lake Cargelligo and Condobolin to the west of Parkes before bearing more northeast towards Peak Hill and Tomingley (Whitehead 2003: 290–296). On the 10<sup>th</sup> and 11<sup>th</sup> of August the group set up camp west of the Bogan River near Gobundry Mountains along Genaren Creek, reaching almost the Bogan River by the 12<sup>th</sup> of August and arriving just north of Tomingley on 13<sup>th</sup> August.

Relating to the travels of August 10, Oxley writes:

*We have hitherto seen no other signs of this being inhabited country than the marks usually made by the natives in ascending the trees, and none of these were very recent. It is probable that they may see us without discovering themselves...*

(Whitehead 2003: 298)

While Cunningham (1817) reported that:

*...we halted and pitched our tent on the site of an old native encampment. Here we saw quantities of horse-mussel shells with which the creek had furnished them and some stones on which they had been sharpening some weapons or instruments, perhaps their mogos or stone hatchets.*

(Whitehead 2003: 299)

Heading east from Genaren Creek on the 11<sup>th</sup> August, Oxley notes that they came across many transitory encampments of the 'natives' that did not appear to have been used for four to six months and many with mussel shell scatters in association.

August 13 was spent traversing the landscape from Genaren Creek to Tomingley, hoping to intersect the Macquarie River at any moment (although they were further from it than they realised). It appears that it had rained in the preceding days and water still lay in creeks of the area and they camped just north of Gundong Creek near Tomingley Creek, where they note the presence of a spring. Oxley writes of their approach to the area that:

*On the banks of that burn (Scottish for creek), many heaps of the pearl muscle-shells were found, and marks of flood about eight feet. We have for several days past seen no signs of any natives being recently in this part of the country; the marks on the trees, which were the only marks we saw, being several months old, and never seen except in the vicinity of water. Marks of the natives' tomahawks were to us certain signs of approaching water...*

(Whitehead 2003: 303)

To the south of the Study Area and somewhat later (1835) are accounts of contact with native groups by the Mitchell expedition, which had set out to explore the Bogan River in 1835 (Unger undated: 3; Kass 2003: 6). In April 1835 Mitchell's party encountered a group of natives on the eastern outskirts of what is today the town of Parkes. From this meeting, Mitchell learned that what had been named the Hervey Range by Oxley in 1817 was in fact known to the locals as 'Goobang', which derived from the Aboriginal word *Coleong Coobung*, which meant place of many wattles (Kass 2003: 9). Mitchell's group camped within earshot of the Aboriginal camp and his account is quoted by Unger (nd: 4):

*The natives who we met here were fine looking men, enjoying contentment and happiness within the precincts of their native woods. Their enjoyment seemed so*

*derived from nature, that it almost excited a feeling of regret, that civilised men, enervated by luxury and all its concomitant diseases, should ever disturb the haunts of these rude happy beings. The countenance of the first man who came up to me, was a fine specimen of man in an independent state of nature. He had nothing artificial about him, save the badge of mourning for the dead, a white band (his was very white), round his brow. His manner was grave, his eye keen and intelligent, and, as our people were encamping, he seemed to watch the moment when they wanted fire, when he took a burning stick, which one of the natives had brought, and presented it in a manner expressive of welcome, and an unaffected wish to contribute to our wants. Sat a distance, their gins sat at fires, and we heard the domestic sounds of squalling children.*

When Mitchell's party left their camping spot, several natives reportedly followed them, one of whom speared a large kangaroo, while others used new tomahawks to extract honey from tree branches. It is recorded that the natives accompanied the expedition for four days before retreating upon the appearance of further natives. This was interpreted by Mitchell as the original group of natives having reached their tribal boundary (Unger nd: 5).

Upon reaching the headwaters of the Bogan (southwest of Peak Hill), Mitchell records encountering the tribe of 'Bultje', said to be composed of up to 120 natives of considerable intelligence who could speak some English. He describes that this tribe remove one of the two front teeth of males aged over 14 (Unger nd: 5). Mitchell's accounts of the 'Bogan blacks' provide excellent detail on subsistence, describing this tribe to be reliant more on possums, kangaroo and emu than the lower Darling Aboriginal groups, but with a significant input from freshwater mussels. The root of the 'tao' plant are said to have comprised much of the children's diet.

Anthropological or ethnographic research ceased in the Peak Hill and Tomingley region during the 20<sup>th</sup> century.

### 3.3 REGIONAL ARCHAEOLOGICAL CONTEXT

The most relevant research-based studies over the central west and Lachlan Valley were undertaken by Kelton (1996), English et al (1998) and OzArk (2016). These studies provide baseline data for placing past Aboriginal sites within a regional landscape context. The following is a summary of the salient points learned from these studies.

In 1996, Kelton completed research-based assessment of Aboriginal scarred trees and other archaeological sites in the Lachlan Valley region. Kelton highlighted that sites found within the Lachlan Valley reflect diversity and different levels of past Aboriginal occupation, hunter-gatherer lifestyle and technology, as well as varying forms of resource extraction. Research into site registrations in the Lachlan Valley display that those with the greatest frequency are open campsites and scarred trees. Around 220 Aboriginal scarred and carved trees were recorded in

the Lachlan Valley by 1996, commonly found on yellow box, grey box, river red gum, fuzzy box and bumble box (Kelton 1996). According to Kelton, scarred trees can be expected to occur over almost all landform units, however, frequency tends to increase with proximity to water. Kelton also noted differences in the types of culturally modified trees concluding that scars result from what may be considered 'normal' routine domestic purposes associated with the hunter-gatherer lifestyle, and carving which results from more culturally complex traditions, including the marking of burials and or ceremonial sites (also known as Bora Grounds). The second most numerous site type, the open campsite, was noted at 210 locations in 1996 (Kelton 1996). Within the Lachlan Valley, open campsites tend to be located in close proximity to reliable water sources such as rivers, creeks, billabongs and lakes, and gilgai formations, playa lakes, ephemeral drainages, and usually at elevated terrace locations, or along non-flood prone, elevated ground nearby these formations.

In 1998, English et al undertook survey of Goobang National Park which includes the Hervey Ranges, located 8 km east of the Study Area, and described a settlement pattern similar to the ones described above (English et al 1998: 196). Results of this assessment recorded 30 open camp sites representing both short- and long-term occupation sites. Artefacts from these sites numbered 928 and were predominantly made from volcanic stone and quartz. Also recorded were 28 modified trees, thought to not represent all likely to be present considering the wooded nature of Goobang National Park and therefore reflecting the amount of coverage feasible over such a large area (42,080 ha). One large axe grinding groove site was recorded comprising 13 elongated grinding grooves over three outcropping boulders, assessed as a significant site as it is the only one recorded in Goobang National Park and is in good condition. A quarry site accessing volcanic stone identified as rhyolite was also found. A 2001 report issued by the NSW National Parks and Wildlife Service (NPWS) details the findings of this survey, shedding some insight to the nature of settlement patterns in the region and noting the importance of the Hervey Ranges. These investigations note a widespread use of the resources in the Hervey Ranges with the watercourses of the lower slopes and undulating plains seeing the most extended and repeated occupation. It also records the importance of the Hervey Ranges to the Wiradjuri as a travelling route, landmark and its possibility of having important ceremonial value.

More recently in 2016, OzArk was engaged by the Central West Local Land Services (CWLLS) to formulate and test a predictive model for Aboriginal site location within Travelling Stock Reserves (TSRs) across the CWLLS area. In formulating a predictive model for site location, Mitchell (2002) landscapes were used to understand the underlying landform type. The resolution of the Mitchell landscape units was too fine to be of use and OzArk (2016) used a higher-level classification within the Mitchell landscape units to describe the landscapes within the CWLLS area. Landscapes were divided into the following types:

- Channels and floodplains

- Alluvial plains
- Slopes
- Uplands
- Downs.

Previously recorded AHIMS sites were plotted against these landscape types and the following observations made:

- A high number of sites (n=876) were located within slopes landscapes, however, this result could be due to the fact that Dubbo is located within a slopes landscape and the highest number of sites in the CWLLS area is recorded in and around Dubbo
- The highest density of sites is within channels and floodplains landscapes (n=927)
- Alluvial plains landscapes have the third highest density of sites (n=770)
- Relatively small numbers of sites are recorded in uplands (n=5) and plateau (n=34) landscapes
- A moderate number of sites are recorded in downs landscapes (n=255). Three or four clusters of sites exist in downs landscapes, which may have skewed the data. If the veracity of all site recordings in this category could be verified, it is suspected that the actual number of sites in downs landscapes would be lower.

OzArk (2016) divided the CWLLS area into two stream orders—major watercourses (normally named rivers) and minor watercourses (normally named creeks and their larger tributaries)—and buffers were established for each watercourse type as follows:

- Drainage 1 buffer: 200 m either side of a major watercourse
- Drainage 2 buffer: 100 m either side of a minor watercourse.

As such, the OzArk (2016) CWLLS predictive model made predictions based on the landscape type and distance to watercourses. The predictive model was tested by assessing 32 TSRs within the CWLLS area located in a variety of landscape types with variable distances to water. As a result of the assessment, 59 sites were recorded. Twenty-six (44%) of the recorded sites were modified trees, 22 (37%) were artefact scatters and 11 (19%) were isolated finds. The majority of recorded sites were located in channels and floodplains landscapes (35 sites or 59% of all sites), followed by 10 in slopes landscapes, four in alluvial plains landscapes and one in a downs landscape. No sites were recorded in uplands or plateau landscapes.

**Table 3-1** demonstrates that the most archaeologically sensitive landscape in the CWLLS area is channels and floodplains, followed by slopes landscapes. Other landscape types have a low representation but demonstrate that low densities of sites exist in other landscape types.



**Table 3-1: Association of all recorded sites to landscape units (OzArk 2016).**

Landscape unit	Number of sites	Percentage of total (n=59)
Channels and floodplains	36	61
Alluvial plains	6	10
Slopes	14	23
Downs	1	2
Uplands	2	4
Plateau	0	0

Site types associated with the landscapes most-frequently recording sites (channels and floodplains and slopes) show that channels and floodplains landscapes are more likely to contain modified trees and that slopes landscapes are more likely to contain artefact scatters and isolated finds (Table 3-2).

**Table 3-2: Frequency of site types in association with landscape types (OzArk 2016).**

Site type	Channels and floodplains	Slopes	Alluvial Plains
Artefact scatter	11 (30.5%)	7 (50%)	3 (50%)
Isolated finds	4 (11%)	3 (21%)	3 (50%)
Modified trees	21 (58.5%)	4 (29%)	0 (0%)

In terms of drainage buffers, OzArk (2016) found that 27 sites (or 46% of all sites) were recorded with the Drainage 1 buffer and 10 sites (or 17% of all sites) were recorded within the Drainage 2 buffer. Therefore, more than 63% of all sites were recorded within the two drainage buffers, with a clear bias toward Drainage 1 buffers.

### 3.4 PREVIOUS ASSESSMENTS NEAR THE STUDY AREA

Wiradjuri heritage in the Parkes–Peak Hill–Narromine region has been documented through many development-related heritage assessment projects. The following review of studies undertaken over this region help to provide a backdrop for the type of sites likely to occur within the Study Area.

#### 3.4.1 McPhail Mine

An Environmental Impact Statement was prepared in 1995 for the proposed reprocessing of tailings from the original McPhail Mine (Cook 1995), immediately north of the Study Area. No physical heritage assessment was undertaken in the face of this proposal due to the conclusion that the site of the tailings had already been substantially disturbed during original mining operations hence leaving a low likelihood for the presence of archaeological remains (Cook 1995: 21). The fact that the site contained no surface water and no evidence of 'native activity' (Cook 1995: 21) was also mentioned.

### 3.4.2 Northparkes Mine

A large development within the local region is Northparkes Mine (NPM), situated 24 km southwest of the Study Area, close to the headwaters of the Bogan River. Assessment of this area began in 1986 with a survey over the Goonumbla Mining Lease as it was then known (Stone 1986). A total of 16 sites were recorded as a result of this assessment consisting of 14 artefact scatters, of which one was associated with a modified tree, and one further isolated find. Overall, these sites were noted as being small and in poor condition, either disturbed by ploughing or erosion. Fifteen of these sites were located along the Bogan River or one of the two tributaries assessed during the study. Seven of the sites were within 1 km of the confluence of Goonumbla Creek and the Bogan River.

Subsequent survey at NPM was undertaken (Nicholson 1990) to assess new proposed impacts to an area not previously assessed by Stone (1986). The study area comprised flat to gently undulating land at the north-eastern boundary of the mining lease over previously cleared paddocks that had been either ploughed or grazed. Dense grass reduced visibility and hence site detection, and as a result, the survey was focussed on fence lines and the areas around dams which provided limited windows of visibility and resulted in coverage of around 4% of the impact area. No archaeological sites were recorded as a result of this assessment. The lack of sites was not considered surprising due to the distance from permanent water and the type of landscape assessed.

Again, to facilitate continuation of operations at NPM, an Aboriginal heritage assessment was required over areas proposed as extensions to the existing mining operations, predominantly over portions of Limestone National Forest and nearby agricultural lands (Appleton 1996). The survey area was noted as comprising about 60 per cent cypress pine, although it was likely to have been box dominated dry sclerophyll open woodland in prehistory. The area contains an elevated depression in the northern portion and undifferentiated gentle slopes down towards Goonumbla Creek in the southern portion. Prior land-use impacts within the survey area were noted as including logging, grazing, and in some locations, ploughing. Survey effort was focussed on areas around such features as erosion scars, tracks and despite the variable visibility, survey coverage was assessed as effective. Four archaeological sites were recorded as a result of this assessment, three being isolated finds and one being a possible modified tree. The overall paucity of archaeological material was interpreted as relating to the fact that the study area was dry sclerophyll woodland with no specific water source or other resources that would concentrate Wiradjuri occupation and was more likely used for activities such as foraging.

In 2006 reinvestigation was again required (Paton 2006). The aims of this assessment included the relocation and assessment of previously recorded sites, survey of areas to be impacted by the current proposal and the delineation of zones of potential archaeological sensitivity within the study area. The study area was noted as being highly modified with the only area not completely

cleared and disturbed being that of the Limestone National Forest, despite it having been logged in the past. Surveying was undertaken in transects which targeted the zones. Overall survey coverage of the proposed impact areas was determined as high, being 45–50%. Three new sites were recorded as a result of this assessment, one small open site and two isolated finds. In terms of zones of archaeological sensitivity, Paton divided the mine site into four zones:

- Zone 4 — zero sensitivity (disturbed by mining impacts)
- Zone 3 — very low sensitivity (flat waterless terrain – 35% of the study area)
- Zone 2 — low sensitivity (Limestone National Forest – 10% of the study area)
- Zone 1 — medium sensitivity (Goonumbla Creek – 5% of the study area).

It was noted that the Zone 1 area provides potential for sites close to the water course on flat, elevated terrain. These are most likely to be surface scatters although there is an assessed low potential for stratified sub-surface archaeological deposits.

In 2008 OzArk carried out archaeological test and salvage excavations in Zone 1 where a new conveyor was planned to be built (OzArk 2008). The aim of the excavation program was to determine the presence and nature of archaeological deposits in this part of Zone 1 so that management recommendations concerning the building of the conveyor could be made. The research methodology stated that if results of the test program warranted, limited salvage was to be undertaken. As part of the excavation program, a spoil heap was sieved to retrieve cultural material. This spoil heap had been created when a pad for a drilling rig was accidentally cleared in 2007. As this area was located within Zone 1, the sieving of the piled soil was included in the research design of the excavation program as the Wiradjuri community wished to retrieve artefacts potentially within it.

The results of the excavation program and accompanying geomorphological assessment indicated that Zone 1 was impacted in the past by both agricultural land use and mining infrastructure and was assessed as being disturbed over most of the area investigated by the excavation program. These disturbances included the building of roads, installation of overhead electricity lines, underground water mains and ploughing for crops. In addition, the area has been cleared of native vegetation. This disturbance was noted in the excavated pits, which were shallow (around 10–20 cm before the B-Horizon [clay] was reached) and the shallow topsoils were impregnated with intrusive rock (brought in as road surfaces), recent charcoal (from vegetation clearing) and no archaeological stratigraphy was noted in any pits. Artefact densities across the area were low and although artefacts were recorded it was extremely difficult to determine if any of these were from *in situ* deposits, although it was assessed to be unlikely. Artefacts recovered from the excavations were typical of the region and consisted mostly of unmodified flakes.

### 3.4.3 Marsden-Parkes Natural Gas Pipeline

A series of 11 sites recorded by Navin Officer (1997) extend along the Marsden to Dubbo natural gas pipeline, which follows the Narromine to Parkes rail line. These sites comprise six isolated finds and five artefact scatters. One of the artefacts scatters, 35-6-0070, was recorded in association with a possible hearth. Recorded materials included quartz, silcrete and chert. All artefact scatters were recorded within 200 m of a creek line, including Gundong and Burrabadine Creeks.

### 3.4.4 Newell Highway Pavement Rehabilitation at Tomingley

OzArk (2003) completed an archaeological assessment for the Roads and Traffic Authority (now Transport for NSW [TfNSW]) along a 4.5 km section of the Newell Highway immediately south of Tomingley. Approximately 2.5 km of this assessment area is located within the Study Area. The assessment area was described as being flat, and low-lying with no hydrological features and over 500 m from a permanent water source. Four Aboriginal sites were located during the survey. All sites included scarred trees on grey box (*E. microcarpa*) located on the eastern side of the Newell Highway. The recording of scarred trees was unexpected, as they are outside their expected zone of location (i.e. close to creek lines) being found on flat plains approximately 0.5 to 1 km from reliable water.

### 3.4.5 Tomingley Gold Project

OzArk (2011) completed an archaeological assessment for the Tomingley Gold Project. The assessment area encompassed 776 ha of land to the north of the Study Area (referred to as the Mine Site Study Area), as well as a 46 km pipeline extending from mine site to Narromine (the TNWP Study Area) and a 20 km electricity transmission line extending to Peak Hill (the PHTETL Study Area). The landform of the three assessment areas is flat and relatively low-lying. Creeks of the area tend to be temporary and from the southern portions of the Mine Site Study Area, flow west into the Bogan catchment and closer to Narromine begin to flow north / northeast into the Macquarie catchment. Overlaying site locations with the general landform unit divisions across the broader region shows most open sites are associated with the alluvial valley floors (close to a drainage features) and the gentle toe slopes of the adjacent flat to undulating plains. They are generally located close to drainage lines and, where distant to water, are more likely to be smaller camp sites or one-off activity sites.

#### Survey results

A total of 60 Aboriginal sites were recorded during survey including 54 culturally modified trees (43 scarred, nine possibly scarred, one resource gathering and one carved); three artefact scatters (one with associated potential archaeological deposit [PAD]), two isolated finds and one ceremonial / dreaming site) (Table 3-3).

**Table 3-3: Summary of the survey results within the three assessment areas.**

	Culturally modified trees	Artefact scatter	Isolated find	Ceremonial and dreaming site
<b>Mine Site Study Area</b>	15 (11 scarred, three possibly scarred, one resource gathering and one carved).	2	2	0
<b>TNWP Study Area</b>	36 (29 scarred, six possibly scarred, one scarred tree and possible ceremonial and dreaming site)	1 (with PAD)	0	1
<b>PHETL Study Area</b>	Three scarred trees	0	0	0

**Test excavation**

TWNP-OS1 with PAD was identified on a river terrace / aeolian dune landform 50 m south of an old Macquarie River palaeochannel. Aboriginal artefacts were found on the eroding edge of this landform closest to the palaeochannel and included including flakes, cores and scrapers manufactured from quartz, indurated mudstone, chert and granite. The uniform appearance of the sands suggested that the crest of the terrace may have been an aeolian, source bordering sand sheet, that may have been active when the climate was drier during the last glacial.

A test excavation program was completed 1–2 February 2011 over six excavation pits confined to the area of TWNP-OS1 with PAD that will be impacted by the TGP water pipeline.

Major findings of the archaeological test program were:

- The lithic assemblage of the excavation consists of a total of 121 artefacts. One hammer stone was recorded, along with several cores
- No archaeological stratification was noted in any of the excavation pits
- Artefact densities ranged from medium to very low across the excavation area with maximum densities of 27.2 artefacts per cubic metre of excavated material
- The excavation assemblage is dominated by quartz with 71.1% of all excavated artefacts of this material. The other dominant raw material used was chert with 14% of the artefacts being from this material. The remaining 14.9% of material came from a mix of silcrete, rhyolite, mudstone, and other fine-grained siliceous materials
- In most cases, the artefacts recorded in the excavations came from Spit 1 (0–20 cm) with a few artefacts from spits 2 and 3. Therefore it is evident that most of the material was concentrated close to the surface
- None of the test excavation squares excavated at site TWNP-OS1 displayed evidence of a complex site features. No features were recorded from the excavations
- The test excavation program has established that site NTWP-OS1 with PAD has, at its eastern margins, a low artefact density, shallow deposits and a high likelihood of prior disturbance

- As such, in the area where the TGP water pipeline is proposed to be located, the site possesses low scientific significance and the findings demonstrate that further archaeological investigation is unwarranted

The test excavations did establish that there is a likelihood of further Aboriginal artefacts in the area of TNWP-OS1 with PAD beyond those areas that were test excavated, including in the area of the water pipeline (i.e. between the test excavation pits). These artefacts are likely to be in the top 20 cm of soil.

### Discussion

The sites recorded during the survey were consistent with the predictive model. The largest open site (TNWP-OS1 with PAD), which displayed a diversity of raw material and artefact types, was identified close to the Macquarie River palaeochannel, while smaller sites (TGP-OS1 and OS2) were identified adjacent to the area thought to have been a spring at Tomingley in prehistory. Aboriginal modified trees were most prevalent in locations close to drainage features, with between 60% and 63% recorded within 100 m of drainage features or water sources.

The lack of artefact scatters in the Mine Site Study Area close to more permanent water sources, such as the northern portion of Gundong Creek was attributed to the fact that the majority of this creek line within the Mine Site Study Area is in fact a post-contact period channel. It was considered likely that the northern portion of this creek may be more original as scarred trees are certainly clustered in that area.

The high frequency of scarred trees was somewhat unexpected, comprising 90% of recorded sites. This predominance was thought to reflect the practise of maintaining remnant, almost unmodified, roadside vegetation corridors and wind breaks along property fence lines. The frequency of modified trees (scarred, carved, boundary markers and women's birthing trees) indicates both significant use of the practice of scarring, as well as providing evidence of a densely occupied area, at least in the last 500 years.

### **3.4.6 HW17 Newell Highway, Trewilga Realignment**

OzArk (2012) was commissioned by Roads and Maritime (TfNSW) to conduct an Aboriginal heritage assessment of several sections of the Newell Highway between Parkes and Peak Hill, immediately west of Trewilga and 33 km north of the current survey area. One Aboriginal site (Trewilga–Open Site 1 [T-OS1] with PAD) was re-recorded as part of the 2012 assessment and was noted as extending the full width of the proposed impact corridor, both north and south of Ten Mile Creek. The PAD associated with this site was thought to include the presence of further artefactual material, despite the fact that the site was assessed as being disturbed by ploughing. The PAD was subject to a three-day test-excavation program from 26 March–28 March 2013. No *in situ* archaeological deposits were encountered in the excavation, with the few artefacts

retrieved coming from disturbed contexts. As such, no further investigation or sub-surface salvage program was recommended. The findings of the investigation indicated that there was a very low-density artefact scatter at T-OS1.

### 3.4.7 Parkes to Narromine Inland Rail Project

Umwelt Australia Pty Limited (Umwelt 2017) completed the Aboriginal cultural heritage assessment for the Parkes to Narromine Inland Rail project. The assessed area was 106 km long and the rail corridor is general 40 m wide. The majority of the proposal area is located within the Bogan Alluvial Plains landscape, with the Goonumbla Hills landscape concentrated primarily in the southern portion of the proposal area. The Boggy Cowal landscapes are present within the northern portion of the proposal area as are the Narromine Hills, with the Bimbi Plains comprising a very small proportion of the northern part of the proposal area.

As a result of previous archaeological investigations undertaken in the region, a total of 19 archaeological sites have been recorded within 50 m of the proposal area. The majority of the sites contain stone artefacts. In general terms, the numbers of artefacts identified within these sites are low and typically contain less than five artefacts. The two largest sites (in terms of quantity of artefacts) are associated with Ten Mile Creek and Burrabadine Creek, both of which are relatively major watercourses in the area. An artefact scatter at Ten Mile Creek was also assessed as having the potential to contain additional artefacts in a sub-surface context. Other sites including three scarred trees and a potential quarry for basalt located outside the proposal area.

During the survey, it was noted that the current rail corridor has been subject to extensive disturbance, with areas within the rail corridor assessed as having low archaeological potential. However, eight areas were identified as having moderate or higher archaeological potential within the sections of the proposal area outside the current rail corridor. These areas include the four previously recorded archaeological sites identified during the survey.

## 3.5 LOCAL ARCHAEOLOGICAL CONTEXT

A search of the AHIMS database on 14 April 2020 returned 98 records for Aboriginal heritage sites within a 30 km x 30 km search area over the study area (GDA Zone 55 Eastings: 599493–629493; Northings: 6378338–6408338 with no buffer) (see **Table 3-4** for the site types and frequencies; results mapped on **Figure 3-1**).

Of the recorded 98 sites, two are located within the Study Area based on the coordinates provided by AHIMS. However, site 31-6-0036 has been erroneously registered with AHIMS and plots within the Study Area when it is in fact in the Menindee Lakes area<sup>1</sup>. This site will be omitted from further

<sup>1</sup> OzArk will contact AHIMS to ensure the coordinates of this site are corrected on the database.



analysis and it will be considered that the search area contains a total of 97 previously recorded sites.

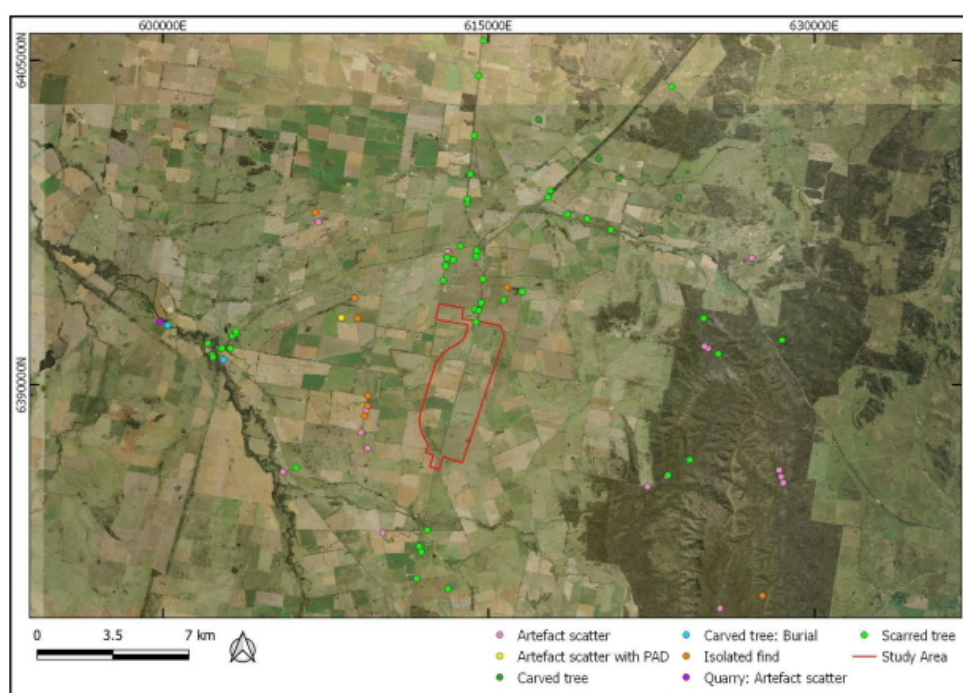
Based on the above, only one previously recorded site is located within the Study Area: site 35-6-0142, a scarred tree recorded by OzArk in 2003 (**Section 3.4.3**) located in the north of the Study Area at the South Tomingley Rest Area, east of the Newell Highway.

As shown in **Table 3-4**, culturally modified trees are the dominant recorded site type in the local area. Of the culturally modified trees, 66 are scarred trees and seven are carved trees. Two of the carved trees have been recorded in association with potential burials.

**Table 3-4: AHIMS site types and frequencies.**

Site Type	Number	% Frequency
Culturally modified trees (scarred or carved)	73	75%
Stone artefact scatter	12	13%
Isolated finds	8	8%
Culturally modified trees; burial	2	2%
Stone artefact scatter with PAD	1	1%
Stone quarry with artefacts	1	1%
<b>Total</b>	<b>97</b>	<b>100%</b>

**Figure 3-1. AHIMS sites in relation to the Study Area.**



Looking more closely at these site recordings and the assessments that recorded them provides a clearer picture of: the level assessment the area has undergone; the range of sites recorded; the landform they were recorded in; and disturbance levels etc. Review of these sites is provided from Narromine in the north to Peak Hill in the south and excludes those already summarised in **Section 3.4**.

Within the searched area the most north-eastern occurring site (35-3-0148) is a scarred tree occurring on the AHIMS as a one-off recording by Stapleton along Momo Road. The auspices of this recording are uncertain, but it may have been documented by an amateur with no associated report.

A few kilometres to the south there are several carved trees recorded along Tomingley and Fiddlers Creeks (35-6-0006, 0012, 0013 and 0021). Three of these four were registered by Bell (1979), while the fourth was recorded by Edmonds. Of these, two of the Tomingley Creek modified trees (35-6-0012, 0013) and possibly also the third (35-6-0006) are likely to be those first referred to by Etheridge in 1918. Against his recording of Tomingley Creek, Etheridge notes that three carved trees were recorded for this locality and that the area is said to have contained a large number of graves. The trees were apparently removed to the Australian Museum, however, records as to which trees these were have not been kept and hence there is no further data available on the glyphs these trees possessed (Etheridge 1918: 41).

Slightly to the south is a group of three scarred trees (35-3-0101, 0102 and 0103) recorded by Bluff, an interested amateur, along the road to Obley, with a further two recorded on the Newell Highway near the Obley Road turn-off (35-3-0058 and 0059). It is believed that the latter two trees have had Section 90 permits enacted for their removal and they are currently stored in shelters by the side of the road.

Immediately north of Tomingley, and slightly west along a road reserve, a further two scarred trees were recorded by NPWS. These trees appear to have the same co-ordinates on the AHIMS; although the fact they are referred to as ST1 and ST2 respectively indicates that there are two trees present, maybe close to one another. These trees apparently bear canoe scars.

South and west of Tomingley is a modified tree (35-6-0047) recorded along the Bogan River by Bluff. This site plots close to an open camp site called Conmomugul Lagoon (43-30028), apparently recorded as part of the Goobang National Park assessment. A group of three sites recorded south and east of Tomingley fall within the Goobang National Park. These comprise two artefact scatters and one scarred tree (35-6-0073, 0104 and 0105).

A group of four sites (35-6-0133, 0134, 0135 and 0136) all apparently modified trees along / near the Newell Highway immediately north of Peak Hill were recorded by Mills. Again, the manner in which these sites were recorded is unknown.

### 3.6 ARCHAEOLOGICAL CONTEXT: CONCLUSION

Due to the history of archaeological investigation near the Study Area, there have been a number of sites recorded in the Tomingley area (Figure 3-1). These research and development driven studies show that the region's most frequently occurring evidence of Aboriginal activity are culturally modified trees, particularly scarred trees. To a lesser extent, a number of carved trees have also been recorded. The previous studies have shown in a number of cases that culturally modified trees are more likely to be located closer to substantial watercourses and drainage lines, however, as noted by Kelton (1996) and confirmed by OzArk 2003 and 2011, they can be found over almost all landform units, even those distant from water.

Artefact scatters are more likely to be located near permanent and semi-permanent watercourses, particularly on flat or gently sloping landforms, terraces, or on the crests saddles and benches of ridge and spur landforms. Artefact scatters in the area range considerably in size and density from manifestations of several artefacts through to sites containing in excess of 50 artefacts. Larger, more complex scatters are more common within 200 m of the Bogan River, while low-density sites are more common within 100 m of semi-permanent creeks. Scatters found on landforms similar to the Study Area are generally low-density with 10 or less artefacts and consist largely of un-modified flakes.

To date, the dominant raw lithic material at identified sites is quartz, with additional materials recorded including sandstone, silcrete, chert, granite, volcanic and fine-grained siliceous materials.

Quarries for the procurement of raw materials used to manufacture stone tools are possible if suitable sources of outcropping stone exist, however, this site type is recorded in a low frequency in the region. Quarries in this area are more likely to be basalt quarries.

## 4 PREDICTIVE MODEL

### 4.1 PREDICTIVE MODEL FOR THE STUDY AREA

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including: plant and animal foods; stone and ochre resources and rock shelters; as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

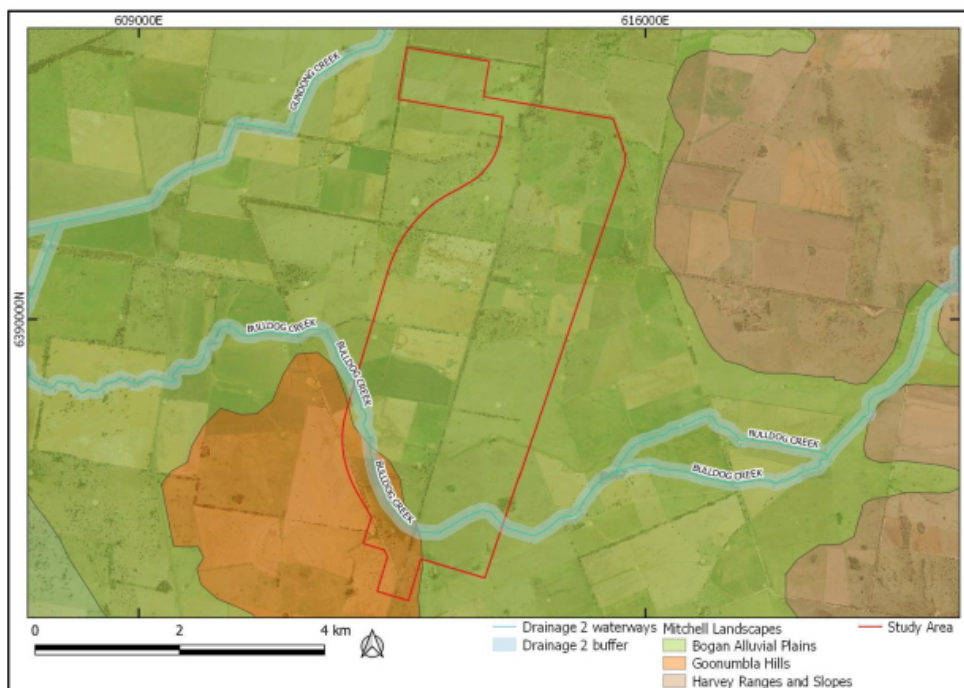
In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these however may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of European farming practices. Scarred trees, by their nature, may survive for up to several hundred years but rarely beyond.

The archaeological studies undertaken in the vicinity of the Study Area provide an insight into the nature and distribution of archaeological sites within the area. However, the location of sites can only reflect what has been identified, usually as a result of infrastructure/development-driven projects, thus presenting the site data as clustered or on linear alignments. Generally, sites have been recorded in proximity to a recognised water source, in locations that have been subject to reduced landform disturbance, and on gentle, elevated landforms. However, landform disturbance may also explain why Aboriginal objects become revealed on the ground surface, such as within modified and disturbed landforms.

The OzArk (2016) CWLLS predictive model is most relevant to the Study Area in determining its archaeological potential. A small portion of the Study Area includes a Drainage 2 buffer area (Figure 4-1), in the vicinity of a minor watercourse, Bulldog Creek. In terms of landscape types, the Study Area is composed of slopes (Goonumbla Hills) and plains (Bogan Alluvial Plains) (Figure 4-1). The CWLLS predictive model predicts higher numbers of sites within the slopes landscapes when compared to plains landscapes, particularly within Drainage 2 buffers. Artefact sites (including isolated finds and artefact scatters) are the most likely site types to be encountered within the Study Area, and are more likely within the slopes landscapes, although

they are also predicted to occur in lower numbers within the plains landscapes. The likelihood of recording scarred trees is significantly lower within the slopes/plains landscapes (**Table 3-2**).

**Figure 4-1. Areas of the Study Area within 100 m of a Drainage 2 buffer.**



Knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded:

- **Isolated finds** may be indicative of: random loss or deliberate discard of a single artefact; the remnant of a now dispersed and disturbed artefact scatter; or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
  - As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Study Area.
- **Open artefact scatters** are here defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can



vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Artefact scatters comprise only 14% of recorded sites within 15 km of the Study Area, however, according to OzArk (2016), this site type is the most likely site to be recorded, particularly within 100 m of Bulldog Creek on eroded exposures and adjacent flat and lower slope landforms.

Findings from the historical documents, largely the journals of early explorers including Oxley, describe larger camps of up to 100 Aboriginal people along the Bogan River, and 'transitory encampments' along semi-permanent creek lines. As the Study Area only contains a semi-permanent waterway, the ethnographic information suggests that only small, less-complex artefact scatters will be recorded.

Artefact scatters are likely to be in a secondary context from disturbances such as erosion and ploughing. It is likely that any sites associated with such landforms are likely to have a low artefact density and a low complexity of tool types as the sites are either one-off events or only infrequently used due to the lack of a permanent or semi-permanent water source and the undifferentiated landforms present. Artefacts are most likely to be manufactured from a variety of materials including quartz, chert, sandstone, silcrete, granite, volcanic and fine-grained siliceous materials.

- Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed as a consequence of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any particular example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.

- Vegetation within the study area includes remnant eucalypt species. These stands of native vegetation may include trees of a type, age and size well suited to scar-producing activities. While the likelihood of recording this site type increases with proximity to water, Kelton (1996) found that modified trees can be found within all landforms. This site type therefore may be encountered, and it is also noted that this site type was the predominant site type recorded in landforms immediately north of the Study Area that are distant from water (OzArk 2003 and OzArk 2011).
- Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.
  - This site type could be recorded within the study area should suitable rock outcroppings be available. Outcropping rock present within the study area is likely to be quartz or volcanics and is likely to be present on the isolated hills within the Study Area.
- Hearths/ovens are often used by Aboriginal people for the preparation of food and would generally be located in the vicinity of available resources, such as water sources to procure fish and shellfish, and on elevated ground to avoid impact from environmental threats.
  - This site type is considered possible in areas where A-Horizon soils are relatively undisturbed. However, given the high levels of disturbance across the Study Area, the likelihood of identifying this site type is significantly reduced.
- Burials are generally found in soft sediments such as aeolian sand, alluvial silts and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.
  - Potential burials have been identified in the local area in association with carved trees along the banks of the Bogan River (Figure 3-1). These sites are more likely to be found on elevated sandy contexts or in association with rivers and major creeks. No such landscape features exist with the Study Area and therefore burials are unlikely to occur.
- Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.
  - This site type does not necessarily follow landform predictability and are, overall, a rare site type with a low likelihood of being present and remaining extant.



## 4.2 RESEARCH QUESTIONS

Several research questions can meaningfully be applied to the investigation of the study area.

These research questions include:

- What resources were available to the Aboriginal people using the Study Area (food, stone and water)?
- What tasks were Aboriginal people undertaking at the sites?
- Did the Aboriginal people use the Study Area at any particular time of the year?
- Are there hearths in the area? And if so, do they contain remains (animal/plant) that may indicate what people were cooking/eating?
- Are there burials in the area?
- Is there evidence to suggest that Aboriginal people were using the area earlier than the mid to late Holocene?
- Can dates be obtained for the Aboriginal use of the area?
- What resources were transported to the area and where?

The survey methodology set out in **Section 5** will be framed to help answer these questions; should sites of sufficient significance be encountered within the study area.

## 5 SURVEY METHODOLOGY

### 5.1 ASSESSMENT APPROACH

The Aboriginal cultural heritage assessment of the study area will follow the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010b). The field inspection will follow the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011).

### 5.2 SURVEY AIMS

The aim of any archaeological survey is not to locate each artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within a study area are known. Therefore, the aims of the survey will be to:

- Conduct pedestrian transects across targeted landforms in the Study Area so that their archaeological potential can be determined
- Evaluate whether the predictive model set out in **Section 4.1** is valid
- Determine if the research questions set out in **Section 4.2** can be answered
- Determine if any portions of the Study Area require test excavation to understand the archaeological potential at a particular location
- Undertake sufficient assessment in order to satisfy Sections 2.2, 2.4 (as it pertains to scientific values), 2.5, 2.6, and 2.7 in the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011)
- Collecting sufficient data so that the results can be presented in an ACHAR as set out in Section 3 in the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011)
- Undertaking survey and record keeping satisfying Requirements 1–13 of the Code of Practice.

### 5.3 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004) and will follow the Code of Practice. The field survey will take place over six days.

As highlighted in **Section 2** and **3**, greater Aboriginal archaeological potential tends to exist on landforms within 200 m of permanent and ephemeral water sources, along access or trade routes, and areas with suitable flora/fauna and shelter. Archaeological potential is generally reduced on landforms disturbed by erosion and historical impacts (e.g. farming and infrastructure installation). As such, during the field assessment, greater survey effort will be expended on landforms deemed to have greater Aboriginal archaeological potential. 'Full pedestrian survey' refers to

systematic transects walked by surveyors spaced approximately 20 m apart throughout the landform or area being surveyed. 'Targeted pedestrian survey' refers to transects walked by surveyors spaced approximately 20 m apart that will not cover the entire area but instead will focus on understanding the archaeological potential of representative landforms within these areas.

As such, the field assessment will include:

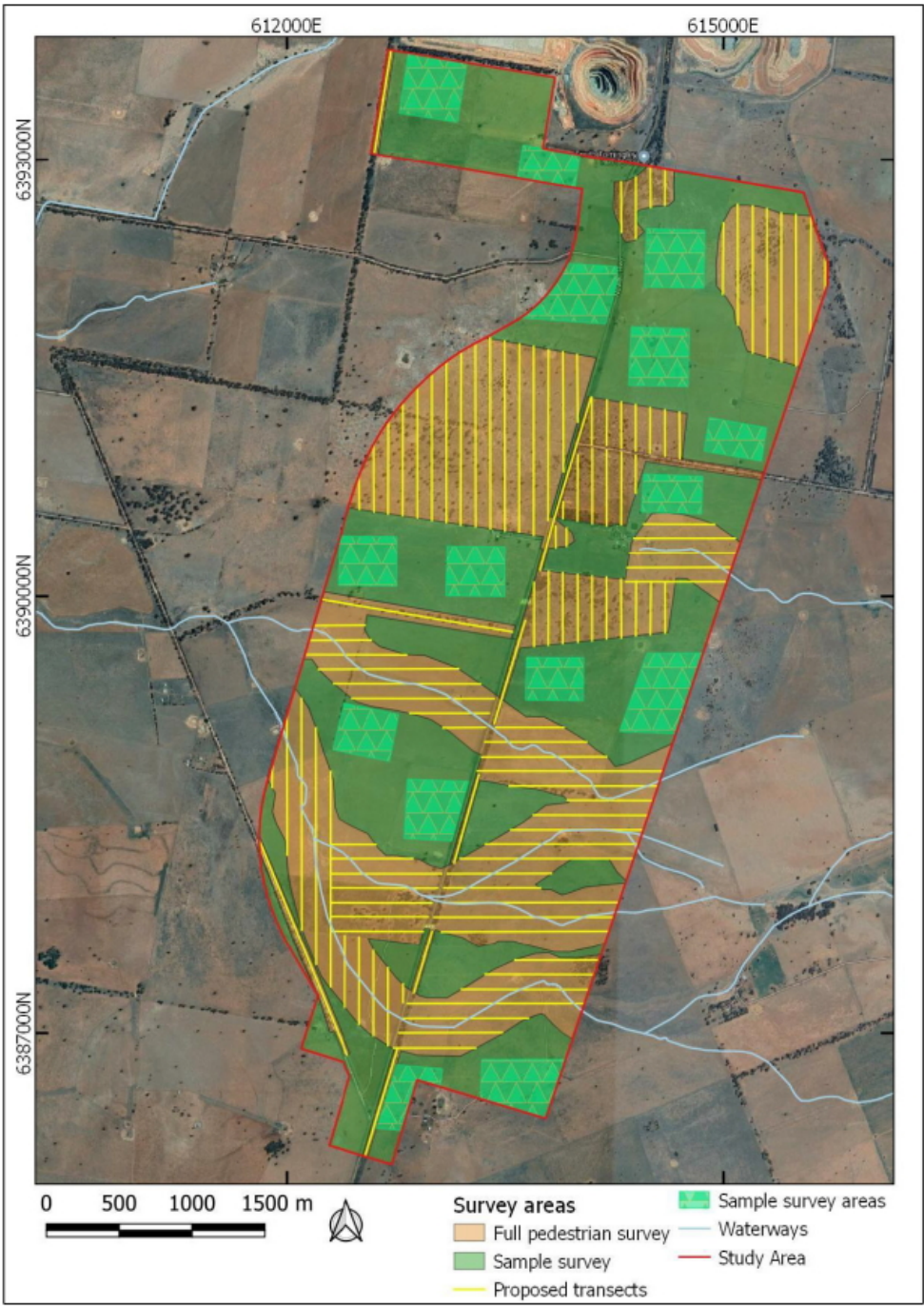
- Full pedestrian survey will occur in areas with minimal disturbance and good ground surface visibility within landforms possessing Aboriginal archaeological potential, i.e. areas within 200 m of Bulldog Creek, elevated landforms and areas with remnant vegetation (Figure 5-1)
- Targeted pedestrian survey will occur in all other areas: i.e. areas more than 200 m from watercourses; areas with poor ground surface visibility; landforms with low archaeological potential; areas of gilgai and areas with significant prior disturbance (Figure 5-1)
- All trees deemed to be of sufficient maturity to contain cultural modification will be inspected, as well as any areas with outcropping rock
- Some areas may not be physically surveyed if the Registered Aboriginal Parties (RAPs) and OzArk staff agree they are too disturbed or possess a very low likelihood of sites.

In the field, OzArk staff will identify, record and evaluate physical (i.e. archaeological) evidence. Site recording will capture all the information required to complete current AHIMS site recording forms (e.g. site location, site boundary, site plan, representative photographs, artefact recording and feature recording). RAPs will participate in the survey, identifying Aboriginal objects, determining the cultural significance of Aboriginal objects and identifying cultural places or non-physical site types within the study area. OzArk staff understand that cultural knowledge may not be provided in some instances due to cultural sensitivities (e.g. men's and/or women's places). Under these circumstances, to assess the potential impacts, OzArk staff will need to be told, only in general terms, why a particular place is important, and what the significance of the impact will be. OzArk staff will liaise with RAPs on a case-by-case basis to determine how to record the location in a culturally sensitive manner.

#### 5.4 TEST EXCAVATION

It is possible that the survey may identify landforms where test excavation under the Code of Practice (Requirements 14–17) is required. Should such landforms be identified during the survey, the test excavation methodology will be prepared as a separate document that will be circulated to all RAPs for review and comment.

Figure 5-1: Aerial showing the proposed survey areas.



## REFERENCES

- Appleton 1996                      Appleton, J. 1996. *The archaeological investigation of the site of proposed extensions to existing mining operations – E 48 development North Parkes Mine, north of Parkes, Central West, NSW*. Report to R.W. Corkery.
- Bell 1979                              Bell, D. 1970. *Aboriginal Carved Trees in New South Wales: A Survey Report – Part 1*. A report prepared for NSW National Parks and Wildlife Service.
- BoM 2020                              Bureau of Meteorology. 2020. [www.bom.gov.au](http://www.bom.gov.au). Accessed online 15 April 2020.
- Cook 1995                              J.M. Cook P/L 1995. *Environmental Impact Statement for Proposed Tailings Reprocessing Operation at Tomingley, NSW*. A Report for Tailings Treatment P/L.
- DECCW 2010                          DECCW. 2010. *Aboriginal cultural heritage consultation requirements for proponents*. Department of Environment, Climate Change and Water (now OEH).
- DECCW 2010b                        DECCW. 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Department of Environment, Climate Change and Water (now OEH).
- English et al 1998                    English, Anthony, Sharon Veale, Jo Erskine and John Robinson 1998. *Goobang National Park Cultural Heritage Assessment*. Cultural Heritage Services Division, NSW National Parks and Wildlife Service.
- Etheridge 1918                        Etheridge, R. 1918. *The Dendroglyphs, or "Carved Trees" of New South Wales*. Memoirs of the Geological Survey of NSW, Ethnological Series 3.
- Frink 1984                              Frink, DS. 1984, "Artifact Behaviour within the Plow Zone", *Journal of Field Archaeology*, Vol. 43, pp. 734-740.
- Garnsey 1942                          Garnsey, E. J., 1942. *A treatise on the Aborigines of Dubbo and District: their camp life, habits and customs*. Dubbo Museum and Historical Society.
- Horton 2007                              Horton 2007
- Gaynor 2001                          Gaynor, P.J. 2001. *Three seasons of cultivating stone artefacts with farming implements in NSW*. <<http://www.archeo.biz/foxp.html>>, Accessed 14 June 2013.
- Horton 1994                          Horton, David (ed.). 1994. *The Encyclopaedia of Aboriginal Australia*. Canberra: Aboriginal Studies Press.

Kelton 1996	Kelton, J. 1996. <i>Aboriginal Archaeological Sites in the Lachlan Valley</i> . Report to National Parks and Wildlife Services.
Keith 2004	Keith, D. 2004. <i>Ocean Shores to Desert Dunes - the native vegetation of New South Wales and the ACT</i> . Department of Environment and Conservation (NSW) Hurstville.
Koettig 1985	Koettig, M. 1985. <i>Assessment of Aboriginal sites in the Dubbo City area</i> . Report to Dubbo City Council.
Mitchell 2002	Mitchell, Dr. P. 2002. <i>Description for NSW (Mitchell) Landscapes Version 2</i> . Department of Environment and Climate Change NSW.
Navin Officer 1997	Navin Officer. 1997. <i>Marsden – Parkes Natural Gas Pipeline</i> . Report to AGL.
Nicholson 1990	Nicholson, A. 1990. <i>Archaeological survey of additional area to be included in the North Parkes Project, located near Parkes, NSW</i> . A Report to National Systems Research P/L.
OEH 2011	Office of Environment and Heritage. 2011. <i>Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales</i> . Department of Environment, Climate Change and Water, Sydney.
OzArk 2003	OzArk Environmental & Heritage Management Pty Ltd. 2003. <i>Newell Highway Pavement Rehabilitation at Tomingley</i> . Report to Roads and Traffic Authority.
OzArk 2008	OzArk Environmental & Heritage Management Pty Ltd. 2008. <i>Test/Salvage Excavation Program, Northparkes Mine, Parkes, NSW</i> . Report to Northparkes Mines.
OzArk 2011	OzArk Environmental & Heritage Management Pty Ltd. 2011. <i>Tomingley Gold Project Cultural Heritage Assessment</i> . Report to Alkane Resources Pty Limited.
OzArk 2012	OzArk Environmental & Heritage Management Pty Ltd. 2012. <i>Aboriginal Heritage Assessment: HW17 Newell Highway, Trewilga Realignment</i> . Report to Roads and Maritime Services, Parkes.
OzArk 2016	OzArk Environmental and Heritage Management Pty Ltd. 2016. <i>Central West Local Land Services Travelling Stock Reserves Study</i> . Report to Central West Local Land Services.
Paton 2006	Paton, R. 2006. <i>Aboriginal Heritage Assessment of the Northparkes Mine E48 Project</i> , A Report to RW Corkery on behalf of Northparkes Mines.

Stone 1986	Stone, T. 1986. <i>An Archaeological Survey of the Goonumbia Mining Lease</i> . A Report to Peko-Wallsend.
Tindall 1982	Tindall, 1982. <i>Parkes: One Hundred Years of Local Government</i> . Griffin Press Limited, Netley, South Australia.
Umwelt 2017	Umwelt Australia Pty Ltd. 2017. <i>Inland Rail- Parkes to Narromine Aboriginal Cultural Heritage and Archaeological Assessment</i> . Report to ARTC.
Unger (ND)	Unger, L.A. No Date. <i>Aboriginal activity in the Parkes district</i> . Parkes & District Historical Society.
White 1986	White, I. 1986. <i>Dimensions of Wiradjuri</i> . Unpublished Thesis. Department of Prehistory and Anthropology. Australian National University.
Whitehead 2003	Whitehead, J. 2003, <i>Tracking and Mapping The Explorers Volume 1 The Lachlan River Oxley, Evans, and Cunningham</i> , Southern Cross University Printery, Lismore.