Appendix 8

Aboriginal Cultural Heritage Assessment

prepared by

OzArk Environment and Heritage Management Pty Ltd

(Total No. of pages including blank pages = 251)

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Plotting the location of a NPWS site boundary peg for Site A in 2023 with the quarry in the background.

REVISION 3 ABORIGINAL CULTURAL HERITAGE & HISTORIC HERITAGE ASSESSMENT REPORT

WESTERN RIVERINA QUARRY EXPANSION

RANKINS SPRINGS, NSW

MARCH 2024

Report prepared by

OzArk Environment & Heritage

for R.W. Corkery & Co. Pty Limited

on behalf of E.B. Mawson & Sons Pty Ltd

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NSW GOVERNMENT | Heritage NSW

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

Report Title	Revised Aboriginal cultural heritage & historic heritage assessment report: Western Riverina Quarry Expansion, Rankin Springs, NSW.
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Report prepared for	Company Name: E.B. Mawson & Sons Pty Ltd 141 King George Street Cohuna 3568 (PO Box 66) Victoria, Australia Tel 03 5456 2409 Toll Free 1800 423 456
Date of Report	March 2024
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Ben Churcher

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DOCUMENT CONTROLS

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Client	R.W. Corkery & Co. Pty Limited
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Acknowledgement

OzArk acknowledge the traditional custodians 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 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	*Aboriginal Cultural Heritage Consultation Requirements for Proponents.* Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
AHIMS	Aboriginal Heritage Information Management System. Administered by Heritage NSW, AHIMS is the central register of all Aboriginal sites within NSW.
AHIP	Aboriginal Heritage Impact Permit.
Assemblage:	All artefacts recorded at a location. In this report, assemblage refers to stone artefacts as this was the only artefact class recorded.
Code of Practice	*Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* under Part 6 NPW Act. Issued in 2010, the Code of Practice is a set of guidelines that allows limited test excavation without the need to apply for an AHIP.
Debitage:	The term debitage refers to all the waste material produced during lithic reduction and the production of stone tools. Therefore, technically, all artefacts other than reworked tools are debitage. However, in this report debitage is used in its other common meaning being the small flakes and chips produced purely as a by-product of knapping. This distinguishes these small flakes from the larger flakes that were removed (while technically 'debitage', a non-retouched flake can be used as a tool and therefore could have been the intended end point for a knapping event).
DCCEEW	Department of Climate Change, Energy, the Environment and Water. DCCEEW contains the Environment and Heritage group that contains HNSW.
DPE	NSW Department of Planning and Environment. On 1 January 2024, the former DPE was split to form two new departments, the Department of Climate Change, Energy, the Environment and Water DCCEEW) and the Department of Planning, Housing and Infrastructure (DPHI).
DPHI	Department of Planning, Housing and Infrastructure. DPHI contains the planning group.

EIS	Environmental Impact Statement. A required document for major projects documenting all potential impacts to the environment, including heritage, that may arise due to the development.
HNSW	Heritage NSW. Government department tasked with ensuring compliance with the NPW Act. HNSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC).
NPW Act	*National Parks and Wildlife Act 1974*. Primary legislation governing Aboriginal cultural heritage within NSW.
OEH	Office of the Environment and Heritage. Former government department tasked with ensuring compliance with the NPW Act (now HNSW).
PAD	Potential archaeological deposit. Indicates that a particular location has potential to contain subsurface archaeological deposits, although no Aboriginal objects are visible.
RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the proposal.
SEARs	Secretary's Environmental Assessment Requirements issued by the Secretary of DPHI.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by R.W. Corkery & Co., on behalf of E.B. Mawson & Sons Pty Ltd (the Applicant) to complete an Aboriginal Cultural Heritage and Historic Heritage Assessment Report (ACHAR) for the proposed expansion of quarry operations at the Western Riverina Quarry (WRQ) (the proposal). The study area (defined in **Section 1.5**) is located inside the Koomaringa Aboriginal Place (AP).

Following review of the original ACHAR (October 2021), Heritage NSW (HNSW) requested further information on 21 June 2022 in the form of a final Koomaringa AP Management Plan and an updated ACHAR that considered the appropriateness of the proposal within the context of the management plan and values of the AP.

The final Koomaringa AP Plan of Management (June 2023) and the updated ACHAR (June 2023) were uploaded to the Concurrence and Referral (CNR) portal on 23 June 2023.

On 24 July 2023, HNSW issued a further request for information. This led to renewed consultation and further details about the potential impacts to the AP were added to the ACHAR. Included in this phase of investigation was a site visit on 11 August 2023 by OzArk Principal Archaeologist, Ben Churcher, to map the 1987 site buffer pegs installed by the National Parks and Wildlife Service in 1987 to ensure that the WRQ had not impacted within this buffer.

A revised ACHAR (October 2023) was produced based on the request for information and submitted to HNSW for review. In November 2023, HNSW received a request from a Registered Aboriginal Party (RAP) about the WRQ proposal and HNSW requested that the Applicant undertake additional consultation to ensure that RAPs understood the nature and extent of the proposal within the AP.

This request for further consultation resulted in three site visits to the WRQ:

- 24 November 2023: OzArk archaeologist, Jordan Henshaw, and three RAPs (Mark Saddler, James Ingram, and Robert Carroll) met on site to discuss management measures to protect the Koomaringa AP
- 5 to 7 December 2023: Three RAPs (Mark Saddler, James Ingram, and Robert Carroll) spend three days at site determining where protective fencing should be placed and investigating the Koomaringa AP surrounding the WRQ
- 20 to 22 December 2023: Three RAPs (Mark Saddler, James Ingram, and Robert Carroll) spend three days at site ensuring the fencing has been correctly installed and further inspecting the Koomaringa AP.

The Revision 2 ACHAR incorporated the results of this further consultation that occurred at the end of 2023.

After the Revision 2 ACHAR was submitted on 5 March 2024, HNSW wrote to the Carrathool Shire Council on 14 March 2023 requesting additional information. The HNSW letter noted that '*during the site inspection (undertaken by stakeholders in December 2023) the stakeholders identified and registered a further 14 sites on AHIMS* (the Aboriginal Heritage Information Management System)*: 42-5-0062 to 42-5-0075. These sites have not been described or mapped in the most recent reports received as the AHIMS search pre-date the registration of these sites. The reports must identify, map, describe and assess all recorded Aboriginal sites in regard to potential impacts from the proposal*'.

The 14 sites were registered by RAP Mark Saddler at a time when OzArk was not present.

Following receipt of the HNSW request for further information, OzArk Principal Archaeologist, Ben Churcher, wrote to Lyndon Patterson, Senior Assessment Officer HNSW, on 14 March 2024 noting '*as OzArk was not there when the sites were recorded, we can certainly map them, describe them based on site card information, and assess them in the context of other sites in the area (or any information on the site card)*'. No response was received from Mr Patterson, and it is assumed that using the information on the site cards is sufficient to 'describe and assess' the 14 sites recorded by Mr Saddler. It is also noted that the 13 March 2024 HNSW letter made no further requests for information beyond incorporating the sites recorded by Mr Saddler into the ACHAR.

This Revision 3 ACHAR incorporates the results of a renewed AHIMS search and the mapping, description, and assessment of the 14 recently registered sites.

Aboriginal cultural heritage

The pedestrian survey was undertaken by Dr Alyce Cameron, OzArk Senior Archaeologist, and Mr Max Harris, a site officer for Griffith Local Aboriginal Land Council (LALC) on Tuesday 8 October to Friday 11 October 2019. The survey included full assessment within the study area where there is no prior disturbance, as well as re-investigating the previously recorded site Site A and Site B that are registered under a single AHIMS registration (see **Section 5.2**).

The survey resulted in 19 Aboriginal sites being recorded, and one previously recorded site was re-investigated. Of the 20 Aboriginal sites recorded or located during the assessment, two sites are located inside the proposed maximum limit of disturbance and may be harmed by the proposal (42-5-0012 [Koomaringa IF-03] and 42-5-0022 [Koomaringa OS-13]). All other 18 sites are outside the maximum limit of disturbance and will not be harmed by the proposal.

In late 2023, RAP Mark Saddler registered an additional 14 sites. All of these sites are located outside the Quarry Site and the maximum limit of disturbance except for 42-5-0064 (Koomaringa Anvil 1) that is located within the maximum limit of disturbance. 42-5-0064 (Koomaringa Anvil 1) is an isolated boulder of vesicular basalt approximately one metre in diameter that has been

described as an ‘anvil’. The remaining 13 sites recorded by Mr Saddler will not be harmed by the proposal.

Therefore, as a result of all previous surveys and site inspections, a total of 34 sites are known to exist in the Koomaringa AP (not including the AHIMS registration for the AP itself). Of these 34 sites, three are likely to be harmed by the proposal (42-5-0012 [Koomaringa IF-03], 42-5-0022 [Koomaringa OS-13], and 42-5-0064 [Koomaringa Anvil 1]) and 31 sites will not be harmed.

A site visit by OzArk Principal Archaeologist, Ben Churcher, on 11 August 2023, demonstrated that the wooden stakes installed by the National Parks and Wildlife Service in 1987 to mark the buffer for the culturally significant Site A and Site B remain in place, albeit often knocked over and/or decayed. This visit determined that the proposed maximum limit of disturbance is entirely outside of the demarcated buffer for Site A and Site B and that the proposal will not directly harm these sites or any land within the established 1987 buffer boundary.

As a result of the assessment, it is determined that the Aboriginal cultural heritage values of the Koomaringa AP will be diminished as three artefacts and a boulder described as an ‘anvil’ will be moved from their current location and placed at another location within the Koomaringa AP where they will not be harmed by the proposal (should an Aboriginal Heritage Impact Permit [AHIP] be approved: see Recommendation 9).

While letters, emails, and a copy of the draft ACHAR were sent to the RAPs for the proposal following the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010b), no feedback at any stage of the consultation process for the ACHAR was received prior to September 2023, apart from that gained from the Griffith LALC during the survey.

In a final effort to gain some feedback, and at the request of HNSW, a further round of consultation was undertaken in September 2023 to allow RAPs to contribute any views they may have in the realisation that the Aboriginal cultural heritage values of the Koomaringa AP will be diminished by the proposal. However, as has been the case for the entire investigation, it proved very difficult to gain feedback from the RAPs, including from the Griffith LALC. However, responses from two Wiradjuri stakeholders (Mt Robert Clegg and Mr Paul Brydon) both stated that they were comfortable with the recommendations made in the ACHAR.

A renewed round of consultation occurred in November and December 2023 that resulted in the Applicant, with the assistance of RAPs, reinstating the boundary fencing for Site A and Site B that was first established by the National Parks and Wildlife Service in 1987. This fencing, undertaken with the advice of the RAPs who were present at the time, ensures the preservation of the culturally significant sites, Site A and Site B, as well as the so-called ‘Site C’; an amalgam of Koomaringa PL-01 (42-5-0023), Koomaringa OS-11 (42-5-0020), and 42-5-0062 (Koomaringa Grind Groove 1 MS) that was also fenced.

As it is acknowledged that the proposed harm to three Aboriginal artefacts and a boulder described as an 'anvil' at the WRQ diminishes the Aboriginal cultural heritage values of the Koomaringa AP, the Applicant agrees to undertake the following initiatives to ensure that the overall Aboriginal cultural heritage values of the Koomaringa AP are enhanced by the proposal:

1. Applicant will monitor the fenced site buffers of Sites A, B, and C that are located at the boundary of the WRQ operational areas on a regular basis and not less than every two years. Monitoring will be undertaken by at least two representatives of the Koomaringa Management Group, where practicable.
2. Photos from the northern, southern, eastern, and western perimeters of the approved Quarry Site boundary will be taken not less than every two years to provide evidence that quarrying activities are within the approved Quarry curtilage. The photos will be made available to the Koomaringa Management Group (see Koomaringa AP Plan of Management).
3. The Applicant will arrange a one-off face-to-face heritage induction for WRQ staff. The content of this induction will then be presented as a training package for later use. Both the face-to-face induction and the provision of a training package will be under an agreed contractual arrangement.
4. The Applicant will fund the installation of heritage signage at the WRQ. The location and wording of any signage will be discussed with the Koomaringa Management Group when it is formed. It is imagined that the signs would recognise the significance of the Aboriginal Place and provide site access details.
5. The Applicant will plant and maintain a tree screen of appropriate native species outside of the archaeological site buffer between Site A and the WRQ. This tree screen will help improve the visual amenity of Site A when looking towards the WRQ. Appropriate species for the tree screen are provided in **Section 9.2.2.1**.
6. To assist with allowing safe access to the Koomaringa AP for the Aboriginal community, the Applicant will undertake to locate and form a gravelled carpark near the location shown on **Figure 9-1**.
7. The Applicant agrees to facilitate an appropriate access protocol as set out in **Section 9.2.1** to allow the Aboriginal community to visit the Koomaringa AP.
8. The Applicant will facilitate and fund the installation of a path, picnic shelter table and seats, and signage leading from the carpark to Site A. The location of these facilities will be on the advice of the Koomaringa Management Group when it is formed and HNSW.

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

9. The Applicant will apply for an AHIP to impact 42-5-0012 (Koomaringa IF-03), 42-5-0022 (Koomaringa OS-13), and 42-5-0064 (Koomaringa Anvil 1) as per the methodology set out in **Section 9.2.3**, with the AHIP area shown on **Figure 10-1**. Until an AHIP is approved, these sites must be protected with fencing.
10. The Applicant will avoid any inadvertent harm to the remaining 31 Aboriginal sites by following the management and mitigation measures outlined in **Section 9.2.4**.
11. All ground-disturbing activities must be confined to the AHIP area shown on **Figure 10-1**. Should ground disturbing works extend beyond this, then further archaeological assessment and impact assessment may be required.
12. The heritage management protocols of the Koomaringa AP Plan of Management apply to the WRQ as set out in **Section 9.2.5**. The consent approval for the WRQ (DA2022/029) and any applicable AHIPs, if approved, will manage cultural heritage within the WRQ.
13. If skeletal remains are identified during the development and operation of the proposal, the *Unanticipated Skeletal Remains Protocol* (**Appendix 4**) will be followed.
14. If Aboriginal objects are identified outside of the maximum limit of disturbance (AHIP area), all work will cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 3**) will be followed.
15. Inductions for work crews will include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 5**) and are aware of the legislative protection of Aboriginal objects under the *National Parks and Wildlife Act 1974* and the contents of the *Unanticipated Finds Protocol, and Unanticipated Skeletal Remains Protocol.*

Historic cultural heritage

The survey did not record any items with significant historic values. As it is unlikely that the proposal will impact historic heritage values, the following general recommendation is made:

16. In the unlikely event that historical relics or deposits are unearthed during the proposed works, the *Historical Heritage Unanticipated Finds Protocol* (**Appendix 7**) will be followed.

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FIGURES

APPENDIX FIGURES

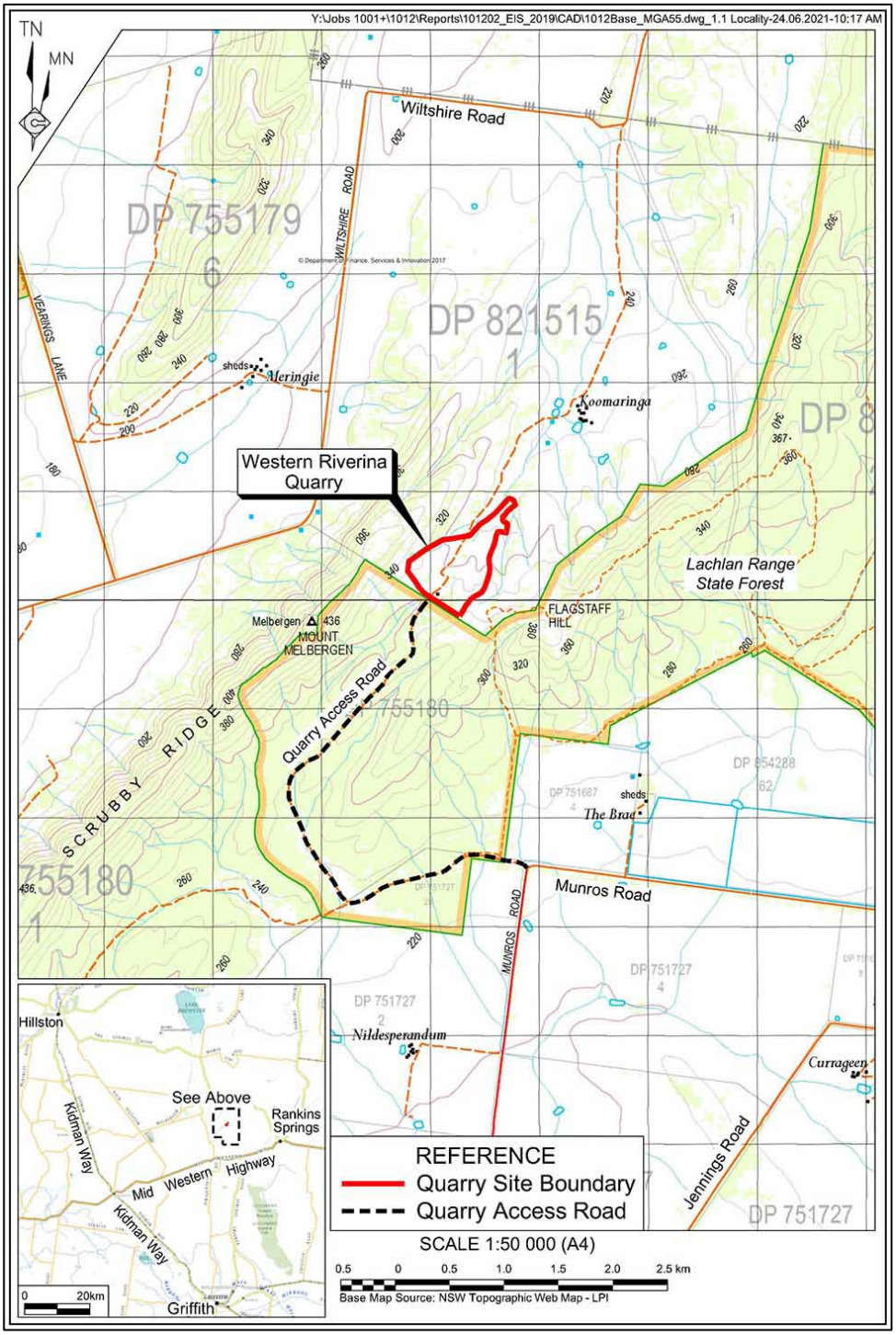
TABLES

1 INTRODUCTION

1.1 DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by R.W. Corkery & Co., on behalf of E.B. Mawson & Sons Pty Ltd (the Applicant) to complete an Aboriginal Cultural Heritage and Historic Heritage Assessment Report (ACHAR) for the proposed expansion of quarry operations at the Western Riverina Quarry (WRQ) (the proposal). The proposal is in the Carrathool Local Government Area (LGA) (**Figure 1-1**).

Figure 1-1: Map showing the location of the proposal.



1.2 BACKGROUND

The study area (defined in **Section 1.5**) is located inside the curtilage for Koomaringa Aboriginal Place (AP). Koomaringa AP is located approximately 55.5 kilometres (km) north of Griffith and 17 km northwest of Rankins Springs, NSW. Koomaringa AP covers approximately 430 hectares (ha) of Lot 12 DP1286927 and is surrounded by the Lachlan Range State Forest to the south and east, Wiltshire Road to the west, and the Koomaringa Homestead to the north. Koomaringa AP was gazetted as an Aboriginal Place in 1991.

WRQ, previously known as Koomaringa Quarry, was originally granted development consent by the Carrathool Shire Council on 25 May 1987. The Quarry currently operates under DA2/91 which was issued by Carrathool Shire Council on 19 July 1991. Prior to operations commencing, three archaeological assessments were undertaken.

The Aboriginal site of Koomaringa was first officially recorded by R. Williams and D. Ingram as AHIMS #42-5-0004 in 1987. This site card details that the site is located approximately 500–1000 metres (m) south of the Koomaringa Homestead. The GPS coordinates provided on this card place the site towards the northern boundary of the curtilage for the AP. Unfortunately, there is no map or photographs provided with the site card. The site is recorded as a stone tool extraction and working/knapping area and is in a creek bed.

AHIMS registration (#42-5-0005) is not a formal site card but contains the gazette notice for Koomaringa AP, and a map showing the AP boundaries. The GPS coordinates for #42-5-0005 are near the north-eastern corner of the AP boundary.

Witter (1987) undertook a heritage assessment of WRQ and Koomaringa AP to supplement an Environmental Impact Statement (EIS) developed in 1986 by Terry Pearce for the Koomaringa Quarry. Witter's report stated there were two locations proposed for rock extraction by the quarry ('Area A' and 'Area B'). A map is provided in the EIS (Pearce 1986) which shows the two proposed extraction areas (see **Figure 1-2**).

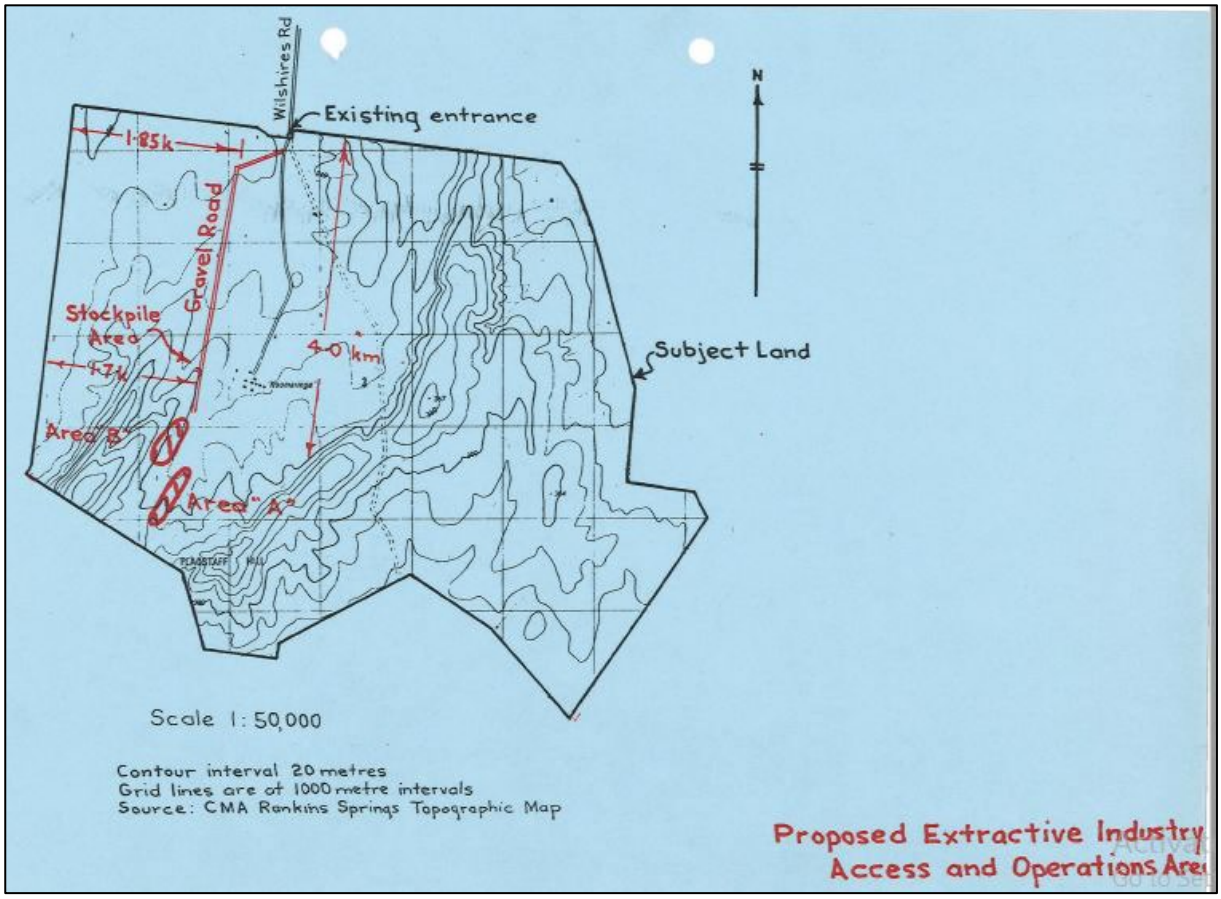
The land west of Area B (**Figure 1-2**) was referred to as the 'western felsite zone' by Witter and described as having "*abundant flaked stone as waste from the process of breaking out core. The breaking out was done by hurling great blocks of stone against the bedrock in order to detach large spalls. These spalls then could be used as core blanks*" (Witter 1987:2). The bedrock anvils and workshop areas are also mentioned as being present in this western felsite zone. The 'eastern felsite zone', described as being adjacent to the east of Area A (**Figure 1-2**), is recorded as being an outcrop upslope of the basalt location, with a variety of flaked stone as well as bedrock anvils.

Witter states that the Koomaringa Aboriginal stone quarry is an "*outstanding example of its kind*" (1987:3), and has been heavily worked, likely due to the rarity of felsite in the area. The felsite is also described as being highly distinctive with red, yellow, and orange colour variations.

Byrne (1987) also assessed the Aboriginal sites at Koomaringa to further supplement the EIS by Pearce (1986). Byrne's main objective was to map the extent of the archaeological evidence of Aboriginal felsite extraction. Furthermore, Byrne also considered approximate 'buffer zones' between the proposed blue-stone extraction and the Aboriginal sites. As part of Byrne's assessment, steel star-pickets were installed as barrier fences as recommended by Witter (1987). These star pickets were placed at 50 m intervals, with a single strand of wire to stop vehicle passage but allow stock movement.

The information provided about Koomaringa AP from the NSW State Heritage Inventory states that the most significant areas of the Aboriginal sites are cordoned off and protected from mining (OEH 2019).

Figure 1-2: Map of rock extraction Area A and Area B at Koomaringa (Pearce 1986:25).



1.3 VERSIONS OF THIS ACHAR

Following review of the original ACHAR (October 2021), Heritage NSW (HNSW) requested further information on 21 June 2022 in the form of a final Koomaringa AP Management Plan and an updated ACHAR that considered the appropriateness of the proposal within the context of the management plan and values of the AP.

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The Revision 2 ACHAR incorporated the results of this further consultation that occurred at the end of 2023.

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it is assumed that using the information on the site cards is sufficient to 'describe and assess' the 14 sites recorded by Mr Saddler.

This Revision 3 ACHAR incorporates the results of a renewed AHIMS search and the mapping, description, and assessment of the 14 recently registered sites.

1.4 PROPOSED WORK

WRQ currently has consent to extract 5,000 cubic metres (m^3), approximately 13,000 tonnes of basalt per year, although the subsequent issuance of Environment Protection Licence (EPL) 3767 allows extraction of between >50,000 tonnes per annum (tpa) and 100,000tpa. Basalt material is extracted from the extraction area using drill and blast techniques with approximately six blasts undertaken per year. The fragmented basalt is loaded and hauled to a fixed crushing and screening plant for processing prior to stockpiling and product despatch. It is noted that some aggregates are pre-coated within the processing area prior to despatch.

The Applicant has identified a further 4.9 million tonnes of resource adjacent to and beneath the current approved extraction area which they propose to extract (the proposal). The activities for which the Applicant is seeking development consent would involve the following:

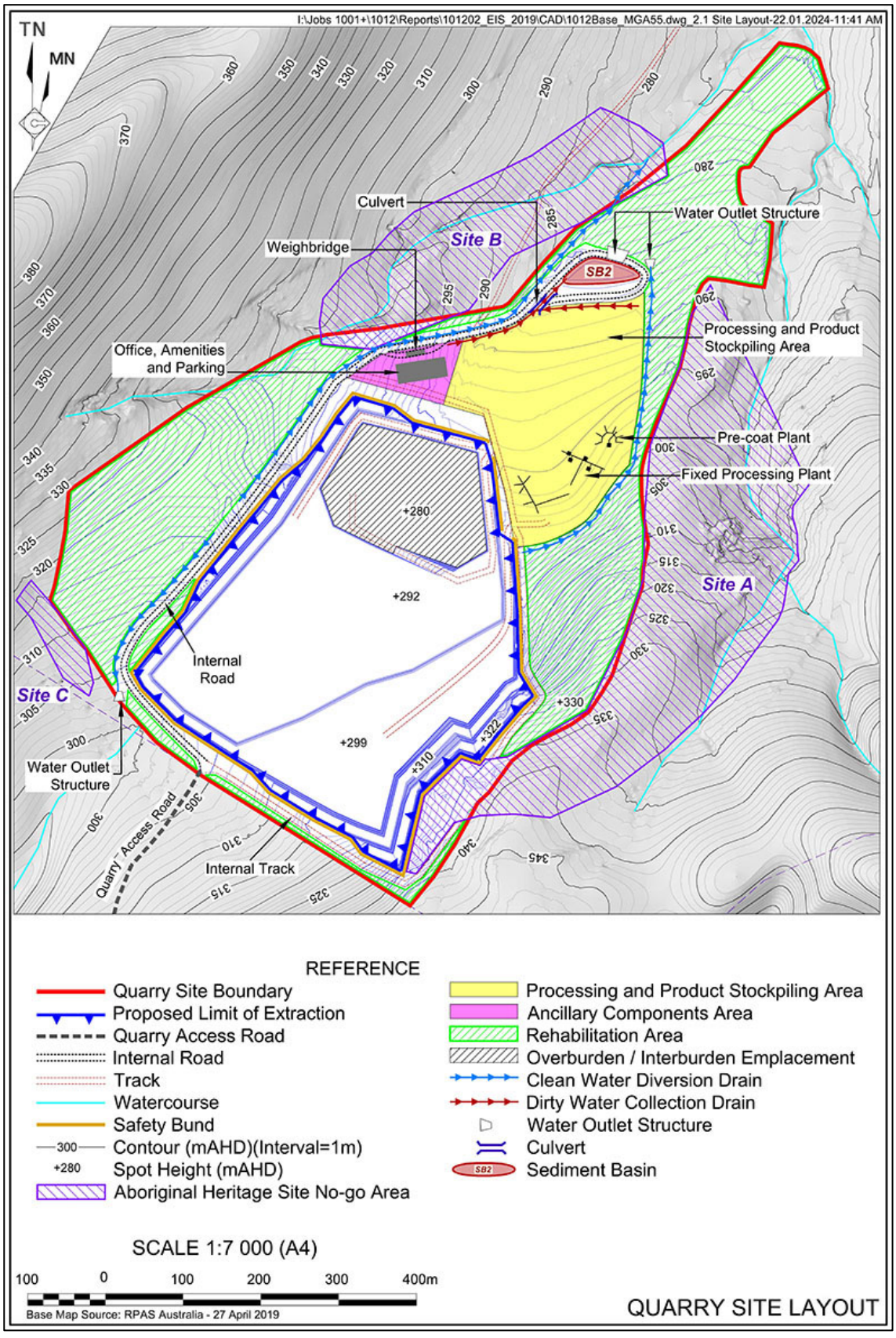
- Extraction of basalt and quartzite from within the proposed extraction area to produce up to 250,000 tonnes per annum (tpa) of quarry products
- Importation of up to 1,500tpa of concrete washout and other construction materials for recycling and incorporation in products produced within the Quarry
- Crushing and screening of fragmented rock and imported materials on site using a fixed processing plant
- Pre-coating of up to 20,000tpa of aggregates
- Transportation of up to 250,000tpa Quarry products to end points of use within the Carrathool LGA and the broader Riverina Region
- Ongoing employment of local personnel
- Progressive and final rehabilitation of the Quarry to develop a final landform suitable for grazing and passive biodiversity conservation.

Figure 1-3 shows the proposed work and impact footprint, which includes the following existing and proposed components within WRQ:

- Extraction Area (18.1 ha): the extraction area would be centred on the targeted hard rock resource
- Processing and Product Stockpiling Area (5.5 ha): this area would include the fixed processing and screening plant, pre-coat plant, pugmill and dedicated areas for stockpiling quarry products and imported material

- Ancillary Components Area (0.7 ha): this area would be located to the west of the processing and product stockpiling area and would comprise the Quarry office, amenities, light vehicle parking, weighbridge, and workshop
- Rehabilitation Areas (15.4 ha): designated areas would be progressively rehabilitated throughout the life of the proposal
- Operational Disturbance Area (40.5 ha – inclusive of all Quarry components and associated areas of disturbance): areas would be cleared of vegetation around the extraction area and other Quarry components to allow for the construction of safety bunds, internal roads / tracks and erosion and sediment control infrastructure
- Quarry Access Road (5.2 km): the existing Quarry Access Road, which extends from Munros Road to the Quarry Site, would be retained to provide ongoing access to the Quarry Site for both heavy and light vehicles.

Figure 1-3: Proposed work showing impact footprint.



1.5 STUDY AREA

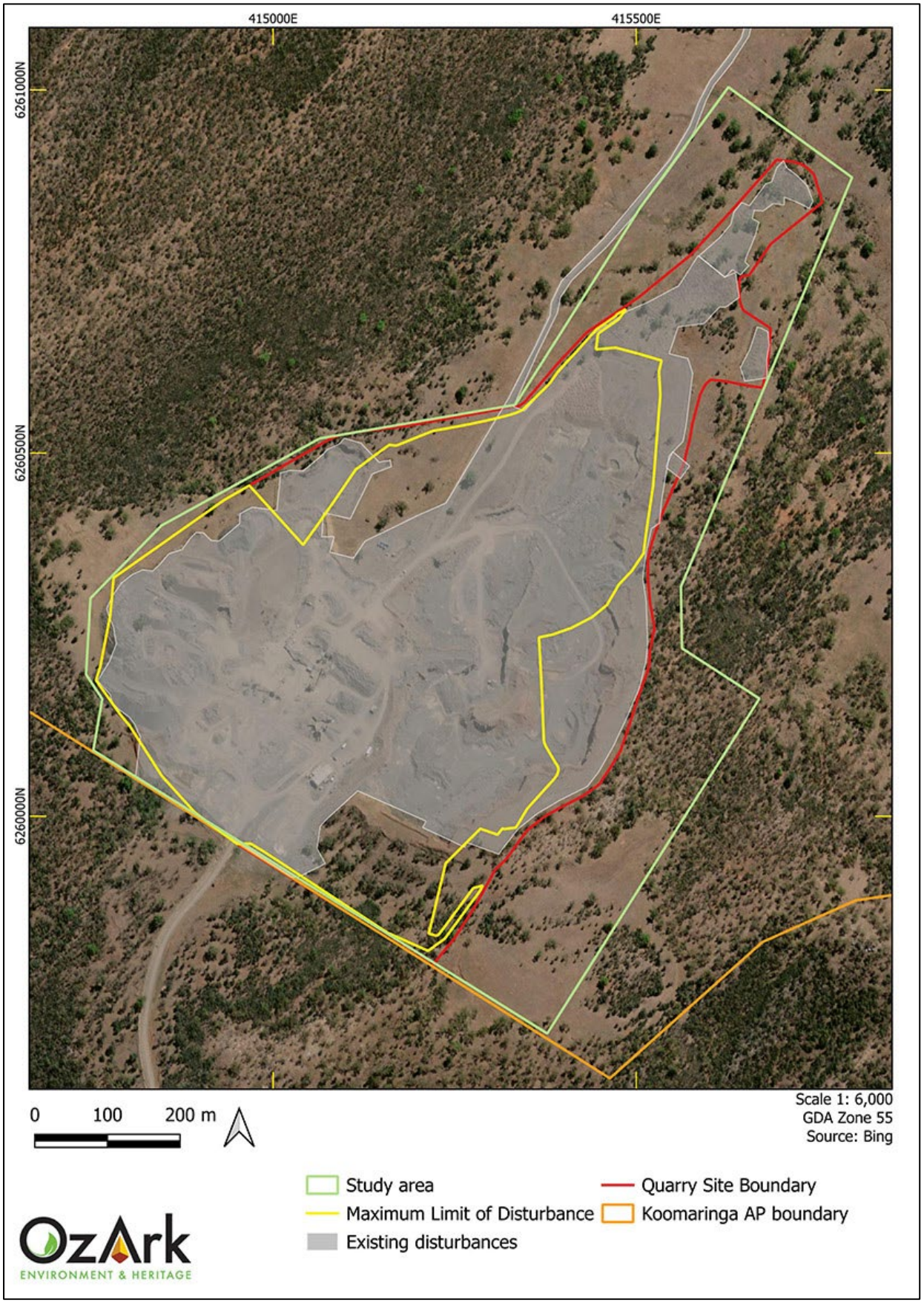
The study area is 63.8 ha in size and includes the maximum limit of disturbance (35.5 ha). The study area extends to the Quarry Site boundary as shown on **Figure 1-3**.

As WRQ is an operating quarry, most of the 35.5 ha maximum limit of disturbance has been previously disturbed, through either open cut extraction methods, construction of roads and benches, or locations used to place overburden piles from the extraction.

The archaeological assessment focused on currently undisturbed areas inside the study area, or where the natural ground surface was visible (i.e., not under overburden piles). Also included in this assessment was a re-recording of the sites originally recorded at Koomaringa AP, Site A and Site B (see **Section 1.2** and **Section 5.3**).

Figure 1-4 shows an aerial of WRQ with the locations of existing disturbance, the proposed maximum limit of disturbance, and the study area boundary used for the assessment.

Figure 1-4: Aerial showing the study area, previous disturbance, and the maximum limit of disturbance.



2 LANDSCAPE CONTEXT

An understanding of the environmental contexts of a study area is requisite in any Aboriginal 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 study area is in the bioregion of Cobar Peneplain and sub-bioregion of the Lachlan Plains. The Cobar Peneplain extends from south of Bourke to just north of Griffith. The Lachlan River traverses the bioregion in the south with many minor runoff drainage lines and smaller streams. The Cobar Peneplain has a topographic landscape consisting of rolling downs and flat plains, with stony ridges and ranges. The Lachlan Plains sub-bioregion is characterised by strike ridges of resistant rocks following fold patterns, as well as low rounded hills of granite with sparse outcrops and wide short valleys which connect to Lachlan floodplains (NPWS 2003).

The study area is also located in the Cocoparra Ranges and Footslopes as characterised by Mitchell (2002). Mitchell describes this landform unit as having steep crested ranges, ridges and hills and an overall relief up to 260 m (Mitchell 2002:36).

The study area is situated in a small valley between two ridges to the west and east. The ridge located to the west of the study area is Scrubby Ridge. Mount Melbergen, part of this ridgeline, is located 900 m southwest of the study area, while Flagstaff hill is 580 m southeast. **Figure 2-1** shows a 3D map of the study area and its surrounds.

There are four landform units present inside the study area: drainage lines and banks, ridgelines and elevated rocky knolls, slopes, and flats, or gently rolling slopes. In addition, there is a large amount of disturbance across the study area. **Table 2-1** outlines the total area of each landform, as well as the final areas of landforms when existing disturbances are considered. **Figure 2-2** shows representative photographs of these landform units inside the study area and **Figure 2-3** shows the location of the landform units within the study area.

Figure 2-1: 3D model of the study area (red line) viewed north.

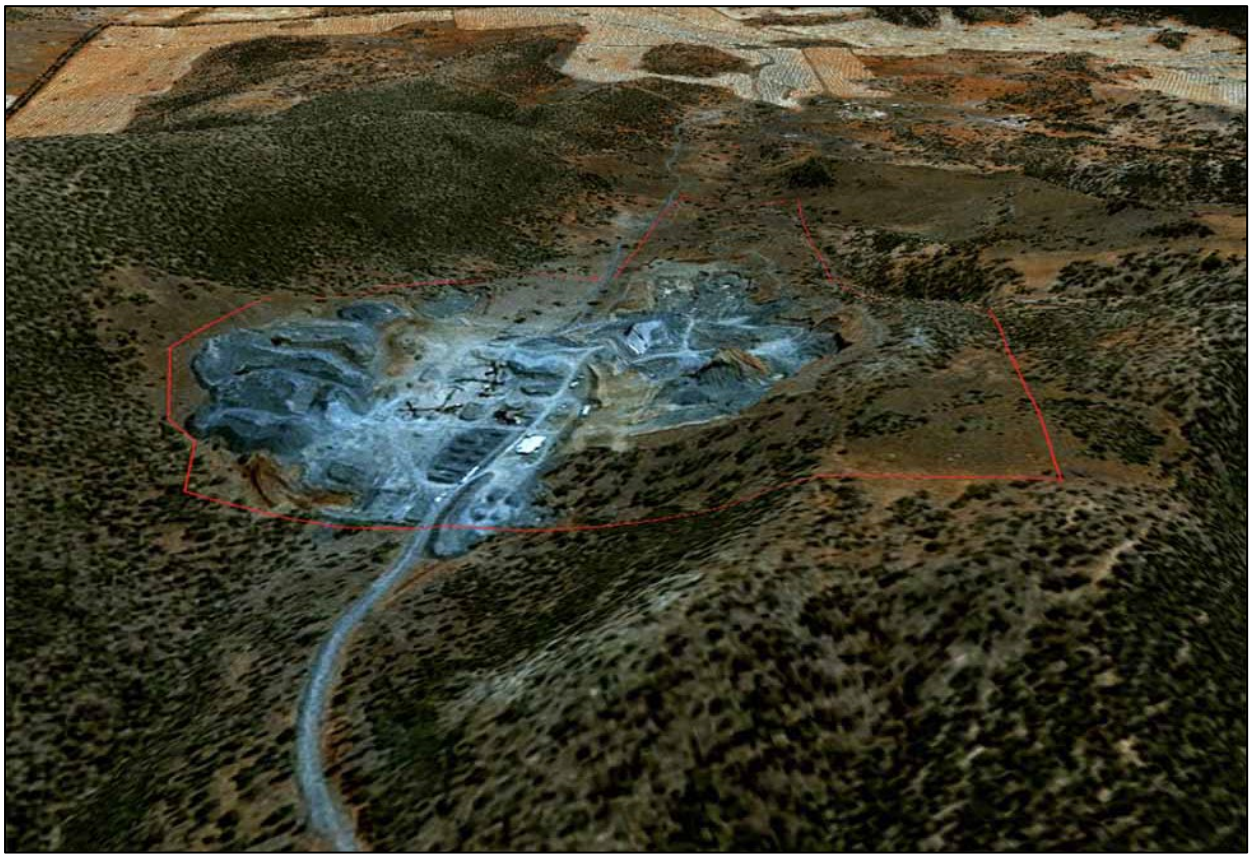


Table 2-1: Landform units inside study area.

Landform unit	Total area (ha)	Excluding existing disturbances (ha)
Drainage lines and banks	8.4	6.3
Ridgelines and elevated rocky knolls	2.2	2.2
Slopes	48.9	15.1
Flats or gently rolling slopes	4.3	2.8
Existing disturbance		37.4
Total study area	**63.8**	**63.8**

Figure 2-2: Landform units of the study area.

1. View of slopes landform unit with the study area.

2. View of a drainage line and bank within the study area.

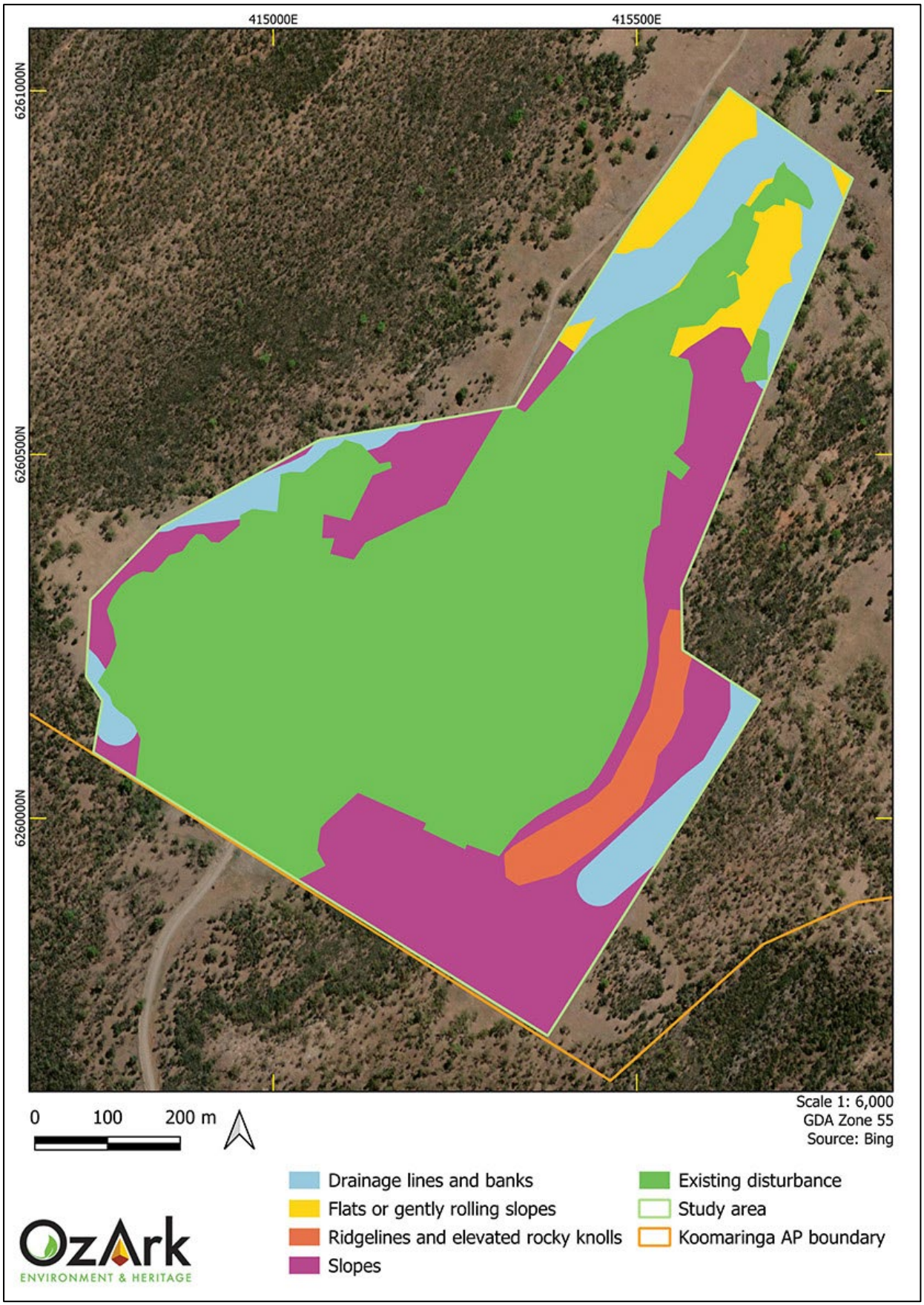
3. View of a flat or gently rolling slopes within the study area.

4. View north across top of a ridgeline within the study area.

5. View west of existing disturbance and current extraction operations within the study area.

6. View southeast of existing disturbance and current extraction operations within the study area.

Figure 2-3: Landform types inside the study area.



2.2 GEOLOGY AND SOILS

The geology of the Lachlan Plains is characterised by Devonian quartz sandstone and conglomerate, with small areas of granite, as well as Quaternary colluvial slope mantles and alluvium (NPWS 2003). Mitchell characterises the geology of the Cocoparra Ranges and Footslopes as boulder hill slopes with extensive rock outcrops (Mitchell 2002).

Soils in the Cobar Peneplain relate closely to topographic position and local geology. Thin, stony, and well-drained red loams are found on ridge crests. Soil thickens into a colluvial mantle downslope, with usually a large amount of stone and increasing texture contrast between topsoil and subsoil. The elevated areas of the Cobar Peneplain are characterised by shallow red soils and aeolian sands. The aeolian sands are associated with the Darling River and Murray Basin mantle in lower areas in the west and south of the bio-region. On the lower slopes in the bioregion, the amount of stone decreases, and yellow subsoils increase along with carbonate levels, and soil drainage is impeded. Brown clays are more prevalent in drainage lines, while red and earthy sands are widespread; however, there are few areas of sandplain and dune field (NPWS 2003).

The study area is situated on one of the areas of basalt suitable for quarrying as blue metal. Prior to the existing extraction a basalt flow was located through the study area. According to Witter (1987), the east and west sides of this basalt flow resulted in contact metamorphism of Devonian quartzite which caused the quartzite to heat and cool slowly into felsite. Outcrops, presumed to be felsite[1], are located throughout the immediate vicinity of the study area.

2.3 HYDROLOGY

There are numerous minor drainage lines surrounding the study area. Some of these drainage lines traverse along the outer western and eastern boundaries of the study area (see **Figure 2-4**). All these drainage lines are ephemeral and would only have running water after rainfall.

The closest named creeks to the study area consist of Naradhan Creek (18 km northeast), Cocoparra Creek (20 km southeast), and Begargo Creek (30 km north).

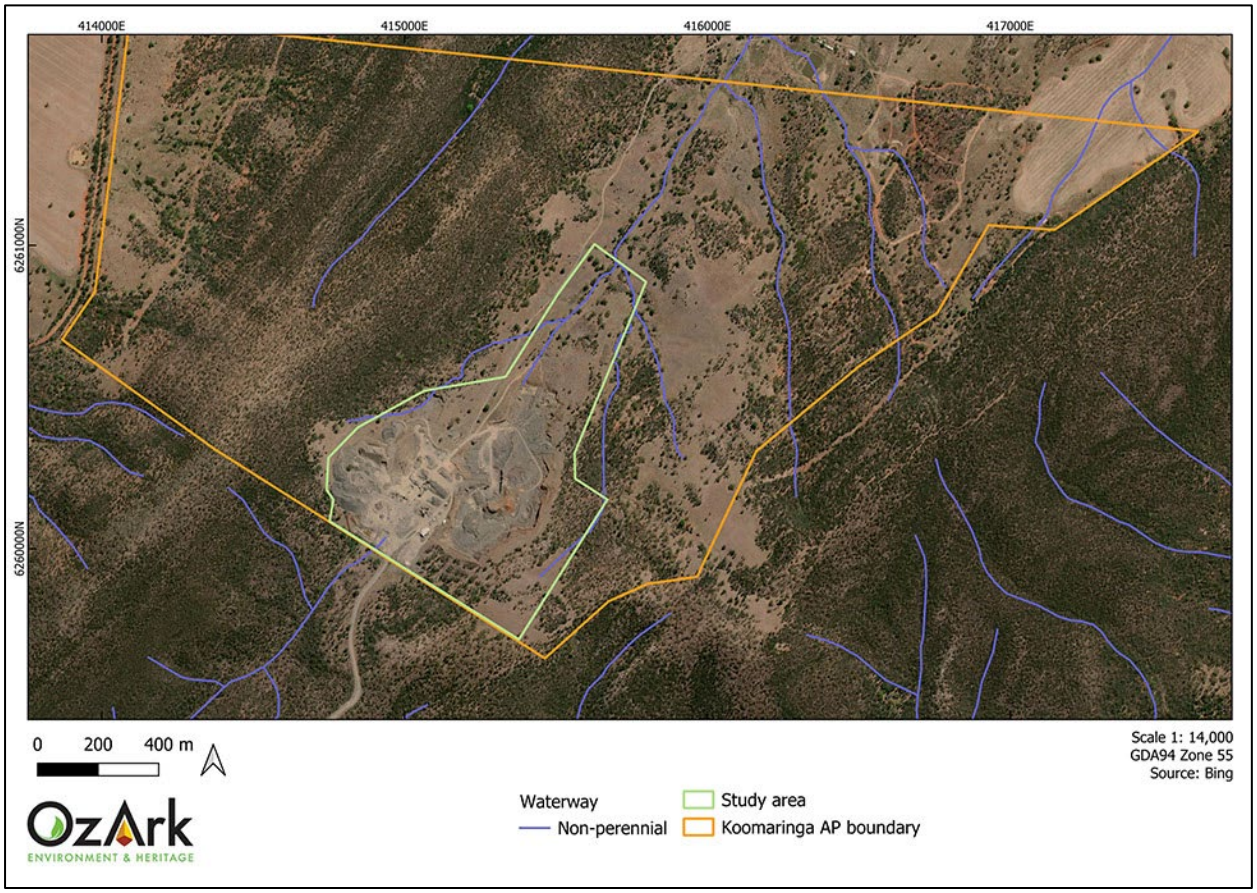
2.4 VEGETATION

Vegetation across the study area and surrounding area has been partly modified by land clearance since European settlement for the purposes of agriculture, and vegetation is, in the main, currently comprised of exotic cereals and weeds. Isolated stands of remnant native vegetation are present around the current extent of WRQ and its surrounds, with areas of greater vegetation density along the road corridors and in remnant groups of vegetation within paddocks.

[1] It is noted that felsite is not a metamorphic rock, and like the basalt flow, probably has an igneous source rather than originating from metamorphosed quartzite.

Native vegetation remaining within the investigation area includes grey box, white cypress pine, and kurrajongs.

Figure 2-4: Drainage lines in and near the study area.



2.5 CLIMATE

In general, the climate for the study area region is temperate with warmer summers and cool winters. Climate statistics from the Naradhan (Uralba) site, approximately 27 km northeast of the study area and the closest Bureau of Meteorology (BOM) weather station to the study area, indicate that temperatures range from a mean maximum temperature of 32.8 degrees Celsius (°C) in January and a mean minimum temperature of 2.8°C in July. Mean annual rainfall is 427 millimetres (mm), with rainfall distributed relatively evenly throughout the year with no distinct dry season. Mean monthly rainfall varies between a maximum of 43.1 mm in June and a minimum of 27.9 mm in February.

2.6 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

The study area prior to 1987 was used for pastoral purposes to graze sheep (Pearce 1986). **Figure 2-5** shows that the location of WRQ was open or cleared grasslands in 1966. By 1991, there had been little change in the study area except for the creation of several dirt tracks and the beginning of the quarrying (**Figure 2-6**).

Following 1987 when the first development consent for quarrying was granted, most of the study area has since been disturbed in relation to the quarrying. Currently, there are two open cut rock extraction areas: one along the east side of the current operations, and a smaller one along the western boundary. A crushing and screen plant is in the centre-south of the study area and there are large piles of overburden throughout the northern, southern, and western edges of the current operations. There are also several tracks throughout the current operation as well as one which extends north towards to Koomaringa Homestead along the northern section of the western boundary, and a less maintained track which circles around the outer upper edge of the eastern open cut area.

Overall, inside where the existing quarry is operating, there is a large amount of disturbance. Areas outside this have generally been undisturbed. See **Figure 1-4** for the extent of the existing disturbance within the study area.

Figure 2-5: 1966 aerial with the study area (source: NSW SS 2021).

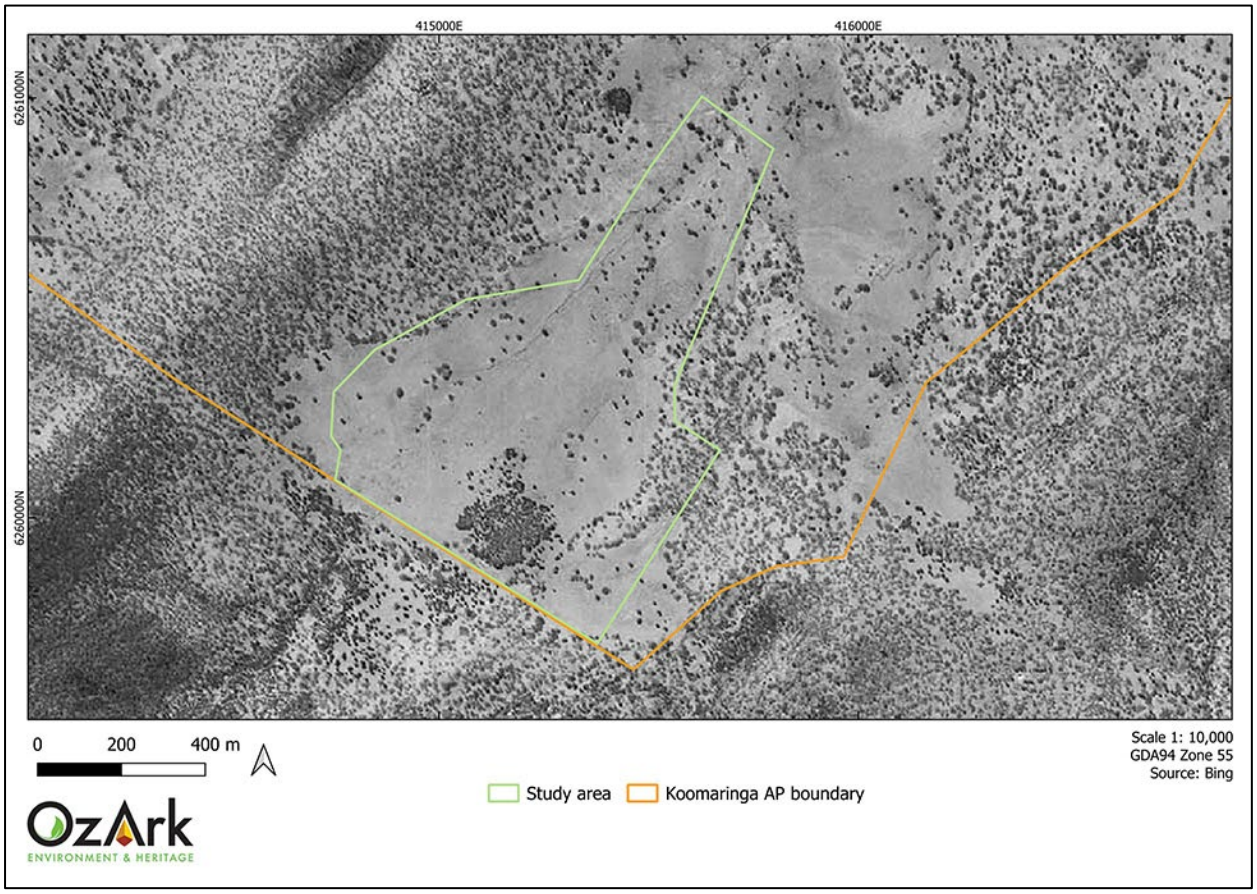


Figure 2-6: 1991 aerial with the study area (source: NSW SS 2021).

2.7 CONCLUSION

The ephemeral drainage lines and lack of a permanent water source in proximity to the study area indicates that occupation by Aboriginals would have likely been short-term and sporadic, depending partly on rainfall and run off from the surrounding ridgelines to provide water. The presence of felsite, a raw material with good flaking properties, means that occupation of the study area would have likely been due to specific visits to source and quarry the felsite. When water was available in the drainage lines it is likely that occupation areas were along the banks of the drainage lines as opposed to the rocky areas where quarrying occurred. There is erosion along the banks of some drainage lines. Considering the high level of disturbance caused by existing quarry operations, it is unlikely any Aboriginal objects or features (such as hearths) remain intact inside the areas of disturbance had they ever existed prior to quarrying operations commencing.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

3 THE ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

3.1 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of this assessment was undertaken by OzArk between Tuesday 8 October and Friday 11 October 2019.

A site inspection to locate the wooden stakes installed in 1987 to mark the buffer of Site A and Site B was undertaken on Friday 11 August 2023.

A site inspection with RAPs to discuss the appropriate buffer of Site A and Site B was undertaken on Friday 24 November 2023.

3.2 OZARK INVOLVEMENT

3.2.1 Field assessment

The fieldwork component of the heritage assessment was undertaken by:

- Fieldwork Director: Dr Alyce Cameron (OzArk Senior Archaeologist, BA [Hons] and PhD [Archaeology & palaeoanthropology] Australian National University)
- The site inspection on 11 August 2023 was conducted by Ben Churcher (OzArk Principal Archaeologist; BA [Hons], Dip Ed)
- The site inspection on 24 November 2023 was conducted by Jordan Henshaw (OzArk Archaeologist; B. Ancient History, Macquarie University).

3.2.2 Reporting

The reporting component of the heritage assessment was undertaken by:

- Report author: Dr Alyce Cameron with contributions by Ben Churcher
- Reviewer: Ben Churcher.

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

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

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (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.

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 Planning, Housing and Infrastructure (DPHI) of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS) that is administered by HNSW.

3.3.2 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act, administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water, 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 proposal

The current proposal will be assessed under Part 4 of the EP&A Act.

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

The proposal is within the Koomaringa AP that is protected under the NPW Act.

The development application will be accompanied by an EIS as the proposal is classified as "Designated Development" given it is categorised as "Extractive Industries", under Schedule 3, Part 1(19) of the *Environmental Planning & Assessment Regulation 2000* (EP&A Reg).

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 and other Commonwealth Acts do not apply.

3.4 ASSESSMENT APPROACH

The ACHAR has been prepared following the appropriate guidelines, policies, and industry requirements:

- *Aboriginal cultural heritage consultation requirements for proponents* (ACHCRs, DECCW 2010b)
- *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010).

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

This assessment has been prepared in accordance with DPHI's Secretary's Environmental Assessment Requirements (SEARs) for the proposal, issued on 8 July 2019. The SEARs identify matters which must be addressed in the EIS and essentially form its terms of reference. **Table 3-1** lists individual requirements relevant to this Aboriginal cultural heritage and historic heritage impact assessment and where they are addressed in this report.

Table 3-1: Technical assessment (heritage) related SEARs.

Requirement	Section addressed
An assessment of the potential impacts on Aboriginal heritage (cultural and archaeological), including evidence of appropriate consultation with relevant Aboriginal communities/parties and documentation of the views of these stakeholders regarding the likely impact of the development on their cultural heritage	**Section 3** to **Section 9**
Identification of Historic heritage in the vicinity of the development and an assessment of the likelihood and significance of impacts on heritage items, having regard to the relevant policies and guidelines listed in Attachment 1	**Section 11** to **Section 13**

To inform the preparation of the SEARs, DPHI invited other government agencies to recommend matters to be addressed in the EIS. These matters were considered by the Secretary for DPHI when preparing the SEARs. Copies of the government agencies' advice to DPHI were attached to the SEARs.

Heritage Council of New South Wales and HNSW (then the Office of Environment and Heritage [OEH]) raised matters relevant to the Aboriginal cultural heritage assessment. The matters raised concerning Aboriginal cultural heritage are listed in **Table 3-2** and have been considered in preparing this assessment, as indicated in the table. No agency specific assessment recommendations regarding historic heritage were provided.

Table 3-2: Agency project specific assessment recommendations.

Requirement	Section addressed
Aboriginal cultural heritage	
A detailed Aboriginal cultural heritage assessment in accordance with the *Guide to Investigation, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* and *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DEECW 2010).	**Section 3.4**
The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the proposal. This may include the need for surface survey and test excavation.	**Section 4** and **Section 8**
The identification of cultural heritage values must be conducted in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH 2010), and should be guided by the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2011) and consultation with OEH regional branch officers.	**Section 6**
Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW). The significance of	**Section 4**

Requirement	Section addressed
cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS.	
Impacts on Aboriginal cultural heritage values are to be assessed and documented in the EIS. The EIS must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	**Section 8.5** and **Section 9**
The assessment of cultural heritage values must include a surface survey undertaken by a qualified archaeologist in areas with potential for subsurface Aboriginal deposits. The result of the surface survey is to inform the need for targeted test excavation to better assess the integrity, extent, distribution, nature and overall significance of the archaeological record. The results of surface surveys and test excavations are to be documented in the EIS.	**Section 6**
Where harm to an Aboriginal object or declared Aboriginal place cannot be avoided, an Aboriginal Heritage Impact Permit (AHIP) will be required from OEH under the *National Parks and Wildlife Act 1974*. You must apply to OEH for an AHIP prior to commencing works that will directly or indirectly harm an Aboriginal object or a declared Aboriginal place	**Section 9** and **Section 10**
The EIS must outline procedures to be followed in the event Aboriginal burials or skeletal material is uncovered during construction to formulate appropriate measures to manage the impacts to this material.	**Appendix 4**
The EIS must outline procedures to be followed if Aboriginal objects are found at any stage of the life of the development to formulate appropriate measures to manage unforeseen impacts.	**Appendix 3**

3.5 PURPOSE AND OBJECTIVES

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

3.5.1 Aboriginal archaeological assessment objectives

The current assessment will apply the ACHCRs, the Code of Practice, and the Guide 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/cultural values

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

Objective Four: To determine, in consultation with the RAPs what harm the proposal may have on the cultural heritage values of the Koomaringa AP.

3.6 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 3-3** tabulates the compliance of this report with the requirements established by the Code of Practice.

Table 3-3: 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	*See subheadings below*
Requirement 1a	Previous archaeological work	**Section 5.2**
Requirement 1b	AHIMS searches	**Section 5.3**
Requirement 2	Review the landscape context	**Section 2**
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	**Section 5.4.5**
Requirement 4	Predict the nature and distribution of evidence	*See subheadings below*
Requirement 4a	Predictive model	**Section 5.4**
Requirement 4b	Predictive model results	**Section 5.4.5**
Requirement 5	Archaeological survey	*See subheadings below*
Requirement 5a	Survey sampling strategy	**Section 6.1**
Requirement 5b	Survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Survey units	**Section 6.3**
Requirement 6	Site definition	**Section 5.4.5**
Requirement 7	Site recording	*See subheadings below*
Requirement 7a	Information to be recorded	The recording of sites adhered to this requirement.
Requirement 7b	Scales for photography	All artefact photographs employed a centimetre scale bar.
Requirement 8	Location information and geographic reporting	*See subheadings below*
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	**Section 6.3**
Requirement 10	Analyse survey coverage	**Section 6.3**
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	*See subheadings below*
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	Not applicable as test excavation has not taken place.
Requirement 15	Pre-conditions to carrying out test excavation	*See subheadings below*
Requirement 15a	Consultation	Consultation has included the ACHCRs, see **Section 4**.
Requirement 15b	Test excavation sampling strategy	Not applicable as test excavation was not required.
Requirement 15c	Notification	Not applicable
Requirement 16	Test excavation that can be carried out in accordance with this Code	*See subheadings below*
Requirement 16a	Test excavations	Not applicable

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 16b	Objects recovered during test excavations	Not applicable
Requirement 17	When to stop test excavations	Not applicable
Requirements 18–20	Artefact recording	These requirements were met during the field survey.

4 ABORIGINAL COMMUNITY CONSULTATION

4.1 ABORIGINAL COMMUNITY CONSULTATION

The Aboriginal cultural heritage assessment of the proposal has followed the ACHCRs (DECCW 2010b). A log and copies of correspondence with Aboriginal community stakeholders is presented in **Appendix 1 Figure 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 the proposal.

An advertisement was placed in the *Area News* on 21 August 2019 to solicit expressions of interest (**Appendix 1 Figure 2**).

A letter seeking information from various agencies was sent on 21 August 2019 (**Appendix 1 Figure 3**). These agencies were: Office of the Registrar; Biodiversity and Conservation Division (BCD, now HNSW); National Native Title Tribunal; NTSCORP; Griffith Local Aboriginal Land Council (LALC), Carrathool Shire Council, and the Riverina Local Land Services. Replies from government agencies are provided in **Appendix 1 Figure 4**.

By the closing date for registration concerning this proposal, as well as with late registrations, five groups or individuals registered to be consulted as RAPs:

- Griffith LALC
- James Ingram (Bidya Marra) (late registration 3.1.24)
- Judy Johnson
- Mark Saddler (Bundyi Culture) (late registration 3.1.24)
- Robert Carroll & Neerim Carroll (Miyagan Culture & Heritage).

4.1.2 ACHCRs Stages 2 & 3

The aim of Stages 2 and 3 is to provide information about the proposal to the RAPs and to acquire information regarding Aboriginal cultural values associated with the proposal 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 26 September 2019 all RAPs were sent an information package including the development overview and proposed assessment methodology (**Appendix 1 Figure 5**). No feedback was provided by RAPs on the survey methodology.

4.1.3 ACHCRs Stage 4

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

The draft ACHAR was sent on 08 October 2021 to all RAPs. A 28-day review period was provided closing on 05 November 2021 (**Appendix 1 Figure 6**).

No comments on the draft ACHAR were received from the RAPs.

The project update letter sent on 06 September 2023 (**Section 4.1.4**) was in response to a recommendation from HNSW to seek further consultation with RAPs about their views regarding potential harm to Koomaringa AP. The project update letter was followed with an email on 13 September 2023 to gain feedback from the RAPs. This email was followed by telephone calls, particularly to the Griffith LALC, on 19 and 20 September 2023. While OzArk was not able to get a response from the Griffith LALC (see **Appendix 1 Figure 1**), two responses were received from Mr Robert Clegg and Mr Paul Brydon. These responses are detailed further in **Section 4.2.2**).

4.1.4 Project updates

Project update letters were sent to the RAPs while the proposal was on hold between the field survey and the drafting of the report. These letters were sent on 7 July 2020, 8 December 2020, and 18 August 2021 and presented in **Appendix 1 Figure 7**. On 29 May 2023, a further project update letter was sent to RAPs explaining the delay in the progress of the project due to the need to complete the Plan of Management for the Koomaringa AP (**Appendix 1 Figure 7**).

On 6 September 2023, a further project update letter was sent to the RAPs seeking feedback on any concerns they may have about potential impact to the Koomaringa AP because of the proposal (**Appendix 1 Figure 7**).

4.1.5 Consultation on the Koomaringa Aboriginal Place Plan of Management

Consultation has also occurred with the RAPs during the development of the Koomaringa Aboriginal Place Plan of Management that has taken place at the same time as the ACHCRs.

Major stages of this consultation consisted of:

- 30.08.2021. OzArk sends letter and questionnaire. No responses to the questionnaire were received
- 28.4.2023. OzArk sends draft Koomaringa Aboriginal Place Plan of Management to RAPs for review. Following the close of the review period (19 May 2023) feedback about the draft Plan of Management was received from Mr Peter Ingram. Mr Ingram's response was comprehensive and relevant portions of the response have been noted in this ACHAR (**Section 4.2.3**).

4.1.6 Site visits during 2023

Because of a request from HNSW to seek further consultation on RAP views regarding the possible harm to the Koomaringa AP from the proposal, a series of site visits occurred during late 2023. Specifically, these were:

- 11 August 2023: OzArk Principal Archaeologist Ben Churcher visits site to map the 1987 site buffer pegs installed by the National Parks and Wildlife Service in 1987
- 24 November 2023: OzArk archaeologist, Jordan Henshaw, and three RAPs (Mark Saddler, James Ingram, and Robert Carroll) met on site to discuss management measures to protect the Koomaringa AP
- 5 to 7 December 2023: Three RAPs (Mark Saddler, James Ingram, and Robert Carroll) spend three days at site determining where protective fencing should be placed and investigating the Koomaringa AP surrounding the WRQ
- 20 to 22 December 2023: Three RAPs (Mark Saddler, James Ingram, and Robert Carroll) spend three days at site ensuring the fencing has been correctly installed and further inspecting the Koomaringa AP. During this site visit Mr Mark Saddler recorded an additional 14 sites. All sites, except one (42-5-0064), are outside the maximum limit of disturbance and the Quarry Site (see **Section 5.3.1**).

4.2 ABORIGINAL COMMUNITY INVOLVEMENT IN THE ASSESSMENT

The field survey was undertaken 8–11 October 2019. The following RAP or representative of RAPs participated in the fieldwork as a site officer:

- Max Harris (Griffith LALC).

In addition, Stephen Collins (Griffith LALC), participated on Friday 11 October 2019 as a volunteer.

From 5 to 7 December 2023 and from 20 to 22 December 2023, RAPs Mark Saddler, James Ingram, and Robert Carroll spent a total of six days on site to acquaint themselves with the study area, to inspect areas within the Koomaringa AP adjacent to the WRQ, and to determine the appropriate location of fencing to protect Site A and Site B. The second site visit (20 to 22 December 2023) was to confirm that the Applicant had placed the fencing at the correct location.

4.2.1 Comments arising from the assessment

During the field survey the site officer, Max Harris, shared information about the Aboriginal occupation and archaeology in the region. This information has been summarised below:

- Mr Harris has seen artefacts made from the same felsite being quarried at Koomaringa AP in several surrounding regions including the Hay Plains and along the Lachlan and Murrumbidgee Rivers. He said that the white/cream/grey felsite was what he had seen the most

- Canoes were often called ‘drag-alongs’ due to being used by resting one knee inside the canoe and pushing along with the other leg
- Many of the trees in the study area have signs of ring-barking. Mr Harris postulated that this may have been done by a group of Chinese immigrants in the early 1900s. According to Mr Harris, there is also a mass grave of Chinese ring-barkers in the general area of Rankins Springs, who accidently ate poisoned flour left out by pastoralists to poison local Aboriginal people. This event cannot be confirmed by other sources
- Sim’s Gap was also talked about by Mr Harris who mentioned it was named after a cattle hustler who died in the vicinity. According to Mr Harris, there is also an Aboriginal site at Sim’s Gap and the locality is a source of sandstone slabs good for grinding stones.

Based on comments from the Griffith LALC site officers in the field during the 2019 survey, the Koomaringa AP that includes the WRQ has high social and cultural value. On 25 January 2019 Mr Ethan Williams, on behalf of the Griffith Local Aboriginal Land Council, wrote:

> *This unique Wiradjuri Aboriginal quarry is of enormous spiritual and cultural significance to many Aboriginal groups and communities throughout this Region, and needs to be afforded the cultural respect, appreciation and protection it deserves.*

On 26 November 2023 RAP Mark Saddler wrote about his values attached to the Koomaringa AP that includes the WRQ (**Appendix 1 Figure 10**):

> *Koomaringa is a very spiritual place for my Wiradjuri people and as such has many special places, songlines and dreaming places that my people have cared for and continue to have connection to for over 80,000 + years.*

In a letter to the Applicant on 29 November 2023, RAP Robert Carroll, referring to the values of the Koomaringa AP that includes the WRQ, wrote (**Appendix 1 Figure 11**):

> *What astounded Roley, I and everyone else who has ever visited the site was its overall size, which included A & western Cultural B tool making sites and the sheer numbers of mounds of worked felsite debitage or tailing’s, artefacts, bedrock anvils and the percussion scars that are clearly visible on the remaining felsite vein which were created by ancient Wiradjuri tool makers smashing larger basalt blocks into it to gather core material for further working.*

It is very clear from these responses that the Aboriginal community have deep cultural values attached to the Koomaringa AP that includes the WRQ. While the values are primarily attached to the quarry features and other sites in the Koomaringa AP, these values also extend across the WRQ.

4.2.2 Aboriginal community feedback on the ACHAR

On 06 September 2023, OzArk sent a project update letter to all RAPs and Wiradjuri stakeholders for the Koomaringa AP (**Appendix 1 Figure 7**). This was followed up by an email on 13 September 2023 that asked several questions to help frame the Aboriginal community's feeling towards the potential harm associated with the proposal both on individual Aboriginal objects and on the Aboriginal cultural values of the Koomaringa AP.

These questions were:

1. Are you aware that the WRQ is inside the Koomaringa AP?
2. Are you aware that DA2022/029 will encroach on and directly impact Aboriginal sites within the AP?
3. The activities proposed in DA2022/029 include recommendations to salvage two sites (an isolated find and a low density artefact scatter of two artefacts)[2]. Aboriginal objects are proposed to be moved from the location where they are found to a place of safe-keeping nearby. The relocation spot will be decided in consultation with the RAPs. As salvage of these objects will also harm the overall values of the AP, do you have any views on the salvage of these objects as part of DA2022/029?
4. In your opinion, how will this impact harm the significance of the AP?
5. The project update letter mentioned a couple of initiatives to improve the values of the Koomaringa AP such as tree screening and the provision of a car park to help community access the AP. Do you feel these initiatives will improve the cultural values of the AP?
6. Are there other initiatives that could be explored to improve the cultural values of the AP? For example, land rehabilitation and vegetation management within the Koomaringa AP that will result in enhancing the values of the AP?

Two responses were received from Mr Robert Clegg and Mr Paul Brydon.

Mr Brydon told OzArk that he is '*happy with the project*' and did not have further comment (19 September 2023, see **Appendix 1 Figure 1**).

Mr Clegg provided answers to the questions in a phone call on 19 September 2023 (**Appendix 1 Figure 1**). Mr Clegg's responses were captured by OzArk's community consultation officer (Catherine Burrowes) and are reproduced below, highlighted in red.

1. Are you aware that the WRQ is inside the Koomaringa AP? Yes
2. Are you aware that DA2022/029 will encroach on and directly impact Aboriginal sites within the AP? Yes
3. The activities proposed in DA2022/029 include recommendations to salvage two sites (an isolated find and a low density artefact scatter of two artefacts). Aboriginal objects are proposed to be moved from the location where they are found to a place of safe-keeping nearby. The relocation spot will be decided in consultation with the RAPs. As salvage of these objects will also harm the overall values of the AP, do you have any views on the

[2] This was written prior to the recording of an additional site in the maximum limit of disturbance.

salvage of these objects as part of DA2022/029? Won't harm value as long as placed near scar tree at base with signage needed.

4. In your opinion, how will this impact harm the significance of the AP? No it won't
5. The project update letter mentioned a couple of initiatives to improve the values of the Koomaringa AP such as tree screening and the provision of a car park to help community access the AP. Do you feel these initiatives will improve the cultural values of the AP? Tree screening yes, car park – edge is fine, if inside will need to fenced
6. Are there other initiatives that could be explored to improve the cultural values of the AP? For example, land rehabilitation and vegetation management within the Koomaringa AP that will result in enhancing the values of the AP? Yes, vegetation management is needed.

In conclusion, the two Wiradjuri stakeholders who responded to OzArk felt that the harm proposed by the proposal is manageable and would not materially impact the Aboriginal cultural values of the Koomaringa AP.

Following this round of consultation, OzArk was contacted by RAP Robert Carroll requesting a site visit for himself and two other RAPs, Mark Saddler and James Ingram (**Appendix 1 Figure 8**). The Applicant agreed to facilitate this request, and on 24 November 2023, OzArk Archaeologist, Jordan Henshaw, and three RAPs (Mark Saddler, James Ingram, and Robert Carroll) met on site to discuss management measures to protect the Koomaringa AP (**Appendix 1 Figure 9**).

On 26 November 2023 (**Appendix 1 Figure 10**) and on 29 November 2023, the Applicant received letters from both Robert Carroll (**Appendix 1 Figure 11**) and Mark Saddler (**Appendix 1 Figure 12**). While these letters mainly dealt with the management within the Koomaringa AP Plan of Management, the comments remain pertinent to the WRQ ACHAR.

Following further conversations with the Applicant, three RAPs (Mark Saddler, James Ingram, and Robert Carroll) were invited to spend three days on site (5 to 7 December 2023). This visit to site was to determine where protective fencing should be placed and investigating the Koomaringa AP surrounding the WRQ.

Following the site visit, the Applicant installed fencing at the agreed location and on 20 to 22 December 2023 the three RAPs (Mark Saddler, James Ingram, and Robert Carroll) again spent three days at site ensuring the fencing has been correctly installed and further inspecting the Koomaringa AP. During this visit, the RAPs recorded a further 14 sites within the Koomaringa AP (**Section 6.6**).

In a phone call to the Applicant on 22 December 2023, Robert Carroll stated that he felt the installed fencing was sufficient to prevent harm to Sites A, B, and C.

On 18 February 2024, OzArk sent responses to the RAPs who had submitted suggestions and recommendations based on the December 2023 site visits. Where appropriate, the RAP input led

to additional recommendations being added to this ACHAR (Recommendations 1, 3, and 4) (**Appendix 1 Figure 14**).

4.2.3 Aboriginal cultural heritage values of the Koomaringa AP

As part of the development of the Koomaringa AP Plan of Management, Wiradjuri stakeholder Mr Peter Ingram volunteered his cultural values for the Koomaringa AP that includes the WRQ. Mr Ingram's cultural values are repeated below as they are also applicable to the WRQ.

> *The Rankins Springs ACH stone quarry is a important significant area wiradjuri people. the silcrete stone is only found in that area Miles around and would have been accessed, traded and utilised over the lower Murrumbidgee to the lower Lachlan river area. now Rankin Springs stone quarry is not just important because of the resources of stone. The local area was inhabited seasonal by all local mob/people for ceremony/lore and sustainable resource able living. there's are fresh water Rockwell's/water springs (only meter away from the AP site) certain diverse vegetation and Verity native animals species that call that place home. Very significant area. (a large quandong tree near the homestead).*
>
> Mr Peter Ingram. 31 May 2023.

As noted in **Section 4.2.1**, RAPs Robert Carroll and Mark Saddler also regard the Koomaringa AP to be a place of high cultural and scientific value.

5 ABORIGINAL ARCHAEOLOGY BACKGROUND

5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

The study area is located within the south-eastern extent of the Wiradjuri tribal and linguistic group (Tindale 1974). The Wiradjuri tribal area is in the Murray Darling Basin and traverses three general physiographic regions: the highlands or central tablelands in the east, riverine plains in the west and the transitional western slope zone in between (White and Cane 1986). The Wiradjuri is one of the largest language groups in New South Wales, extending across the districts of Mudgee, Bathurst, Dubbo, Parks, West Wyalong, Forbes, Orange, Junee, Cowra, Young, Holbrook, Wagga Wagga, Narrandera, Griffith, and Mossgiel (Tindale 1974). Although the area is considered to have a single language, various dialects were found throughout the region (Tindale 2000).

At the beginning of the nineteenth century the Wiradjuri group occupied the area to the south of the Murrumbidgee River and east of the Lachlan River (Kass 2003: 10). The woodland communities of the region provided habitat for possums (used for meat and fur), reptiles and birds (Kabaila 1995). The Murrumbidgee River was a source of mussels and fish, including the Murray cod (Heritage Office 1996: 132). The country between the rivers provided seasonal plants, tubers, nuts, seeds, and daisy yams. Larger game such as kangaroos and emus were hunted, contributing to an overall nutritious and varied diet (Heritage Office 1996: 132). Small groups moved around regularly according to seasonal resource fluctuations and ritual obligations (Kass 2003). A relatively large number of carved trees are associated with important sites marked out by clans, including burial sites (Kass 2003: 10).

Wiradjuri social organisation appears to have been based upon extended kinship networks involving totemic designations and associations. The kinship system governed and controlled marriage and determined ceremonial obligations. Individual identity and clan affiliations were expressed partly through skin cloaks and elaborate carvings on wooden implements (White and Cane 1986: 61).

Common areas favoured by the local Wiradjuri (river and plains) also attracted colonial settlers and the frontier of colonial settler expansion swept into Wiradjuri country over the 1830s and 1840s at breakneck pace (Kabaila 1995: 12). Diseases spread along the river systems decimating Aboriginal populations. By the time the British settlers arrived, the fabric of traditional Aboriginal life was no longer intact. A variety of locally contingent Aboriginal responses rose from this, including resistance, economic hardship, and opportunism. In the 1880s a mission called the Warangesda Mission was established by Reverend John Gribble at Darlington Point.

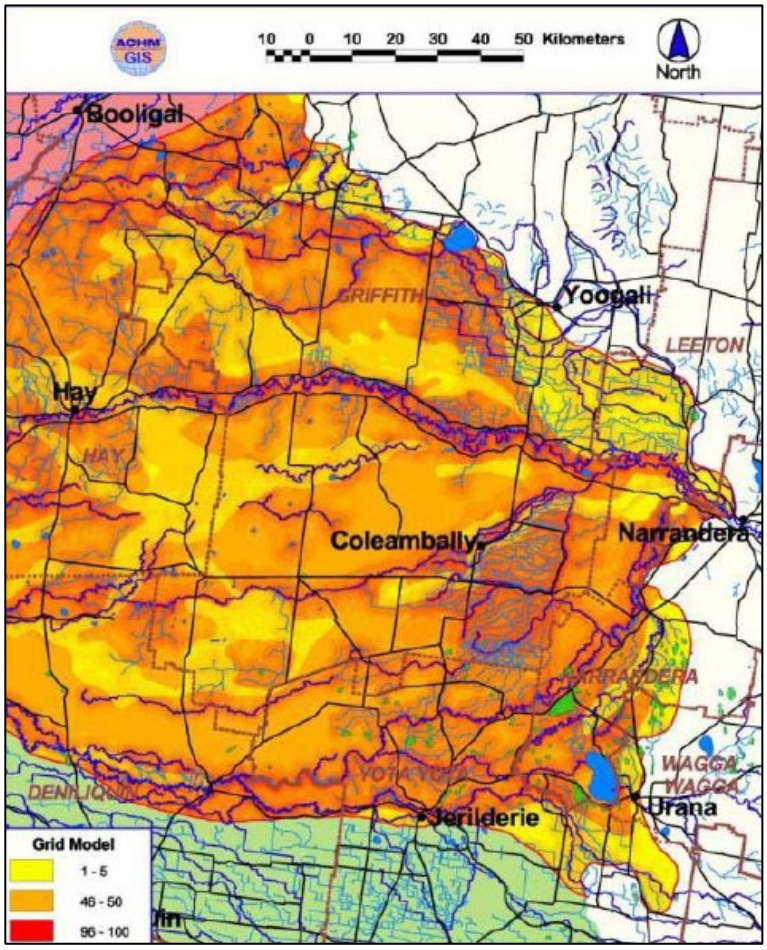
5.2 REGIONAL ARCHAEOLOGICAL CONTEXT

There are few archaeological assessments in the general region of Koomaringa AP. As such, it is necessary to use assessments from surrounding areas to help provide some archaeological context.

Pardoe and Martin (2011) undertook an Aboriginal cultural heritage study of the Murrumbidgee province. Though their study covered the Murrumbidgee province, which at its closest is approximately 38 km to the south and west of Koomaringa AP, the detailed analysis of the cultural landscape and archaeological sites is still useful, especially the predictive model of the eastern half of their area. **Figure 5-1** shows a predictive model of sites in the Murrumbidgee east province, which shows the likelihood of sites on a scale of 0–100, where yellow is low, orange is moderate, and red is high. Pardoe and Martin correlated the AHIMS site register and fieldwork, as well as environmental contexts, such as landform, soils, and water sources in formulating the predictive model. The map on **Figure 5-1** shows the likelihood of finding a site in a one-hectare area based on environmental features of the land in that hectare, as well as the density of Aboriginal sites in a particular area. Pardoe and Martin (2011: 119) conclude that "*occupation decreases markedly and systematically as one moves away from the water source*". There is also a list of 'nodes' which are major concentrations of occupation provided for further research. Though the study area is distant from a permanent source of water, the presence of a raw material suitable for artefact manufacture would categorise the study area as a 'node' and having a high likelihood of further Aboriginal sites. However, Pardoe and Martin also mention that there are some site types which differentiate from this generalisation, in particular mounds and burials.

> *While a large amount of variation in site distribution can be explained by reference to environmental patterns and resource availability, there are other patterns that may only be explained with reference to considerations of social organization. The distribution of stone artefact assemblages and the aforementioned nodes of occupation are probably in this category. These features may, for instance, reflect relationships between groups.* (Pardoe and Martin 2011: 119)

Figure 5-1: Predictive model of sites in the Murrumbidgee east province (source: Pardoe and Martin 2011: 104).



Of the three prior assessments conducted within or near the study area, only two have a formal report available. These were done by Witter in 1987 and Byrne in 1987 prior to the existing WRQ starting operations.

Witter (1987), as an NPWS archaeologist, conducted an inspection of the study area, prior to it being originally developed as a quarry in 1987. Two sites were examined during the inspection, Site A and Site B, where, according to Witter, intense contact metamorphism between basalt and Devonian quartzite has resulted in felsite being present, although as previously noted (footnote 1) felsite is not a metamorphic rock and probably has an igneous source.

Site A was recorded by Witter as being an outcrop of felsite up-slope of the basalt which had a variety of flaked stone as well as bedrock anvils. It was noted that Site A was not used as heavily as Site B, perhaps due to the felsite being mostly coarser grained. Site A also has a large amount of colluvially deposited thermally fractured felsite overlying the nearby basalt.

Site B is located along the western boundary of the study area. Witter describes it as being "*largely exposed by a gully which runs down along the contact*" (Witter 1987: 1). It was noted that Site B had a large amount of flaked stone as waste from the process of breaking out cores from the felsite bedrock exposed in the drainage line. There were indications of Aboriginal quarrying

occurring by using the bedrock as anvils, as well as using large rocks to detach spalls from the bedrock which could then be used as core blanks. Witter also noted Hertzian cones in several of the felsite outcrops, as well as workshop areas which he postulates are "*trimming areas where the blanks were flaked to reduce unnecessary weight. These prepared cores would then be ready for transport to sites away from the quarry*" (Witter 1987: 2), as well as areas of implement manufacturing including retouched flake tools.

The felsite recorded at Site A and Site B includes red, yellow, and orange colour variations, as well as the more common white / grey colour type. Witter notes that this was due to changes in iron oxidation due to the heat from the basalt dykes.

In terms of significance, Witter states:

> *The Koomaringa Aboriginal stone quarry is an outstanding example of its kind. It is heavily worked, and it is unlikely that many similar quarries are present in the area…The main prehistoric use of this quarry was probably from about 5,000 to 2,000 years ago… The techniques used were highly sophisticated and required stone materials with the best flaking qualities… However, people of earlier and later periods probably also made a point of utilising such a fine stone source. The earliest date of use is conjectural, but could exceed 40,000 years ago.* (Witter 1987: 2–3)[3]

A series of management recommendations were outlined by Witter for Site A and Site B:

- A site map of both Site A and Site B should be produced showing the location and distribution of the cultural resource.
    - A large base map showing gullies and indicating hills and ridges to place the sites in context
    - Plotting archaeological material, such as bed rock anvils, extents of flaked debris, and other items with flake removal or retouch
- The archaeological sites should be marked out using white topped star pickets to avoid any impact by the rock extraction mining.
- A barrier fence should be installed to include a 50 m buffer zone in the basalt for the protection of the archaeological sites to prevent heavy equipment from crossing it or other mining activities straying onto the site.

Byrne (1987) also conducted a detailed assessment of Site A and Site B. The primary aim of Byrne's assessment was to spatially record the sites through mapping to determine the site extents and appropriate buffers to use for protecting the sites from the rock extraction activities.

[3] While Witter states that these dates are conjectural, there is no evidence available that suggests such an early date for the site.

Byrne recorded Site A as consisting of:

> *Surface exposures of felsite bedrock in a zone c. 50 metres wide along the spine of a low ridge for a distance of one kilometre.*
>
> *The bedrock exposures are surrounded by percussion material occupying a zone varying from about 50 to 100 metres wide. This material is mostly located on the flat to gently sloping top of the ridge. Downslope to the west a colluvial screen of mostly thermal felsite extends up to 150 metres from the ridge spine. This colluvium overlies the basalt. Further downslope towards the creek bed the scree is predominately basalt. A small amount of thermal felsite occurs in the creek bed. West of the creek the ridge slope is exclusively basalt.*
>
> *For the most part the north felsite occurrences on the ridge spine appear not to have been intensively used. Anvil areas are present but rare, no Hertzian cones were observed, and the density of percussion material is low (varying between about 1: 2–50 m^2).*
>
> *The southern end of the ridge spine (i.e., c. 300 m from vehicle track) has been more intensively used. Several anvil areas with Hertzian cones were observed. Workshop areas in this vicinity have densities of percussion material up to 20: 1 m^2. Several Hertzian cones are present on the bedrock exposures here.* (Byrne 1987: 7–8)

Figure 5-2 shows the site map Byrne produced for Site A. The numbers on the map represent Byrne's fieldnotes and are reproduced in **Table 5-1**.

Figure 5-2: Area 'A' felsite extraction zone showing location of buffer zone (source: Byrne 1987: 33).

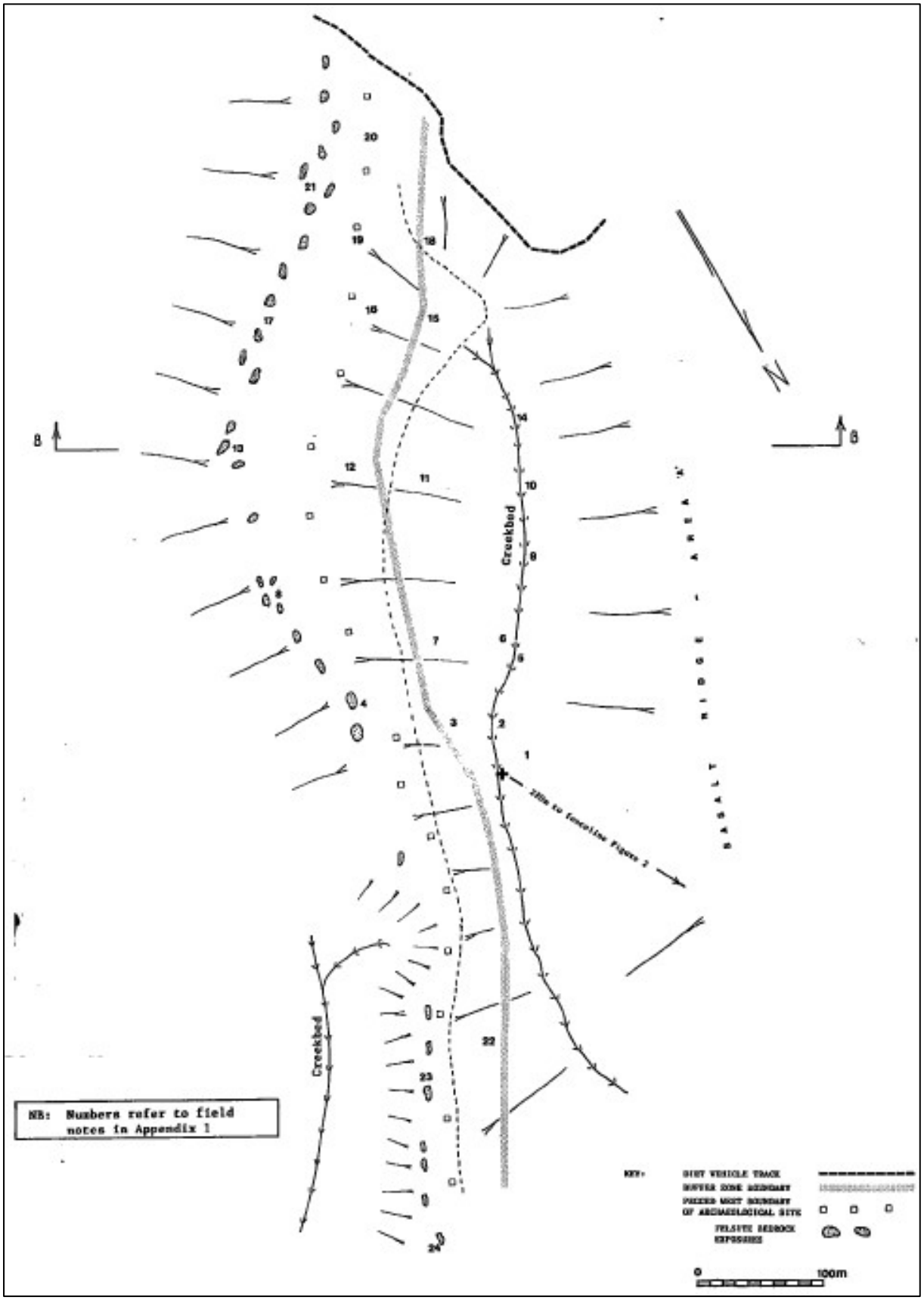


Table 5-1: Field Notes – Area 'A' (reproduced from Byrne 1987: 21–23).

Number on map	Field notes
1	Gentle slope on east side of creek. Basalt scree. Low density of felsite. Mostly thermal. No felsite artefacts observed.
2	Creek bed. Exposures of basalt bedrock. Some thermal felsite in creek bed. Bed 1.5 m wide. No banks. Gentle slope either side.
3	Basalt and felsite scree. Felsite mostly has thermal fractures. Thin dry pasture – ground visibility 40%. No artefacts observed.
4	Spine of ridge with felsite bedrock exposures. Non-artefactual felsite larger than downslope. No anvil areas observed on bedrock. Low density of artefacts – flakes and core to 8 cm. Artefact density 1: 2 m^2. Zone of bedrock and artefacts c. 20 m wide along the ridge spine at this point. Zone of bedrock and artefacts c. 30 m wide along the ridge spine at this point.
5	Creek bed 1.5 m wide, no banks. No felsite observed in basalt screen slope no west side.
6	Basalt scree with some felsite, mostly thermal.
7	Roughly equal proportions of basalt and felsite in scree. One felsite core, multi-platform 9 cm.
8	Felsite bedrock exposures as for 4. Felsite more coarse-grained than 4. Felsite bedrock exfoliating thermally. Mostly cobble-sized felsite. Very low density of felsite artefacts 1: 50 m^2. No anvil areas observed.
9	Creek bed. Basalt screen slopes on both sides. Some thermal felsite in creek bed. No artefacts observed.
10	Creek bed ill-defined. Basalt screen slopes on both sides. Some thermal felsite in bed. No artefacts.
11	Basalt scree slope. No felsite.
12	Mixed basalt-felsite scree. Coarse-grained felsite, mostly thermal. No artefacts observed.
13	Felsite bedrock exposures on ridge spine. Zone of bedrock and artefacts about 50 m wide at this point. Artefact density 2: 1 m^2. A few negative flake scars on felsite bedrock. Bedrock a few centimetres above ground surface. Some of felsite here quite fine-grained. Blade flakes mostly in 2–4 cm size range. No cores observed here.
14	Creek bed ill-defined. Some thermal felsite in bed. No artefacts observed.
15	Felsite scree. No artefacts observed.
16	As for 15.
17	Bedrock exposure as for 13. A few possible anvil areas. No Hertzian cones.
18	Basalt scree with some thermal felsite. No artefacts.
19	Felsite scree. No artefacts observed.
20	As for 19.
21	Felsite bedrock exposures along ridge spine. Anvil areas and Hertzian cones. Artefact density surrounding anvil areas up to 20: 1 m^2. Mostly flakes and flaked pieces. Artefact density here considerably higher than anywhere to the north along the ridge. Thin dry pasture with visibility 40%. Negative flake scars on bedrock. Some artefacts (flakes and flaked pieces) have retouch.
22	Basalt scree. No artefacts observed.
23	Felsite bedrock exposures. No Hertzian cones or negative scars observed on bedrock. But artefacts present at density of about 2: 1 m^2.
24	Northern most felsite bedrock exposure on ridge spine. Exposures quite small. Low density of artefacts in association. No Hertzian cones.

Site B was also recorded and mapped by Byrne:

> *…the felsite bedrock exposures are confined to two stretches of creek bed of 50 and 70 metres in length in addition to a small number of small exposures on the slope west of the creek. Felsite artefacts and thermal material, however, occur in the creek bed in sizes ranging from pebbles to boulders at least as far north as the creek junction.*
>
> *East of the creek bed is the low basalt ridge which is the subject of the Area 'B' basalt quarry proposal. The west side of this ridge takes the form of a relatively steep scree*

slope leading directly to the bank of the creek bed. No felsite was found on this slope. Evidently the Aboriginal activity associated with felsite extraction and processing was confined to the creek bed and the gentle slope on the west side of the bed.

…The bedrock exposures in the creek bed bear scars resulting from block-on-block percussion and removal, by percussion, of projections. Numerous Hertzian cones are present. It is clear that much of the debitage associated with extraction here has been washed downstream. There remain, however, scatters of percussion material in the bed at densities up to 5: 1 m^2. These occur amongst thermal felsite pebbles and cobbles and basalt rocks in a variety of sizes.

West of the creek bed the density of percussion material falls off rapidly from around 1: 1 m2 within 20 metres of the bed to 1: 5m2 100 metres west of the bed. The slope at the time of the investigation was covered with dry pasture which reduced ground visibility to less than 30% in most places.

A number of areas on the slope has densities of percussion material indicative of workshop activity. These were particularly associated with the small exposures of the bedrock on the slope.

As with Area 'A', considerable amounts of thermal felsite scree occur on the slope.

The felsite percussion material ceases to occur about 150 m south of the southernmost of the two creek bed felsite occurrences. At the northern end of the site the percussion material is mostly confined to the creek bed. Between the vehicle track crossing and the creek junction felsite percussion material was observed in the alluvial banks of the creek which are up to 2m high here.

…Most of the felsite percussion material seen in Area 'B' was relatively small by quarry standards. The largest core was 30 cm and no flakes or flaked-piecers were larger than 20 cm, most of them well below 10 cm. The scarcity of large items may be due to the high quality of the stone and the extent to which the raw material extracted from the exposures was reduced before rejection or removal from the site. (Byrne 1987: 8–9)

The site map of Site B produced by Byrne is shown on **Figure 5-3** and **Figure 5-4**, while the fieldnotes relating to the numbers on the maps is reproduced in **Table 5-2**.

Figure 5-3: Area 'B' felsite extraction area showing buffer zone east of creek bed (source: Byrne 1987: 31).

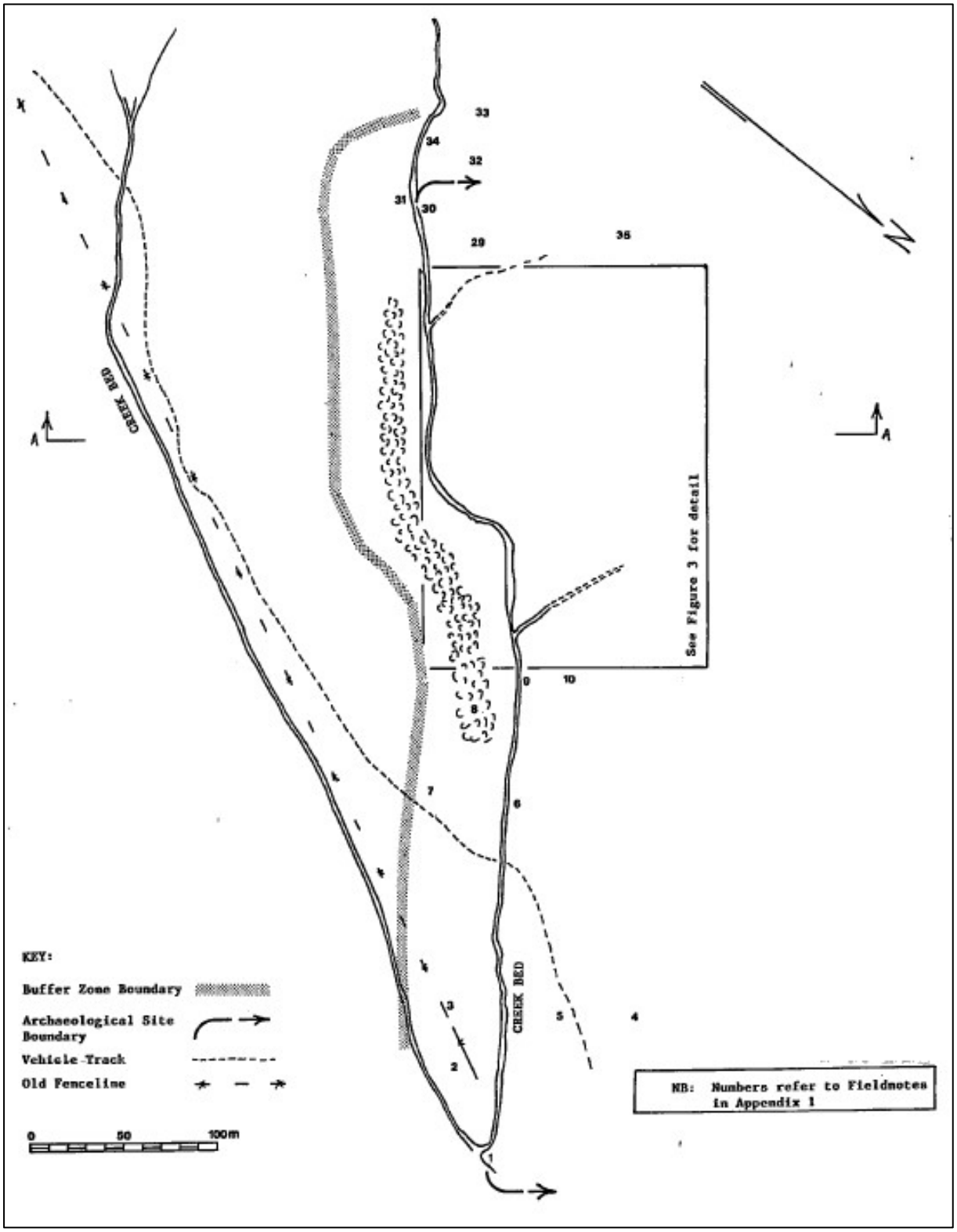


Figure 5-4: Detail showing area of felsite bedrock exposures at Area 'B' (source: Byrne 1987: 32).

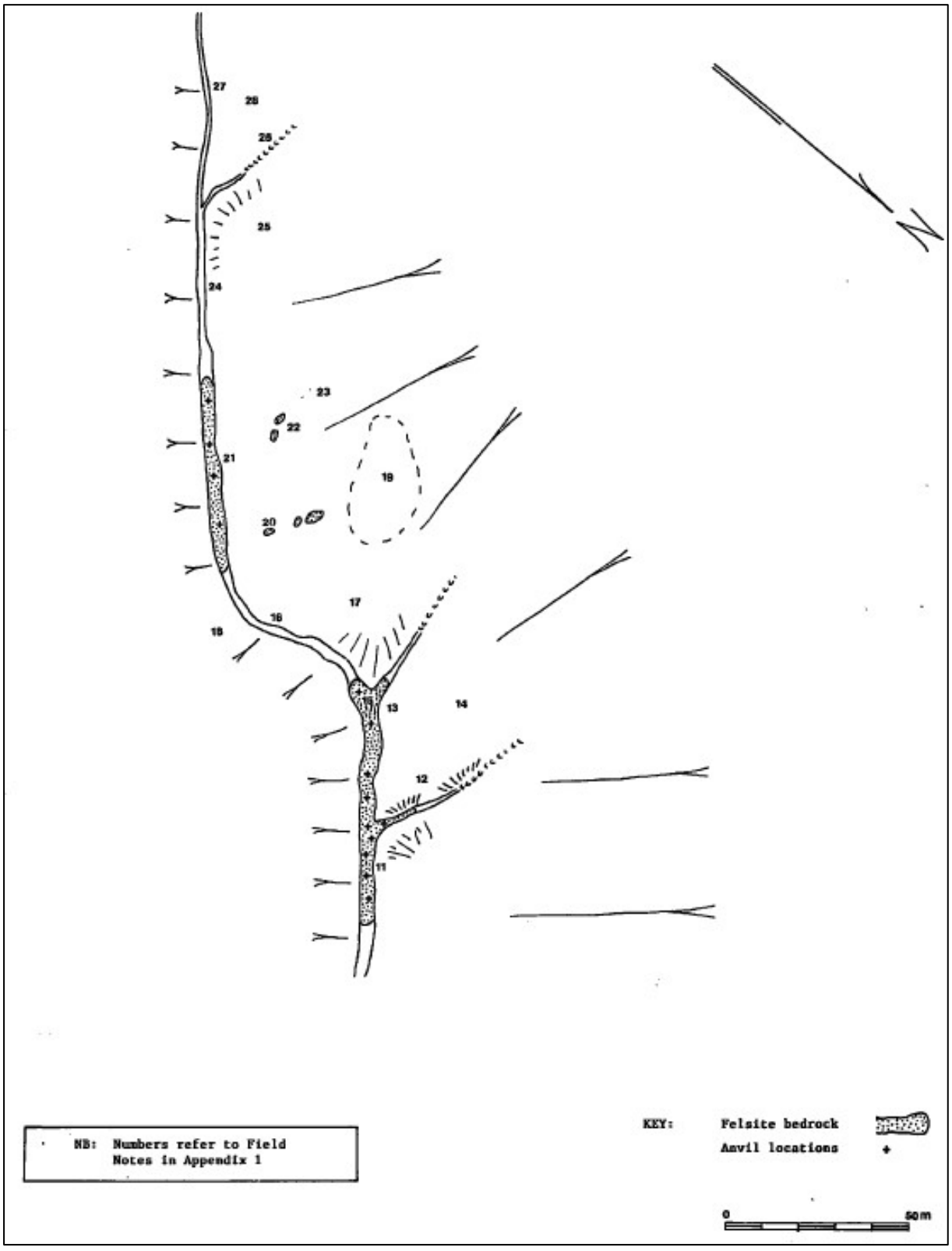


Table 5-2: Field Notes – Area 'B' (reproduced from Byrne 1987: 18–21).

Number on map	Field notes
1	Creek junction. Felsite cobbles and pebbles in creek bed. Also, low-density scatter of artefacts in bed material (1: 1 m^2). Banks up to 2 m high. Some artefacts exposed in bank alluvium.
2	Dry pasture. Ground visibility 10%. No artefacts or felsite pebbles, etc.
3	Rabbit warren surrounded by dry pasture. Ground visibility on warren 70%. Mixture of basalt and felsite rocks on surface. Felsite cores and flakes – low density (1: 1 m^2). Some thermal felsite.
4	Gentle slope with dry pasture. Visibility 10–20% with some more exposed patches. Low-density thermal felsite. No artefacts observed.
5	Gentle slope. Visibility as 4. Low-density thermal felsite (pebble size) plus low-density felsite artefacts 1: 1 m^2 increasing downslope to about 2: 1 m^2.
6	Creek bed. No banks. Mixture of basalt and felsite pebbles and cobbles. Bed 2 m wide. Artefacts 2: 1 m^2 in 2–10 cm size range.
7	Dry pasture. Ground visibility 10%. A few felsite rocks. No artefacts observed.
8	Basalt screen slope. No artefacts observed.
9	Exposure of felsite bedrock in creek bed. Floor of creek bed c. 3 m wide – bed entirely occupied by bedrock. Hertzian cones and other block-on-block percussion attributes present. Small amount of loose stone lying on bedrock – includes flakes and flaked pieces (mostly smaller than 5 cm). The south-east side of the creek consists of a basalt scree slope descending steeply to the bank of the creek which is 2 m high. Low density of felsite artefacts on north-west creek margin (1: 1 m^2).
10	Gentle slope with dry pasture. Felsite scree of pebble-sized stones. Mostly thermal. Artefact density c. 1: 5 m^2.
11	Creek bed felsite bedrock exposure. Felsite thermal material to cobble size. A small proportion of percussion artefacts – c. 5%. Artefact density up to 5: 1 m^2. No felsite on basalt screen slope.
12	Felsite screen slope on south side of small dry channel. Includes artefacts at 1: 1m^2 density. Flakes and flaked pieces – no cores observed here.
13	Gentle slope with 20% ground visibility. Artefact density up to 5: 1 m^2. Core up to 10 cm. In context of felsite scree.
14	Felsite thermal scree with low density artefacts – 1: 1 m^2. Ground visibility 10–20%.
15	Exposed felsite bedrock in creek bed. Anvil areas. Some shallow alluvium overlying bedrock in places. Artefact density 5: 1 m^2. Felsite flakes and flake pieces.
16	No felsite bedrock in creek bed. Basalt and felsite pebbles, cobbles. Artefact density 1–5: 1 m^2. Low basalt scree slope on south-east side – no artefacts.
17	Gentle slope with ground visibility 30%. Artefact density 2: 1 m^2 Flakes and flaked pieces, some with retouch. Low density of multi-platform cores to 6 cm.
18	Rabbit warren area – 100% ground visibility. Artefact density 1: 1 m^2. Flakes and flaked pieces to 10 cm. Some retouched. Cores to 10 cm.
19	Small bedrock exposures on gentle slope. Bedrock only a few centimetres above surrounding land surface. Possible anvil areas. No Hertzian cones. Artefact density in surrounding area only c. 1: 1 m^2.
20	Bedrock exposure as for 19. 4 m^2 area. Anvil area – also negative flake scars. Artefact concentration up to 50: 1 m^2. These on bedrock and immediate area – total coverage 6 m^2. Mostly flakes – high proportion with retouch/utilisation. Low density of core up to 20 cm.
21	Felsite bedrock exposure in creek bed as further downstream – e.g. 9. Bare areas of flat felsite and areas covered by felsite and basalt cobbles. Possible anvil areas – several negative flake scars on bedrock.
22	Small felsite bedrock exposures on gentle slope. Also, felsite boulders. Boulders have thermal fractures only. Flakes and flaked pieces in adjacent area 5: 1 m^2 – mostly small (1–3 cm).
23	Slope has low density felsite artefact scatter at 1: 5 m^2 against background on felsite thermal scree. Ground visibility c. 10%.
24	Creek bed narrows to 1.5 m wide. No felsite bedrock exposure. Bed consists of basalt and felsite pebbles and cobbles. Felsite artefact density 1: 2–5 m^2. South-west bank on 1 m high.
25	Gentle slope. Dry pasture with ground visibility 20%. Felsite artefact density 1: 5–10 m^2. No felsite bedrock or boulders.
26	Dry channel has low eroded slope on south side. Some felsite scree, mostly thermal. Artefacts on scree and in channel 1: 2 m^2 – flakes and flaked pieces.
27	Creek bed 1.5 m wide. Banks 2–3 m high on both sides. No felsite bedrock. Low density artefacts 1: 10 m^2.
28	Gentle slope. No felsite bedrock or boulders. Low density thermal scree. Ground visibility 20%. Artefact density 1: 10 m^2.

Number on map	Field notes
29	Eroded area on gentle slope (sheet erosion). Ground visibility 60%. Area c. 40 m^2. Artefact density 1: 1 m^2. Mostly flakes and flakes pieces. No retouched items observed. Small cores to 5 cm.
30	Creek bed partly grassed. Visibility only 30% in bed. Basalt and felsite pebbles and cobbles. Low density felsite artefacts – 1: 10 m^2.
31	Basalt scree slope.
32	Thick dry pasture on gentle slope. Ground visibility 0–5%. No felsite bedrock or boulders. Low density thermal felsite scree. No artefacts observed.
33	Exposed ground at base of tree. Some thermal felsite. No artefacts observed.
34	Mostly basalt cobbles in creek bed. No felsite artefacts observed.
35	Medium slope with tick pasture. Isolated felsite artefacts c. 1: 50 m^2. Flakes and flaked pieces. Ground visibility 5%.

Due to the scarcity of rock extraction sites in the immediate vicinity of Koomaringa AP, Byrne (1987) likens Site A and Site B at the Koomaringa AP to several Aboriginal silcrete extraction sites in the Lightning Ridge region, NSW. At these sites (#9-2-0018, #9-2-0019 and #9-2-0021) the rock extraction locations tended to be associated with camp sites, with stone obtained from the silcrete outcrops widely disseminated and the material being predominate in flaked-stone artefact assemblages at open sites in the area.

The significance of Site A and Site B at Koomaringa AP was determined by Byrne to be high. This is in part to the considerable research potential of these sites, and that many sites in the surrounding area are likely to contain felsite artefacts derived from the Koomaringa AP stone sources. In addition to mapping and recording Site A and Site B, Byrne was also present when steel star-pickets and wooden stakes were placed along the outer edge of the buffer area. The locations of these star-pickets and wooden pegs in relation to Site A is detailed on the site map (see **Figure 5-2**), while Site B was apparently not pegged out due to using the basalt screen slope east of the site as a boundary (Byrne 1987: 14). The 11 August 2023 site inspection, however, also located wooden stakes along the eastern boundary of the Site B buffer area which are now included within the fenced area for Site B.

Byrne also noted that there are various locations throughout the Koomaringa property where felsite artefactual material has been noted, mostly along vehicle tracks (Byrne 1987: 14). These locations were not recorded, and specifics are unknown.

5.3 LOCAL ARCHAEOLOGICAL CONTEXT

5.3.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously recorded heritage values within the study area. The results of this search are summarised in **Table 5-3** and presented in detail in **Appendix 2**.

Table 5-3: Aboriginal cultural heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	3/10/2019	Carrathool LGA	No places listed on either the National or Commonwealth Heritage lists are located within the study area
National Native Title Claims Search	3/10/2019	NSW	No Native Title Claims cover the study area.
AHIMS	12/09/2019	20 x 20 km centred on the study area	Seven sites within the search area.
AHIMS	09/08/2021	20 x 20 km centred on the study area	26 sites within the search area.
AHIMS	24/05/2023	20 x 20 km centred on the study area	36 sites within the search area
AHIMS	21/03/2024	20 x 20 km centred on the study area	50 sites within the search area
Local Environmental Plan (LEP)	3/10/2019	Carrathool LEP of 2012	None of the Aboriginal places noted occur near the study area.

A search of the AHIMS database on the 12 September 2019 returned five records for Aboriginal heritage sites within the designated 20 km by 20 km search area centred on the study area (eastings: 394689–435771, northings: 6239688–6281025, Zone 55) (**Appendix 2 Figure 1**). Of the five sites, three are modified trees, one is a quarry, and one is an Aboriginal Place. The quarry (AHIMS #42-5-0004) is recorded inside the gazetted boundaries of Koomaringa AP (AHIMS #42-5-0005). As mentioned in **Section 1.2**, the GPS coordinates provided for #42-5-0004 are outdated and place this site 590 m north of the study area, while the GPS coordinates for #42-5-0005 are 1.4 km northeast of the study area but still within the boundary of the Koomaringa AP.

OzArk submitted a site card update on 28 May 2023 for site #42-5-0004 to change the location to GDA Zone 55 415300E, 6260684N; a location within the assessed site extent of Site B associated with the #42-5-0004 recording. The coordinates for #42-5-0005 were unaltered as the AHIMS location still falls within the boundary of the Koomaringa AP.

An updated AHIMS search was conducted on 09 August 2021 which returned 26 records for Aboriginal heritage sites using the same search criteria as the above (**Appendix 2 Figure 2**). Nineteen of the records are for sites recorded during this assessment (42-5-0010 to 42-5-0028) and have been excluded from further analysis here (see **Section 6.4** for details on these sites). Of the seven remaining records, two include Site A and B, and the Koomaringa AP listing (42-5-0004 and 42-5-0005 respectively), and three are the sites returned in the original search (see above; 42-5-0001, 42-5-0002, and 42-5-0006). Two additional sites have been recorded at Sims Gap (42-5-0008 and 42-5-0009; a modified tree and a potential archaeological deposit [PAD] respectively) since the initial search was conducted. **Figure 5-5** shows the location of the AHIMS sites that had been recorded near the study area in 2021 and **Table 5-4** shows the frequency of site types in the region.

On 24 May 2023, a further AHIMS search was undertaken to ensure that no sites had been recorded in or near the Quarry Site following the 2021 AHIMS search. The results of the search are presented in **Appendix 2 Figure 3**. This search was identical to the 2021 search except for an additional 10 sites recorded by Ms. Jessica Murphy approximately 17 km to the east-northeast of the study area (**Figure 5-6**). These sites consist of a hearth, eight isolated finds, and one artefact scatter consisting of two artefacts. These sites appear to have been recorded for an assessment of a fire trail within the Jimberoo National Park. As there are no new recordings within or near the Quarry Site apart from those known before the 2019 survey and those recorded for this assessment, the 2023 AHIMS search does not alter the findings of this report.

On 23 March 2024, a fourth AHIMS site search was undertaken (**Appendix 2 Figure 4**) following a HNSW review of the Revision 2 ACHAR and OzArk being informed that Mr Mark Saddler had recorded a number of sites in late December 2023. The 2024 search returned 50 sites in the search area. These include the 36 sites included in the 2023 site search and the 14 sites recorded by Mr Mark Saddler (**Figure 5-7**).

OzArk was not present at the recording of these sites in late December 2023 and has relied on the information provided in the site cards. All sites except one are outside the maximum limit of disturbance and the Quarry Site. One site, 42-5-0064 (Koomaringa Anvil 1), a single basalt boulder described as an anvil, is within the maximum limit of disturbance and will be discussed further in **Section 6.6** (**Figure 5-8**).

Overall, the most frequent site types located in the vicinity of the study area at the time of the 2019 survey were modified trees (57%), with a quarry (14%), Aboriginal Place (14%) and PAD (14%) also present.

Table 5-4: Site types and frequencies of AHIMS sites near the study area (2019).

Site Type	Number	% Frequency
Modified tree	4	57.1
Quarry	1	14.3
Aboriginal Place	1	14.3
PAD	1	14.3
Total	**7**	**100**

Figure 5-5: Location of previously recorded AHIMS sites in relation to the study area (2021).

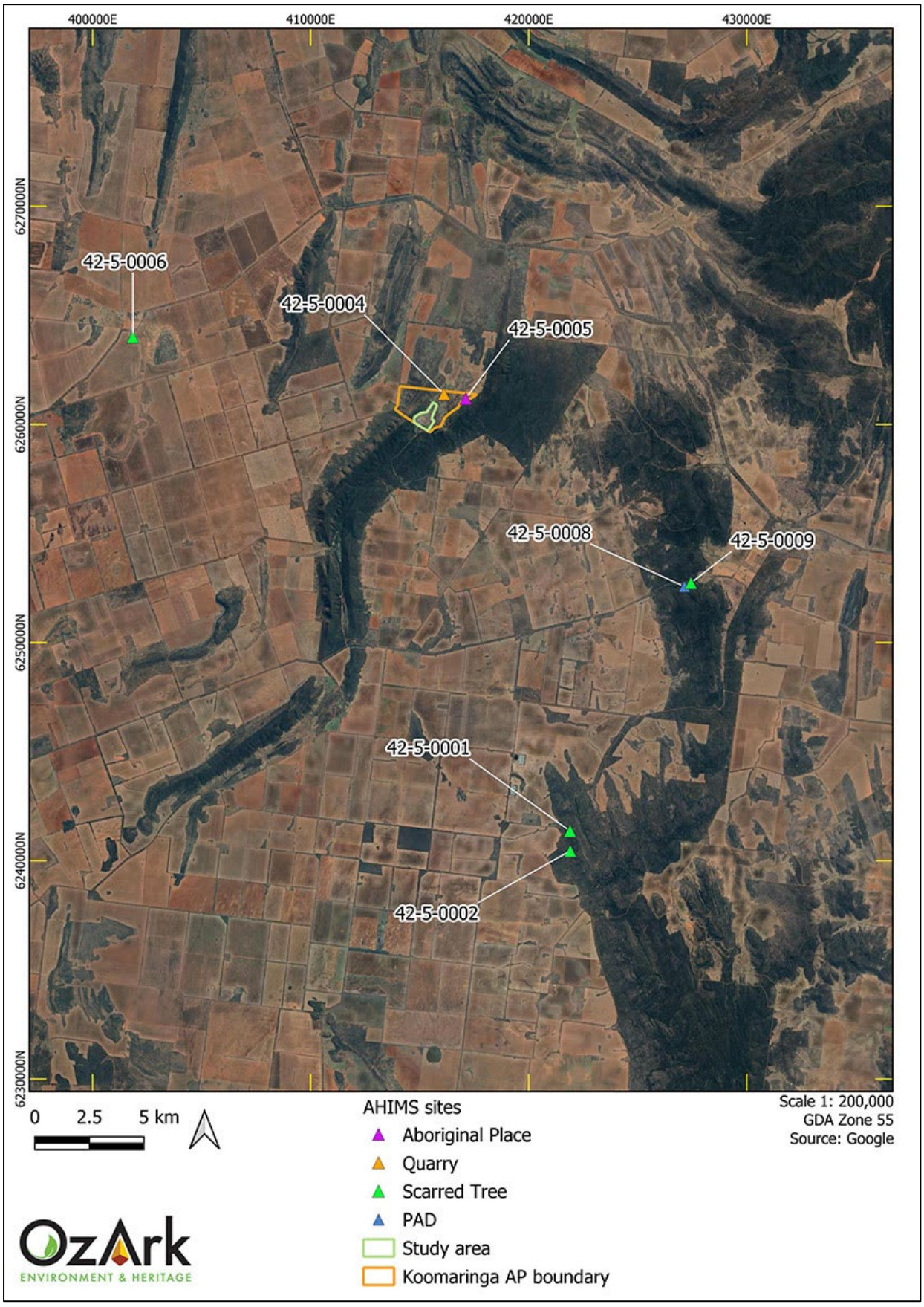


Figure 5-6: Location of previously recorded AHIMS sites in relation to the study area (2023).

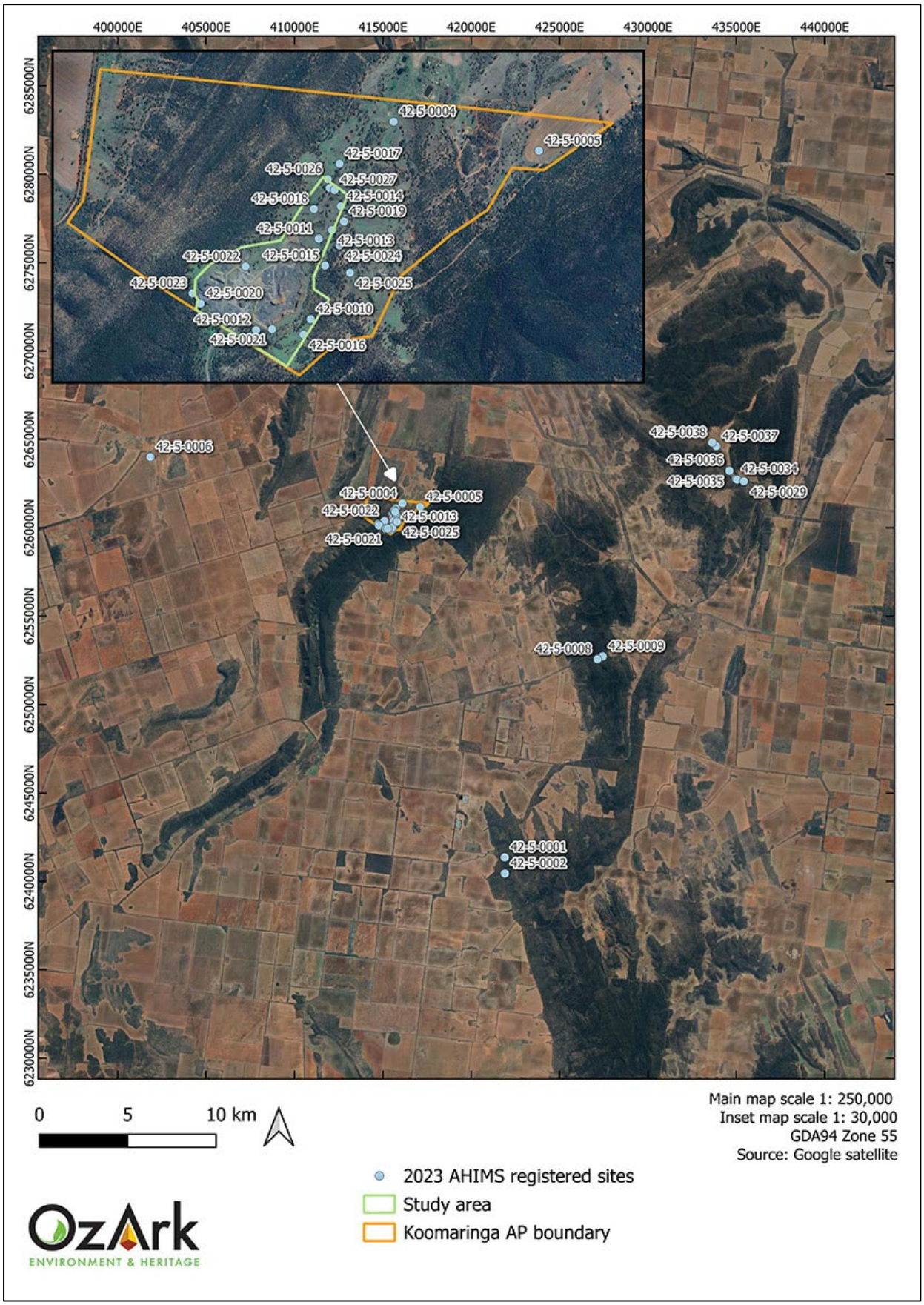


Figure 5-7 Location of previously recorded AHIMS sites in relation to the Koomaringa AP (2024).

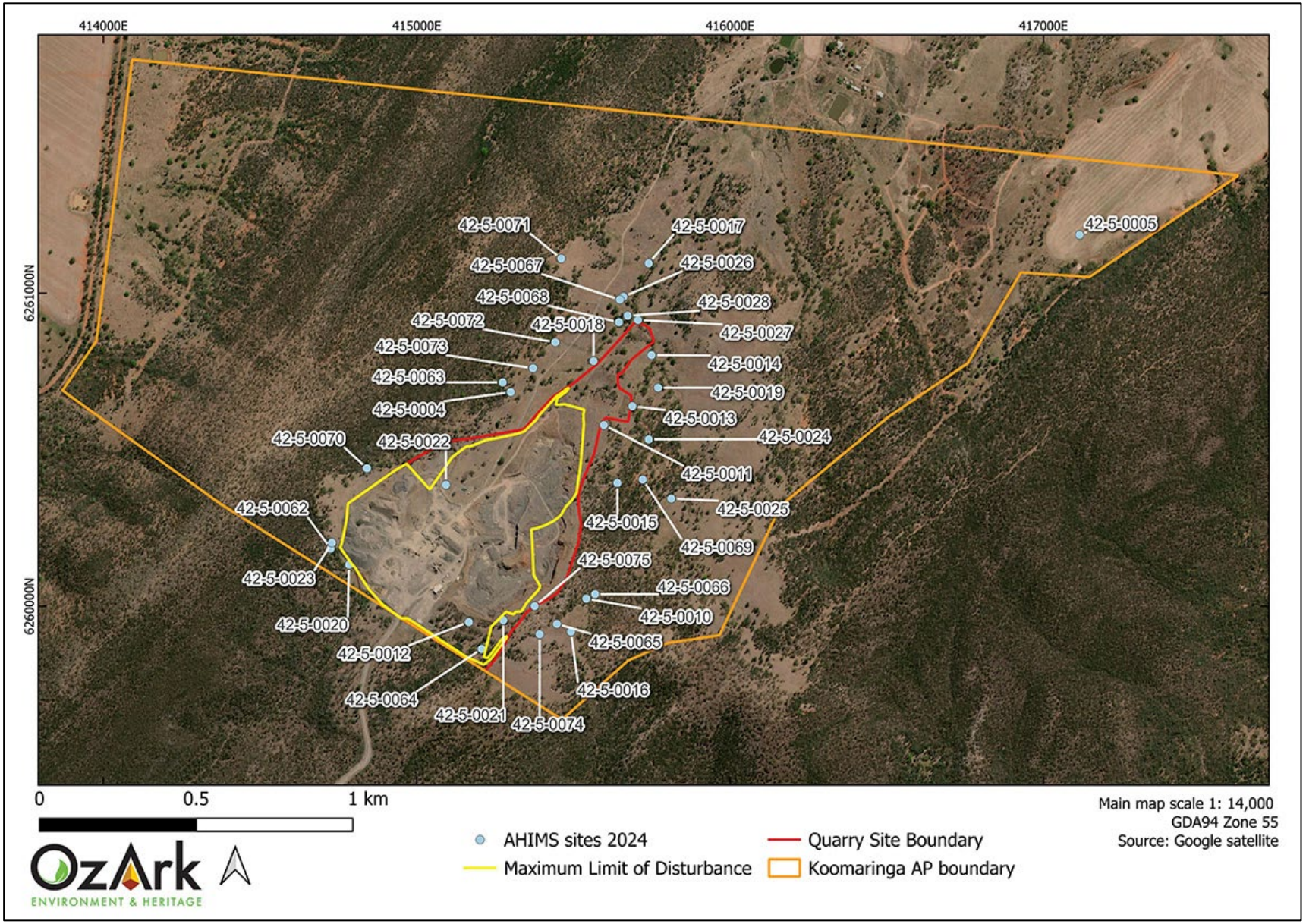
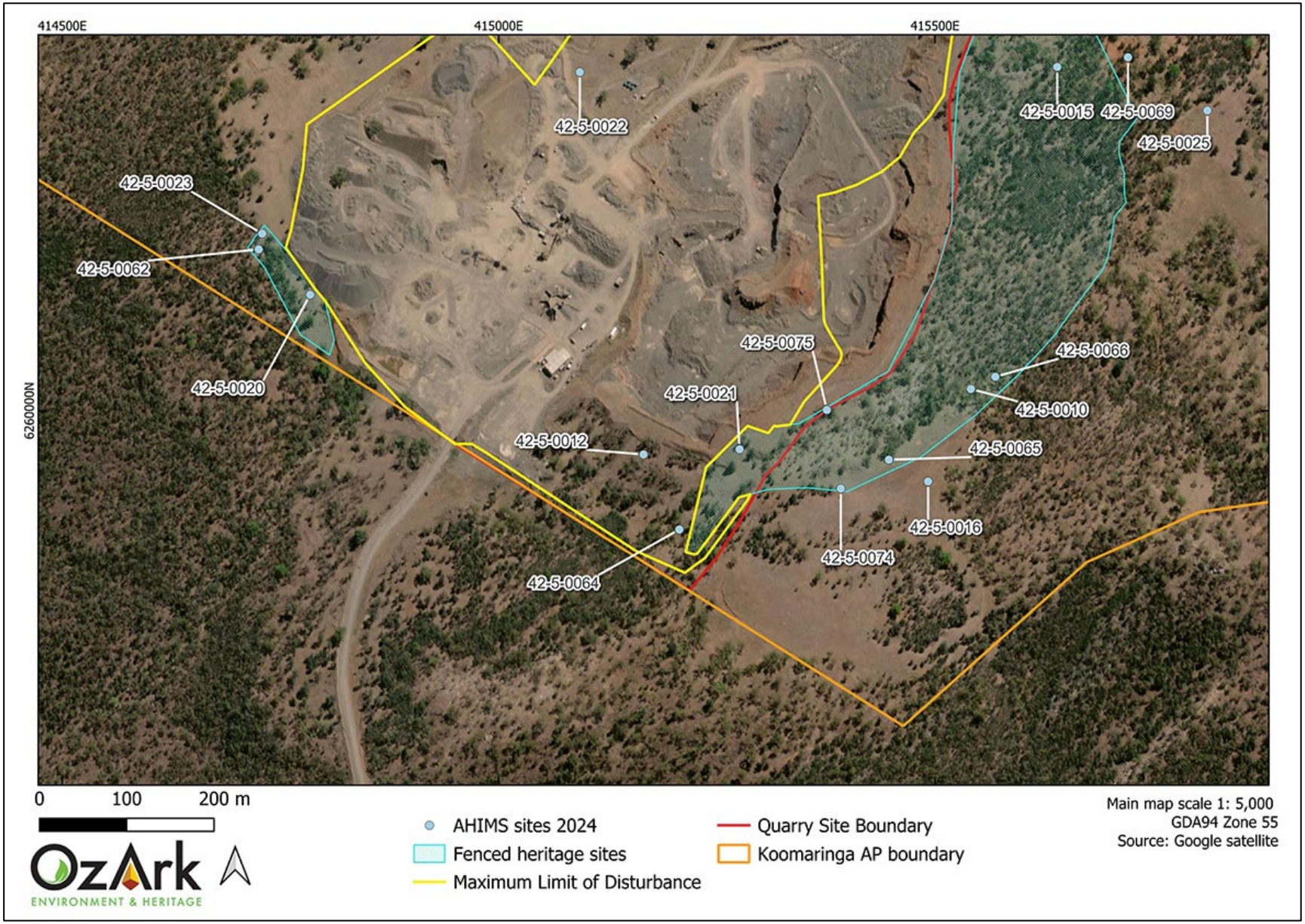


Figure 5-8: Detail of sites recorded in the Koomaringa AP at the south of the Quarry Site.



5.4 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, shells, 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.

5.4.1 Settlement strategies

The two archaeological studies undertaken near the study area provide information to obtain some 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, especially regarding open camp sites seen partly in the archaeological record as stone artefact scatters. As the water sources in or close to the study area would have been based on the amount of rainfall and wash down from the surrounding ridgelines, occupation of the study area was likely to have been sporadic and for short periods of time. As Pardoe and Martin (2011) suggest, the study area is likely to have been a ‘node’ in the landscape due to the abundance of suitable raw materials for stone tools, which would have attracted visitation to the area, if not long-term occupation.

5.4.2 Past land use

Crucial for the preservation of archaeological deposits is the history of past land use in an area. Site A and Site B at Koomaringa AP, located along the western and eastern edges of WRQ have not been impacted by the ongoing quarry operations due to previous management

recommendations. However, due to the high level of disturbance by quarrying operations, it is unlikely that any substantive Aboriginal archaeological sites would be present inside the study area where disturbance has already occurred. If any sites are present inside previous disturbed locations, these are likely to be in a secondary context and not be associated with intact subsurface deposits.

Preservation of sites outside the study area and previous locations of disturbance are more likely, especially on flat slightly elevated terraces and banks adjacent to the drainage lines throughout the remainder of Koomaringa AP.

5.4.3 Previous studies

Previous archaeological studies indicate that the following site types will possibly be recorded within the study area: rock extraction locations where felsite bedrock has been quarried; open artefact scatters and / or isolated artefacts perhaps indicating temporary camp sites; and workshop areas surrounding the quarried bedrock of felsite.

The results of past archaeological investigations in the study area indicate that the most common site type will be either Aboriginal stone extraction sites and / or open artefact scatters consisting primarily of flakes or flaked pieces from initial reduction of extracted spalls.

5.4.4 Landform modelling

A consideration of the landforms within the study area enables a prediction regarding the type and distribution of sites to be made. Extraction sites are most likely to occur where there are sources of fine-grained felsite available for quarrying. Such sites usually occur inside drainage lines or along the top of ridges in the study area, and are likely to be associated with flakes, flaked pieces, and workshop areas. Artefact scatters are also likely to be present along the edges of larger drainage lines where there are flat banks and topsoil. Such scatters are likely to include primary, secondary, and possibly tertiary reduction waste debitage, as well as retouched stone tools which have been discarded or left behind.

5.4.5 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.

- Applicability to the study area. As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type is likely to 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.

- Applicability to the study area. Although most of the study area is within sloping landforms and distant to permanent water, this site type is predicted to be frequent. The flat banks of drainage lines and ridge landforms are possible locations for this site type to be present in the study area. The previously recorded quarry sites, Site A and Site B, inside and adjacent to the study area, and located in relation to drainage and ridgeline landforms, mean that primary reduction of quarried stone material would have occurred close by and that there is a high likelihood of workshop floors and associated debitage to be present nearby.

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.

- Applicability to the study area. The AHIMS search indicates that scarred trees have been recorded in the region. There is remnant native vegetation in and near the study area, so it is possible this site type will be present.

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.

- Applicability to the study area. This site type has already been recorded inside and adjacent to the study area (Site A and Site B, see **Section 5.2** and **Section 5.3**). As such, it is highly likely there are further sources of felsite available that may have been used as a source of material are present in or around the study area.

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.

- Applicability to the study area. Although it is possible that this site type could be found within the study area, it is considered a rare site type especially given the disturbance that has occurred within the study area and the types of landforms present that are not normally associated with burials.

6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

6.1 SAMPLING STRATEGY AND FIELD METHODS

Standard archaeological field survey and recording methods were employed in this study (Burke and Smith 2004). The Aboriginal cultural heritage assessment of the investigation area followed the Code of Practice, as well as the Guide.

The survey included full assessment within the study area where there is no prior disturbance. In addition, several locations such as previously recorded sites (Site A and Site B, see **Section 5.2**) were also included. Additional areas outside and adjacent to the study area were also surveyed to help inform the forthcoming Plan of Management for Koomaringa AP.

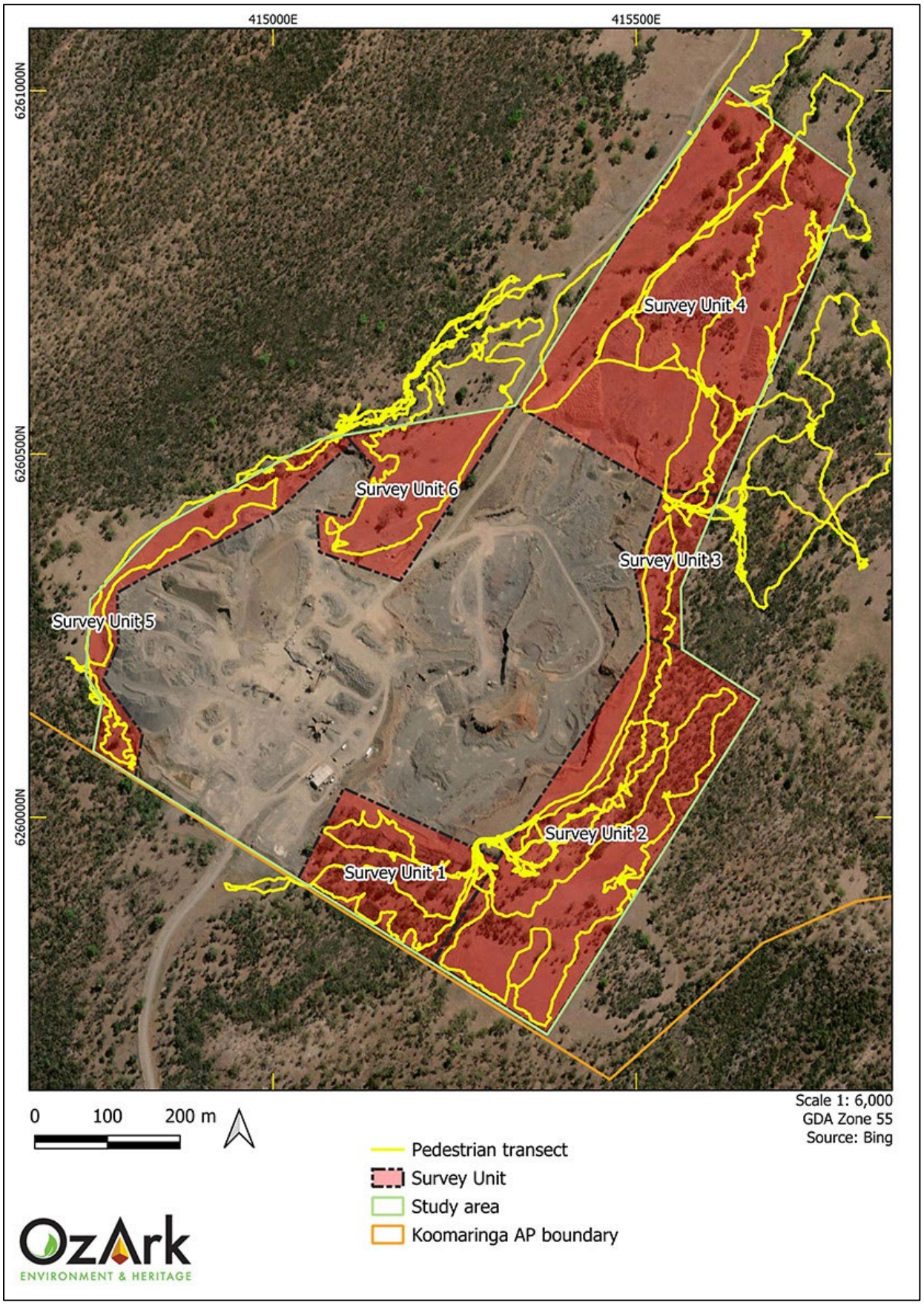
In general, due to the prior disturbances inside the study area, straight transects were not consistently possible in some survey areas. However, care was taken to ensure that the two surveyors were spaced approximately 10–25 m to ensure adequate coverage. There were six areas surveyed during the assessment. These survey areas are based on locations inside the study area, but outside of the existing disturbance footprint and cover the range of different landform types present in the study area. The landforms in each of the survey areas shown on **Figure 6-1** is detailed in **Table 6-1**. **Figure 6-1** also shows the pedestrian line of one surveyor.

When recording a site, the following details were noted:

- GPS location/s of site features (i.e., stone artefact locations, etc.)
- Site type
- Site extent
- Landform and context of site
- Details for each artefact, or a sample of artefacts (size, type, raw material, etc.), or the feature being recorded (i.e., scarred tree, procurement location)
- Whether site had potential for PAD
- Notes on discussion from RAPs regarding their views about the site.

These details were used to register sites on AHIMS and compile the information in **Section 6.4**.

Figure 6-1: Pedestrian transects and survey areas.



6.2 PROJECT CONSTRAINTS

Ground surface visibility (GSV) was the only constraint during the field survey. Due to the dense short grasses and weeds which are prevalent across the study area, the ground surface was sometimes obscured. However, there are large areas of exposures where GSV was higher throughout much of the survey areas, affording at least moderate visibility across the study area as a whole.

6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are 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. Some areas outside the study area were included in the survey, and sites were recorded during this. However, these sites (Koomaringa OS-04, OS-08, OS-10, PL-01, PL-02 and ST-01) have been excluded from **Table 6-1** and **Table 6-2** as these six sites are completely outside the boundary of 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 drainage line landforms of the study area approximately 40% of the ground surface could be seen. Exposures in these landforms were generally confined to erosions along the edges of drainage line banks. The amount of visible ground increased across the ridgelines as these generally had less ground cover compared with the flat or gently sloping landforms. Visibility

within ridgeline landforms was hampered by gravels, basalt scree, and naturally shattered felsite scree. Sloping landforms had variable visibility, with lower visibility where basalt or felsite scree was present. Exposures in this landform unit were derived from sheet wash erosion.

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

Survey Unit	Main Landform/s	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	Slopes	34522	20	40	2762	8
2a	Slopes	54514	30	40	6542	12
2b	Ridgeline	20987	40	50	4197	20
2c	Drainage line	23194	40	60	5567	24
3	Slopes	13789	20	40	1103	8
4a	Slopes	21544	40	50	4309	20
4b	Flats	73028	40	40	11684	16
4c	Drainage lines	40025	30	70	8405	21
5a	Slopes	16268	30	50	2440	15
5b	Drainage lines	10977	30	70	2305	21
6	Slopes	31363	50	40	6273	20

Table 6-2 demonstrates that although the survey efficacy was lowest on the sloping landforms, a number of sites were still recorded. The highest number of sites are recorded along drainage lines (n=10), and these were predominately stone artefact scatters recorded in exposures along the banks. Though the flats or gently rolling slope landforms had the highest amount effectively surveyed (42%) the number of sites (and artefacts / features) recorded was the lowest. This is likely due to the lack of erosion exposures across this landform unit. These results indicate that variable GSV and GSE was not a factor in the recording of sites and that the distribution of sites shown in **Table 6-2** are a true reflection of the potential for different landform units to contain Aboriginal sites. Therefore, there is confidence in the assumption that sites are more numerous in either drainage or ridgeline landscape units.

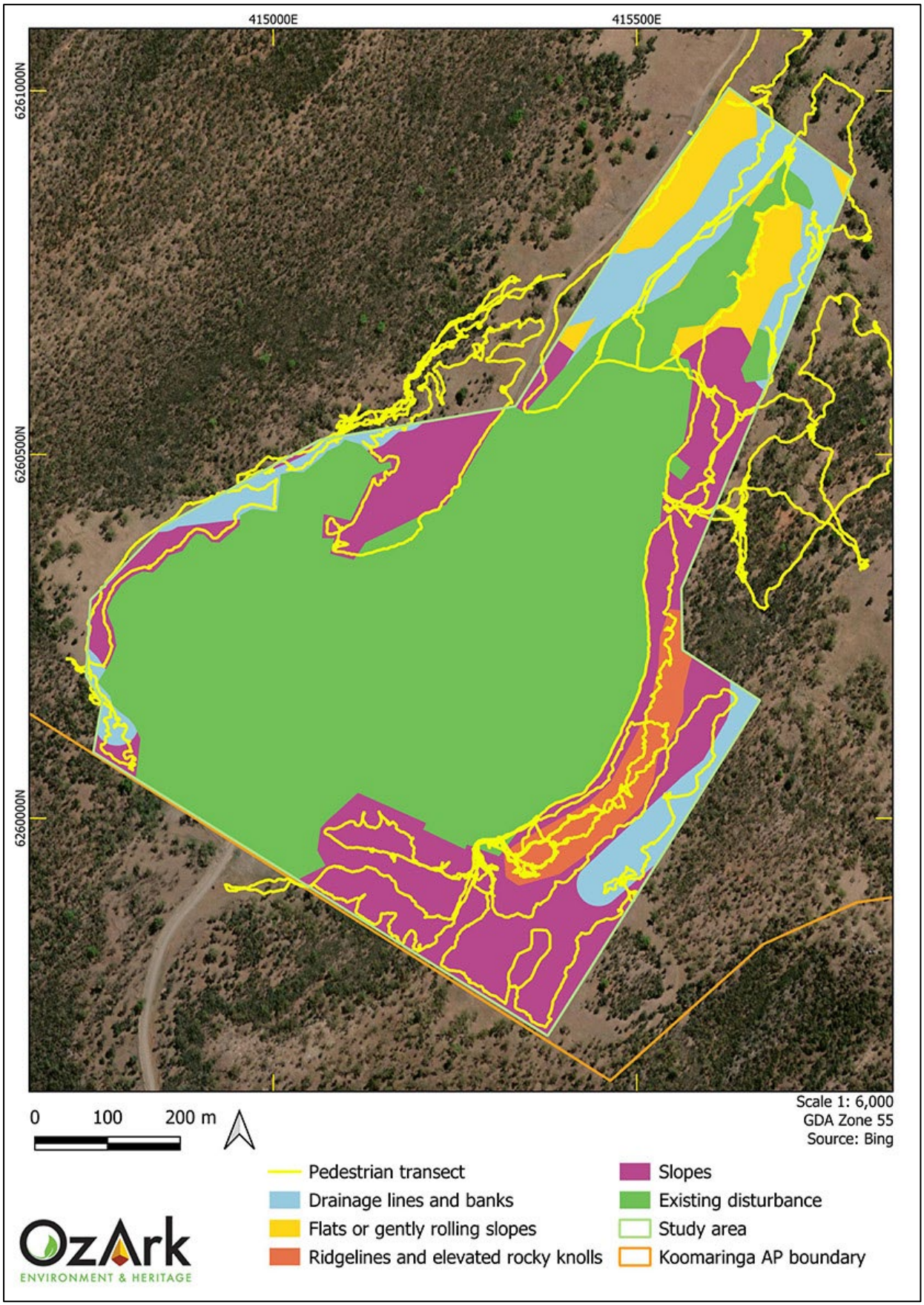
Figure 6-2 demonstrates that all landform units were adequately assessed providing further confidence that the distribution of sites across landform units shown in **Table 6-2** is an accurate reflection of the study area.

Table 6-2: Effective survey coverage and incidences of site recording.

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
Drainage lines and banks	63000	16277	26	9	58

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
Ridgelines and elevated rocky knolls	22000	4197	19	1	24
Slopes	151000	23428	16	4	8
Flats or gently rolling slopes	28000	11684	42	1	8

Figure 6-2: Pedestrian transects and landforms.



6.4 ABORIGINAL SITES RECORDED

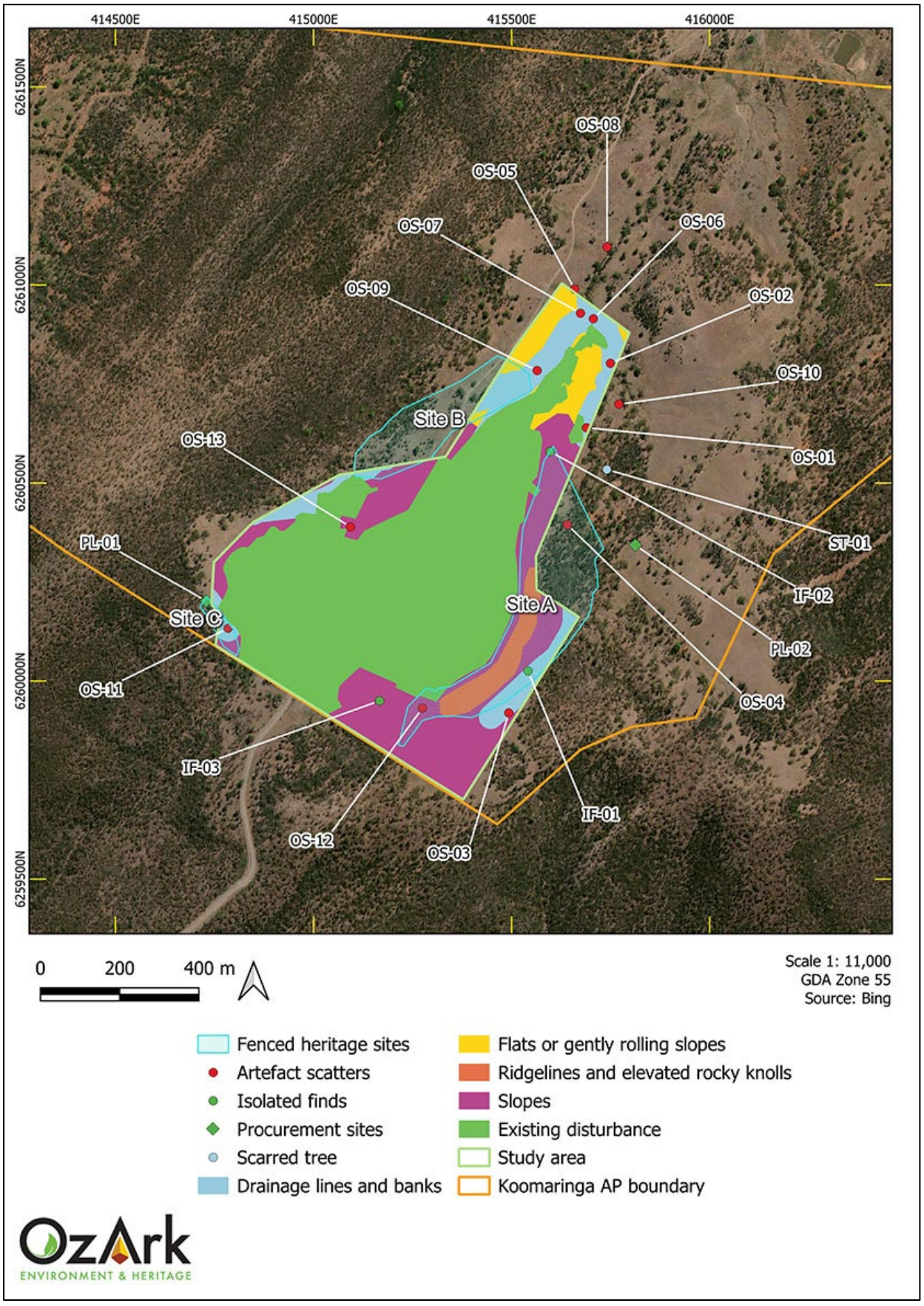
Table 6-3 summarises the Aboriginal cultural heritage sites recorded during the survey of the study area. Please note that some sites detailed in this section are completely outside the current study area boundary. A full artefact catalogue with the details of the artefacts recorded in detail is provided in **Appendix 6**. **Figure 6-3** shows the location of each site in relation to the study area. Further details on each site follows.

Previously recorded sites, Site A and Site B, are discussed in **Section 6.5**.

Table 6-3: Aboriginal cultural heritage sites recorded by OzArk during the survey.

AHIMS ID	Site Name	Feature(s)	Survey Unit	Landform
42-5-0010	Koomaringa IF-01	Isolated find	2	Drainage line and banks
42-5-0011	Koomaringa IF-02	Isolated find	2	Slopes
42-5-0012	Koomaringa IF-03	Isolated find	6	Drainage line and banks
42-5-0013	Koomaringa OS-01	Artefact scatter	4	Drainage line and banks
42-5-0014	Koomaringa OS-02	Artefact scatter & PAD	4	Drainage line and banks
42-5-0016	Koomaringa OS-03	Artefact scatter	2	Drainage line and banks
42-5-0015	Koomaringa OS-04	Artefact scatter	Outside study area	Drainage line and banks
42-5-0026	Koomaringa OS-05	Artefact scatter & PAD	Outside study area	Drainage line and banks & flats and gentle slope
42-5-0027	Koomaringa OS-06	Artefact scatter & PAD	4	Drainage line and banks
42-5-0028	Koomaringa OS-07	Artefact scatter & PAD	4	Drainage line and banks
42-5-0017	Koomaringa OS-08	Artefact scatter & PAD	Outside study area	Drainage line and banks & flats and gentle slope
42-5-0018	Koomaringa OS-09	Artefact scatter	4	Drainage line and banks
42-5-0019	Koomaringa OS-10	Artefact scatter & PAD	Outside study area	Drainage line and banks & flats and gentle slope
42-5-0020	Koomaringa OS-11	Artefact scatter	5	Drainage line & slopes
42-5-0021	Koomaringa OS-12	Artefact Scatter	1	Slopes
42-5-0022	Koomaringa OS-13	Artefact scatter	6	Slopes
42-5-0023	Koomaringa PL-01	Procurement location (quarried felsite bedrock)	Outside study area	Drainage line and banks
42-5-0025	Koomaringa PL-02	Procurement location (quarried felsite bedrock)	Outside study area	Slopes
42-5-0024	Koomaringa ST-01	Scarred tree	Outside study area	Slopes

Figure 6-3: OzArk recorded site locations and landforms.



Koomaringa IF-01 (42-5-0010)

Site Type: Isolated find

GPS Coordinates: 415541 E / 6260025 N

Location of Site: The site is located northwest of a small drainage line inside the Koomaringa AP. It is located at the base of a slope declining west towards the drainage line (**Figure 6-3**). It is approximately 460 m east of the WRQ site office.

Description of Site: The site is situated between the base of a slope with basalt scree to the west and a small drainage line to the east (**Figure 6-5**). The artefact is located along a narrow animal track with moderate visibility (**Figure 6-4**). The site location is surrounded by native trees, dead branches, leaf litter and short dry grasses. The soil is red/brown loam with some gravels present. The site consists of a single proximal flake made from white felsite. It is 32 mm in length, 35 mm in width and 10 mm thickness. The artefact has retouch along the right lateral margin. There is little potential for *in situ* subsurface deposits at the site location.

Figure 6-4: Koomaringa IF-01. View of site and recorded artefact.

1. View south of Koomaringa IF-01.

2. Artefact at Koomaringa IF-01 (A23).

Figure 6-5: Koomaringa IF-01 & OS-03. Site map.

Koomaringa IF-02 (42-5-0011)

Site Type: Isolated find

GPS Coordinates: 415597 E / 6260579 N

Location of Site: The site is located 20 m east of an access track of the WRQ. The site is located on the lower slope declining south towards north (**Figure 6-3**, **Figure 6-7**). The site is approximately 730 m northeast of the WRQ site office.

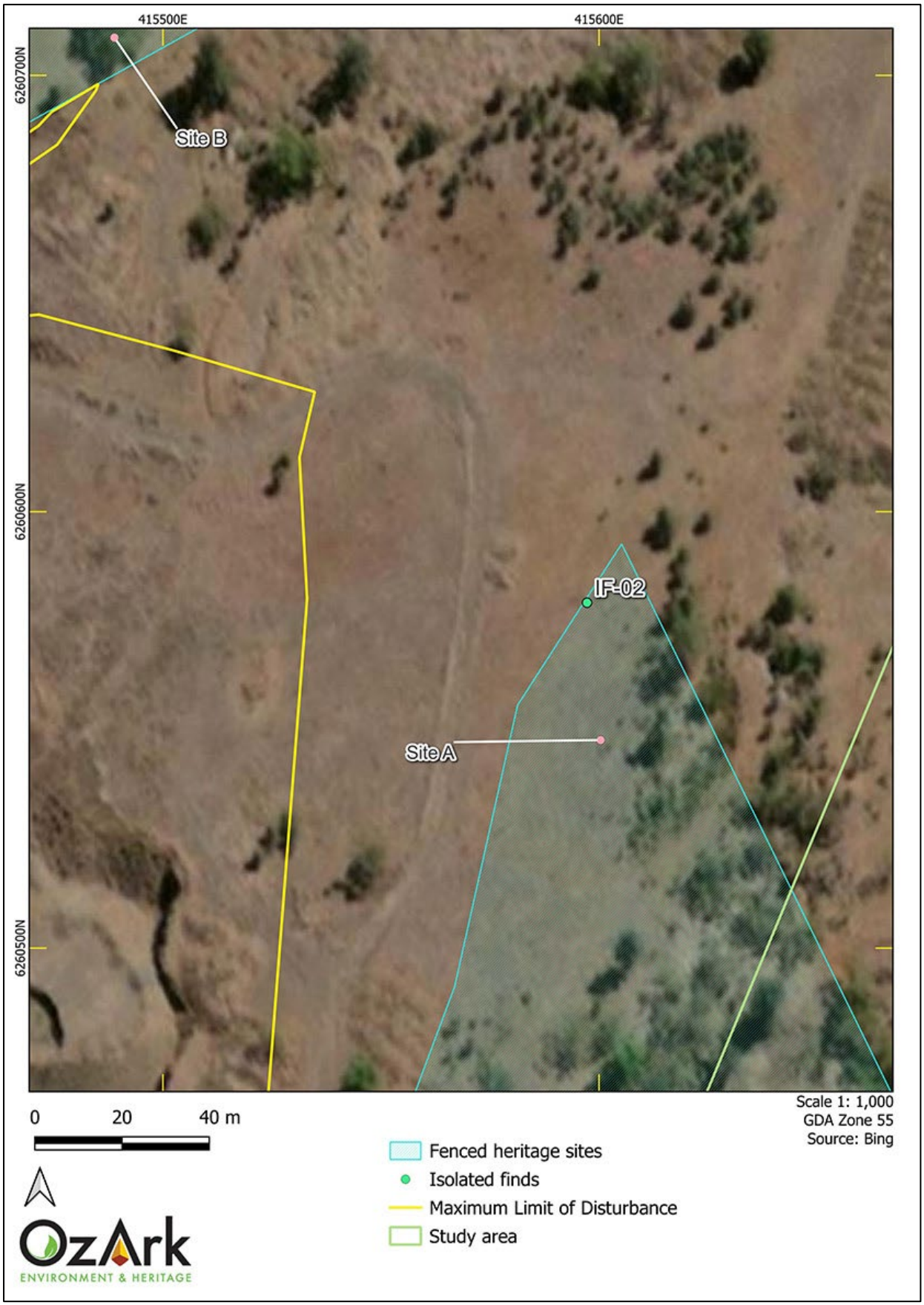
Description of Site: The site is located directly south of a stand of dead trees which have been ringbarked. The area is covered with short dead grasses and some medium sized basalt rocks. The site consists of single grey felsite core (**Figure 6-6**). The core is 81 mm in length, 70 mm in width and 75 mm in thickness. The bladelet core with eight flake scars is at a tertiary stage of reduction and is unidirectional. There is little potential for *in situ* subsurface deposits at the site location.

Figure 6-6: Koomaringa IF-02. View of site and recorded artefact.

1. View southeast of Koomaringa IF-02.

2. Artefact at Koomaringa IF-02 (A24).

Figure 6-7: Koomaringa IF-02. Site map.



Koomaringa IF-03 (42-5-0012)

Site Type: Isolated find

GPS Coordinates: 415166 E / 6259950 N

Location of Site: The site is located approximately 130 m southeast of the WRQ site office. It is located mid slope of a partially cleared area. The site is inside the Koomaringa AP (**Figure 6-3**; **Figure 6-9**).

Description of Site: The site is located mid slope of a cleared easement approximately 20 m wide. It is in an area of scalding on mid-brown loam surrounded by remnant native vegetation. The site consists of a single white felsite core at a secondary stage of reduction with approximately 40% cortex (**Figure 6-8**). The multidirectional core with nine flake scars is 50 mm in length, 50 mm in width, and 20 mm in thickness. The site is in a disturbed / secondary context. There is little potential for *in situ* subsurface deposits at the site location.

Figure 6-8: Koomaringa IF-03. View of site and recorded artefact.

1. View east of Koomaringa IF-03.

2. Artefact at Koomaringa IF-03 (A74).

Figure 6-9: Koomaringa IF-03 & OS-12. Site map.

Koomaringa OS-01 (42-5-0013)

Site Type: Artefact scatter

GPS Coordinates: 415688 E / 6260639 N (centroid)

Location of Site: The site is located along the eastern bank of drainage line and a pile of overburden located directly to the west. It is approximately 835 m northeast of the WRQ site office (**Figure 6-3**, **Figure 6-11**).

Description of Site: The site consists of an open surface scatter of artefacts. Detailed recording occurred for three of the artefacts (see **Appendix 6** for details). The site has a low density of artefacts with approximately 1–2 artefacts per 1 m^2. The soil at the site is a light brown/orange loam with basalt rocks and gravels of varying sizes present. The site extent is approximately 22 m by 10 m. The area of the site is cleared, except for some native vegetation growth, and trees close to the edge of the drainage line. There is a narrow animal track through the centre of the site (**Figure 6-10**). The visibility was moderate with patches of scalding amongst the dead grasses and weeds. There is little potential for *in situ* subsurface deposits at the site location.

Figure 6-10: Koomaringa OS-01. View of site and selection of recorded artefacts.

1. View south of Koomaringa OS-01.

2. Artefact from Koomaringa OS-01 (A42).

Figure 6-11: Koomaringa OS-01 & OS-10. Site map.

Koomaringa OS-02 (42-5-0014)

Site Type: Artefact scatter and PAD

GPS Coordinates: 415749 E / 6260802 N (centroid)

Location of Site: The site is located approximately 990 m northeast of the WRQ site office. It is located on the western bank of a drainage line and adjacent to the confluence of two drainage lines. The site is inside the Koomaringa AP (**Figure 6-3**; **Figure 6-13**).

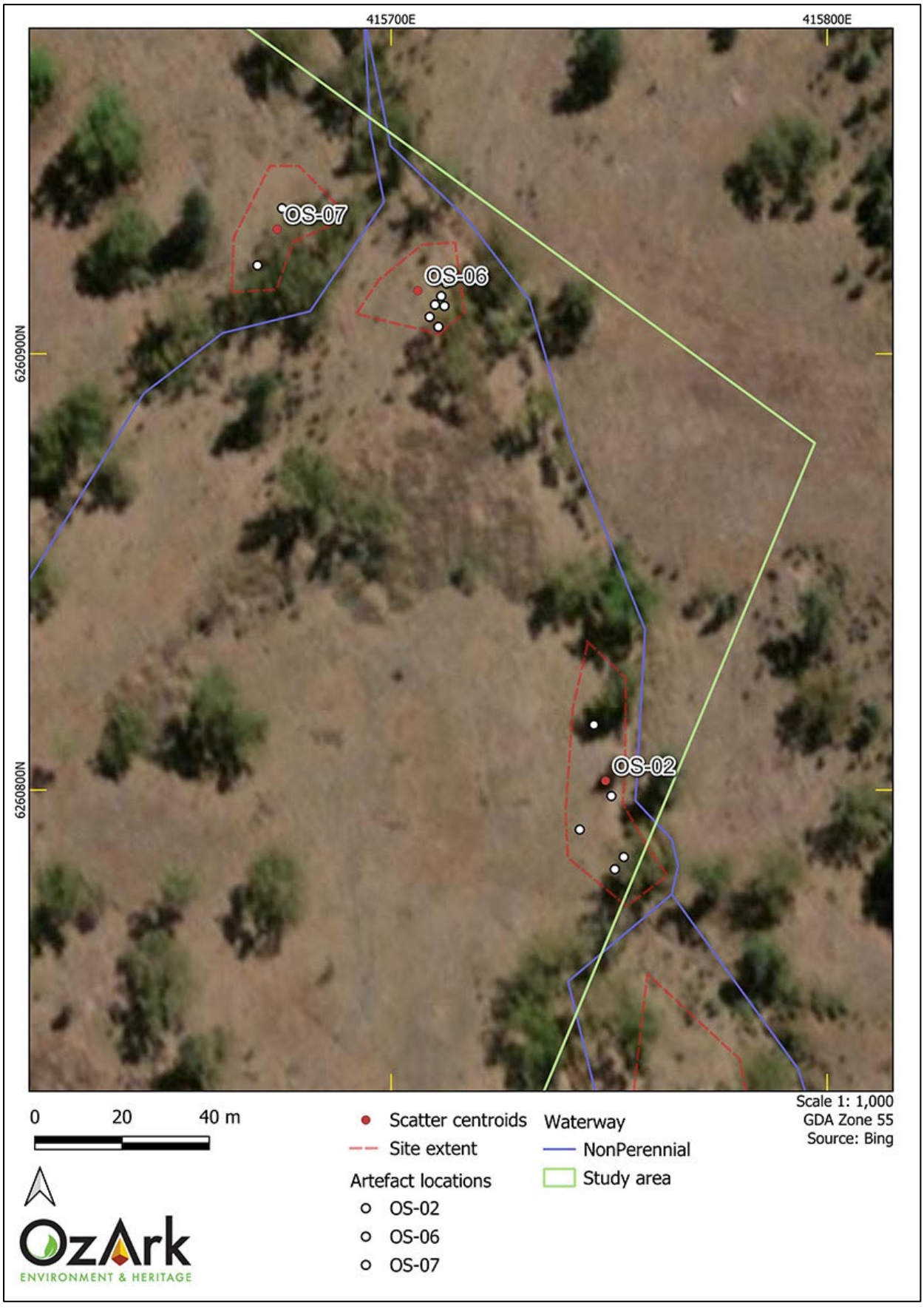
Description of Site: The site is located on the western bank of the drainage line. The area is flat and cleared of trees. There is moderate visibility with patches of scalding between short grasses and weeds. The visible surface artefacts extend approximately 60 m along the drainage line bank up to a width of 15 m (**Figure 6-13**). Five artefacts at the site were recorded in detail (see **Appendix 6** for details). The visible density of artefacts is low with approximately one artefact every 3 m^2. The soil at the site is a light brown loam (**Figure 6-12**). There is potential for intact subsurface deposits at the site.

Figure 6-12: Koomaringa OS-02. View of site and selection of recorded artefacts.

1. View north of Koomaringa OS-02.

2. Artefact from Koomaringa OS-02 (A36).

Figure 6-13: Koomaringa OS-02, OS-06 & OS-07. Site map.



Koomaringa OS-03 (42-5-0016)

Site Type: Artefact scatter

GPS Coordinates: 415492 E / 6259919 N (centroid)

Location of Site: The site is located approximately 420 m southeast of the WRQ site office. It is located on the eastern side of a minor drainage line. The site is inside the Koomaringa AP (**Figure 6-3**, **Figure 6-5**).

Description of Site: The site is located on the eastern side of a minor drainage line. The area is moderately sloping, declining towards the drainage line. There is a basalt scree slope 24 m south of the site extent (**Figure 6-14**). Thirteen artefacts were recorded in detail (see **Appendix 6** for details) and the site has an average density of one artefact per 4 m^2. The site extent is 82 m by 32 m. The soil at the site is light brown loam and the area has been cleared of trees. There is short patchy weeds and grasses.

Figure 6-14: Koomaringa OS-03. View of site and selection of recorded artefacts.

1. View southwest of Koomaringa OS-03.

2. Artefacts from Koomaringa OS-03 (A11–A15).

Koomaringa OS-04 (42-5-0015)

Site Type: Artefact scatter and PAD

GPS Coordinates: 415640 E / 6260394 N (centroid)

Location of Site: The site is located approximately 640 m northeast of the WRQ site office. It is located on the western bank of a drainage line. There is a basalt and felsite scree slope directly to the west (**Figure 6-3**; **Figure 6-16**).

Description of Site: The site is located on the western bank of a minor drainage line. There is an animal track along the western bank which cuts through the centre length of the site (**Figure 6-15**). The site extent is 133 m by a maximum of 34 m. Ten artefacts were recorded in detail (see **Appendix 6** for details), and five counts of artefacts within 0.5 m

by 0.5 m squares occurred. Overall, the site has a moderate to high density of artefacts present. Several higher density locations were counted with an average of 12 artefacts per 0.5 m^2. These higher density locations appeared to be workshop floors with flaked pieces (i.e. debitage) of varying sizes from the same coloured felsite. There is potential for intact subsurface deposits at this site, especially in the northern half of the site where there is a small open flat area.

Figure 6-15: Koomaringa OS-04. View of site and a recorded artefact.

1. View south of Koomaringa OS-04

2. Artefact from Koomaringa OS-04 (A80).

Figure 6-16: Koomaringa OS-04. Site map.

Koomaringa OS-05 (42-5-0026)

Site Type: Artefact scatter & PAD

GPS Coordinates: 415659 E / 6260988 N (centroid)

Location of Site: The site is located approximately 1 km northwest of the WRQ site office. It is situated to the western of a drainage line, and approximately 29 m east of an access track (**Figure 6-3**; **Figure 6-18**).

Description of Site: The site is located west of a drainage line. Artefacts are exposed along the edges of a drainage channel into the drainage line on the eastern side of the site (**Figure 6-17**). Six artefacts were recorded in detail (see **Appendix 6** for details). The exposure extent is 67 m by 27 m. The area is mostly cleared of vegetation and the GSV is generally low, with moderate visibility on the exposures caused by erosion. Soil at the site is a mid-brown loam. As the artefacts are eroding out of the edge of the channel, it is likely there are intact subsurface deposits surrounding the surface extent of the site.

Figure 6-17: Koomaringa OS-05. View of site and selection of recorded artefacts.

1. View southwest of Koomaringa OS-05.

2. Artefact from Koomaringa OS-05 (A54).

Figure 6-18: Koomaringa OS-05 & OS-08. Site map.

Koomaringa OS-06 (42-5-0027)

Site Type: Artefact scatter

GPS Coordinates: 415706 E / 6260914 N (centroid)

Location of Site: The site is located approximately 1 km northwest of the WRQ site office. It is located at the confluence of two drainage lines and approximately 130 m east of the access track (**Figure 6-3**; **Figure 6-13**).

Description of Site: The site is located at the confluence of two drainage lines. The site area is flat with some remnant vegetation surrounding the area. GSV was moderate, with a small animal track through the eastern half of the site, and an old fence line traversing through the centre. Eight artefacts were recorded in detail at the site (see **Appendix 6** for details), although a further five artefacts were observed on the eastern side of the fence. The soil at the site is brown/orange loam. The extent of site is 21 m by 22 m (**Figure 6-12**). Directly to the south of the site is large pile of overburden (**Figure 6-19**).

Figure 6-19: Koomaringa OS-06. View of site and selection of recorded artefacts.

1. View southwest of Koomaringa OS-06.

2. Artefacts from Koomaringa OS-06 (A28–A30).

Koomaringa OS-07 (42-5-0028)

Site Type: Artefact scatter and PAD

GPS Coordinates: 415673 E / 6260928 N (centroid)

Location of Site: The site is located approximately 1 km northwest of the WRQ site office. The side is located on the western bank of drainage line and approximately 93 m east of the access track (**Figure 6-3**; **Figure 6-13**).

Description of Site: The site is located on the western side of a drainage line. It consists of two artefacts located on a narrow animal trail where the soil is exposed (**Figure 6-20**). The extent of the site includes possible intact subsurface deposits and measures roughly

32 m by 20 m. Both artefacts are complete flakes, one at a secondary stage of reduction, the other at a tertiary stage of reduction. Both flakes had simple platforms and hinge terminations. The full artefact details are provided in **Appendix 6**.

Figure 6-20: Koomaringa OS-07. View of site and selection of recorded artefacts.

<table>
<tr><td>  </td><td> 
</td></tr>
<tr><td>1. View south of Koomaringa OS-07.</td><td>2. Artefact from Koomaringa OS-07 (A45).</td></tr>
</table>

Koomaringa OS-08 (42-5-0017)

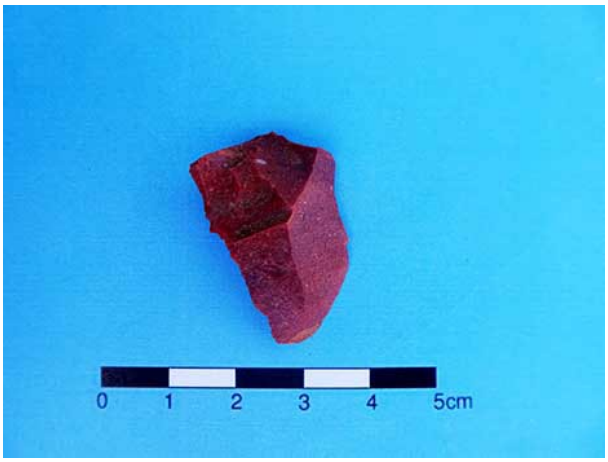
Site Type: Artefact scatter & PAD

GPS Coordinates: 415740 E / 6261095 N (centroid)

Location of Site: The site is located approximately 1.2 km northeast of the WRQ site office. It is located on the western bank of a drainage line and 85 m northeast of Koomaringa OS-07. The access track is 52 m west of the site extent (**Figure 6-3**; **Figure 6-18**).

Description of Site: The site consists of an artefact scatter eroding from the ground surface along a minor drainage channel which feeds into the drainage line along the eastern boundary of the site (**Figure 6-21**). The site extent is 55 m by 47 m and there is potential for intact subsurface deposits to be present at and around the site. The visibility within the exposures is moderate to high. Outside of the exposures the visibility low-moderate, with short grasses and weeds being prevalent. Four artefacts were recorded in detail (see **Appendix 6** for details). The site has an average density of one artefact per 1 m^2 on the exposures, which accounts for approximately half (840 m^2) of the overall 1650 m^2 extent of the site. There is potential for subsurface archaeological deposits within the surface scatter extent.

Figure 6-21: Koomaringa OS-08. View of site and selection of recorded artefacts.

	
1. View north of Koomaringa OS-08.	2. Artefact from Koomaringa OS-08 (A57).

Koomaringa OS-09 (42-5-0018)

Site Type: Artefact scatter

GPS Coordinates: 415564 E / 6260783 N (centroid)

Location of Site: The site is located approximately 870 m northeast of the WRQ site office. The site is located on the eastern bank of a drainage line and is approximately 100 m east of the access track (**Figure 6-3**; **Figure 6-23**).

Description of Site: The site is located on a narrow animal trail on the eastern side of a drainage line. There are several mature native trees at the southern extent of the site. The site consists of two artefacts: one complete flake and a flaked piece (**Figure 6-22**). The full details of the artefacts are provided in **Appendix 6**. The extent of the site is 9 m by 3 m. There are large piles of overburden approximately 20 m southeast of the site extent.

Figure 6-22: Koomaringa OS-09. View of site and selection of recorded artefacts.

	
1. View south of Koomaringa OS-09.	2. Artefact from Koomaringa OS-09 (A43).

Figure 6-23: Koomaringa OS-09. Site map.

Koomaringa OS-10 (42-5-0019)

Site Type: Artefact scatter and PAD

GPS Coordinates: 415770 E / 6260698 N (centroid)

Location of Site: The site is located on a flat area south of a confluence of drainage lines. The site is approximately 940 m northwest of the WRQ site office. Koomaringa OS-10 is approximately 18 m south of Koomaringa OS-02 and 52 m northeast of Koomaringa OS-01 (**Figure 6-3**; **Figure 6-11**).

Description of Site: The site consists predominately of PAD, with an exposure of surface artefacts along the western edge of the site extent. The site extent is 103 m by 62 m. Three artefacts were recorded in detail (see **Appendix 6** for details) and further flaked pieces of white/grey felsite were noted at an approximate density of three artefacts per 1 m^2 over the exposure (430 m^2) inside the site extent (**Figure 6-24**).

Figure 6-24: Koomaringa OS-10. View of site and selection of recorded artefacts.

1. View southeast of Koomaringa OS-10.

2. Artefacts from Koomaringa OS-10 (A94–A96).

Koomaringa OS-11 (42-5-0020)

Site Type: Artefact scatter

GPS Coordinates: 414784 E / 6260133 N (centroid)

Location of Site: The site is located partially inside the Koomaringa AP boundary. It is located approximately 250 m west of the WRQ site office. The site is located along the southern bank of a minor drainage channel. Koomaringa PL-01 is located 30 m northwest along the drainage line (**Figure 6-3**, **Figure 6-26**).

Description of Site: The site is located on the southern bank of a minor drainage channel near the central-south boarder of the Koomaringa AP. There is a moderate slope northwest to southeast following the drainage line across the site. Native vegetation

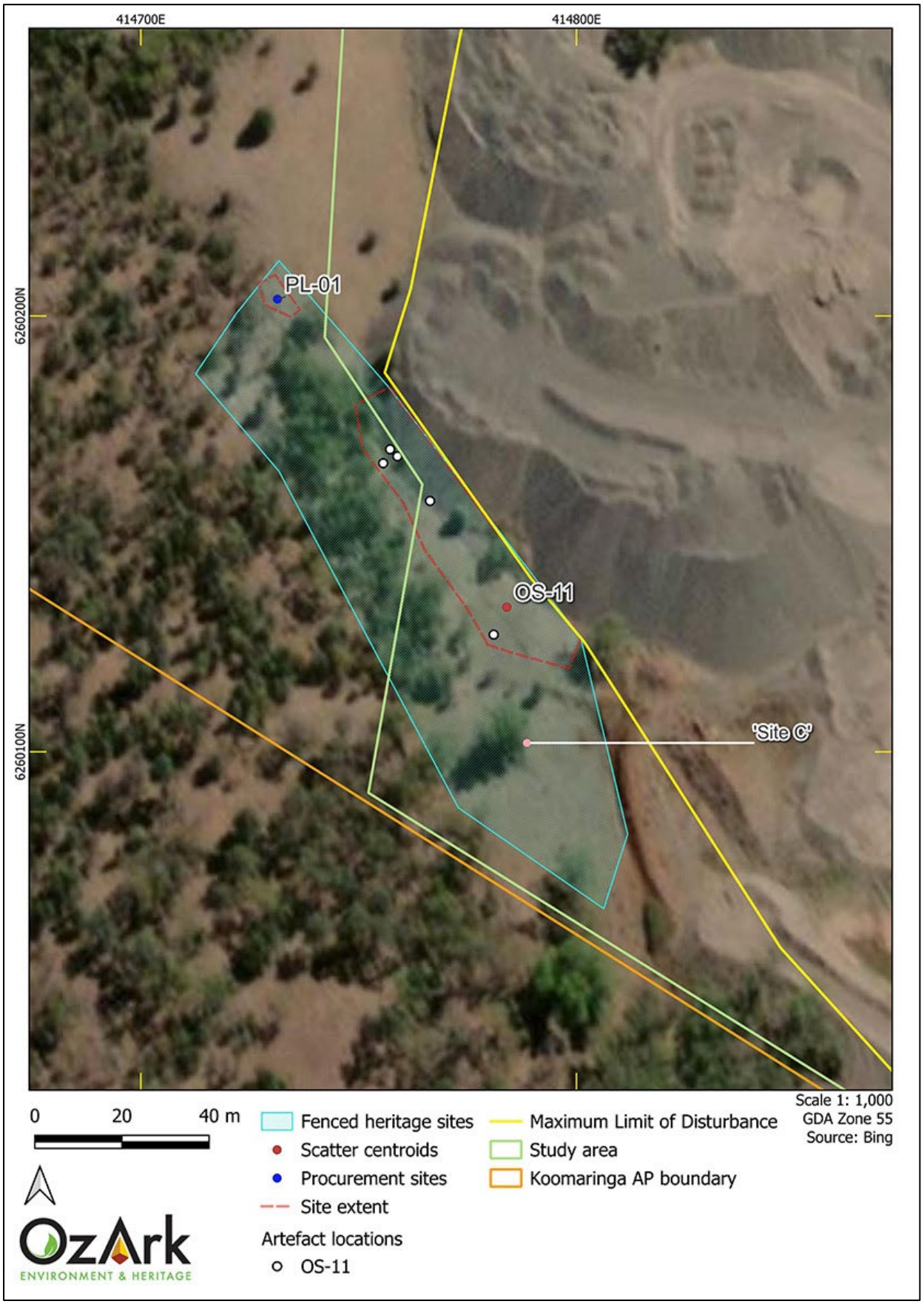
borders the site extent along its south-western edge, while there are large piles of overburden along the north-eastern extent of the site (**Figure 6-25**). The site consists of a surface scatter of artefacts which are in a secondary context. There has been ground disturbing works near the southern extent of the site with an artificial channel which the drainage line feeds into. The site extent is 130 m in length by 15 m. Ten artefacts were recorded in detail (see **Appendix 6**). The visibility was moderate, with exposures of soil and short grasses and weeds. The site is affected by water erosion.

Figure 6-25: Koomaringa OS-11. View of site and selection of recorded artefacts.

1. View northwest of Koomaringa OS-11.

2. Artefacts from Koomaringa OS-11 (A60–A62).

Figure 6-26: Koomaringa OS-11 & PL-01. Site map.



Koomaringa OS-12 (42-5-0021)

Site Type: Artefact scatter

GPS Coordinates: 415276 E / 6259956 N (centroid)

Location of Site: The site is located approximately 220 m southeast of the WRQ site office. The site is situated at the top of a slope which declines to west towards to the WRQ site office. It is 100 m east of Koomaringa IF-03 and 25 m west of the southern extent of Site A (**Figure 6-3**; **Figure 6-9**).

Description of Site: The site is located along an exposure at the top of a slope which declines west towards the WRQ site office. The site extent is 50 m by 20 m and consists of five artefacts recorded in a secondary context (**Figure 6-27**). There are large piles of overburden directly to the northeast of the site extent and grading and benching directly to the northwest. There are also felled trees and branches in piles along the eastern extent of the site. The soil at the site is light brown and thin. There are basalt gravels and naturally shattered felsite present. All the artefacts were recorded in detail (see **Appendix 6**).

Figure 6-27: Koomaringa OS-12. View of site and selection of recorded artefacts.

1. View southwest of Koomaringa OS-12.

2. Artefact from Koomaringa OS-12 (A75).

Koomaringa OS-13 (42-5-0022)

Site Type: Artefact scatter

GPS Coordinates: 415093 E / 6260388 N (centroid)

Location of Site: The site is located 305 m north of WRQ site office. It is located on a gentle slope overlooking the Area B open cut extraction location to the north. Site B is located 120 m north (**Figure 6-3**; **Figure 6-29**).

Description of Site: The site is located in a small gentle rise directly to the south of the open cut extraction known as Area B (Pearce 1987). The artefacts are in a secondary

context. The site extent is 29 m by 12 m. The site consists of two flakes, both recorded in detail (see **Appendix 6**). The visibility at the site is low–moderate with short grasses and weeds across the site. There is disturbance, a small channel, cut through the centre of the site extent. Basalt rocks are also present across the area (**Figure 6-28**).

Figure 6-28: Koomaringa OS-13. View of site and selection of recorded artefacts.

<table>
<tr><td>  </td><td> 
</td></tr>
<tr><td>1. View north of Koomaringa OS-13.</td><td>2. Artefact from Koomaringa OS-13 (A69).</td></tr>
</table>

Figure 6-29: Koomaringa OS-13. Site map.

Koomaringa PL-01 (42-5-0023)

Site Type: Procurement (quarrying) location

GPS Coordinates: 414729 E / 6260203 N

Location of Site: The site is located at the base of a minor drainage channel approximately 360 m northwest of the WRQ site office. The site is located close to the southern boundary of Koomaringa AP and 30 m northwest of Koomaringa OS-11 **Figure 6-3**, **Figure 6-26**).

Description of Site: The site consists of an outcrop of felsite exposed within a minor drainage channel. The felsite is predominately red/orange and tan in colour. There are two points on the bedrock which show signs of flake scars on protruding boulders of bedrock where large flakes have been removed (**Figure 6-30**). There are some broken angular fragments present around the bedrock in the drainage line, though none were noted to be diagnostic. Some of the bedrock exposure is physically weathered with large, flat pieces of felsite exfoliating from the flat surfaces.

Figure 6-30: Koomaringa PL-01. View of site and selection of recorded artefacts.

1. View northwest of Koomaringa PL-01.

2. Detail view of quarried bedrock with flake scars present.

Koomaringa PL-02 (42-5-0025)

Site Type: Procurement (quarrying) location

GPS Coordinates: 415812 E / 6260344 N

Location of Site: The site is located mid slope on the edge of small ridgeline between two drainage lines. The site is approximately 780 m northeast of the WRQ site office. There is a scree slope to the southeast and northeast of the site, and a rocky basalt knoll to the east (**Figure 6-3**; **Figure 6-32**).

Description of Site: The site consists of an outcrop of felsite located mid slope declining from a small ridgeline and scree slope southeast towards a drainage line in the northwest. The site has four small felsite boulders or bedrock eroding from the ground surface. Three of these outcrops show crushing along the top flat edge where they were used as an anvil and have large flake scars along several edges where quarrying has taken place (**Figure 6-31**). The felsite is predominately grey in colour with some tan present. The overall outcrop, and site extent, measures approximately 8 m in length by 5 m. Next to the outcrop, one large piece of felsite (a flake) was noted. No further debitage or angular fragments were observed, however, as the site is mid slope it is likely any were washed by water further down the slope or covered over in sediment. The soil at the site is a mid-brown loam with short grasses and weeds present.

Figure 6-31: Koomaringa PL-02. View of site and selection of recorded artefacts.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>1. View southwest of Koomaringa PL-02.</td><td>2. Detail view of outcrop used as an anvil with flake scars around edge of outcrop.</td></tr>
</table>

Figure 6-32: Koomaringa PL-02. Site map.

Koomaringa ST-01 (42-5-0024)

Site Type: Scarred tree

GPS Coordinates: 415740 E / 6260533 N

Location of Site: The site is located on a lower slope to the east of a drainage line (**Figure 6-34**). It is approximately 800 m northeast of the WRQ site office. The site is 130 m south of Koomaringa OS-10, 110 m northeast of Koomaringa OS-04 and 200 m northwest of Koomaringa PL-02 (**Figure 6-3**; **Figure 6-34**).

Description of Site: The site consists of one scarred tree with a large scar. The scar measures 190 centimetres (cm) in length, 65 cm in width, and has 7 cm of regrowth present. The circumference of the scarred trunk is approximately 1.5 m. The scarred trunk is dead and hollow, though the other trunks surrounding the scarred trunk are alive and holding the scarred portion upright. The bimble box tree is approximately 20–30 m tall. The scar is facing southwest. There are at least two axe marks present in the top face of the canoe scar. There are two epicormic stems which have grown from below the canoe scar (**Figure 6-33**). The scarred trunk has also been ringbarked.

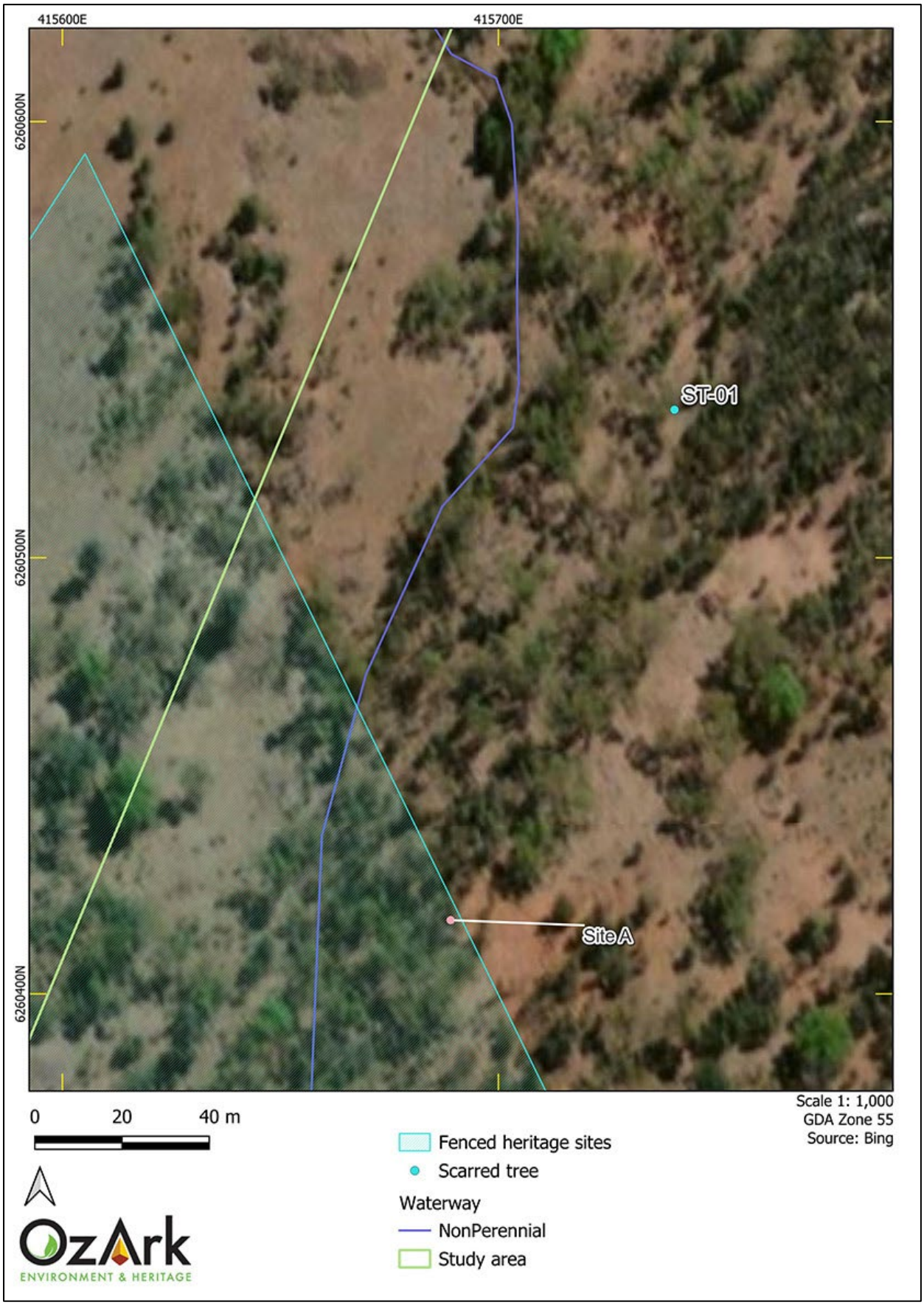
Figure 6-33: Koomaringa ST-01. View of site and selection of recorded artefacts.

1. View northeast of Koomaringa ST-01.

2. Detail view of axe marks on face of scar (circled in red).

	
3. View southeast of scar.	4. View northwest of scar.

Figure 6-34: Koomaringa ST-01. Site map.



6.5 PREVIOUSLY RECORDED ABORIGINAL SITES LOCATED

Two sites, Site A and Site B, as recorded by Witter (1987) and Byrne (1987), were located during the survey. The two sites were recorded and the information from the recent recording and previous recordings were combined. The details for each site are below:

Site A (42-5-0004)

Site Type: Procurement locations, artefacts, water hole / holder and potential grinding grooves

GPS Coordinates: 415536 E / 6260200 N (centroid)

Location of Site: Site A is located along the top of a small ridgeline running north–south through the south-eastern portion of the Koomaringa AP. Site A is directly west of the western edge of the existing extent of the WRQ, and is bounded along its eastern edge by a dirt vehicle track and along its western edge by a slope descending to a minor drainage line (**Figure 6-3**). The ridgeline narrows at the northern extent of the site, and there is a naturally shattered felsite scree slope present on the eastern boundary at the centre of the site extent.

Description of Site: The site consists of a series of a felsite outcrops along the ridgeline running north–south. These outcrops have been mapped previously by Byrne (1987, see **Section 1.2** and **Section 5.2**), though there was no distinction between outcrops used as procurement locations for felsite.

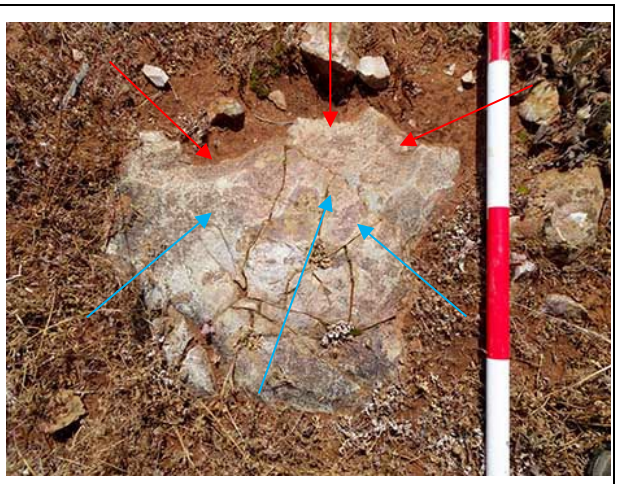
The current recording of Site A, as shown in **Figure 6-36**, differentiates between felsite outcrops which have been quarried, and those which did not show evidence of quarrying. In total, 31 separate felsite outcrops were recorded at Site A, with at least 14 outcrops showing evidence of having been used as procurement quarry locations. Evidence of procurement locations was determined by large flake scars and / or the presence of Hertzian cones in the felsite outcrops. Several areas at Site A had scatters of artefacts, including cores and flakes. The highest density of procurement locations and artefacts were at the southern extent of the site.

In addition, there is one location within Site A of potential grinding grooves, and a possible water hole / holder. Grinding groove 1 consists of two depressions on a felsite outcrop, which show deliberate flaking around the edges, and are deep enough to hold a small amount of water. The largest depression at grinding groove 1 is 30 cm by 30 cm in size and approximately 5 cm in depth. Grinding groove 2 consisted of a shallow depression, partially filled with soil. The edge which was visible is approximately 60 cm in length and the felsite bedrock had been shallowly flaked off and rubbed smooth. Both grinding groove locations were likely felsite procurement locations, which were then further modified to

create shallow depressions. The water hole / holder has an opening 35 cm by 25 cm and is 25 cm in depth. The edges of the water hole show impact fractures indicating that perhaps a natural feature that holds water, which has been modified and enlarged to function better. A selection of photographs detailing Site A and its various features is provided on **Figure 6-35**.

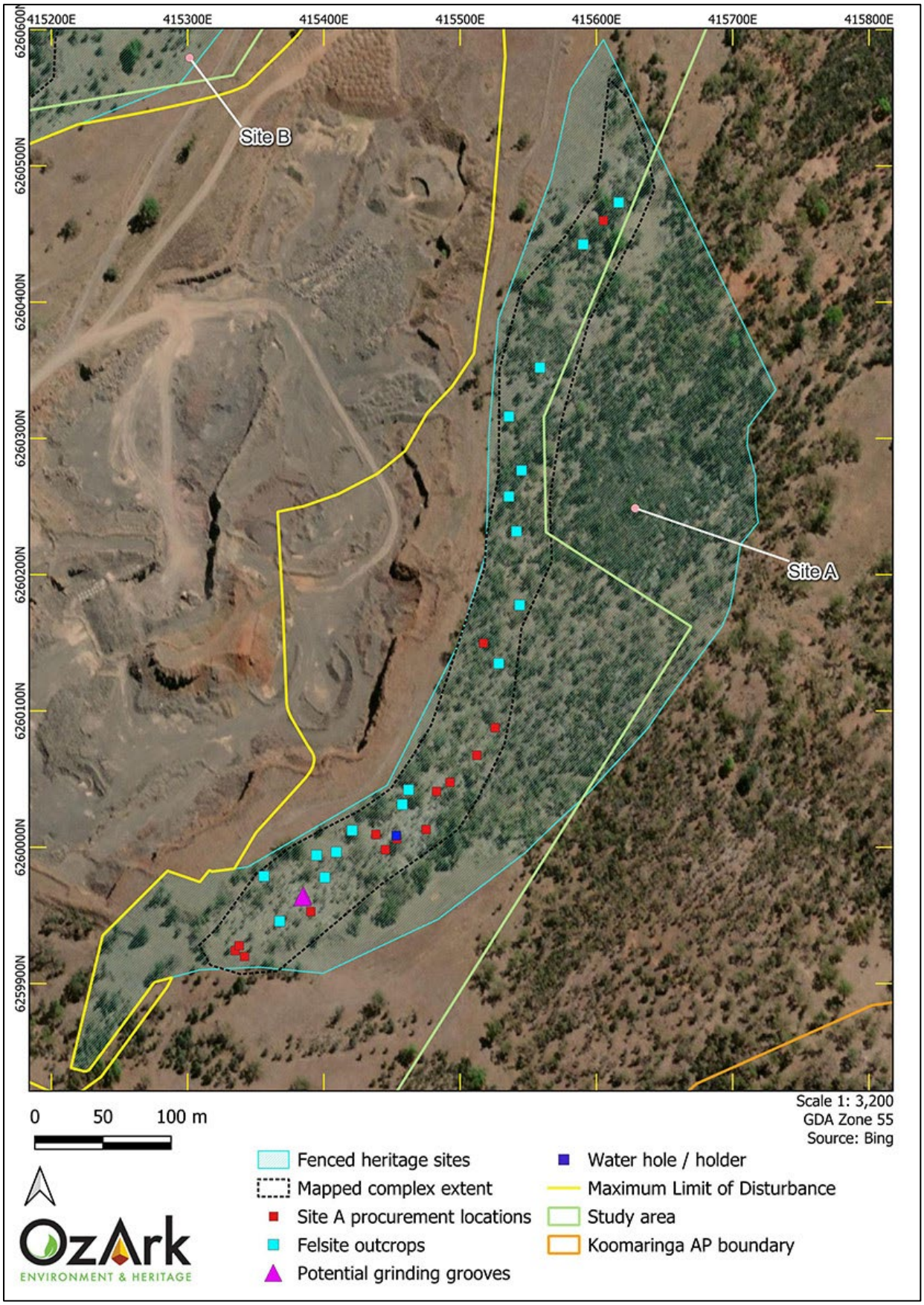
Overall, the extent of Site A covers an area of approximately 37,869 m² and measures 770 m in length north–south and is 65 m at its widest point east–west. Site A remains in good condition, and it is highly likely that further artefacts are present underneath leaf and branch litter at the site.

Figure 6-35: Site A. View of site, procurement locations and recorded artefacts.

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>1. View west of procurement location in southern extent of Site A.</td><td>2. Detail of a procurement location at Site A. Note flake scars (red arrows) and impact points (blue arrows) on surface.</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>3. Detail of grinding groove 1 at Site A.</td><td>4. Detail of water hole / holder at Site A.</td></tr>
</table>

	
5. View south along centre ridge of Site A from near northern extent.	6. View of selected artefacts at Site A.

Figure 6-36: Site A. Site map.



Site B (42-5-0004)

Site Type: Procurement location, artefact scatter and water holes / holders

GPS Coordinates: 415272 E / 6260663 N (centroid)

Location of Site: Site B is in narrow drainage line to the northwest of the study area (**Figure 6-3**).

Site B extends along the northern and southern sides of a drainage line. It includes the drainage line itself as well as the bank and lower slopes along the north-western side of the drainage line, and the slopes and crest along the southern bank of the drainage line. The site extent includes three minor drainage tributaries which intersect with the main drainage line.

Description of Site: Site B consists of several features. The procurement locations are felsite bedrock eroding from the base of the drainage line channel. At least eight separate procurement locations were recorded. These are characterised by the presence of flake scars and Hertzian cones in the felsite outcrops. There are several areas adjacent to the drainage line where primary tool production took place, indicated by moderate to high density artefact scatters consisting of large cores, primary flakes, and debitage. These artefact areas are present as indicated in **Figure 6-38**. In addition, there are two water hole / holder locations, where slightly modified natural depressions in the felsite bedrock are present.

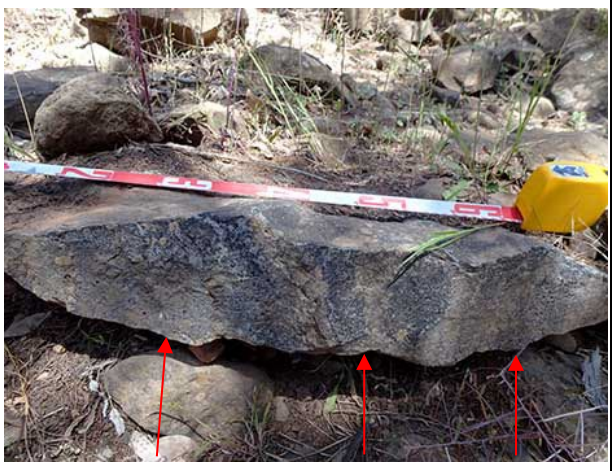
Site B extents further southeast than what has been demarcated in the field as the site extent. This includes an elevated flat area along the central south-eastern extent of the site where several scattered artefacts were recorded. The main area of Site B is at the centre of the site extent where most procurement locations are present, as well as the water holes / holders. A selection of photographs detailing Site B and its various features is provided in **Figure 6-37**.

Overall, the extent of Site B covers an area of approximately 25,000 m² and measures 530 m in length northeast–southwest and is 80 m at its widest point northwest–southeast. Site B remains in good condition, and it is highly likely that further artefacts are present underneath leaf and branch litter at the site.

Figure 6-37: Site B. View of site, procurement locations and recorded artefacts.

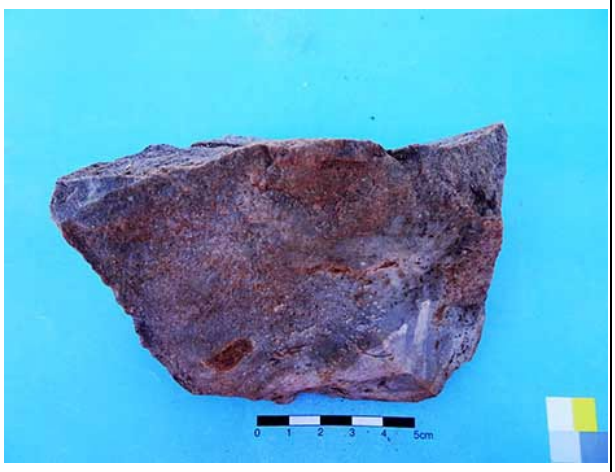
1. View southwest of Site B along the drainage line. Northern-most procurement location is 60 m southwest.

2. View southwest of felsite outcrops in the drainage line. Procurement locations are on the felsite outcrops.



3. Detail of a procurement location at Site B. Note flake scars (red arrows).

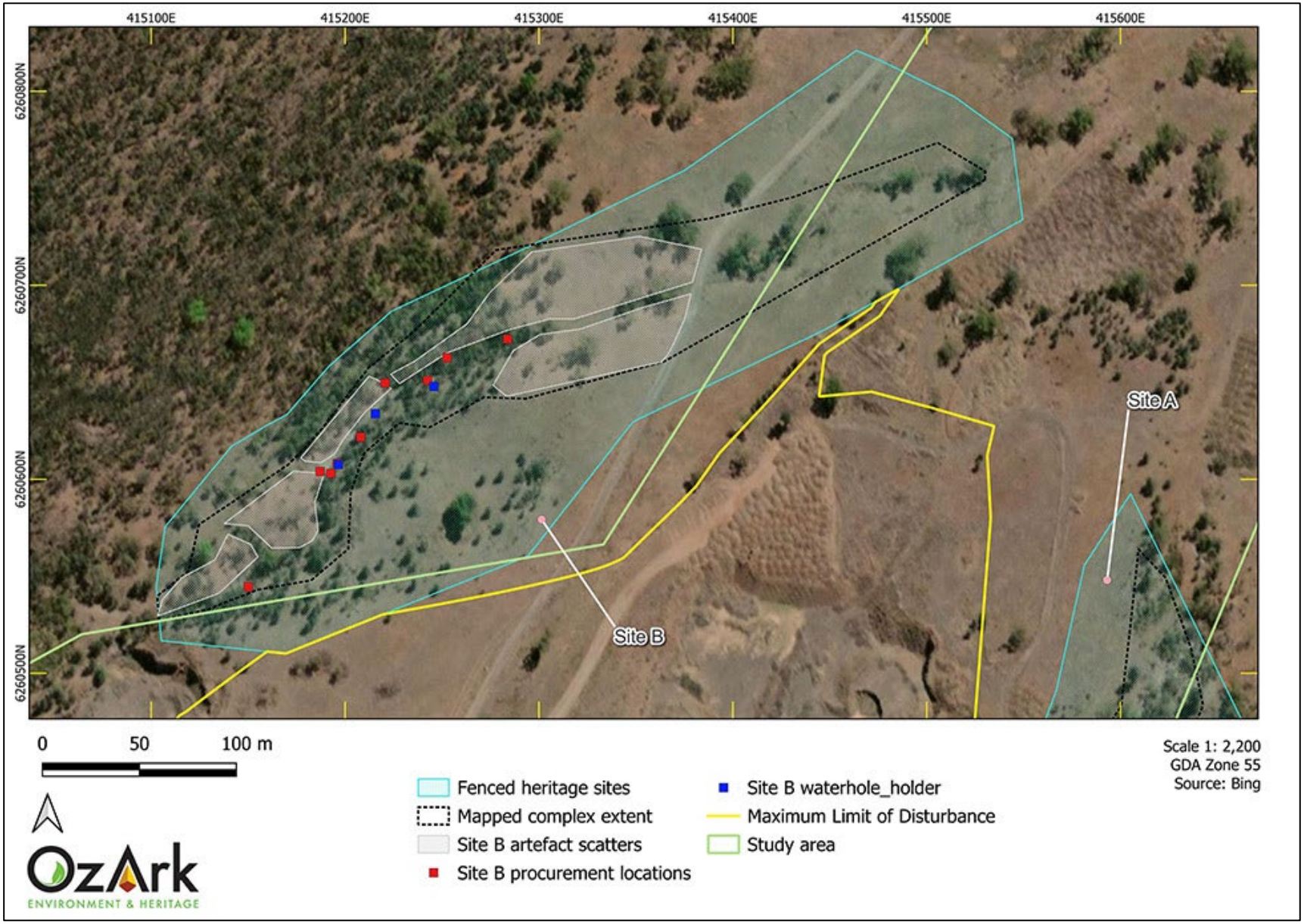
4. View southwest of southern-most procurement location at Site B.



5. Detail of large felsite core recorded at Site B (A74).

6. Detail of a large felsite core recorded at Site B (A75).

Figure 6-38: Site B. Site map.



6.6 SITES RECORDED IN 2023

In December 2023, RAPs recorded 14 sites within the Koomaringa AP during a site visit arranged by the Applicant.

The 14 sites registered on AHIMS by Mark Saddler were recorded at a time when OzArk was not present.

Based on information from the site cards, the location and description of the 2023 site recordings are detailed in **Table 6-4** and shown on **Figure 6-40**. The assessment of the significance of these sites is detailed in **Table 8-2** and **Section 8.3**.

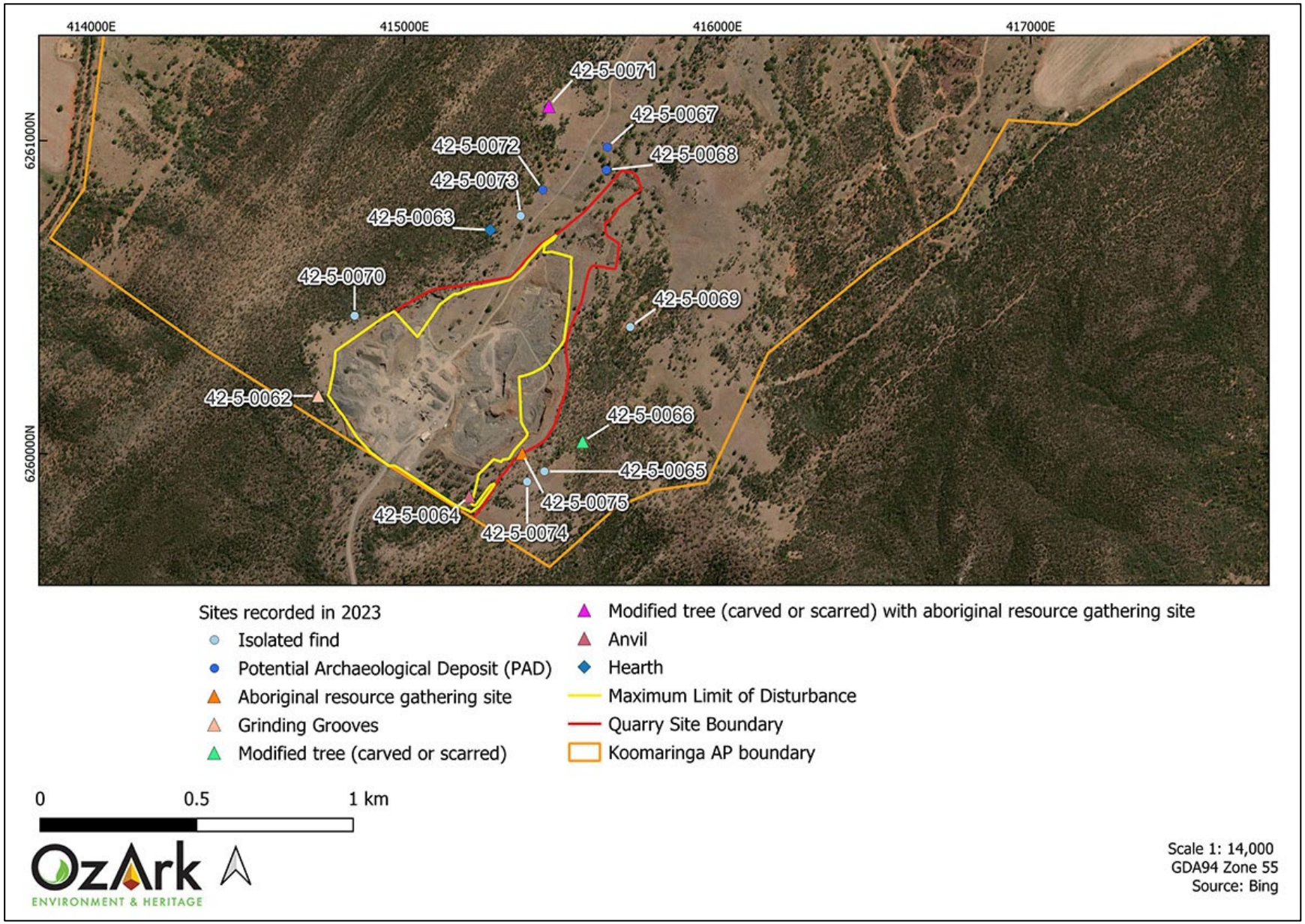
Table 6-4: Sites recorded in 2023.

Site ID	Site name	GDA Zone 55 East	GDA Zone 55 North	Site description
42-5-0062	Koomaringa Grind Groove 1 MS	414725	6260185	Single grinding groove
42-5-0063	Koomaringa Hearth 1	415274	6260715	Burnt clay nodules
42-5-0064	Koomaringa Anvil 1	415207	6259864	Single anvil
42-5-0065	Koomaringa Hammer Stone 1	415447	6259944	Broken hammer stone with pitting
42-5-0066	Koomaringa Scar 1	415569	6260039	Single scar in box tree
42-5-0067	Koomaringa PAD 2 MS	415648	6260979	PAD with visible artefacts
42-5-0068	Koomaringa PAD 1 MS	415645	6260907	PAD with visible artefacts
42-5-0069	Koomaringa Large White Core 1	415721	6260405	Core, potential manuport
42-5-0070	Koomaringa Anvil 22.12.23	414841	6260441	Single anvil
42-5-0071	Koomaringa Scar Tree 21.12.23	415461	6261110	Single scar in box tree
42-5-0072	Koomaringa PAD Site 21.12.23	415442	6260843	PAD with over 200 artefacts
42-5-0073	Koomaringa Large Core Stone 1	415371	6260760	Large core
42-5-0074	Koomaringa Axe Blank 1	415392	6259911	Axe blank
42-5-0075	Koomaringa Stock Plie 1	415376	6260001	Rock tool mound

One of these recordings, 42-5-0064 (Koomaringa Anvil 1) is within the maximum limit of disturbance. The site is described as '*Anvil still in ground*' with no further information apart from a photograph (**Figure 6-39**). From the photograph alone, it is difficult to determine whether the visible vesicles are natural or artificial, however, it is suspected that they are natural. Apart from the vesicles, there are no further features to suggest that the boulder has been used as an anvil.

Figure 6-39: View of 42-5-0064 taken from the site card.

Figure 6-40: Location of sites recorded in 2023.



7 DISCUSSION

7.1 DISCUSSION OF SURVEY RESULTS

7.1.1 Summary of survey results

- The site extents of previously recorded Site A and Site B were defined and mapped using GPS, including the extents bordering WRQ and the study area
- Three isolated finds, thirteen artefact scatters, two additional procurement locations, and one scarred tree were also recorded during the survey
- The two additional procurement locations consist of felsite outcrops situated mid-slope
- Of the thirteen artefact scatters recorded, six of the scatters have associated PAD. These sites are outside the existing footprint of WRQ and are near the main drainage line running north–south at the northern extent of WRQ
- Most artefacts recorded are felsite and consist predominately of flakes, debitage, and cores.
- Primary reduction of the quarried felsite occurred closer to the procurement locations at Site A, Site B, Koomaringa PL-01, and Koomaringa PL-02.

7.1.2 Discussion

The results of the survey indicate that further artefact scatters with PADs are likely to be located on flat or gentle slopes adjacent to the drainage lines in the general location of the study area. Sites such as Koomaringa OS-02, OS-05, OS-06, OS-07, OS-08, and OS-10 which have potential for subsurface archaeological deposits, indicate that occupation along the banks of the drainage lines is highly probable, even if such occupation would have been for relatively short periods of time, and likely only when the drainage lines held water. The presence of Koomaringa ST-01, a scarred tree, also indicates that the Koomaringa AP was used to procure resources apart from raw material for stone tool working.

The two additional procurement locations (PL-01 and PL-02) recorded during the survey show there are other locations of quarrying outside the site extents of Site A and Site B. Such locations were utilised for raw felsite material or were at least tested for stone quality.

Unsurprisingly, of the 96 artefacts recorded in detail, most are made from felsite (96%, n=92), and that the most frequently recorded artefact types sampled were flakes (46%, n=44), debitage (33%, n=32), and cores (17%, n=16). Only a few of the sampled artefacts were tools, such as side scrapers or showed signs of retouch (n=6). Primary reduction of the quarried felsite occurred closer to the procurement locations, as observed during the field survey and originally recorded by Bryce (see **Section 5.2**, **Table 5-1** and **Table 5-2**).

Based on the results of the survey, it is possible to extrapolate locations within Koomaringa AP which, when possible, should be prioritised for further survey. These locations include the banks of drainage lines which extend through the Koomaringa AP, as well as along the top of Scrubby Ridge. Furthermore, there were several sites recorded with PAD (Koomaringa OS-02, OS-05, OS-06, OS-07, OS-08 and OS-10) which could yield further information through archaeological excavation.

It is noted that during the RAP visit to the WRQ on 5 to 7 December 2023, that several further sites were recorded within the Koomaringa AP to the north and east of the WRQ (**Appendix 1 Figure 12**). These site recordings, subsequently registered with AHIMS, are mostly outside of the maximum limit of disturbance and the Quarry Site and will not be harmed by the proposal. One site, 42-5-0064 (Koomaringa Anvil 1) is within the maximum limit of disturbance. These recordings demonstrate that further sites within the Koomaringa AP and outside of the Quarry Site are highly likely to be present.

8 SIGNIFICANCE AND IMPACT ASSESSMENT

8.1 ASSESSMENT OF SIGNIFICANCE

8.1.1 Introduction

The appropriate management of cultural heritage items is usually determined based on their assessed significance, as well as the likely impacts of any proposed developments. Cultural, scientific, aesthetic, and historical significance are identified as baseline elements of significance assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

Social or Cultural Value

This area of assessment concerns the importance of a site or features to the relevant cultural group: in this case the Aboriginal community. Aspects of social value include assessment of sites, items, and landscapes that are traditionally significant or that have contemporary importance to the Aboriginal community. This importance involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

Archaeological/Scientific Value

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of value relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether a site can contribute to current research also involves defining 'research potential'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

Aesthetic Value

This refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Burra Charter 2013).

Historic Value

Historic value refers to the associations of a place with a historically important person, event, phase, or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain enough understanding of historic values.

8.2 ASSESSED SIGNIFICANCE OF THE SITES RECORDED BY OZARK

Table 8-1 presents a summary of the significance assessment of Aboriginal cultural heritage sites recorded during this assessment. Further details of each of the assessment criteria are provided below.

Social or Cultural Value

The assessment of cultural or social value concerns the importance of a site or features to the relevant cultural group – in this case the Aboriginal community. Aspects of social value include assessment of sites, items, and landscapes that are traditionally significant or that have contemporary importance to the Aboriginal community. This importance involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

A draft copy of this ACHAR was provided to RAPs for review on 08 October 2021. At the end of the consultation period, no further information regarding cultural values of the recorded sites was provided.

However, based on comments from site officers in the field, and because the sites are located inside Koomaringa AP, high social and cultural value has been assigned to all Aboriginal sites recorded during the assessment.

This is supported by community feedback from Wiradjuri stakeholders who volunteered their cultural values for the Koomaringa AP that includes the WRQ. The RAP's cultural values are reproduced in **Section 4.2.2** and indicate that the Koomaringa AP is a culturally significant place because of its stone resources, its natural heritage values, and as a meeting place for local Aboriginal people.

Archaeological/Scientific Value

The scientific significance of Koomaringa IF-01, IF-02, IF-03, OS-09, OS-10, OS-13 is assessed as low. These sites are described as having low scientific/archaeological significance based on the following values:

- Sites tend to represent artefacts in secondary contexts
- Low density of artefacts
- No associated archaeological deposits.

These sites have low scientific values because they have little or no research potential and a very limited ability to inform researchers about the nature and extent of Aboriginal occupation in the area. All sites are highly representative of other sites in the region.

The scientific significance of Koomaringa OS-01, OS-03, OS-06, OS-11, and OS-12 is assessed as low–moderate. These sites have low–moderate scientific values as they have little research potential and a limited ability to inform researchers about the nature and extent of Aboriginal occupation in the area. The sites are lower density surface artefact scatters with no or little likelihood of PAD and have limited variation in artefact types.

Koomaringa PL-01, PL-02 and ST-01 are assessed as having moderate scientific/archaeological values. Koomaringa PL-01 and PL-02 have been assessed as moderate scientific values as there are no associated archaeological deposits with the sites, and none or a limited density of artefacts are present. Both sites have been affected by water wash. However, the sites are procurement locations and show evidence of Aboriginal quarrying on a smaller scale than at Site A and Site B. Koomaringa ST-01 has been assessed as having moderate scientific values due to its rarity in the region of the study area. However, Koomaringa ST-01 does not have any associated archaeological deposits or additional features such as associated artefact scatters and therefore has limited research potential.

Koomaringa OS-02, OS-04, OS-05, OS-07, and OS-08 are assessed has having moderate–high scientific significance. This level of scientific/archaeological significance is based on the sites having higher density of artefacts present, a greater variety of artefact types, and the potential for associated archaeological deposits.

Aesthetic Value

Koomaringa IF-01, IF-02, IF-03, OS-01, OS-06, OS-09, OS-11, OS-12, OS-13, and PL-01 are assessed as having low aesthetic values. None of these Aboriginal sites have significant aesthetic value as the integrity of the sensory landscape has been altered in the recent past.

Koomaringa OS-02, OS-03, OS-04, OS-05, OS-07, OS-08, OS-10, ST-01, PL-02 are assessed as having moderate aesthetic values due to these sites being situated further away from quarrying

activities at WRQ. Further, the landscape at these sites has undergone minimal or no modifications.

Historic Value

None of the Aboriginal sites recorded have an apparent direct relationship to known historical Aboriginal sites (such as missions or massacre sites). To that end, all recorded sites are assessed as having no historic value. Please note that this determination is only based on archaeological and known historic evidence. The RAPs consider all Aboriginal sites to be historic and add to the collective anthropological information and story of their people whether its pre- or post-European contact.

Table 8-1: Aboriginal cultural heritage: significance assessment of sites recorded by OzArk.

AHIMS ID	Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
42-5-0010	Koomaringa IF-01	High	Low	Low	Low
42-5-0011	Koomaringa IF-02	High	Low	Low	Low
42-5-0012	Koomaringa IF-03	High	Low	Low	Low
42-5-0013	Koomaringa OS-01	High	Low–moderate	Low	Low
42-5-0014	Koomaringa OS-02	High	Moderate–high	Moderate	Low
42-5-0016	Koomaringa OS-03	High	Low–moderate	Moderate	Low
42-5-0015	Koomaringa OS-04	High	Moderate–high	Moderate	Low
42-5-0026	Koomaringa OS-05	High	Moderate–high	Moderate	Low
42-5-0027	Koomaringa OS-06	High	Low–moderate	Low	Low
42-5-0028	Koomaringa OS-07	High	Moderate–high	Moderate	Low
42-5-0017	Koomaringa OS-08	High	Moderate–high	Moderate	Low
42-5-0018	Koomaringa OS-09	High	Low	Low	Low
42-5-0019	Koomaringa OS-10	High	Low	Moderate	Low
42-5-0020	Koomaringa OS-11	High	Low–moderate	Low	Low
42-5-0021	Koomaringa OS-12	High	Low–moderate	Low	Low
42-5-0022	Koomaringa OS-13	High	Low	Low	Low
42-5-0023	Koomaringa PL-01	High	Moderate	Low	Low
42-5-0025	Koomaringa PL-02	High	Moderate	Moderate	Low
42-5-0024	Koomaringa ST-01	High	Moderate	Moderate	Low

8.3 ASSESSED SIGNIFICANCE OF SITES RECORDED IN 2023

During the site inspection undertaken by stakeholders in December 2023, the stakeholders identified and registered a further 14 sites on AHIMS: 42-5-0062 to 42-5-0075. The 14 sites were registered by RAP Mark Saddler at a time when OzArk were not present, and the assessment of their significance is based on the context of other sites in the area and any information on the site card.

Unfortunately, the site cards do not comment on the significance of the 14 recorded sites, although it is clear that they all hold high cultural value to the recorder and to the RAPs more

generally. The scientific significance of individual sites cannot be commented on as the sites have not been inspected by an archaeologist, however, in toto, these recordings, along with other previous recordings, clearly demonstrate that the Koomaringa AP has a high scientific significance as it contains a variety of sites that have high research potential. As such, all sites contribute to our understanding of the Aboriginal use of the area and are significant items within the broader cultural landscape. Similarly, the sites have moderate aesthetic significance as they are located within a significant cultural landscape that preserves the sensory elements of the sites, including sights and sounds, albeit with some impact from the agricultural use of the area. None of the sites, to OzArk's knowledge, have historic significance. As noted above, however, RAPs consider all Aboriginal sites to be historic and add to the collective anthropological information and story of their people whether its pre- or post-European contact.

Table 8-2: Aboriginal cultural heritage: significance assessment of sites recorded in 2023.

AHIMS ID	Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
42-5-0062	Koomaringa Grind Groove 1 MS	High	Contributory	Moderate	Low
42-5-0063	Koomaringa Hearth 1	High	Contributory	Moderate	Low
42-5-0064	Koomaringa Anvil 1	High	Contributory	Moderate	Low
42-5-0065	Koomaringa Hammer Stone 1	High	Contributory	Moderate	Low
42-5-0066	Koomaringa Scar 1	High	Contributory	Moderate	Low
42-5-0067	Koomaringa PAD 2 MS	High	Contributory	Moderate	Low
42-5-0068	Koomaringa PAD 1 MS	High	Contributory	Moderate	Low
42-5-0069	Koomaringa Large White Core 1	High	Contributory	Moderate	Low
42-5-0070	Koomaringa Anvil 22.12.23	High	Contributory	Moderate	Low
42-5-0071	Koomaringa Scar Tree 21.12.23	High	Contributory	Moderate	Low
42-5-0072	Koomaringa PAD Site 21.12.23	High	Contributory	Moderate	Low
42-5-0073	Koomaringa Large Core Stone 1	High	Contributory	Moderate	Low
42-5-0074	Koomaringa Axe Blank 1	High	Contributory	Moderate	Low
42-5-0075	Koomaringa Stock Plie 1	High	Contributory	Moderate	Low

8.4 AVOIDING AND MINIMISING HARM

8.4.1 Conserving significant Aboriginal cultural heritage

An object of the NPW Act is the '*conservation of objects places and features… of cultural value within the landscape, including… places, objects and features of significance to Aboriginal people*' (s.2A(1(b)(i)).

As heritage professionals, OzArk, strives for good conservation outcomes. In particular, OzArk is primarily concerned with the conservation and protection of Aboriginal cultural heritage that is of significance to Aboriginal people.

Two primary objectives when managing harm to an Aboriginal object are:

- Impacts to significant Aboriginal objects and places should always be avoided wherever possible
- Where impacts to Aboriginal objects and places cannot be avoided, proposals should be amended to reduce the extent and severity of impacts to significant Aboriginal objects and places through the use of reasonable and feasible measures.

The current assessment recorded 19 Aboriginal sites and located a previously recorded Aboriginal site, resulting in a total of 20 Aboriginal sites being recorded or investigated during the assessment. Of these 20 Aboriginal sites, all but two sites can be avoided by the proposal due to the Applicant electing to revise the maximum limit of disturbance to avoid most recorded Aboriginal sites.

Subsequently, a further 14 sites were recorded by RAPs in late 2023. All but one of these sites can be avoided by the proposal.

In total, there are 34 known sites within the Koomaringa AP (excluding the AHIMS registration of the AP itself). Of there, three sites are likely to be harmed by the proposal and 31 sites will remain in the landscape and be protected by already installed fencing, or by signage.

8.4.2 Ecologically sustainable development principles

Ecologically sustainable development principles (ESD) (defined in s.6 of the *Protection of the Environment Administration Act 1991*) requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. Regarding Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

8.4.2.1 Intergenerational equity

Intergenerational equity is the principle whereby the present generation should ensure the health, diversity, and productivity of the environment for the benefit of future generations.

In terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous permits), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.

Information about the integrity, rarity or representativeness of the Aboriginal objects and places proposed to be impacted, and how they illustrate the occupation and use of land by Aboriginal people across the region, will be relevant to the consideration of intergenerational equity and the understanding of the cumulative impacts of the proposal.

Where there is uncertainty, the precautionary principle should also be followed.

8.4.2.2 The precautionary principle

The precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In relation to Aboriginal cultural values, the precautionary principle should be guided by:

- Whether the proposal involves a risk of serious or irreversible damage to Aboriginal objects or places or to the value of those objects or places
- Whether there is uncertainty about the Aboriginal cultural heritage values or scientific or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

8.4.2.3 Principle of Integration

The Plan of Implementation of the World Summit on Sustainable Development held in Johannesburg, 2002, noted the need to "*promote the integration of the three components of sustainable development—economic development, social development and environmental protection—as interdependent and mutually reinforcing pillars*".

The principle of integration ensures mutual respect and reciprocity between economic and environmental considerations:

- Environmental considerations are to be integrated into economic and other development plans, programs, and projects
- Development needs are to be considered in applying environmental objectives.

8.4.2.4 Applicability to the proposal

The proposal adds to the cumulative impact on the region's Aboriginal cultural heritage as three sites, 42-5-0012 (Koomaringa IF-03), 42-5-0022 (Koomaringa OS-13), and 42-5-0064 (Koomaringa Anvil 1), will be harmed. However, the heritage impact value of this loss is low as these sites consist of an isolated find, a low-density artefact scatter in a secondary context, and a ballast boulder described as an 'anvil'. Furthermore, the other 31 Aboriginal sites, several with PAD, will not be harmed by the proposal. **Table 8-3** examines the application of ESD principles to the proposal.

Table 8-3: Application of ESD principles to the proposal.

ESD principle	Response
Avoiding and minimising harm	31 known Aboriginal sites will not be harmed by the proposal. The Applicant has elected to revise the maximum limit of disturbance to avoid Aboriginal sites which would have been impacted under original plans. Three Aboriginal sites, one isolated find 42-5-0012 (Koomaringa IF-03), one artefact scatter 42 5 0022 (Koomaringa OS-13), and one boulder described as an 'anvil' 42-5-0064 (Koomaringa Anvil 1) will be harmed by the proposal, however, these sites consist of a single artefact and a low-density scatter in secondary context with low

ESD principle	Response
	potential for *in situ* subsurface deposits, and a boulder of vesicular basalt described as an 'anvil'. The Applicant has permanently fenced Sites A, B and C to ensure that significant sites close to the maximum limit of disturbance are not harmed.
The integration principle	The proposal has sought to minimise environmental and heritage harm wherever possible. Two sites will be impacted by the proposal, though measures will be implemented to mitigate the loss of value associated with these sites.
The precautionary principle	The archaeological assessment has followed the precautionary principle through undertaking a robust impact assessment to ensure that harm to Aboriginal objects is minimised. The survey adopted a precautionary principle when it came to describing and assessing the archaeological potential of the landforms within the study area.
The intergenerational equity principle	The archaeological measures contained in this ACHAR are designed to mitigate the loss of inter-generational equity as much as possible. The results of the investigation and the undertakings of the Applicant have ensured that most of the recorded sites will be preserved and able to be appreciated by future generations. It is assessed that there is a minor diminution of the heritage values associated with the Koomaringa AP that is mitigated by several initiatives by the Applicant including fencing the most significant sites, providing tree screening, and facilitating site access for the Aboriginal community.

8.5 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROPOSAL

Table 8-4 presents a summary of potential impacts to Aboriginal cultural heritage associated with the proposal. Of the 20 Aboriginal sites recorded or located during the assessment and the 14 sites recorded by RAPs in December 2023, three sites are located inside the maximum limit of disturbance and may be impacted directly by the proposal (shaded blue in **Table 8-4**).

The remaining 31 sites are outside the maximum limit of disturbance and will not be impacted by the proposal.

Neither Site A or Site B are inside the maximum limit of disturbance or will be impacted by the proposed works. **Figure 8-1** shows the location of the sites in relation to the proposed works and **Figure 8-2** shows those sites that may be harmed by the proposal.

The maximum limit of disturbance is outside of the buffer demarcated by wooden stakes that were installed by the National Parks and Wildlife Service in 1987. The fencing undertaken by the Applicant in late 2023 to protect Sites A, B, and C includes a larger area than the area of the sites marked in 1987 by the National Parks and Wildlife Service and mapped in 2019 by OzArk (**Figure 8-3**). This fencing, as well as protecting Site A and Site B, also includes:

- Fencing for Site A includes Site A, Koomaringa IF-01, Koomaringa IF-02, Koomaringa OS-04, Koomaringa OS-12, Koomaringa Hammer Stone 1, Koomaringa Scar 1, Koomaringa Axe Blank 1, and Koomaringa Stock Plie (sic) 1
- Fencing for Site B includes Site B
- Fencing for Site C includes Koomaringa OS-11, Koomaringa PL-01, and Koomaringa Grind Groove 1 MS.

In addition, the cultural heritage values of Site A will be enhanced by the planting of a tree screen between Site A and the WRQ.

Table 8-4: Aboriginal cultural heritage: impact assessment.

AHIMS ID	Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
42-5-0010	Koomaringa IF-01	None	None	No loss of value
42-5-0011	Koomaringa IF-02	None	None	No loss of value
42-5-0012	Koomaringa IF-03	Direct	Total	Total
42-5-0013	Koomaringa OS-01	None	None	No loss of value
42-5-0014	Koomaringa OS-02	None	None	No loss of value
42-5-0016	Koomaringa OS-03	None	None	No loss of value
42-5-0015	Koomaringa OS-04	None	None	No loss of value
42-5-0026	Koomaringa OS-05	None	None	No loss of value
42-5-0027	Koomaringa OS-06	None	None	No loss of value
42-5-0028	Koomaringa OS-07	None	None	No loss of value
42-5-0017	Koomaringa OS-08	None	None	No loss of value
42-5-0018	Koomaringa OS-09	None	None	No loss of value
42-5-0019	Koomaringa OS-10	None	None	No loss of value
42-5-0020	Koomaringa OS-11	None	None	No loss of value
42-5-0021	Koomaringa OS-12	None	None	No loss of value
42-5-0022	Koomaringa OS-13	Direct	Total	Total
42-5-0023	Koomaringa PL-01	None	None	No loss of value
42-5-0025	Koomaringa PL-02	None	None	No loss of value
42-5-0024	Koomaringa ST-01	None	None	No loss of value
42-5-0004[4]	Site A/Site B	None	None	No loss of value
42-5-0062	Koomaringa Grind Groove 1 MS	None	None	No loss of value
42-5-0063	Koomaringa Hearth 1	None	None	No loss of value
42-5-0064	Koomaringa Anvil 1	Direct	Total	Total
42-5-0065	Koomaringa Hammer Stone 1	None	None	No loss of value
42-5-0066	Koomaringa Scar 1	None	None	No loss of value
42-5-0067	Koomaringa PAD 2 MS	None	None	No loss of value
42-5-0068	Koomaringa PAD 1 MS	None	None	No loss of value
42-5-0069	Koomaringa Large White Core 1	None	None	No loss of value
42-5-0070	Koomaringa Anvil 22.12.23	None	None	No loss of value
42-5-0071	Koomaringa Scar Tree 21.12.23	None	None	No loss of value
42-5-0072	Koomaringa PAD Site 21.12.23	None	None	No loss of value
42-5-0073	Koomaringa Large Core Stone 1	None	None	No loss of value
42-5-0074	Koomaringa Axe Blank 1	None	None	No loss of value

[4] Both Site A and Site B were registered as a single registration as AHIMS ID 42-5-0004.

AHIMS ID	Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
42-5-0075	Koomaringa Stock Plie 1	None	None	No loss of value

Figure 8-1: Recorded sites in relation to impacts from the proposal.

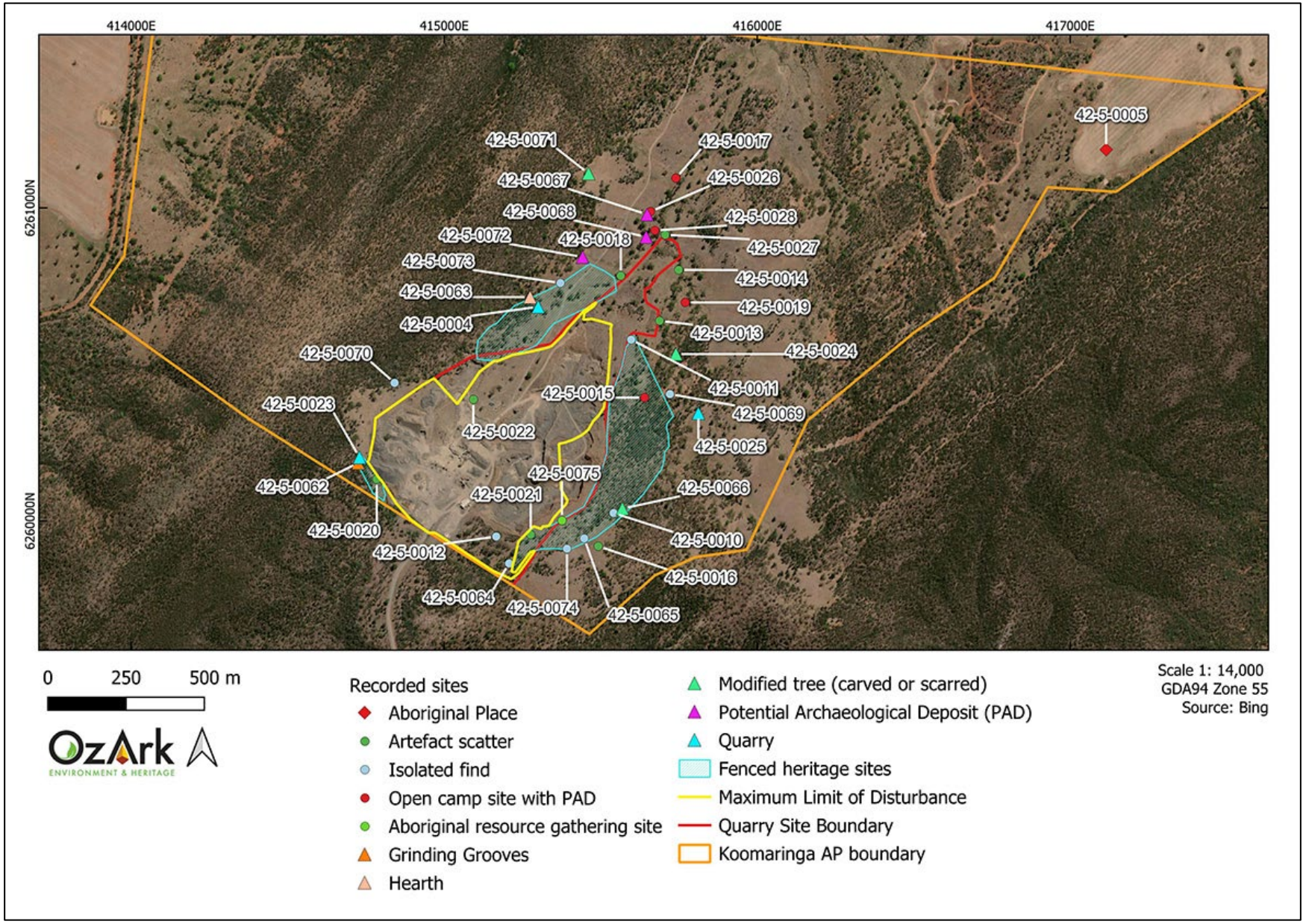


Figure 8-2: Sites that may be harmed by the proposal.

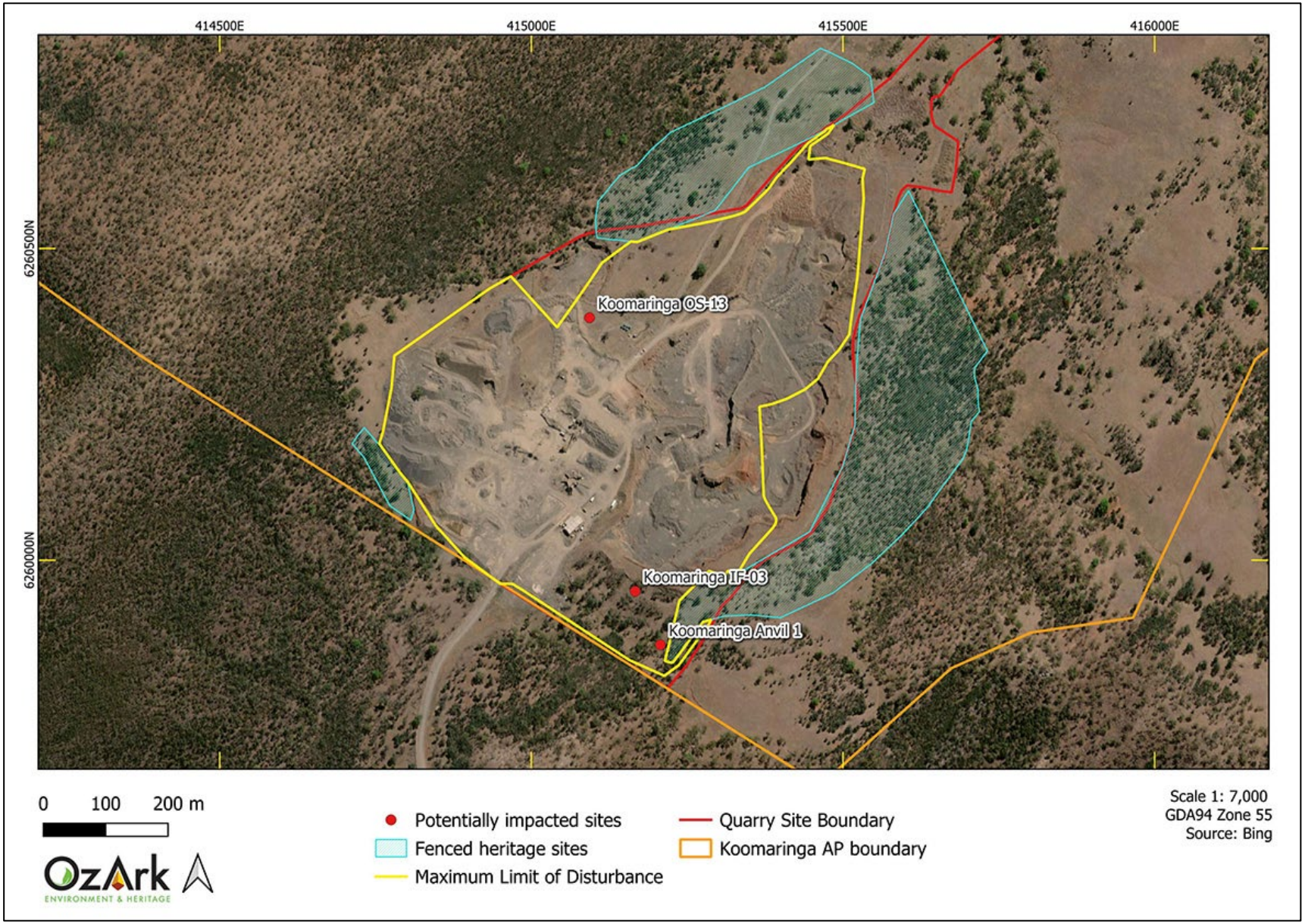


Figure 8-3: Map showing mapped site extents of Site A and Site B and the current protective fencing.

9 MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE SITES

9.1 GENERAL MANAGEMENT PRINCIPLES

Appropriate management of cultural heritage items is primarily determined based on their assessed significance as well as the likely impacts of the proposed development. **Section 8.2** and **Section 8.5** describe, respectively, the significance / potential of the recorded sites and the likely impacts of the development. The following management options are general principles, in terms of best practice and desired outcomes, rather than mitigation measures against individual site disturbance.

- Avoid impact by altering the development proposal or in this case by avoiding impact to a recorded Aboriginal site. If this can be done, then a suitable curtilage around the site must be provided to ensure its protection both during the short-term construction phase of development and in the long-term use of the area. If plans are altered, care must be taken to ensure that impacts do not occur to areas not previously assessed.

- If impact is unavoidable then approval to disturb sites under the authority of an AHIP must be sought from HNSW. Whether the AHIP is consented will depend on many factors including the site's assessed significance. This ACHAR will be required to accompany the AHIP application and normally the management recommendations contained in the ACHAR become conditions of the AHIP. As the Aboriginal community have been provided the opportunity to view the draft ACHAR, the ACHAR must make it clear that an AHIP application will be sought so that the Aboriginal community can assess the management recommendations with this knowledge. The AHIP conditions will often stipulate that the Aboriginal community should be involved in any salvage activities and will dictate what the fate of any salvaged Aboriginal objects will be.

9.2 MANAGEMENT AND MITIGATION OF RECORDED ABORIGINAL SITES

9.2.1 Mitigation of direct harm to the Koomaringa AP

A site visit by OzArk Principal Archaeologist, Ben Churcher, on 11 August 2023, identified that the wooden stakes installed by the National Parks and Wildlife Service in 1987 to mark the buffer for the culturally significant Site A and Site B remain in place, albeit often knocked over and/or decayed. This visit determined that the proposed maximum limit of disturbance is entirely outside of the demarcated buffer for Site A and Site B and that the proposal will not directly harm these sites or any land within the established 1987 buffer boundary (**Figure 8-3**). The buffer for Sites A and B (as well as so-called 'Site C', an amalgam of Koomaringa OS-11, Koomaringa PL-01, and Koomaringa Grind Groove 1 MS) have been fenced with the assistance of the RAPs.

Notwithstanding the conservation of most sites recorded during this assessment, as well as the culturally significant Site A and Site B, the proposal has the potential to diminish the Aboriginal cultural heritage values of the Koomaringa AP as three artefacts and a boulder of vesicular basalt described as an 'anvil' will be moved from their current location and placed at another location within the Koomaringa AP where they will not be harmed by the proposal (should an AHIP be approved).

To mitigate this diminution of cultural values and to enhance the overall cultural values of the Koomaringa AP, the Applicant will undertake the following initiatives:

1. The Applicant has re-fenced Sites A and B, as well as so-called 'Site C' (an amalgam of Koomaringa OS-11, Koomaringa PL-01, and Koomaringa Grind Groove 1 MS), to ensure that they are not harmed. The fencing was marked out during a three day site visit by three RAPs (Mark Saddler, James Ingram, Robert Carroll) from 5 to 7 December 2023 and increases the extent of the sites as assessed during the fieldwork in 2019 (**Figure 8-3**). The in situ fencing was again inspected by the same three RAPs during a three day site visit by the RAPs from 20 to 22 December 2023. At the end of this program, the RAPs indicated that they were satisfied that the fencing makes protection of the sites more secure. The new fencing includes the boundary pegs for Site A and Site B that were installed by the National Parks and Wildlife Service in 1987. The 1987 wooden pegs remained in place as determined by a site visit by OzArk Principal Archaeologist, Ben Churcher, on 11 August 2023 accompanied by staff from the WRQ. The location of the 1987 wooden stakes and the location of the new fencing is shown on **Figure 8-3**[5] (see also **Section 9.2.4**).

   The fenced locations of Sites A, B, and C will be marked as no-go zones on all applicable quarry plans as shown on **Figure 1-3**.

   It will be the responsibility of the Applicant to monitor site buffers at boundary of the WRQ operational areas on a regular basis and not less than every two years.

2. To assist with allowing safe access to the Koomaringa AP for the Aboriginal community, the Applicant will undertake to locate and form a gravelled carpark near the location shown on **Figure 9-1**.

3. To assist with allowing safe access to the Koomaringa AP for the Aboriginal community, the Applicant agrees to facilitate the following access protocol:

   - At least two business days prior to site visit:

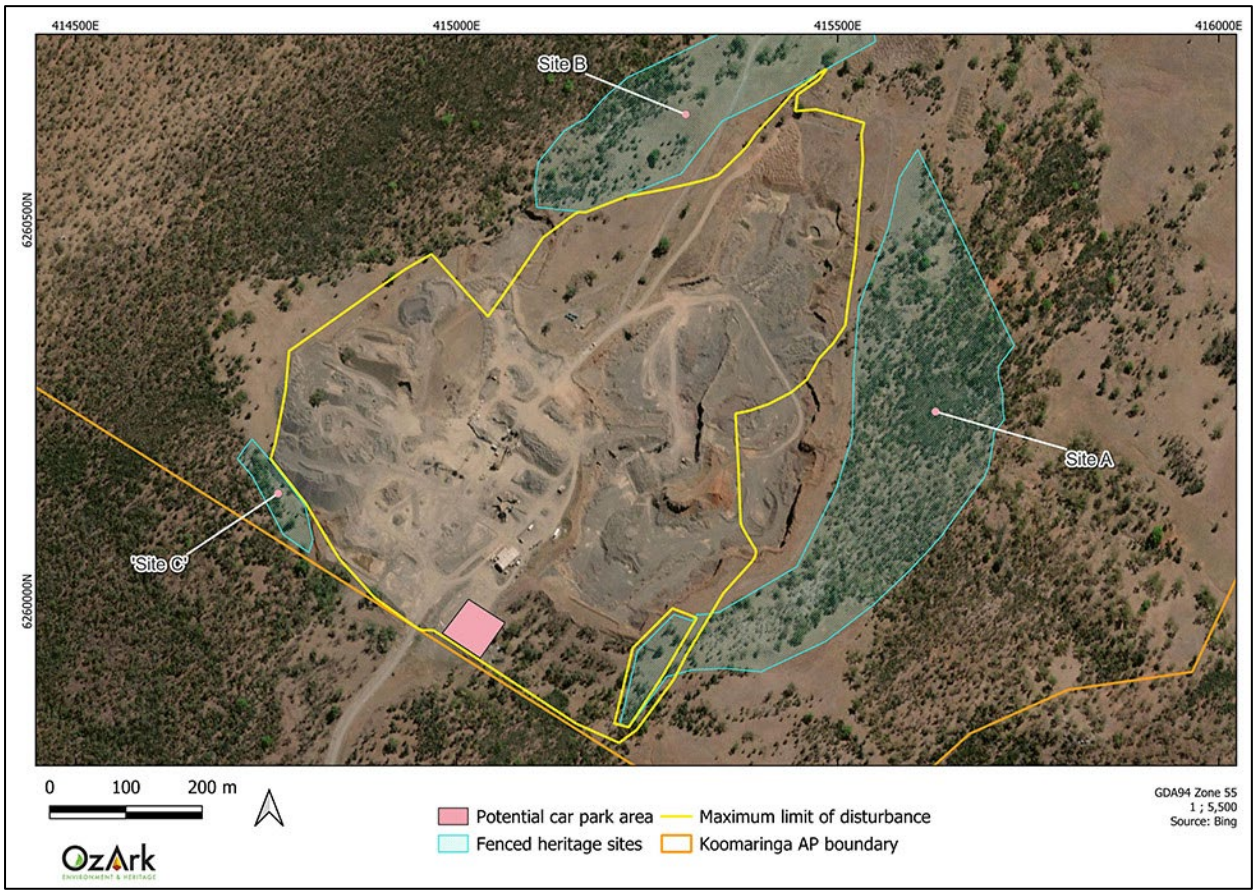
[5] The wooden stakes on the western side of Site A were mapped as shown on **Figure 9-1**. While there are in situ wooden stakes on the eastern side of Site B, these were not mapped due to reception issues with the Differential GPS being used. However, the line of wooden stakes at Site B is as shown on **Figure 9-1**.

- Call the Quarry Manager to arrange a suitable time to access site
- Provide contact details so the Quarry Manager can touch base if site activities or conditions change.

- Day of site visit:
  - Meet the Quarry Manager or delegate at the designated time at the site entrance on Munros Road
  - The Quarry Manager or delegate will provide escort to the designated parking area
  - The Quarry Manager or delegate will provide escort whilst on site to ensure the safety of visitor
  - At conclusion of the visit the Quarry Manager or delegate will provide escort back to the site entrance.

4. The Applicant will facilitate and fund the installation of a path, picnic shelter table and seats, and signage leading from the carpark to Site A. The location of these facilities will be on the advice of the Koomaringa Management Group (see Koomaringa AP Plan of Management) when it is formed and HNSW.
5. The decision to allow access to Site B will be taken by the Koomaringa Management Group who can decide on the location and form of any proposed access track. Until such times as the access track is installed, the Applicant will assist with the transport of people to Site B when required.
6. The Applicant will arrange a one-off face-to-face heritage induction for WRQ staff. The content of this induction will then be presented as a training package for later use. Both the face-to-face induction and the provision of a training package will be under an agreed contractual arrangement.

Figure 9-1: Aerial showing the potential location of a car park.



9.2.2 Management of indirect harm to the Koomaringa AP

The proposal has a low potential to indirectly harm the Koomaringa AP in terms of visual amenity and from the impact of periodic blasting. These factors are discussed below.

9.2.2.1 Visual amenity

To assess the visual amenity of the significant Site A and Site B, a series of photographs were taken to illustrate the current views from Site A and Site B (**Figure 9-2** and **Figure 9-3**). These photographs demonstrate that the current Quarry, as well as the proposed expansion, is only partially viewable from the more extensive Site A and is not easily viewed from Site B.

To improve the visual amenity of Site A, the Applicant will plant and maintain a tree screen of appropriate native species outside of the archaeological site buffer between Site A and the WRQ. This tree screen will help improve the visual amenity of Site A when looking towards the WRQ. The most appropriate tree species would be the following:

- Kurrajong (*Brachychiton populneus*)
- Black Cypress-pine (*Callitris endlicheri*)
- White Cypress-pine (*Callitris glaucophylla*)

- Dwyer's Red Gum (*Eucalyptus dwyeri*)
- Poplar Box (*Eucalyptus populnea*).

Most of these species have some traditional use by Aboriginal people, e.g. for food (particularly Kurrajong), tools, or resin to make glues etc. The addition of a local wattle like *Acacia deanei* will provide a good year-round source of seeds for native animal food.

Figure 9-2: Aerial showing the photo points taken from Site A and Site B.

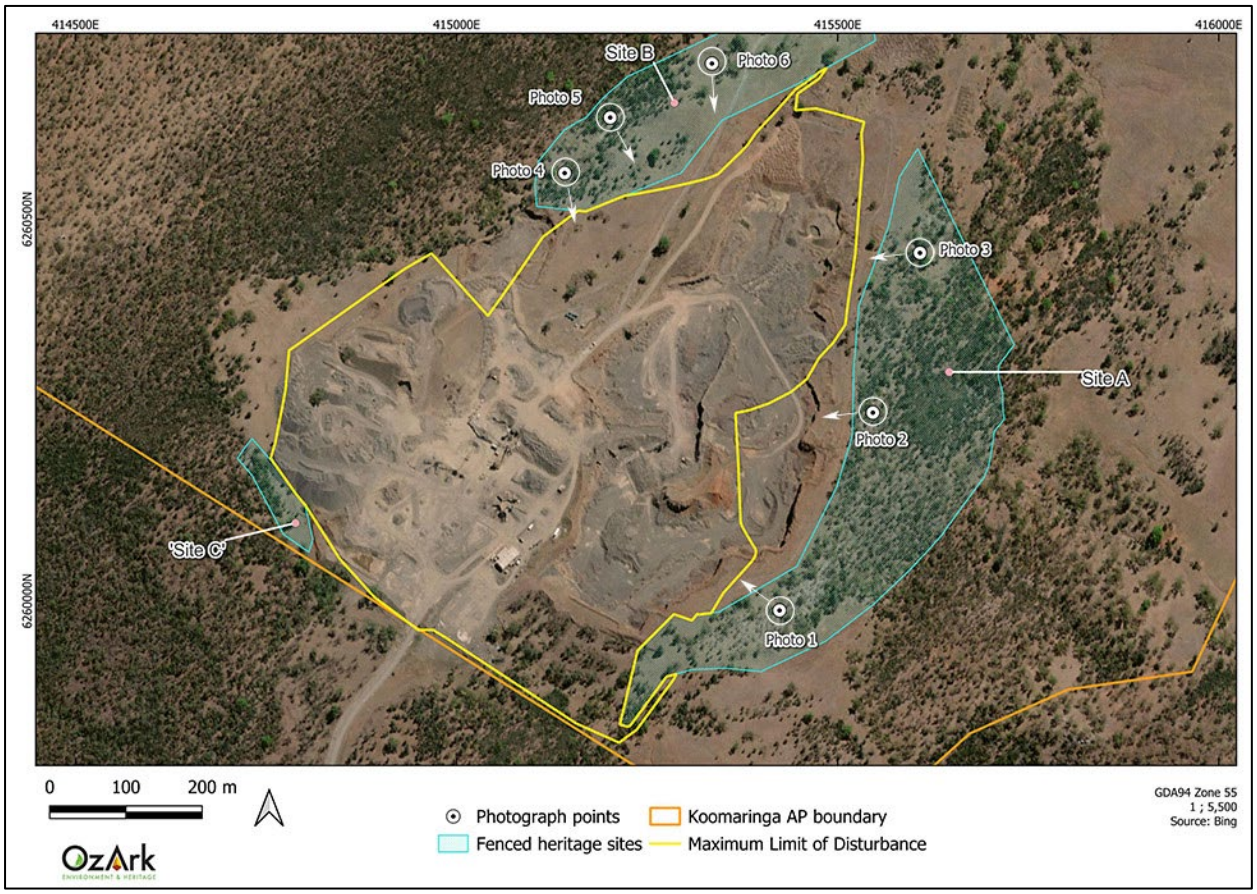


Figure 9-3: Views towards the WRQ from Site A and Site B.

	Photo point 1. View north-northwest from Site A.
	Photo point 2. View west from Site A.
	Photo point 3. View west from Site A.

	Photo point 4. View south-southeast from Site B.
	Photo point 5. View southeast from Site B.
	Photo point 6. View south-southeast from Site B.

9.2.2.2 Blasting impacts

Blasting operations at WRQ have been carried out since extraction operations commenced in 1987. The Applicant has developed a blasting method suited to the conditions at the Quarry Site. The existing blast schedule includes blasting at approximately bimonthly intervals; however, these intervals can be more frequent during periods of high product demand.

Overpressure and vibration levels from blasting are assessable against criteria proposed by the Australian and New Zealand Environment and Conservation Council (ANZECC) in their publication *"Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration – September 1990"*.

The noise and vibration impact assessment undertaken for the proposal predicted air blast overpressure and ground vibration levels would satisfy all ANZEC overpressure and vibration criteria at surrounding residences. The site inspection by OzArk Principal Archaeologist, Ben Churcher, on 11 August 2023, demonstrated that there is no evidence of blasting impacts on Site A and Site B from blasting associated with the current operations.

Notwithstanding, the drill and blast contractor would be required to monitor each blast in accordance with existing practices. If the criteria are exceeded, a further visual inspection would be undertaken of Site A and Site B to ensure there are no adverse impacts to Aboriginal cultural heritage values.

It is assessed that it is very unlikely that blasting associated with the proposal will detrimentally impact the rock slabs containing quarrying activities at Site A and Site B.

9.2.3 Management of Aboriginal sites within the maximum limit of disturbance

Three sites are located within the maximum limit of disturbance: 42-5-0022 (Koomaringa OS-13), 42-5-0012 (Koomaringa IF-03), and 42-5-0064 (Koomaringa Anvil 1) and will be appropriately managed as set out in **Section 9.2.3.1**.

9.2.3.1 Archaeological salvage

As three Aboriginal sites 42-5-0012 (Koomaringa IF-03), 42 5 0022 (Koomaringa OS-13), and 42-5-0064 (Koomaringa Anvil 1) could potentially be harmed by the proposal it is recommended that the sites be salvaged through the recording and collection of the surface artefacts and the relocation of the boulder of vesicular basalt described as an 'anvil', prior to any works proceeding. This recommendation is made due to:

- The cultural value of the sites and their importance to the Aboriginal community
- The nature of the impacted sites (an isolated find and one low-density artefact scatter located in secondary contexts, and a boulder described as an 'anvil')

- Being in landforms with previous disturbance from a range of factors including erosion and land use practices
- The low archaeological value assigned to 42-5-0012 (Koomaringa IF-03) and 42 5 0022 (Koomaringa OS-13) preclude more intensive archaeological investigations. 42-5-0064 (Koomaringa Anvil 1) has a contributory scientific value that will not be diminished by its relocation
- Sites such as these have a limited ability to further inform the community about the history and culture of the area. While any potential research questions are limited, some information can nevertheless be gained.

The archaeological salvage of 42-5-0012 (Koomaringa IF-03) and 42 5 0022 (Koomaringa OS-13) should include the following measures:

- All visible surface artefacts at a site should be flagged in the field
- The site should be photographed after flagging and before recording
- All artefacts should have the following artefact information recorded:
    - Location
    - Artefact class
    - Artefact type
    - Size
    - Reduction level
    - Raw material
    - Notes.
- A selection of indicative and / or unusual artefacts from each site will be photographed
- Once all recording is complete, the artefacts will be collected according to site with artefacts from each site being kept separate
- Should the collection team encounter a human burial, all work should cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought
- The recording of the artefacts recovered will largely be completed in the field and this data would be incorporated into a report
- The salvaged artefacts should be relocated at an agreed upon location. This will take place in accordance with the input of RAPs. The location chosen for relocation will be an area where future developments will not occur and as close as possible to their original locations. A site card will be submitted to AHIMS to record the relocation positions and an Aboriginal Site Impact Recording Form (ASIRF) will be submitted by the archaeologist detailing the salvage process and results of the salvage.

The archaeological salvage of 42-5-0064 (Koomaringa Anvil 1) should include the following measures:

- As it is likely that 42-5-0064 (Koomaringa Anvil 1) is a detached boulder, it should be possible to safely move the boulder with the use of machinery
- RAPs must be consulted about the relocation and agreement on the method of relocation must be reached
- The salvaged boulder should be relocated at an agreed upon location. This will take place in accordance with the input of RAPs. The location chosen for relocation will be an area where future developments will not occur and as close as possible to its original location (the boulder is 13 m from the fenced enclosure for Site A). A site card will be submitted to AHIMS to record the relocation positions and an ASIRF will be submitted by the archaeologist detailing the salvage process and results of the salvage.

All three sites must be fenced until salvage under an approved AHIP is approved.

9.2.4 Management of Aboriginal sites outside the maximum limit of disturbance

Thirty-one Aboriginal sites that are detailed in this report are located outside the maximum limit of disturbance. Although these sites will not be impacted directly by the proposal, mitigation measures to avoid inadvertent impacts should be considered for the sites listed below:

- Site A and Site B. To continue to protect these sites from inadvertent impacts, new fencing has been installed by the Applicant with advice from the RAPs that increases the site extent to that mapped during the 2019 survey (**Figure 8-3**). The new fencing includes the boundary pegs for Site A and Site B that were installed by the National Parks and Wildlife Service in 1987. The 1987 wooden pegs remain in place as determined by a site visit by OzArk Principal Archaeologist, Ben Churcher, on 11 August 2023 accompanied by staff from the WRQ. In addition, so-called 'Site C', an amalgam of Koomaringa PL-01 (42-5-0023), Koomaringa OS-11 (42-5-0020), and 42-5-0062 (Koomaringa Grind Groove 1 MS), was also fenced. The Applicant will monitor the fenced site buffers of Sites A, B, and C on a regular basis and not less than every two years.
- As the newly installed fencing for Site A includes Site A, Koomaringa IF-01, Koomaringa IF-02, Koomaringa OS-04, Koomaringa OS-12, Koomaringa Hammer Stone 1, Koomaringa Scar 1, Koomaringa Axe Blank 1, and Koomaringa Stock Plie (sic) 1, and the fencing for Site C includes Koomaringa OS-11, Koomaringa PL-01, and Koomaringa Grind Groove 1 MS, there are an additional 19 sites located away from the maximum limit of disturbance that are not currently fenced (Koomaringa OS-01, OS-02, OS-3, OS-05, OS-06, OS-07, OS-8, OS-09, OS-10, PL-02, ST-01, Koomaringa Hearth 1, Koomaringa PAD 2 MS, Koomaringa PAD 1 MS, Koomaringa Large White Core 1, Koomaringa Anvil 22.12.23, Koomaringa Scar Tree 21.12.23, Koomaringa PAD Site 21.12.23, and Koomaringa Large Core Stone 1). To protect these sites from any inadvertent impacts during the life of the quarrying operations, it is recommended that two star pickets with a sign attached between them be installed at each site facing the most obvious direction of travel from the quarry area. The sign will identify the area as an 'environmental area' (not an Aboriginal site that may draw unwanted attention to it) and provide advice not to disturb

the area and a contact number of a responsible person at the Quarry to contact for further information (see **Figure 9-4**).

Figure 9-4: Example of signage.

	1. Example of potential signage.

9.2.5 Koomaringa Plan of Management

The heritage management protocols contained in the Koomaringa AP Plan of Management apply to any sites outside the WRQ. While the WRQ is within the Koomaringa AP, heritage management for sites within the WRQ will be managed under the WRQ development consent (DA2022/029).

In particular, the following list of management priorities are noted in the Koomaringa AP Plan of Management.

- Mapping used at the WRQ must reflect the registered curtilage of the Aboriginal Place, locations and extent of all tangible archaeological sites, and the boundary and extent of the approved WRQ. To protect Aboriginal sites from inadvertent harm from the WRQ, this information must be present on all applicable WRQ site plans and those areas where Aboriginal objects are known must be clearly delineated as no go zones.
- It is the responsibility of WRQ to organise a suitably qualified archaeologist and Wiradjuri stakeholders to undertake salvage of 42-5-0012 (Koomaringa IF-03), 42-5-0022 (Koomaringa OS-13), and 42-5-0064 (Koomaringa Anvil 1) under the authority of an approved AHIP (see also **Section 9.2.3.1**).
- A suitable buffer between site 42-5-0004 (Site A and Site B) and the WRQ operations has been demarcated with high visibility fencing. RAPs assisted in the correct placement of the demarcation during site visits from 5 to 7 December 2023 and again from 20 to 22 December 2023. The buffer must be periodically monitored to ensure that the demarcation remains clear (see also **Section 9.2.1**).
- Site signage at other known sites (Koomaringa OS-01, OS-02, OS-3, OS-05, OS-06, OS-07, OS-8, OS-09, OS-10, PL-02, ST-01, Koomaringa Hearth 1, Koomaringa PAD 2 MS, Koomaringa PAD 1 MS, Koomaringa Large White Core 1, Koomaringa Anvil 22.12.23, Koomaringa Scar Tree 21.12.23, Koomaringa PAD Site 21.12.23, and Koomaringa Large Core Stone 1) will be installed (see **Section 9.2.4**). The buffer should be periodically monitored to ensure that the demarcation remains clear. It is the responsibility of WRQ to organise a suitably qualified archaeologist and Wiradjuri stakeholders to establish the signage.
- It is the responsibility of WRQ or any other proponent of ground disturbing activity not approved in the WRQ development approval to engage a suitably qualified archaeologist and representatives of the Koomaringa Management Group to inform whether further archaeological assessment is required. Prior to the commencement of any vegetation clearing or earthworks, WRQ will commission a surveyor to survey and physically mark out the approved areas of disturbance using appropriately labelled and highly visible permanent survey markers such as yellow painted concrete posts. Survey markers would be positioned at the corners of key component areas and along boundaries at distances / spacing that allows visibility of the next marker. All personnel would be made aware of the approved areas of disturbance and the importance of not disturbing any area beyond the approved areas.

- WRQ will liaise with the Koomaringa Management Group to determine a suitable protocol for ongoing management of the sites, including monitoring and record keeping, to ensure sites are not harmed by ongoing activities or works at the WRQ.

10 AHIP APPLICATION DETAILS

The AHIP application area will include the 35 ha maximum limit of disturbance assessed as part of this ACHAR (see **Section 1.5**) (henceforth 'the AHIP area'). All ground disturbing impacts associated with the proposal will be contained within the AHIP area. The proposed term of the AHIP will cover 10 years from a proposed start date in 2024. There have been no other applications for AHIPs relating to the study area.

10.1 CADASTRAL DETAILS

Table 10-1 details the cadastral information specific to the AHIP area.

Table 10-1: Cadastral details for the AHIP area.

Information Requirement	Details
Street Address(es)	"Western Riverina Quarry", Koomaringa, Rankins Springs
Lot(s) / DP(s)	Lot 1 DP821515
LGA(s)	Carrathool Shire Local Government Area
Zone(s)	RU1 Primary Production
Parish(es)	Cooper and Melbergen South

10.2 AHIP AREA

The AHIP area includes those areas where all ground disturbing impacts associated with the proposal will be located. The Applicant will apply for approval to impact sites 42-5-0012 (Koomaringa IF-03), 42-5-0022 (Koomaringa OS-13), and 42-5-0064 (Koomaringa Anvil 1).

Figure 10-1 shows the AHIP area and **Table 10-2** provides GPS points demarcating the AHIP area. **Figure 10-2** shows the AHIP Area along with sites that may be harmed by the proposal, as well as the no-go fenced areas around Sites A, B, and C.

No further archaeological investigation is required at 42-5-0012 (Koomaringa IF-03) and 42-5-0022 (Koomaringa OS-13) as both sites are low-density artefact scatters or isolated flakes located in secondary contexts and without PAD (**Section 6.4**). A community collection of surface artefacts should take place at these sites. Following the collection, the sites will be listed as 'destroyed' on the AHIMS register and the collected artefacts will be moved outside the maximum limit of disturbance.

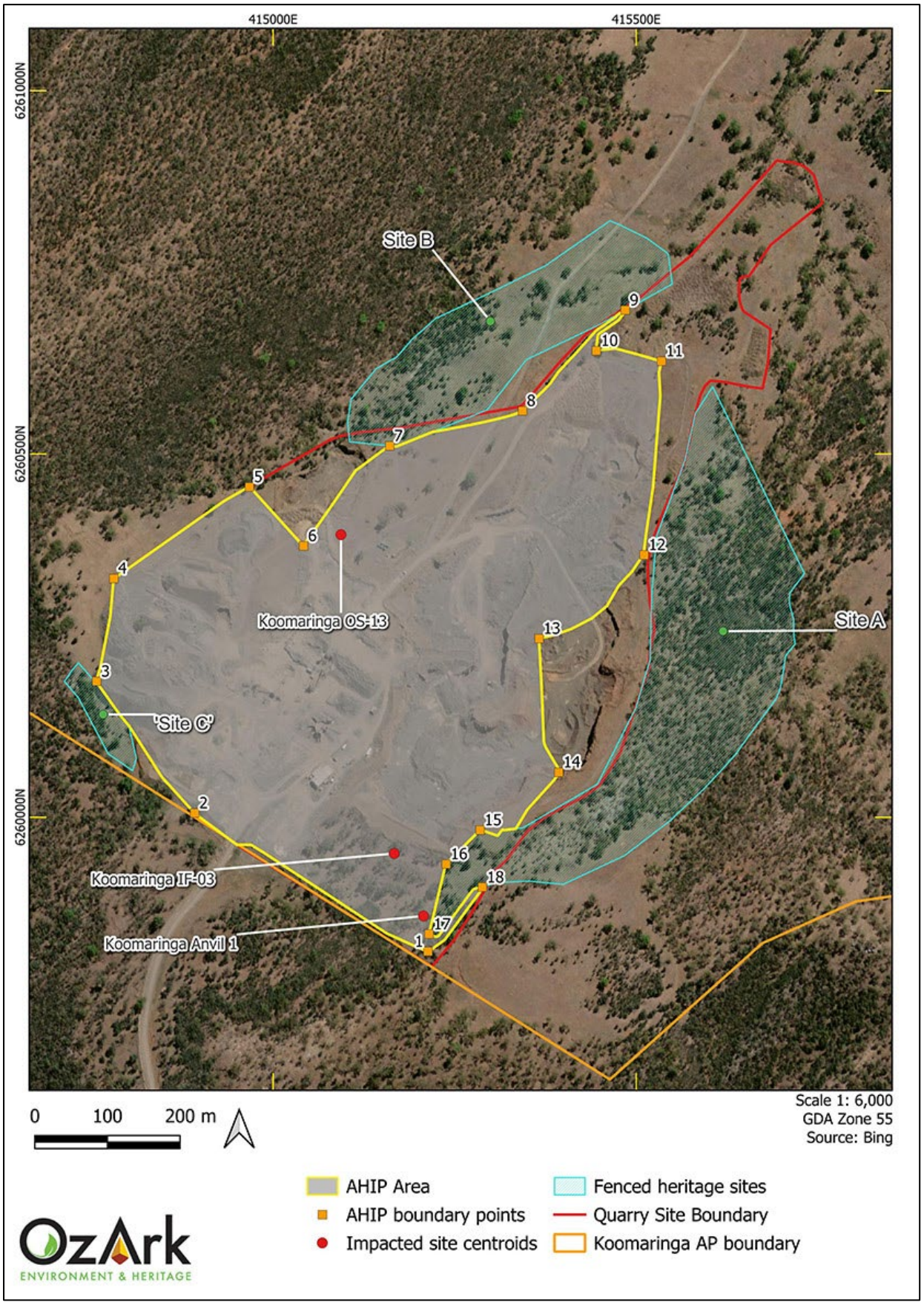
No further archaeological investigation is required at 42-5-0064 (Koomaringa Anvil 1) as the site consists of a vesicular basalt boulder described as an 'anvil'. Community consultation on the relocation of the boulder should take place. Following the relocation, the site will be listed as 'destroyed' on the AHIMS register and the boulder will be moved outside the maximum limit of disturbance.

Table 10-2: AHIP area boundary points.

AHIP area boundary points	GDA94 Zone 55 East	GDA94 Zone 55 North
1	415213	6259815
2	414892	6260006
3	414757	6260187
4	414781	6260329
5	414967	6260455
6	415042	6260373
7	415161	6260511
8	415343	6260559
9	415485	6260698
10	415445	6260642
11	415535	6260628
12	415511	6260361
13	415366	6260246
14	415393	6260062
15	415238	6259935
16	415285	6259982
17	415215	6259839
18	415288	6259904

Figure 10-1: The AHIP area.

Figure 10-2: The AHIP area with sites.



10.2.1 Movement only of certain Aboriginal objects

The surface artefacts recorded at 42-5-0012 (Koomaringa IF-03) and 42 5 0022 (Koomaringa OS-13) should be salvaged and relocated within the study area but outside of the AHIP area. The method for collecting the surface artefacts is outlined in **Section 9.2.3.1**.

The vesicular basalt boulder described as an 'anvil' registered as 42-5-0064 (Koomaringa Anvil 1) should be salvaged and relocated within the study area but outside of the AHIP area. The method for relocating the boulder is outlined in **Section 9.2.3.1**.

10.2.2 Treatment of objects from surface artefact collection

Depending on the community's wishes, the artefacts and the boulder should be relocated at an agreed upon location within the study area but outside of the AHIP area (maximum limit of disturbance). It is noted that RAP Robert Clegg suggested the artefacts be placed at the base of the scarred tree, Koomaringa ST-01 (**Section 4.2.2**). The boulder 42-5-0064 (Koomaringa Anvil 1) is 13 m from the fenced no-go area for Sita A and it would be appropriate to move the boulder to a point within the fenced Site A close to the original location for 42-5-0064 (Koomaringa Anvil 1).

The location/s will be discussed with RAPs during the AHIP enactment. Site card/s will also be submitted to AHIMS to record the relocation area/s.

10.2.3 Harm to certain Aboriginal objects through the proposed works

The harm to certain Aboriginal objects through the proposed works would apply to any stone artefacts not identified during the survey inside the AHIP area. Impact to these stone artefacts from the proposal would be authorised by the AHIP.

Further, should an AHIP be approved, and the Aboriginal objects moved to a place of safe-keeping, the Aboriginal cultural values of the Koomaringa AP will be diminished as three Aboriginal artefacts and a boulder described as an 'anvil' will be moved from their current location to another location within the Koomaringa AP.

10.2.4 Areas where Aboriginal objects will not be harmed

No harm will occur to any land within the fenced area for Sites A, B, and C established with the assistance of RAPs in December 2023 and fenced in 2023 with new high visibility fencing (see **Section 9.2.1** and **Figure 8-3**).

The heritage management protocols contained in the Koomaringa AP Plan of Management must be followed within the Koomaringa AP that includes the WRQ (see **Section 9.2.5**). Sites other than those listed in an approved AHIP must not be harmed within the Koomaringa AP.

10.2.5 Heritage contingency protocols for unanticipated finds

If unexpected Aboriginal features, such as a large number of stone artefacts or skeletal material, are encountered within the AHIP area that are not identified in this ACHAR, work must stop immediately, and the area be cordoned off with high visibility fencing. The AHIP holder must be notified of the situation as soon as possible and the following protocol followed.

1. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities (excluding human skeletal remains), the Applicant must:
    a. Not further harm the object
    b. Immediately cease all work at the particular location
    c. Secure the area to avoid further harm to the Aboriginal object
    d. Notify a suitably qualified archaeologist and the RAPs registered for the proposal
    e. With the assistance of the archaeologist and the RAPs, salvage the artefact under the terms of the AHIP by recording and collecting the artefact
    f. The salvaged artefact should be reburied along with the other artefacts recovered from the surface collection
    g. A brief addendum to this report should be written to record the find.
2. If Aboriginal burials are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and HNSW contacted. It should be noted that an AHIP, should it be granted, will not allow harm to human skeletal material and that further investigation, as set out below, will be required.
    a. In the event of human skeletal material being uncovered, the Applicant must cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
        i. The recording and assessment of the find(s)
        ii. The fulfilment of any legal constraints arising from the find(s), including complying with HNSW directions
        iii. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
    b. Recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from HNSW (at a minimum with a variation to the AHIP).

Further details regarding the discovery of human skeletal material are provided in **Appendix 4**.

HISTORIC HERITAGE ASSESSMENT

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11 HISTORIC HERITAGE ASSESSMENT: INTRODUCTION

11.1 BRIEF DESCRIPTION OF THE PROPOSAL

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

11.2 RELEVANT LEGISLATION

11.2.1 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 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.

11.2.2 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.

11.2.3 Applicability to the proposal

The proposal will be assessed under Part 4 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.

11.3 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 proposal is likely to cause harm to recorded historical heritage items or areas

Objective Four: Provide management recommendations and options for mitigating impacts.

11.4 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 dates of the fieldwork.

11.5 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.

12 HISTORIC HERITAGE ASSESSMENT: BACKGROUND

12.1 BRIEF HISTORY OF RANKINS SPRINGS

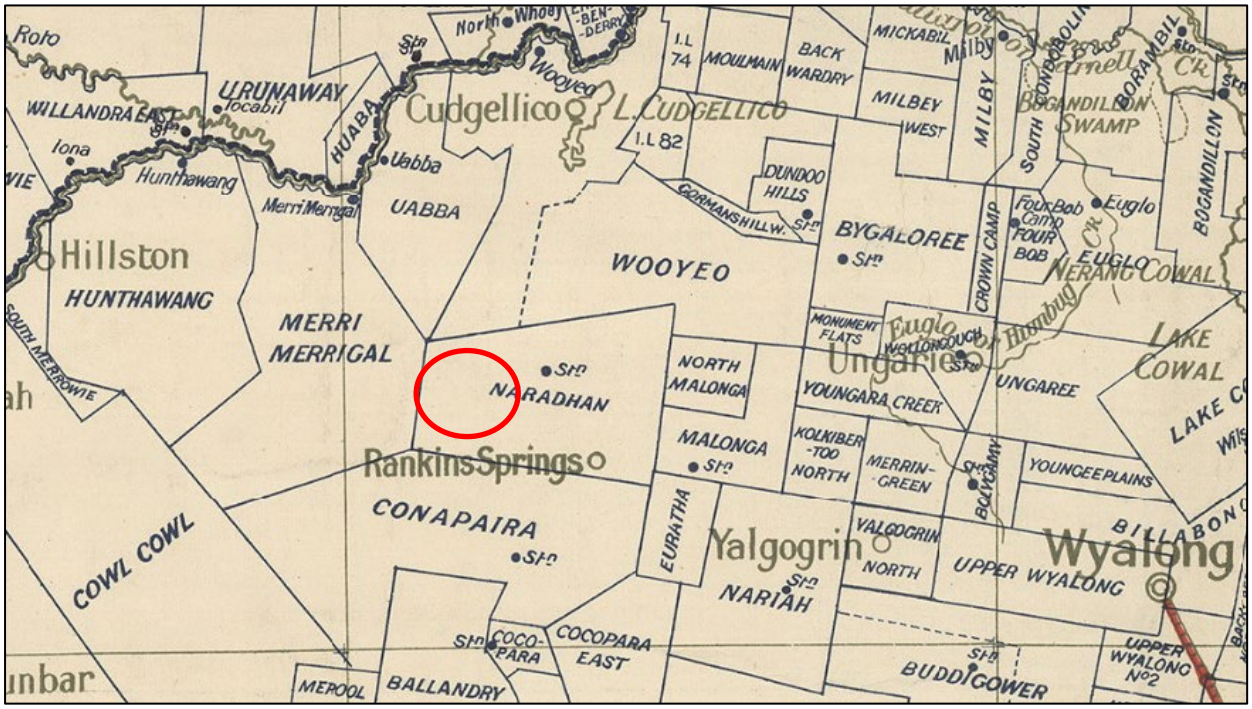
The early settlement of Rankins Springs was located approximately 10 km northeast of the town's current location. The town was likely named after pastoralist Arthur Ranken who had extensive holdings throughout NSW, including the 'Cunimbla' run south of the Lachlan River. Permanent settlement in Rankins Springs was established in 1869, during a period of increased population and consolidation of Riverina townships as the NSW government encouraged settlement in the inland regions. The location of Rankins Springs at the convergence of multiple roads and proximity to a water supply, provided amenities to travelling public and residents of the district (Buxton 1967).

A hotel was constructed at Rankins Spring in the early 1870s, while a post office was established in September 1875. The hotel burnt down in early 1892, though a new stone-built hotel was completed in 1893 (Buxton 1967).

In 1923 a railway line opened connected Rankins Springs with Barmedman, on the central western railway which connected Lake Cargelligo to Cootamundra. The Rankins Springs railway station was built approximately 10 km southwest of the hotel and the line provided transport for agricultural produce as well as passenger services. Rankins Springs proceeded to grow rapidly around the railway station and included a public hall, garage, bakery, and general store. A new hotel was built by 1928 inside the township limits and a police station also opened that year.

The study area is likely situated inside the former boundary of the Naradham pastoral run (see **Figure 12-1**). By 1931, Koomaringa is listed in the Australian Pastoral Directory, and again in 1954. The study area is also inside a Bourke Cooper Dowling and Gipps Gold Field which was proclaimed on 15 October 1880.

Figure 12-1: Extract of the 1903 NSW Pastoral Stations Map with the general location of the study area marked in red (source: SLNSW 2021).



13 HISTORIC HERITAGE ASSESSMENT

13.1 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 13-1**.

Table 13-1: Historic heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
National and Commonwealth Heritage Listings	3/11/2023	Carrathool LGA	No National or Commonwealth heritage listings are present within a 5 km radius of the study area.
State Heritage Listings	3/11/2023	NSW	No State Heritage Listings are present within a 5 km radius of the study area.
Local Environmental Plan (LEP)	3/11/2023	Carrathool LEP 2012	No LEP historic listings are present within a 5 km radius of the study area.

A search of the Heritage Council of NSW administered heritage databases and the Carrathool LEP returned no records for historical heritage sites within the designated search area (a radius of 5 km around the study area).

13.2 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004). The historic heritage field survey was completed concurrently with the Aboriginal heritage field assessment (see **Section 6.1**).

13.3 PROJECT CONSTRAINTS

There were no constraints to the historic heritage assessment.

13.4 RESULTS OF HISTORIC HERITAGE ASSESSMENT

No historic heritage sites, archaeologically sensitive areas, or potential historical archaeological deposits were identified during the survey.

Although the study area is inside a proclaimed gold field, there is no evidence that gold mining has occurred inside or near the study area.

13.5 DISCUSSION OF RESULTS

Overall, there was limited potential for historic heritage to be present inside the study area. The heritage values associated with the study area are derived from practices which are unlikely to have physical remains such as grazing. As such, potential remaining physical fabric such as cattle yards, fencing, etc. if present, were removed prior to the quarry beginning operations. No historic remnants of activities associated with grazing or agricultural practices were recorded during the survey, excepting some trees which had been ring barked. In addition, no areas of potential historical deposits were identified during the survey.

13.6 GENERAL PRINCIPLES FOR THE MANAGEMENT OF HISTORIC SITES

Appropriate management of heritage items is primarily determined based on their assessed significance as well as the likely impacts of the proposed development.

In terms of best practice and desired outcomes, avoiding impact to any historical item is a preferred outcome, however, where a historical site has been assessed as having no heritage value, impacts to these items does not require any legislated mitigation.

14 RECOMMENDATIONS

14.1 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 19 Aboriginal sites were recorded during the assessment, and two previously recorded sites located.

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 HNSW
- The findings of the current investigations undertaken within the study area
- The interests of the Aboriginal community.

As it is acknowledged that the proposed harm to three Aboriginal artefacts at the WRQ diminishes the Aboriginal cultural heritage values of the Koomaringa AP, the Applicant agrees to undertake the following initiatives to ensure that the overall Aboriginal cultural heritage values of the Koomaringa AP are enhanced by the proposal:

1. Applicant will monitor the fenced site buffers of Sites A, B, and C that are located at the boundary of the WRQ operational areas on a regular basis and not less than every two years. Monitoring will be undertaken by at least two representatives of the Koomaringa Management Group, where practicable.
2. Photos from the northern, southern, eastern, and western perimeters of the approved Quarry Site boundary will be taken not less than every two years to provide evidence that quarrying activities are within the approved Quarry curtilage. The photos will be made available to the Koomaringa Management Group (see Koomaringa AP Plan of Management).
3. The Applicant will arrange a one-off face-to-face heritage induction for WRQ staff. The content of this induction will then be presented as a training package for later use. Both the face-to-face induction and the provision of a training package will be under an agreed contractual arrangement.
4. The Applicant will fund the installation of heritage signage at the WRQ. The location and wording of any signage will be discussed with the Koomaringa Management Group when

it is formed. It is imagined that the signs would recognise the significance of the Aboriginal Place and provide site access details.

5. The Applicant will plant and maintain a tree screen of appropriate native species outside of the archaeological site buffer between Site A and the WRQ. This tree screen will help improve the visual amenity of Site A when looking towards the WRQ. Appropriate species for the tree screen are provided in **Section 9.2.2.1**.
6. To assist with allowing safe access to the Koomaringa AP for the Aboriginal community, the Applicant will undertake to locate and form a gravelled carpark near the location shown on **Figure 9-1**.
7. The Applicant agrees to facilitate an appropriate access protocol as set out in **Section 9.2.1** to allow the Aboriginal community to visit the Koomaringa AP.
8. The Applicant will facilitate and fund the installation of a path, picnic shelter table and seats, and signage leading from the carpark to Site A. The location of these facilities will be on the advice of the Koomaringa Management Group when it is formed and HNSW.

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

9. The Applicant will apply for an AHIP to impact 42-5-0012 (Koomaringa IF-03), 42-5-0022 (Koomaringa OS-13), and 42-5-0064 (Koomaringa Anvil 1) as per the methodology set out in **Section 9.2.3**, with the AHIP area shown on **Figure 10-1**. Until an AHIP is approved, these sites must be protected with fencing.
10. The Applicant will avoid any inadvertent harm to the remaining 31 Aboriginal sites by following the management and mitigation measures outlined in **Section 9.2.4**.
11. All ground-disturbing activities must be confined to the AHIP area shown on **Figure 10-1**. Should ground disturbing works extend beyond this, then further archaeological assessment and impact assessment may be required.
12. The heritage management protocols of the Koomaringa AP Plan of Management apply to the WRQ as set out in **Section 9.2.5**. The consent approval for the WRQ (DA2022/029) and any applicable AHIPs, if granted, will manage cultural heritage within the WRQ.
13. If skeletal remains are identified during the construction and operation of the proposal, the *Unanticipated Skeletal Remains Protocol* (**Appendix 4**) will be followed.
14. If Aboriginal objects are identified outside of the maximum limit of disturbance (AHIP area), all work will cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 3**) will be followed.

15. Inductions for work crews will include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 5**) and are aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the *Unanticipated Finds Protocol.*

14.2 HISTORIC HERITAGE

The following recommendations are made based on the impacts associated with the proposal 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.

The recommendation concerning the historic values within study area is as follows:

16. In the unlikely event that historical relics or deposits are unearthed during the proposed works, the *Historical Heritage Unanticipated Finds Protocol* (**Appendix 7**) will be followed.

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SLNSW 2021	State Library of NSW. 2021. *Map of New South Wales showing Pastoral Stations & c. by H.E.C. Robinson*. [online resource, accessed 9 August 2021]: https://search.sl.nsw.gov.au/primo-explore/fulldisplay?docid=SLNSW_ALMA21139747150002626&vid=SLNSW&tab=default_tab&lang=en_US&context=L
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APPENDIX 1: ABORIGINAL COMMUNITY CONSULTATION

Appendix 1 Figure 1: Consultation Log.

Date	Organisation	Comment	Method
13.8.19	The Area News	Rebecca Hardman (RH) rang - newspaper is printed on a Monday, Wednesday and Friday. The cut off is by 11:30 am the day prior to each	phone
21.8.19	The Area News	RH sent advert for proof and quote	email
21.8.19	BCD DPIE (OEH)	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	Griffith Local Aboriginal Land Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	Office of The Registrar, ALRA	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	National Native Title Tribunal	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	NTSCORP	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	Carrathool Shire Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	Riverina Local Land Services	RH sent stage1 agency letter requesting potential stakeholders. Closing date 4.9.19	email
21.8.19	BCD DPIE (OEH) - Sam Kirby	RH sent letter enquiring re meeting on site prior to commencing stage 1	email
21.8.19	The Area News	RH received proof	email
21.8.19	The Area News	RH enquired re proof size	email
21.8.19	The Area News	RH received 2nd proof	email
21.8.19	The Area News	RH phoned to confirm	phone
21.8.19	National Native Title Tribunal	RH received notification *Records held by the National Native Title Tribunal as at 21 August 2019 indicate that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area*	email
26.8.19	The Area News	RH requested a tear sheet	email
26.8.19	The Area News	RH received tear sheet	email
26.8.19	Riverina Local Land Services	RH received email recommending to contact Hay LALC	email
30.8.19	BCD DPIE (OEH)	RH received list of stakeholders to contact	email
2.9.19	Carrathool Shire Council	RH received email: *The only stakeholders that may have an interest is the Aboriginal Land Council in Griffith NSW.* *There are not many other groups, if any, in this area*	email

Date	Organisation	Comment	Method
9.9.19	Griffith Local Aboriginal Land Council	RH received call, confirming would like to register as a RAP. May know others also interested in registering but has not yet had a chance to talk to them. RH advised the only contact we received from OEH for this project was the Griffith LALC so if anyone wants to register as a RAP to please get them to contact us.	Phone
9.9.19	Griffith Local Aboriginal Land Council	RH received email registering the Griffith LALC, Robert Carroll and Judy Johnson as RAPs	email
9.9.19	Griffith Local Aboriginal Land Council	RH responded to see if Stephen has an email for Robert and Judy	email
9.9.19	Griffith Local Aboriginal Land Council	RH received email: *I don't have their email addresses, but will get them to you ASAP.*	email
26.9.19	Griffith Local Aboriginal Land Council	RH received email addresses for RAPs	email
30.9.19	Griffith Local Aboriginal Land Council	RH thanked Stephen	email
30.9.19	Griffith Local Aboriginal Land Council	RH sent stage 2. Feedback closes 28th Oct 2019	email
30.9.19	Robert Carroll	RH sent stage 2. Feedback closes 28th Oct 2019	email
30.9.19	Judy Johnson	RH sent stage 2. Feedback closes 28th Oct 2019	email
1.10.19	Griffith Local Aboriginal Land Council	RH sent invite to fieldwork	email
3.10.19	BCD DPIE (OEH)	RH sent notification of RAPs	email
3.10.19	Griffith Local Aboriginal Land Council	RH sent notification of RAPs	email
3.10.19	Griffith Local Aboriginal Land Council	RH phoned to follow up on fieldwork invite - Line disconnected	phone
3.10.19	Griffith Local Aboriginal Land Council	RH phoned to follow up on fieldwork invite - Line disconnected	phone
3.10.19	Griffith Local Aboriginal Land Council	RH sent email asking for Stephen to get back to her today with availability	email
3.10.19	Griffith Local Aboriginal Land Council	RH sourced Stephen's mobile, phoned and left message	email
3.10.19	Griffith Local Aboriginal Land Council	RH received call back and spoke to Stephen, he will confirm in an email tomorrow who will be attending as the site officer. RH advised we still have a current copy of workers comp	phone
4.10.19	Griffith Local Aboriginal Land Council	RH received email confirming will attend fieldwork. Site officers name and that Stephen would like to attend to observe.	email
4.10.19	Griffith Local Aboriginal Land Council	RH responded to see if Stephen had Ma's contact number and noting he is welcome to come as a volunteer if he likes.	email
8.10.19	Griffith Local Aboriginal Land Council	RH received email saying will get a number for the site officer	email
8.10.19	Griffith Local Aboriginal Land Council	RH received number for site officer	email
8.10.19	Griffith Local Aboriginal Land Council	RH phoned site officer to advise of delay due to car accident OzArk Field	phone

Date	Organisation	Comment	Method
		officer had to take detour for. RH will call back with ETA when known	
8.10.19	Griffith Local Aboriginal Land Council	RH phoned and pushed fieldwork back to 1pm	phone
11.10.19	BCD DPIE (OEH)	RH received email confirming receipt of notification of RAPs	email
14.10.19	BCD DPIE (OEH)	RH thanked Andrew	email
14.10.19	Office of The Registrar, ALRA	RH received a letter noting there are currently not any registered Aboriginal Owners in the project area. Suggested to contact Griffith and Murrin Bridge LALC	email
8.10.19 to 11.10.19	Griffith Local Aboriginal Land Council	Site officer (Max Harris) from Griffith LALC attended field survey. Stephen, CEO of Griffith LALC participated Friday morning as a volunteer and see area in person.	In person
25.11.19	Griffith Local Aboriginal Land Council	RH received call clarifying rates	phone
26.11.19	Griffith Local Aboriginal Land Council	RH received invoice	email
7.7.20	Griffith Local Aboriginal Land Council	RH sent project update	email
7.7.20	Robert Carroll	RH sent project update	email
7.7.20	Judy Johnson	RH sent project update	email
8.12.20	Griffith Local Aboriginal Land Council	Alyce Cameron (AC) sent project update	Email
8.12.20	Robert Carroll	AC sent project update	Email
8.12.20	Judy Johnson	AC sent project update	Email
18.8.21	Griffith Local Aboriginal Land Council	AC sent project update	Email
18.8.21	Robert Carroll	AC sent project update	Email
18.8.21	Judy Johnson	AC sent project update	Email
8.10.21	Griffith Local Aboriginal Land Council	Catherine Burrowes (CB) sent stage 4 letter and draft report exp 5.11.21	Email
8.10.21	Robert Carroll	CB sent stage 4 letter and draft report exp 5.11.21	Email
8.10.21	Judy Johnson	CB sent stage 4 letter and draft report exp 5.11.21	Email
29.5.23	Griffith Local Aboriginal Land Council	CB sent project update	Email
29.5.23	Robert Carroll	CB sent project update	Email
29.5.23	Judy Johnson	CB sent project update	Email
6.9.23	Yalmambirra	CB sent Project update letter September 2023	Email
6.9.23	Peter Ingram	CB sent Project update letter September 2023	Email
6.9.23	Robert Clegg	CB sent Project update letter September 2023	Email
6.9.23	Paul Brydon	CB sent Project update letter September 2023	Email
13.9.23	Griffith Local Aboriginal Land Council	CB sent follow up email with questions asking for comments/ feedback	Email
13.9.23	Robert Carroll	CB sent follow up email with questions asking for comments/ feedback	Email

Date	Organisation	Comment	Method
13.9.23	Judy Johnson	CB sent follow up email with questions asking for comments/ feedback	Email
13.9.23	Yalmambirra	CB sent follow up email with questions asking for comments/ feedback	Email
13.9.23	Peter Ingram	CB sent follow up email with questions asking for comments/ feedback	Email
13.9.23	Robert Clegg	CB sent follow up email with questions asking for comments/ feedback	Email
13.9.23	Paul Brydon	CB sent follow up email with questions asking for comments/ feedback	Email
19.9.23	Griffith Local Aboriginal Land Council	CB called and left message. Call not returned.	Phone
19.9.23	Robert Carroll	CB called and left message. Call not returned.	Email
19.9.23	Judy Johnson	Unable to confirm contact number	Email
19.9.23	Yalmambirra	Unable to confirm contact number	Email
19.9.23	Peter Ingram	CB called and left message. Call not returned.	Phone
19.9.23	Robert Clegg	CB reforwarded email to Robert asking for feedback.	Phone
19.9.23	Paul Brydon	CB Called, *Paul is happy with project, no comment*	Phone
19.9.23	Robert Clegg	CB received call from Rob - comments placed against email sent. Comments in folder	Phone
20.9.23	Griffith Local Aboriginal Land Council	CB called and left message. Call not returned.	Phone
24.10.23	Griffith Local Aboriginal Land Council	CB received call from Steve - Comments in folder	Phone / Email
8.11.23	Griffith Local Aboriginal Land Council	BC called the LALC to speak with Stephen but only got the message machine. Left a message	Phone
8.11.23	Griffith Local Aboriginal Land Council	BC emailed the Griffith LALC asking that Stephen give him a call back to discuss his response.	Email
9.11.23	Griffith Local Aboriginal Land Council	BC called the LALC to speak with Stephen but only got the message machine. Left a message	Phone
9.11.23	Robert Carroll	BC sent email to Robert including the Koomaringa Plan of Management, the WRQ ACHAR, and the 13 Sept email (inc project update)	email
9.11.23	Robert Carroll	BC receives delivery receipts from both of Robert's email addresses	email
10.11.23	Griffith Local Aboriginal Land Council	BC called the LALC to speak with Stephen but only got the message machine. Left a message	Phone
13.11.23	Robert Carroll	BC called and spoke with Robert. Robert said he has received the documents sent last week and is going through them today and will provide comment. BC invited Robert to call him if he had any questions. From speaking with Robert, he has a very confused view of what is happening at Koomaringa and thinks	Phone / Email

Date	Organisation	Comment	Method
		that the significant sites have been removed etc and that the quarry expansion will remove the remaining vestiges. BC tried to explain it to him but he said he'd look at the documents and provide comment.	
13.11.23	Griffith Local Aboriginal Land Council	BC called the LALC to speak with Stephen but only got the message machine. Left a message	Phone
13.11.23	Griffith Local Aboriginal Land Council	BC re-emailed the Griffith LALC asking that Stephen give him a call back to discuss his response.	Email
14.11.23	Robert Carroll	BC received email from Robert (saved on server) setting out his association with Koomaringa AP and requesting a site visit	Email
14.11.23	Robert Carroll	BC replied thanking Robert and saying he would be in touch about the site visit	Email
14.11.23	Robert Carroll	BC sent Robert an invitation for a site visit either on 23/11/23 or 24/11/23	Email
15.11.23	Mark Saddler	BC receives email from Mark saying he wants to meet on the 8/12/23. Robert Carroll and James Ingram cc'd into email.	Email
15.11.23	Mark Saddler	BC calls Mark to see if another date is possible. No answer. Left meassage	Phone
16.11.23	Mark Saddler	BC receives email from Mark saying a meeting on 24/11/23 is OK	Email
16.11.23	James Ingram	BC receives email from James saying a meeting on 24/11/23 is OK	Email
16.11.23	Mark Saddler, James Ingram, Robert Carroll	BC confirms the site meeting at 10.30 on 24/11/23	Email
16.11.23	Robert Carroll	BC receives email confirming Robert will be at the site meeting	Email
20.11.23	Griffith Local Aboriginal Land Council	BC emailed the Griffith LALC inviting Stephen to the site visit on 24/11/23.	Email
18.11.23	Griffith Local Aboriginal Land Council	BC received call from Stephen Young who said he cannot make the site visit on 24/11/23. Suggested another time (Friday 1 December) and BC said he'd check with the quarry.	phone
23.11.23	Robert Carroll	Geoff Pygram (GP) speaks with Robert who described his concerns about the site and the process.	phone
24.11.23	Mark Saddler, James Ingram, Robert Carroll	Site visit with Jordan Henshaw and Peter and Chris Woods (former quarry owner). Jordan's meeting summary in folder.	on-site
26.11.23	Mark Saddler	OzArk receives report of site visit from Mark Saddler (saved into folder)	Email
27.11.23	Robert Carroll	GP speaks with Robert about the possibility of site visit and how the project might proceed, outcomes and next steps etc.	phone
28.11.23	Mark Saddler, James Ingram, Robert Carroll	BC writes to Mark, Robert, and James thanking them for their time to visit the WRQ and to ask for any further responses. BC attaches Koomaringa PoM for Mark's information	Email

Date	Organisation	Comment	Method
29.11.23	Robert Carroll	BC receives email from Robert with his report on the site visit. Saved to folder.	Email
29.11.23	Mark Saddler	BC receives email with attachment from Mark referring to the Koomaringa PoM but also applicable to the WRQ. Saved in folder.	Email
29.11.23	Robert Carroll / Mark Saddler	BC thanks Mark and Robert seperately for their contributions	Email
5.12.23 to 7.12.23	Mark Saddler, James Ingram, Robert Carroll	Attend site visit (3 days) to inspect area and to provide guidance on the placing of protective fencing for sites	on-site
20.12.23 to 22.12.23	Mark Saddler, James Ingram, Robert Carroll	Attend site visit (3 days) to review the in situ protective fencing for sites	on-site
22.12.23	Robert Carroll	GP speaks with Robert where he advised that the fencing was satisfactory.	phone
24.12.23	Robert Carroll	GP speaks with Robert about the timeframe for receiving their report and the next steps.	phone
2.1.24	Robert Carroll	GP speaks with Robert about the timeframe for receiving their report and the next steps.	phone
3.1.24	Mark Saddler, James Ingram, Robert Carroll	Provide written submission with further questions around the management of the area.	Email
18.2.24	Mark Saddler, James Ingram, Robert Carroll	OzArk provide written response to their joint response received on 3.1.24.	Email
18.2.24	Robert Carroll	OzArk provide written response to Robert's questions received on 29 November 2023.	Email
18.2.24	Mark Saddler	OzArk provide written response to Mark's questions response received on 29 November 2023.	Email

Appendix 1 Figure 2: Stage 1 advertisement.

Expression of Interest
Cultural Heritage Management

OzArk Environment & Heritage has been engaged by R.W. Corkery & Co. on behalf of Milbrae Quarries Pty Ltd (the Applicant) to seek the registration of Aboriginal groups or individuals in the Western Riverina area interested in being consulted for two projects: the proposed expansion of the Western Riverina Quarry located in Carrathool LGA; and the management of the Koomaringa Aboriginal Place.

We will be preparing an Aboriginal Cultural Heritage Assessment (ACHAR) for the Quarry which could potentially lead to the need for an Aboriginal Heritage Impact Permit application (AHIP) and a Plan of Management (PoM) for the Koomaringa Aboriginal Place.

The consultation for the Quarry expansion will assist the Applicant in the potential preparation of an AHIP application (if required) and assist the approval agency in their consideration of any application(s). The consultation for the PoM will ensure the place is understood and managed to protect cultural values.

If you hold cultural knowledge relevant to determining the significance of Aboriginal objects or places in the Koomaringa Aboriginal Place area and wish to assist in developing management strategies or if you like to be consulted in relation to the proposed Quarry expansion, please register your interest. Registrations can be made by post: OzArk EHM PO Box 2069 Dubbo NSW 2830; email: rebecca@ozarkehm.com.au or by phoning OzArk on 02 6882 0118. All submissions should be received no later than **Friday 6th September 2019.**

Appendix 1 Figure 3: Stage 1 letters to agencies.

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

21st August 2019

Members
Griffith Local Aboriginal Land Council
PO Box 8043
EAST GRIFFITH NSW 2680
grifflalc@bigpond.com

ABORIGINAL PLACE MANAGEMENT PLAN – KOOMARINGA ABORIGINAL PLACE & ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT – WESTERN RIVERINA QUARRY EXTENSION, CARRATHOOL LGA

Dear Members,

OzArk Environment & Heritage (OzArk) has been engaged by RW Corkery & Co Pty Limited (RW Corkery) on behalf of the Applicant, Milbrae Quarries Pty Ltd (Milbrae Quarries) to undertake Aboriginal community consultation as per the Office of Environment and Heritage *Aboriginal cultural heritage consultation requirements for proponents 2010*.

Milbrae Quarries are proposing to expand the Western Riverina Quarry located in the Carrathool LGA which is incorporated within the Koomaringa Aboriginal Place (AP). This AP is a large Aboriginal stone quarry with part of the land currently quarried by Milbrae Quarries, however the most significant area is cordoned off and protected from extraction. The Quarry Site is shown in **Figure 1**.

Milbrae Quarries is also working with the Biodiversity and Conservation Division (BCD) of the Department of Planning, Industry and Environment (DPIE) to prepare a Plan of Management (PoM) for the Koomaringa Aboriginal Place.

We are therefore seeking Expressions of Interest from Aboriginal groups and individuals in the Riverina area, to form a consultation group. This consultation is to assist OzArk and the proponent in preparing an Aboriginal Cultural Heritage Assessment Report (ACHAR) and potential Aboriginal Heritage Impact Permit application for the quarry expansion as well as the PoM for the Koomaringa AP.

If your organisation can recommend and provide contact details for any known Aboriginal groups or individuals with cultural knowledge relevant to determining cultural significance and assisting in developing a PoM for the Koomaringa AP and the Quarry extension ACHAR, please advise our office. We would appreciate it if you could provide any feedback to the contact details provided at the top of the page, regarding these Aboriginal stakeholder groups by **Wednesday 4th September 2019**, or sooner if possible.

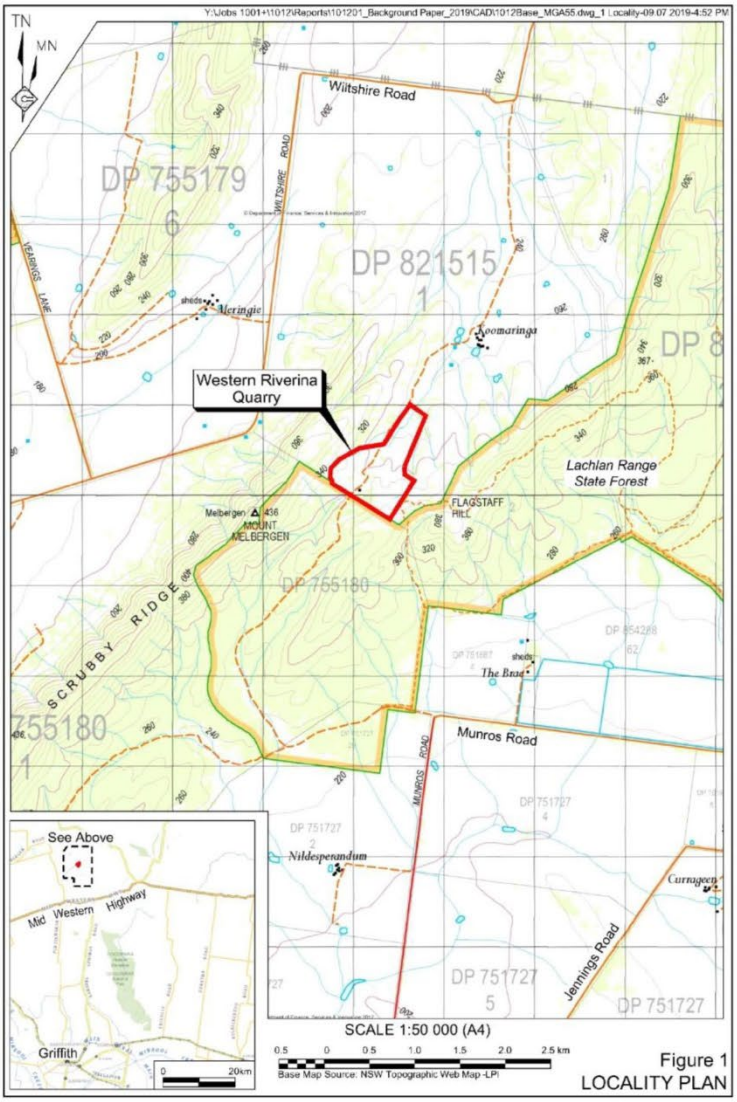
OzArk Environment & Heritage

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. WESTERN RIVERINA QUARRY LOCATION



Appendix 1 Figure 4: Stage 1 replies from agencies.

Planning, Industry & Environment

Our ref: DOC19/716918
Senders ref:

Ms Rebecca Hardman

OzArk Environment & Heritage

145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

Via email: www.ozarkehm.com.au

29 August 2019

Dear Ms Hardman

Subject: **ACHAR – Western Riverina Quarry Expansion, Carrathool LGA**

WRITTEN NOTIFICATION OF PROPOSAL AS REQUIRED UNDER DECCW ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010

Thank you for your correspondence received 21 August 2019 about the above matter seeking comments from the Biodiversity and Conservation Division of the Department of Planning, Industry and Environment (The Department).

The Biodiversity and Conservation Division was formerly part of the Office of Environment and Heritage (OEH). It forms part of the new Environment, Energy and Science Group in the Department (see https://intranet.dpie.nsw.gov.au/). The Environment, Energy and Science Group works to protect and strengthen NSW's natural environment by managing the conservation of our environment and energy resources. We support the community, as well as business and government, in developing their ability to achieve these outcomes.

The Biodiversity and Conservation Division has statutory responsibilities relating to biodiversity (including threatened species, populations, ecological communities, or their habitats), Aboriginal cultural heritage and flooding. For matters relating to national parks estate matters please refer these to the National Parks and Wildlife Service.

Attached is a list of known Aboriginal parties for the Carrathool local government area that the Department considers likely to have an interest in the development. Please note this list is not necessarily an exhaustive list of all interested Aboriginal parties. Receipt of this list does not remove the requirement of a proponent/ consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties, in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (April 2010).

Under Section 4.1.6. of the Consultation Requirements, you must also provide a copy of the names of each Aboriginal person who registered an interest to the relevant Department regional office and Local Aboriginal Land Council (LALC) within 28 days from the closing date for registering an interest.

Please note that the contact details in the list provided by the Department may be out of date as it relies on Aboriginal parties advising the Department when their details need changing. If individuals/companies undertaking consultation are aware that any groups contact details are out of date, or letters are returned unopened, please contact either the relevant stakeholder group (if you know their more current details) and/or the Department. AHIP applicants should make a note of any group they are unable to contact as part of their consultation record.

512 Dean Street Albury 2640 | PO Box 1040 Albury 2640 | rog.southwest@environment.nsw.gov.au | dpie.nsw.gov.au | 1

If you have any questions about this advice, please contact me via rog.southwest@environment.nsw.gov.au or 02 6022 0623.

Yours sincerely

Andrew Fisher

Senior Team Leader Planning

South West Branch

Biodiversity and Conservation Division

Department of Planning, Industry and Environment

ATTACHMENT A Registered Aboriginal Interests – Carrathool Local Government Area

ATTACHMENT A Registered Aboriginal Interests

Carrathool Local Government Area

Organisation/ Individual Name	Address	Contact Details
Griffith Local Aboriginal Land Council	PO Box 8043 EAST GRIFFITH NSW 2680 5 Wiradjuri Place GRIFFITH NSW 2680	Phone: 02 6962 6711 Fax: 02 6964 1477 Email: grifflalc@bigpond.com.au
Murrin Bridge Local Aboriginal Land Council	39 Foster Street PO Box 157 LAKE CARGELLIGO NSW 2672	Phone: 02 6898 1119 Fax: 02 6898 1158 Email: murrinbridgelalc@gmail.com
Ivanhoe Local Aboriginal Land Council		No contact details available

Appendix 1 Figure 5: Stage 2/3 letters to RAPs with assessment methodology.

OzArk Environment & Heritage ABN 59 104 582 354

Dubbo
Queanbeyan
Newcastle

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enquiry@ozarkehm.com.au
www.ozarkehm.com.au

145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

30 September 2019

Members
Griffith Local Aboriginal Land Council
c/- Stephen Collins
PO Box 8043
EAST GRIFFITH NSW 2680
grifflalc@bigpond.com

KOOMARINGA ABORIGINAL PLACE MANAGEMENT PLAN
SURVEY METHODOLOGY

Dear Members,

Thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) to be consulted for the proposed Aboriginal Place Management Plan – Koomaringa Aboriginal Place (AP) & Aboriginal Cultural Heritage Assessment Report – Western Riverina Quarry Extension, in the Carrathool LGA.

OzArk Environment and Heritage will be conducting a research program into the Koomaringa AP on behalf of Milbrae Quarries (Milbrae). Milbrae has received a heritage grant from the former NSW Office of Environment and Heritage for the purpose of drafting a Plan of Management (PoM) for Koomaringa AP. This will include site survey and recording over Koomaringa AP, identification of and consultation with Aboriginal community stakeholders, as well as the mapping of plotting archaeological remains.

Koomaringa AP was gazetted in 1991 and has had no management plans or activities undertaken in the meantime. There is an existing blue stone quarry, Western Riverina Quarry (WRQ), inside the curtilage for Koomaringa AP and a PoM is necessary to help protect the values of the AP and to assist Milbrae to ensure that WRQ operates in consideration of these values, so as to ensure they are protected and conserved.

We would appreciate your feedback on the proposed methodology for the research program, which is set out in the accompanying document. 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 documents. This period closes **5pm on Monday 28th October 2019**. 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,

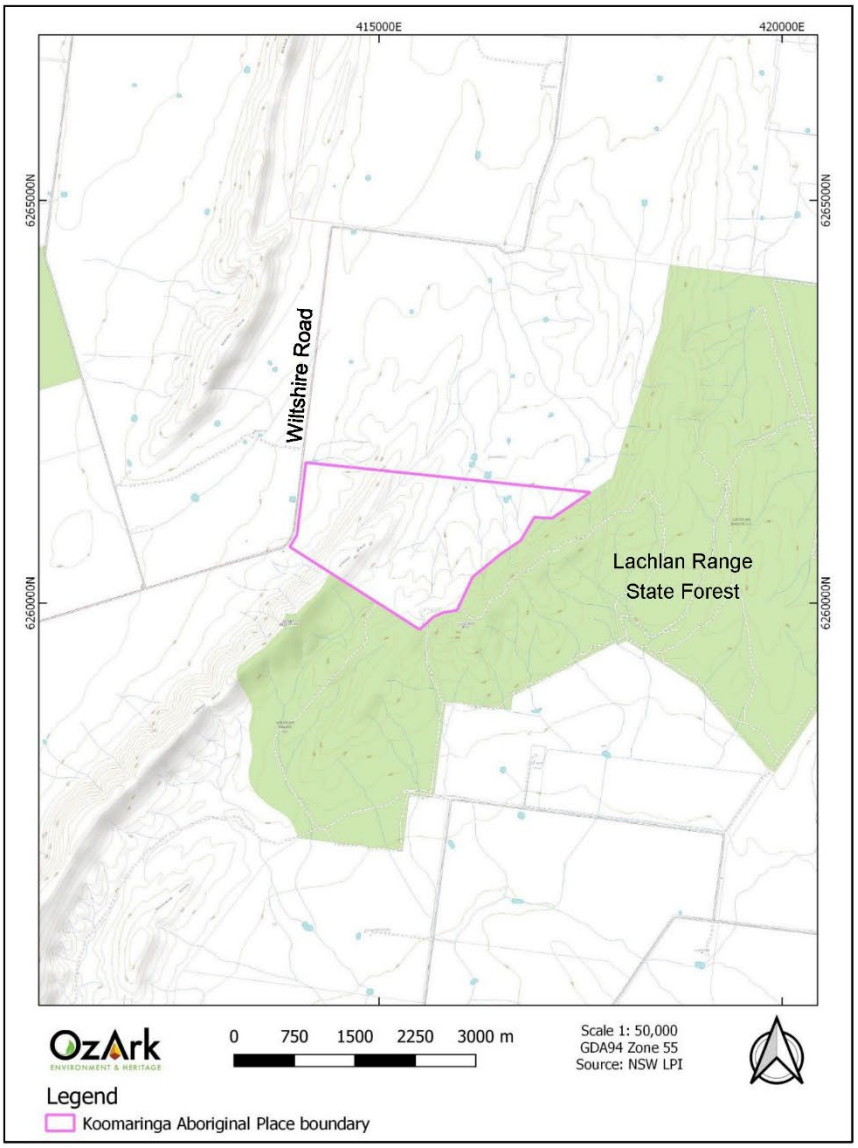
Rebecca Hardman
Community Liaison & Administration

1 BACKGROUND

1.1 KOOMARINGA ABORIGINAL PLACE

Koomaringa Aboriginal Place (AP) is located approximately 55.5 kilometres (km) north of Griffith and 17 km northwest of Rankins Springs, NSW. Koomaringa AP covers approximately 430 hectares (ha) of Lot 1 DP821515 and is surrounded by the Lachlan Range State Forest to the south and east, Wiltshire Road to the west, and the Koomaringa Homestead to the north (**Figure 1-1**). Koomaringa was gazetted as an Aboriginal Place in 1991.

Figure 1-1: Location of Koomaringa Aboriginal Place.



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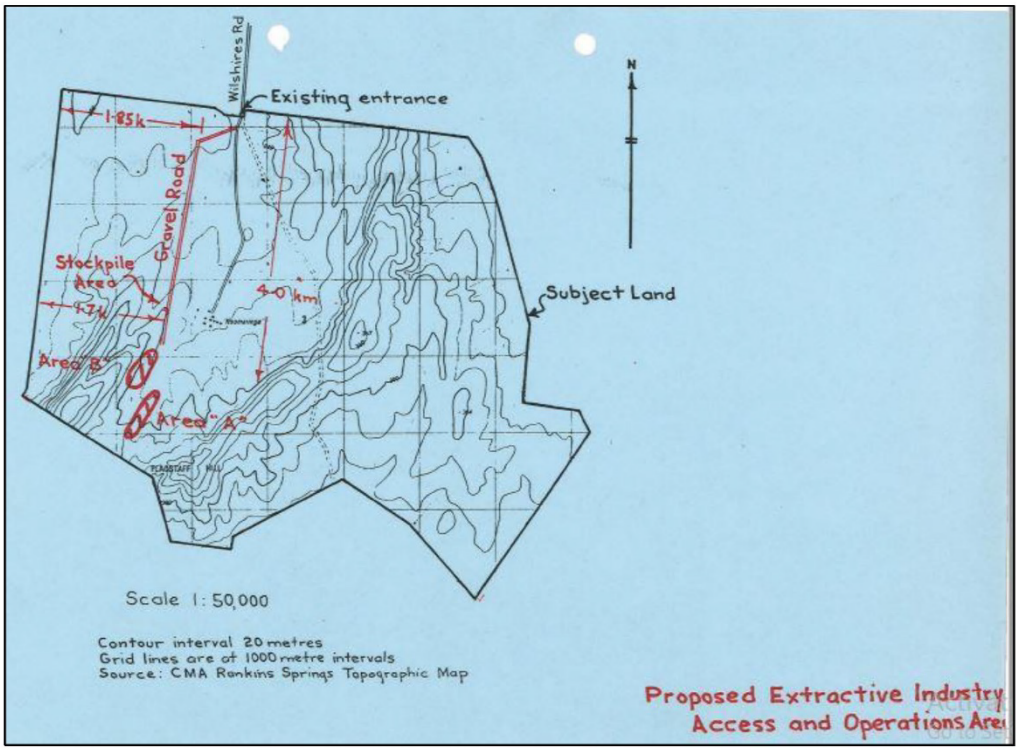
1.2 PREVIOUS REPORTS AND RECORDING

The site was first officially recorded by R Williams and D Ingram as AHIMS #42-5-0004 (Wiradjuri Regional Aboriginal Land Council [RLAC]) in 1987. This site card details that the site is located approximately 500–1000 metres (m) south of the Koomaringa Homestead. The GPS coordinates provided on this card places the site towards the northern boundary of the curtilage for the Aboriginal Place. Unfortunately, there is no map or photographs provided with the site card. The site is recorded as a stone tool extraction and working/knapping area and is in a creek bed. AHIMS #42-5-0005 is not a formal site card, but contains the gazette notice for Koomaringa Aboriginal Place, and a map showing the AP boundaries. The GPS coordinates for #42-5-0005 is near the northeast corner of the AP boundary.

Witter (1987) undertook a heritage assessment of WRQ and Koomaringa AP to supplement an EIS done in 1986 by Terry Pearce for Western Riverina Quarry (WRQ). Witter's report stated there were two locations proposed for rock extraction - 'Area A' and 'Area B'. A map is provided in the EIS (Pearce 1986) which shows the two proposed extraction areas (see **Figure 1-2**).

Figure 1-2: Map of rock extraction Area A and Area B at Koomaringa (Pearce 1986: 25).



The land west of Area B (**Figure 1-2**) was referred to as the 'western felsite zone' by Witter and described as having "abundant flaked stone as waste from the process of breaking out core. The breaking out was done by hurling great blocks of stone against the bedrock in order to detach large spalls. These spalls then could be used as core blanks" (Witter 1987: 2). The bedrock anvils and workshop areas are also mentioned as being present in this western felsite zone. The 'eastern felsite zone', described as being adjacent to the east of Area A (**Figure 1-2**), is recorded as being an outcrop upslope of the basalt, with a variety of flaked stone as well as bedrock anvils.

Witter states that the Koomaringa Aboriginal stone quarry is an "outstanding example of its kind" (1987: 3), and has been heavily worked by the Aboriginals, likely due to the rarity of felsite in the area. The felsite is also described as being highly distinctive with red, yellow and orange colour variations.

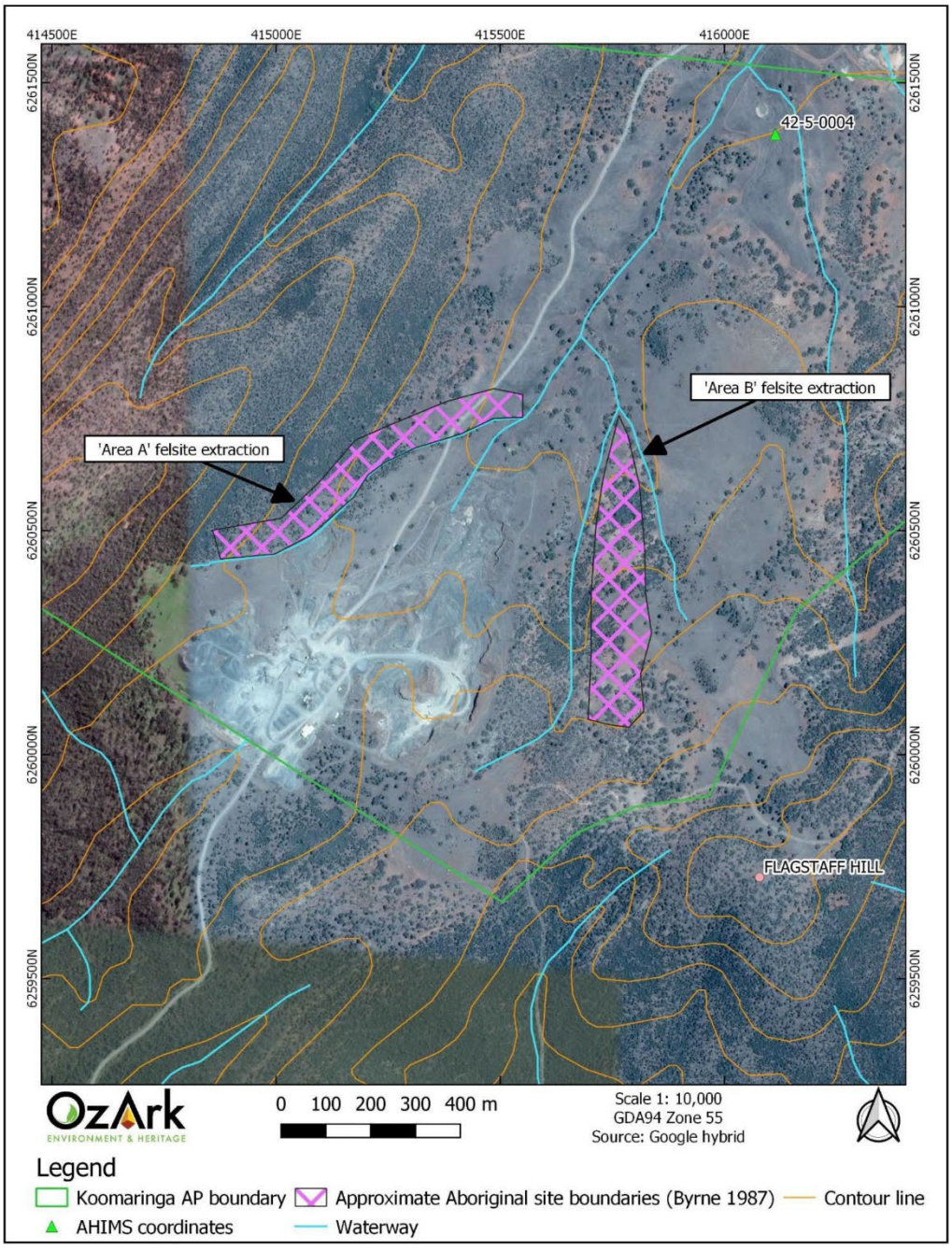
Witter recommended several management recommendations in the report:

- Mapping of the site map showing the location and distribution of the cultural resource. He noted this could achieved by:
    - Firstly, as a large base map including the gullies that cut through the area and indicating hills and ridges.
    - Secondly, by plotting the archaeological material including:
        - Areas of flaked debris, bed rock anvils, flake removal locations, or artefacts with retouch.
- Marking out the archaeological site(s) using star pickets
- Installation of a barrier fence.

Byrne (1987) also assessed the Aboriginal sites at Koomaringa to further supplement the EIS by Pearce (1986). Byrne's main objective was to map the extent of the archaeological evidence of Aboriginal felsite extraction. Furthermore, Byrne also considered approximate 'buffer zones' between the proposed blue-stone extraction and the Aboriginal sites. **Figure 1-3** shows the approximately location of the two Aboriginal quarrying areas at Koomaringa based on the maps drawn by Byrne (1987). As part of Byrne's assessment, steel star-pickets were installed as barrier fences as recommended by Witter (1987). These star pickets were placed at 50 m intervals, with a single strand of wire to stop vehicle passage but allow stock movement.

The information provided about Koomaringa AP from the NSW State Heritage Inventory does state that the most significant area of the Aboriginal site is cordoned off and protected from mining (OEH 2019).

Figure 1-3: Approximate location of Aboriginal sites based on Byrne (1987).



2 FIELD SURVEY

2.1.1 Aims of field survey

The aims of the field survey are to primarily undertake a more formal recording of Koomaringa AP, in particular accurate mapping of and recording of Aboriginal features located during survey.

2.1.2 *Methodology*

As the Koomaringa AP encompasses a very large land area, it will not be feasible within the parameters of the current project to undertake comprehensive field survey across the entire area.

Instead a more targeted methodology has been devised, with a likely recommendation of the PoM being that further field investigations should be undertaken in the future as the funding becomes available.

We further note that as no-one from the OzArk archaeological team has as yet been on site, this methodology may need some minor modification once the OzArk archaeologist, the Aboriginal community representatives and the representative from NSW Premier and Cabinet are present together on site.

With this in mind, the following draft methodology is proposed:

- Targeted pedestrian survey over sections of Koomaringa AP. Some likely locations for the survey are shown in **Figure 4-1**. Survey areas will be adjusted as further information is provided during the consultation process. The purpose of the survey is to identify:
    - outcrops of rock with indications of Aboriginal quarrying
    - locations of bedrock anvils
    - stone artefacts present on the ground surface; and if so, are there any high density scatters present.
- A map of the Koomaringa AP will be produced, focusing on the areas closest to the existing rock extraction quarry, where survey effort is likely to be highest. Potential survey areas are shown in **Figure 4-1** based on Pearce (1986), Witter (1987) and Byrne (1987). Confirmation of these locations will be undertaken during the survey. This will be achieved using GPS and supplemented by hand-drawn maps. Features, if present, will be mapped as follows:
    - Extent of the Aboriginal quarried rock outcrops
    - Bedrock anvils
    - Flaking debitage or 'aprons'
    - Large flake scars
    - Locations of high-density scatters
- A representative sample of stone artefacts within a selection of features will be recorded in detail including:
    - Size (length, width, thickness)
    - Artefact type
    - Stage of reduction
    - Integrity
    - Raw material

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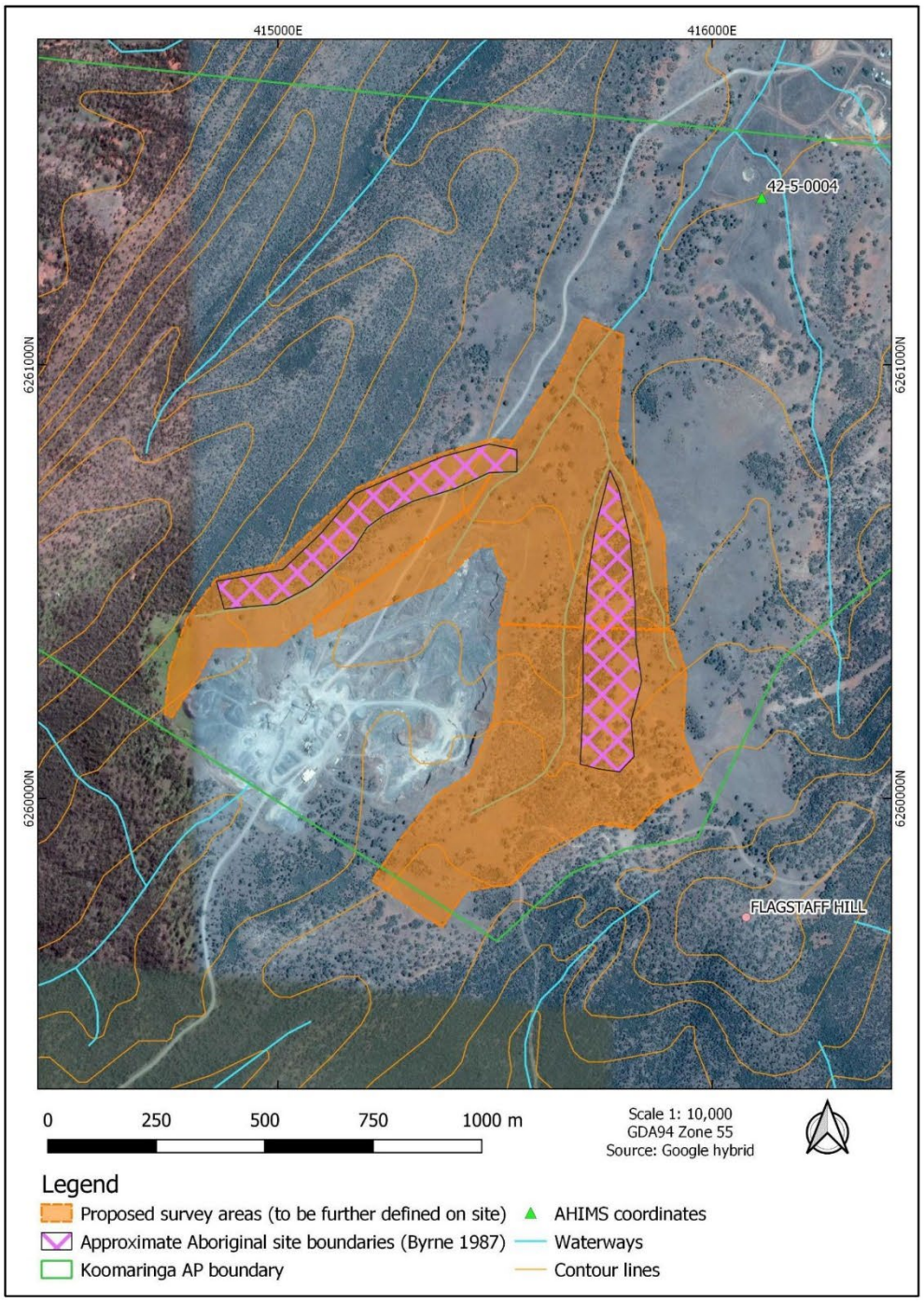
  - Scaled photographs of select artefacts
  - Additional information where present (core type and features, retouch, etc.)
- Representative views of the AP in general, and specifically of procurement areas by Aboriginal people, will be taken using digital photography. All photographs will include an appropriate scale where feasible.
- Further consultation with the local Aboriginal community to understand the cultural values of the site.
- A report detailing the findings of the fieldwork will be produced and used to inform the PoM being prepared for the Koomaringa AP. This will be lodged on AHIMS in relation to the appropriate site card/s.
- The AHIMS site card/s will be updated with further information concerning the overall site and AP. This may also include updated GPS coordinates.

Figure 2-1: Koomaringa Aboriginal Place and proposed survey areas.



3 DEVELOPMENT OF A PLAN OF MANAGEMENT

The following approach is advocated for the development of the PoM:

3.1 PREPARE A DRAFT TABLE OF CONTENTS (TOC) FOR THE POM

This will be prepared based on:

- The NSW Government *Declared Aboriginal Places: Guidelines for developing Management Plans* (OEH 2017), which noted the following elements as requisite:
    - A statement of cultural values of the Aboriginal Place, including whether it is a men's or women's site.
    - Threats to the place, an assessment of risk of harm and ways in which significant threats will be treated.
    - Other uses of the area i.e. recreational, economic
    - Appropriate fire regimes.
    - Activities that may require Aboriginal Heritage Impact Permits issued under Part 6 of the National Parks and Wildlife Act 1974, and maps of where these activities are authorised under a permit.
    - The treatment of culturally sensitive information in accordance with a section 161 notice.
    - Ongoing management actions, who is responsible for doing them, and what consultation arrangements are needed.
    - A process for periodic monitoring and recording of Aboriginal Place site conditions.
    - Funding and resources.
- The substance of the PoM will also be guided by the more site specific elements of the Koomaringa AP, which notably include the operation of the WRQ within its curtilage.
- Further, the PoM will be guided by the specific wishes of the Aboriginal community and NSW government, Department of Premier and Cabinet.

Once a draft of the ToC has been developed, this would be circulated to the stakeholders for review and input.

3.2 POM DEVELOPMENT

Sections of the PoM would be drafted so as to include all feedback received as well as content from the archaeological assessment.

The draft PoM would be circulated for review and input. Once comments were received, the document would be finalised.

4 REFERENCES

Byrne 1987 — Byrne, D. 1987. *Investigation and assessment of an Aboriginal stone extraction site at Koomaringa, near Rankins Springs, Western NSW.* Report to Mr Glen Neyland.

OEH 2017 — *Declared Aboriginal Places: Guidelines for developing Management Plans.*

OEH 2019 — *Koomaringa Aboriginal Place.* [Online resource]: https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5062944

Pearce 1986 — Pearce, T. 1986. *Environmental Impact Statement for proposed "Extractive Industry" at "Koomaringa" Rankins Springs, New South Wales.* Report to Mr & Mrs G Neyland.

Witter 1987 — Witter, D. 1987. *Koomaringa Rock Extraction Management Plan*.

Appendix 1 Figure 6: Stage 4 letter sent to RAPs.

OzArk Environment & Heritage ABN 59 104 582 354
Dubbo T: 02 6882 0118 145 Wingewarra St
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Newcastle www.ozarkehm.com.au DUBBO NSW 2830

8 October 2021

Members
Griffith Local Aboriginal Land Council
c/- Stephen Collins
PO Box 8043
EAST GRIFFITH NSW 2680

ABORIGINAL CULTURAL HERITAGE & HISTORIC HERITAGE ASSESSMENT REPORT FOR THE WESTERN RIVERINA QUARRY EXPANSION, RANKIN SPRINGS NSW.

Dear Members,

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

Milbrae Quarries (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 document. This period closes on the **Friday 5th November 2021**. 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.

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

Kind regards,

Catherine Burrowes
Office Manager/ Community Liaison

Appendix 1 Figure 7: Project updates sent to RAPs.

7 July 2020

OzArk Environment & Heritage ABN 59 104 582 354
Dubbo T: 02 6882 0118 145 Wingewarra St
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Newcastle www.ozarkehm.com.au DUBBO NSW 2830

7 July 2020

Members
Griffith Local Aboriginal Land Council
c/- Stephen Collins
PO Box 8043
EAST GRIFFITH NSW 2680
grifflalc@bigpond.com

UPDATE FOR THE ABORIGINAL PLACE MANAGEMENT PLAN – KOOMARINGA ABORIGINAL PLACE & ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT – WESTERN RIVERINA QUARRY EXTENSION, CARRATHOOL LGA.

Dear Members,

We wish to apologise for the delay in correspondence and thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) for the proposed expansion to the Western Riverina Quarry (the project) located in the Carrathool LGA which is incorporated within the Koomaringa Aboriginal Place (AP).

The purpose of this letter is to update you in relation to the progress of the above-mentioned project. As you are aware, the project commenced *Aboriginal Cultural Heritage Consultation Requirements* in August 2019.

Stage 1 commenced on 21st August 2019 with a closing date of 6th September 2019. As part of Stage 1 an advertisement was placed in The Area News on Friday 23rd August 2019.

Stage 2 commenced on 30th September 2019 with a closing date of 28th October 2019.

Fieldwork was carried out by OzArk and a representative from Griffith Local Aboriginal Lands Council on the 8th, 9th, 10th and 11th October 2019 with the following sites found **(Table 1)**.

Table 1. Aboriginal cultural heritage sites recorded during the survey.

Site Name	Feature(s)	Landform
Koomaringa IF-01	Isolated find	Drainage line and banks
Koomaringa IF-02	Isolated find	Slopes
Koomaringa IF-03	Isolated find	Drainage line and banks
Koomaringa OS-01	Artefact scatter	Drainage line and banks
Koomaringa OS-02	Artefact scatter & PAD	Drainage line and banks
Koomaringa OS-03	Artefact scatter	Drainage line and banks

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Site Name	Feature(s)	Landform
Koomaringa OS-04	Artefact scatter	Drainage line and banks
Koomaringa OS-05	Artefact scatter & PAD	Drainage line and banks & flats and gentle slope
Koomaringa OS-06	Artefact scatter & PAD	Drainage line and banks
Koomaringa OS-07	Artefact scatter & PAD	Drainage line and banks
Koomaringa OS-08	Artefact scatter & PAD	Drainage line and banks & flats and gentle slope
Koomaringa OS-09	Artefact scatter	Drainage line and banks
Koomaringa OS-10	Artefact scatter & PAD	Drainage line and banks & flats and gentle slope
Koomaringa OS-11	Artefact scatter	Drainage line & slopes
Koomaringa OS-12	Artefact Scatter	Slopes
Koomaringa OS-13	Artefact scatter	Slopes
Koomaringa PL-01	Procurement location (quarried felsite bedrock)	Drainage line and banks
Koomaringa PL-02	Procurement location (quarried felsite bedrock)	Slopes
Koomaringa ST-01	Scarred tree (canoe scar)	Slopes

Going forward a draft report is being prepared and request for input and feedback (**Stage 4**) will be sent out for your consideration as soon as the draft report and editing is complete.

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

8 December 2020

OzArk Environment & Heritage ABN 59 104 582 354
Dubbo T: 02 6882 0118 145 Wingewarra St
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Newcastle www.ozarkehm.com.au DUBBO NSW 2830

8 December 2020

Members
Griffith Local Aboriginal Land Council
PO Box 8043
EAST GRIFFITH NSW 2680
grifflalc@bigpond.com

UPDATE FOR THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT – WESTERN RIVERINA QUARRY EXTENSION, CARRATHOOL LGA.

Dear Members,

We wish to apologise for the delay in correspondence and thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) for the proposed expansion to the Western Riverina Quarry (the project) located in the Carrathool LGA which is incorporated within the Koomaringa Aboriginal Place (AP).

The purpose of this letter is to update you in relation to the progress of the above-mentioned project. As you are aware, the project commenced *Aboriginal Cultural Heritage Consultation Requirements* in August 2019.

Stage 1 commenced on 21st August 2019 with a closing date of 6th September 2019. As part of Stage 1 an advertisement was placed in The Area News on Friday 23rd August 2019.

Stage 2 commenced on 30th September 2019 with a closing date of 28th October 2019.

Fieldwork was carried out by OzArk and a representative from Griffith Local Aboriginal Lands Council on the 8th, 9th, 10th and 11th October 2019. During the fieldwork three isolated finds, seven artefact scatters, six artefact scatters with potential archaeological deposit, two felsite procurement locations and one scarred tree were identified and recorded.

A project update letter was sent on 7 July 2020.

Going forward a draft *Aboriginal Cultural Heritage Assessment Report* is still being prepared and request for input and feedback (Stage 4 ACHCRs) will be sent out for your consideration as soon as the draft report and editing is complete.

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

Kind regards,

OzArk Environment & Heritage

Alyce Cameron
Senior Archaeologist

18 August 2021

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

18 August 2021

Members
Griffith Local Aboriginal Land Council
PO Box 8043
EAST GRIFFITH NSW 2680
grifflalc@bigpond.com

UPDATE FOR THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT – WESTERN RIVERINA QUARRY EXTENSION, CARRATHOOL LGA.

Dear Members,

We wish to apologise for the delay in correspondence and thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) for the proposed expansion to the Western Riverina Quarry (the project) located in the Carrathool LGA which is incorporated within the Koomaringa Aboriginal Place (AP).

The purpose of this letter is to update you in relation to the progress of the above-mentioned project. As you are aware, the project commenced *Aboriginal Cultural Heritage Consultation Requirements* in August 2019. Stage 1 commenced on 21st August 2019 with a closing date of 6th September 2019. As part of Stage 1 an advertisement was placed in The Area News on Friday 23rd August 2019. Stage 2 commenced on 30th September 2019 with a closing date of 28th October 2019.

Fieldwork was carried out by OzArk and a representative from Griffith Local Aboriginal Lands Council on the 8th, 9th, 10th and 11th October 2019. During the fieldwork three isolated finds, seven artefact scatters, six artefact scatters with potential archaeological deposit, two felsite procurement locations and one scarred tree were identified and recorded.

A project update letter was sent on 8 December 2020.

Going forward a draft *Aboriginal Cultural Heritage Assessment Report* is still being prepared and request for input and feedback (Stage 4 ACHCRs) will be sent out for your consideration as soon as the draft report and editing is complete.

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

Kind regards,

Alyce Cameron
Senior Archaeologist

29 May 2023

OzArk Environment & Heritage
Dubbo | Queanbeyan
Wollongong | Newcastle
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Fieldwork was carried out by OzArk and a representative from Griffith Local Aboriginal Land Council from 8 October to 11 October 2019. During the fieldwork three isolated finds, seven artefact scatters, six artefact scatters with potential archaeological deposit, two felsite procurement locations, and one scarred tree were identified and recorded.

A project update letter was sent to you on 8 December 2020 and on 18 August 2021.

A draft *Aboriginal Cultural Heritage Assessment Report* (ACHAR) was sent to you on 8 October 2021 with a closing date for comments of 5 November 2021. No responses were received from any of the Registered Aboriginal Parties with regard to the ACHAR.

Since that time, development of the Plan of Management (PoM) for the Koomaringa AP has proceeded, and following community consultation, this document has been finalised.

The proponent, EB Mawsons & Sons Pty Ltd, will now submit the ACHAR and the PoM to the Carrathool Shire Council for consideration of Development Application 2022/29 related to the proposed expansion of quarry operations at the Western Riverina Quarry.

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

Kind regards,

Ben Churcher
Principal Archaeologist

6 September 2023

OzArk Environment & Heritage
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6 September 2023

Griffith Local Aboriginal Land Council
grifflalc@bigpond.com

WESTERN RIVERINA QUARRY

PROJECT UPDATE: SEPTEMBER 2023

Dear Members,

Thank you for your continued interest in the Koomaringa Aboriginal Place (AP) and for the Western Riverina Quarry (WRQ) that is located within the AP.

On 8 October 2021, those of you registered as Registered Aboriginal Parties (RAPs) for the WRQ were sent a draft of the Aboriginal Cultural Heritage Assessment Report (ACHAR) that examined the heritage implications associated with the Development Application (DA20200/029) that is currently with the Carrathool Shire Council for consideration.

Those of you who are acknowledged as stakeholders for the Koomaringa AP, but are not RAPs for the WRQ, may not have received the ACHAR and we can send this to you if required.

DA20200/029 involves a limited expansion from the existing WRQ footprint and two Aboriginal sites have potential to be harmed: 42-5-0012 (Koomaringa IF-03) and 42 5-0022 (Koomaringa OS-13). Koomaringa IF-03 is a white felsite core and Koomaringa OS-13 is a scatter of two felsite flakes. Site 42-5-0021 (Koomaringa OS-12) will be conserved in place within a no-go zone.

Should DA20200/029 be approved, this will lead to a loss of value to the AP because approximately three artefacts within the AP will be harmed through being relocated to another nearby area.

When Heritage NSW reviewed the ACHAR, they requested that the views of the Aboriginal community be sought with the realisation that Aboriginal artefacts will be harmed within an AP.

To improve the Aboriginal cultural values of the AP, the WRQ has undertaken to provide access for visitors to the AP, including a car parking area with signage. The WRQ has also undertaken to plant a tree screen between the Aboriginal quarry area and the WRQ to improve the amenity of the Aboriginal site.

In addition, the original buffer boundary established in 1987 to protect the Aboriginal quarry site from the impacts of the modern quarry will be reestablished with new pegs and signage. On 11 August 2023, a site visit located many of the original buffer 1987 boundary pegs and all activities associated with DA20200/029 are outside of this pegged buffer and the significant Aboriginal sites will not be harmed.

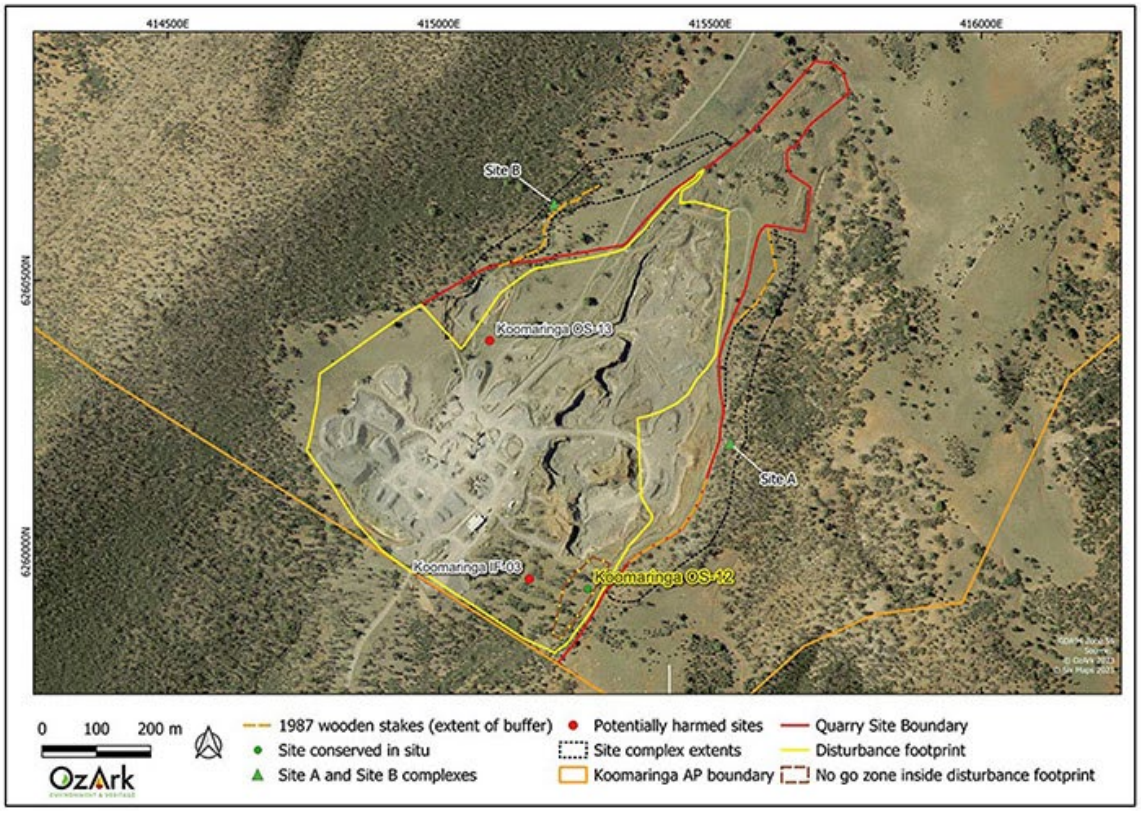
OzArk Environment & Heritage

Given the cultural significance of the AP, your views these or other management measures that will improve the cultural value of the AP are welcomed.

OzArk would like to call you and speak with you personally on these matters. Please let me know if you do not wish to be contacted.

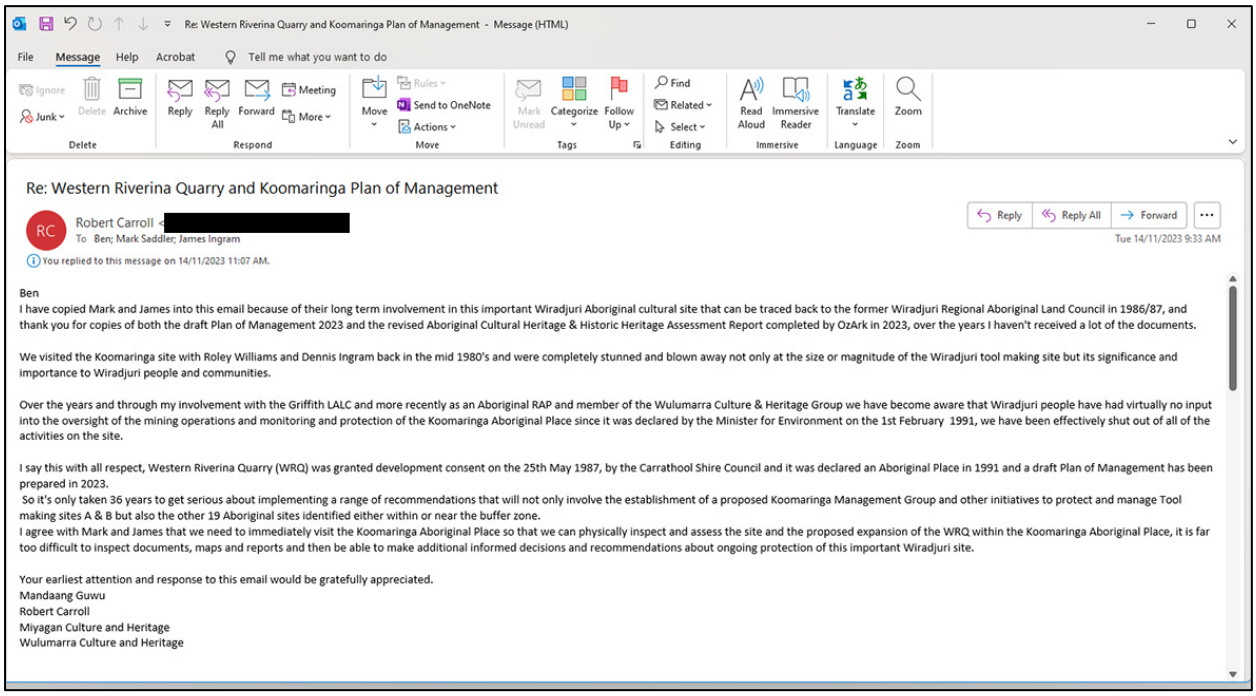
Kind regards,

Catherine Burrowes
Consultation Officer
catherine@ozarkehm.com.au



This figure shows the line of wooden stakes installed in 1987 to mark the buffer installed to avoid harm to the two most significant sites in the area, Site A and Site B (orange dotted line). Outside of the buffer is the Quarry Site Boundary, and within this, the maximum limit of disturbance should DA20200/029 be approved (the disturbance footprint). The three sites within the disturbance footprint are shown: Koomaringa IF-03 and Koomaringa OS-13 that are recommended for salvage by surface artefact collection and Koomaringa OS-12 that will be preserved in a no-go zone. As can be seen, the activity associated with DA20200/029 is mostly contained within disturbed landforms associated with the existing quarry and all proposed disturbances will not harm land within the buffer established to protect Site A and Site B.

Appendix 1 Figure 8: Email from Robert Carroll, 14 November 2023.



Re: Western Riverina Quarry and Koomaringa Plan of Management - Message (HTML)

File Message Help Acrobat Tell me what you want to do

Ignore Junk Delete Archive | Reply Reply All Forward Meeting More | Move Rules Send to OneNote Actions | Mark Unread Categorize Follow Up | Find Related Select | Read Aloud Immersive Reader | Translate | Zoom

Delete Respond Move Tags Editing Immersive Language Zoom

Re: Western Riverina Quarry and Koomaringa Plan of Management

RC Robert Carroll <[redacted]>
To Ben; Mark Saddler; James Ingram

Reply Reply All Forward ...
Tue 14/11/2023 9:33 AM

You replied to this message on 14/11/2023 11:07 AM.

Ben
I have copied Mark and James into this email because of their long term involvement in this important Wiradjuri Aboriginal cultural site that can be traced back to the former Wiradjuri Regional Aboriginal Land Council in 1986/87, and thank you for copies of both the draft Plan of Management 2023 and the revised Aboriginal Cultural Heritage & Historic Heritage Assessment Report completed by OzArk in 2023, over the years I haven't received a lot of the documents.

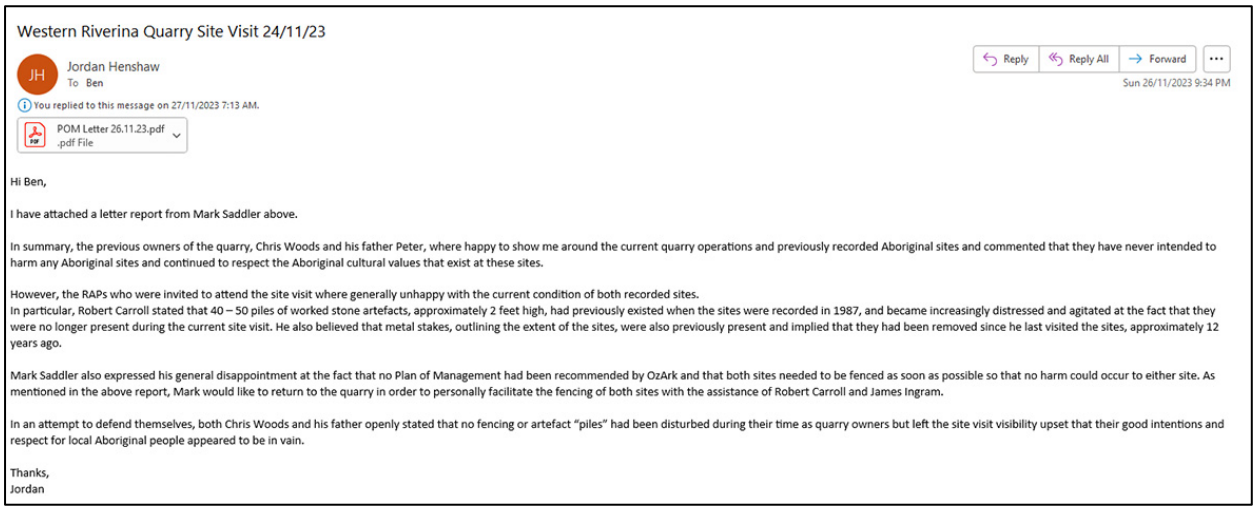
We visited the Koomaringa site with Roley Williams and Dennis Ingram back in the mid 1980's and were completely stunned and blown away not only at the size or magnitude of the Wiradjuri tool making site but its significance and importance to Wiradjuri people and communities.

Over the years and through my involvement with the Griffith LALC and more recently as an Aboriginal RAP and member of the Wulumarra Culture & Heritage Group we have become aware that Wiradjuri people have had virtually no input into the oversight of the mining operations and monitoring and protection of the Koomaringa Aboriginal Place since it was declared by the Minister for Environment on the 1st February 1991, we have been effectively shut out of all of the activities on the site.

I say this with all respect, Western Riverina Quarry (WRQ) was granted development consent on the 25th May 1987, by the Carrathool Shire Council and it was declared an Aboriginal Place in 1991 and a draft Plan of Management has been prepared in 2023.
So it's only taken 36 years to get serious about implementing a range of recommendations that will not only involve the establishment of a proposed Koomaringa Management Group and other initiatives to protect and manage Tool making sites A & B but also the other 19 Aboriginal sites identified either within or near the buffer zone.
I agree with Mark and James that we need to immediately visit the Koomaringa Aboriginal Place so that we can physically inspect and assess the site and the proposed expansion of the WRQ within the Koomaringa Aboriginal Place, it is far too difficult to inspect documents, maps and reports and then be able to make additional informed decisions and recommendations about ongoing protection of this important Wiradjuri site.

Your earliest attention and response to this email would be gratefully appreciated.
Mandaang Guwu
Robert Carroll
Miyagan Culture and Heritage
Wulumarra Culture and Heritage

Appendix 1 Figure 9: Email record of site visit, 24 November 2023.



Western Riverina Quarry Site Visit 24/11/23

JH Jordan Henshaw
To Ben

Reply Reply All Forward ...
Sun 26/11/2023 9:34 PM

You replied to this message on 27/11/2023 7:13 AM.

POM Letter 26.11.23.pdf
.pdf File

Hi Ben,

I have attached a letter report from Mark Saddler above.

In summary, the previous owners of the quarry, Chris Woods and his father Peter, where happy to show me around the current quarry operations and previously recorded Aboriginal sites and commented that they have never intended to harm any Aboriginal sites and continued to respect the Aboriginal cultural values that exist at these sites.

However, the RAPs who were invited to attend the site visit where generally unhappy with the current condition of both recorded sites.
In particular, Robert Carroll stated that 40 – 50 piles of worked stone artefacts, approximately 2 feet high, had previously existed when the sites were recorded in 1987, and became increasingly distressed and agitated at the fact that they were no longer present during the current site visit. He also believed that metal stakes, outlining the extent of the sites, were also previously present and implied that they had been removed since he last visited the sites, approximately 12 years ago.

Mark Saddler also expressed his general disappointment at the fact that no Plan of Management had been recommended by OzArk and that both sites needed to be fenced as soon as possible so that no harm could occur to either site. As mentioned in the above report, Mark would like to return to the quarry in order to personally facilitate the fencing of both sites with the assistance of Robert Carroll and James Ingram.

In an attempt to defend themselves, both Chris Woods and his father openly stated that no fencing or artefact "piles" had been disturbed during their time as quarry owners but left the site visit visibility upset that their good intentions and respect for local Aboriginal people appeared to be in vain.

Thanks,
Jordan

Appendix 1 Figure 10: Letter from Mark Saddler (Bundyi Culture), 26 November 2023.

Bundyi Cultural Services

Mark Saddler

Koomaringa Aboriginal Place, Rankin Springs, NSW

Bundyi Cultural Services, Mark Saddler

26/11/2023

Artwork by Mark Saddler. (Copyright)

Artwork Title, Murrawarra (stand your ground, protect)

Back Ground Artwork "Ngumbaay Bula Bila Mayiny (3 River people)

Mark Saddler

This report was compiled by Bundyi Cultural Services !

Contents:

"I would like to acknowledge the traditional custodians of this land, my land, "The Wiradjuri People"

What I record and find is dedicated to those who have gone before us, to those present and to those who will follow us"

Mark Saddler, Wiradjuri Gibirr (man)

2

Travelling Stock Reserves (TSRs)

Travelling Stock Reserves (TSRs) are parcels of Crown land reserved under legislation for use by travelling stock. Local Land Services is responsible for the care, control and maintenance of almost 500,000ha of TSRs in NSW.

TSRs provide pasture reserves for travelling or grazing stock. These reserves can be beneficial in times of drought, bushfire or flood. They are also used for public recreation, apiary sites and for conservation.

Local Land Services manages the land to strike a balance between the needs of travelling or grazing stock and the conservation of native species.

The role of Local Land Services role in managing TSRs includes:

- *Authorising and monitoring stock, recreation and apiary site use*
- *Controlling noxious weeds*
- *Controlling pest animals and insects*
- *Provision and maintenance of fencing, watering points and holding yards*
- *Consideration of land management and animal health legislation.*

Local Land Services has developed the first draft state-wide planning framework for TSRs to support the future management of this land. We are now keen to hear from the public with their opinions on how to manage TSRs in the future. We want to understand the values people hold important for TSRs, including biodiversity and Aboriginal cultural heritage values.

The draft state-wide framework allows for the development of TSR regional management plans to facilitate more consistent and transparent management, resourcing and reporting.

NSW Travelling Stock Reserves Draft State Planning Framework 2016-19
TSR State Planning Framework Fact Sheet
Frequently asked questions

3

Aboriginal objects:

Aboriginal objects are physical evidence of the use of an area by Aboriginal people. They can also be referred to as 'Aboriginal sites', 'relics' or 'cultural material'.

Aboriginal objects include:

** Physical objects, such as stone tools, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps*
** Material deposited on the land, such as middens*
** The ancestral remains of Aboriginal people.*

Handicrafts made by Aboriginal people for sale are ***not*** *'Aboriginal objects' under the NPW Act.*
Known Aboriginal objects and sites are recorded on OEH's Aboriginal Heritage Information Management System (AHIMS). If you find a site you should report it to us.

Protecting Aboriginal objects and places:

You will need to exercise due diligence in determining whether your actions will harm Aboriginal objects. The ***Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW***
http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf
This link will explain and provide practical guidance about what due diligence means. Anyone who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability objects offence if they later harm an Aboriginal object.

An Aboriginal Heritage Impact Permit (AHIP) can be issued by OEH under Part 6 of the NPW Act where harm to an Aboriginal object or Aboriginal place cannot be avoided. An AHIP is a defence to a prosecution for harming Aboriginal objects and/or Aboriginal places if the harm was authorised by the AHIP and the conditions of that AHIP were not contravened.

Find out about AHIPs, due diligence and care agreements see ***Information on Aboriginal Heritage Impact Permits.***
http://www.environment.nsw.gov.au/licences/Section87Section90.htm

4

Purpose of code of practice for Due Diligence.

This code of practice is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP). The National Parks and Wildlife Act 1974 (NPW Act) provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP.

The NPW Act allows for a generic code of practice to explain what due diligence means. Carefully following this code of practice, which is adopted by the National Parks and Wildlife Regulation 2009 (NPW Regulation) made under the NPW Act, would be regarded as 'due diligence'. This code of practice can be used for all activities across all environments.

This code sets out the reasonable and practicable steps which individuals and organisations need to take in order to: 1 identify whether or not Aboriginal objects are, or are likely to be, present in an area 2 determine whether or not their activities are likely to harm Aboriginal objects (if present) 3 determine whether an AHIP application is required.

If Aboriginal objects are present or likely to be present and an activity will harm those objects, then an AHIP application will be required. Information about the permits and how to apply for them can be obtained through the Department of Environment, Climate Change and Water (DECCW) website at

www.environment.nsw.gov.au/licences/index.htm.

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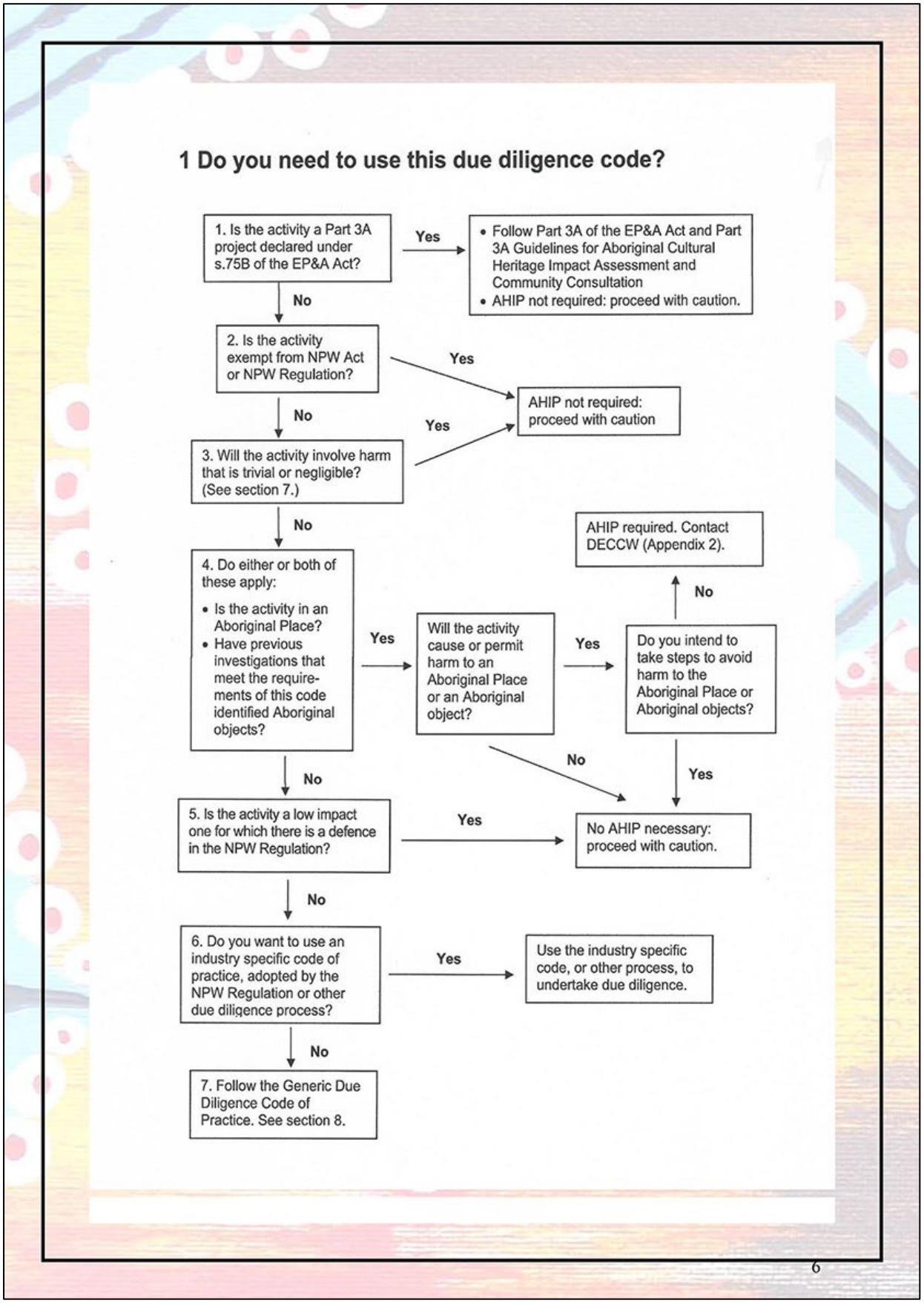

1 Do you need to use this due diligence code?
1. Is the activity a Part 3A project declared under s.75B of the EP&A Act?
Yes
• Follow Part 3A of the EP&A Act and Part 3A Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation
• AHIP not required: proceed with caution.
No
2. Is the activity exempt from NPW Act or NPW Regulation?
Yes
AHIP not required: proceed with caution
No
3. Will the activity involve harm that is trivial or negligible? (See section 7.)
Yes
No
4. Do either or both of these apply:
• Is the activity in an Aboriginal Place?
• Have previous investigations that meet the require-ments of this code identified Aboriginal objects?
Yes
Will the activity cause or permit harm to an Aboriginal Place or an Aboriginal object?
Yes
Do you intend to take steps to avoid harm to the Aboriginal Place or Aboriginal objects?
No
AHIP required. Contact DECCW (Appendix 2).
No
Yes
No
5. Is the activity a low impact one for which there is a defence in the NPW Regulation?
Yes
No AHIP necessary: proceed with caution.
No
6. Do you want to use an industry specific code of practice, adopted by the NPW Regulation or other due diligence process?
Yes
Use the industry specific code, or other process, to undertake due diligence.
No
7. Follow the Generic Due Diligence Code of Practice. See section 8.

AHIMS Data Base Search.

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 16.11.23/1
Client Service ID : 840357

Mark Saddler
Date: 16 November 2023

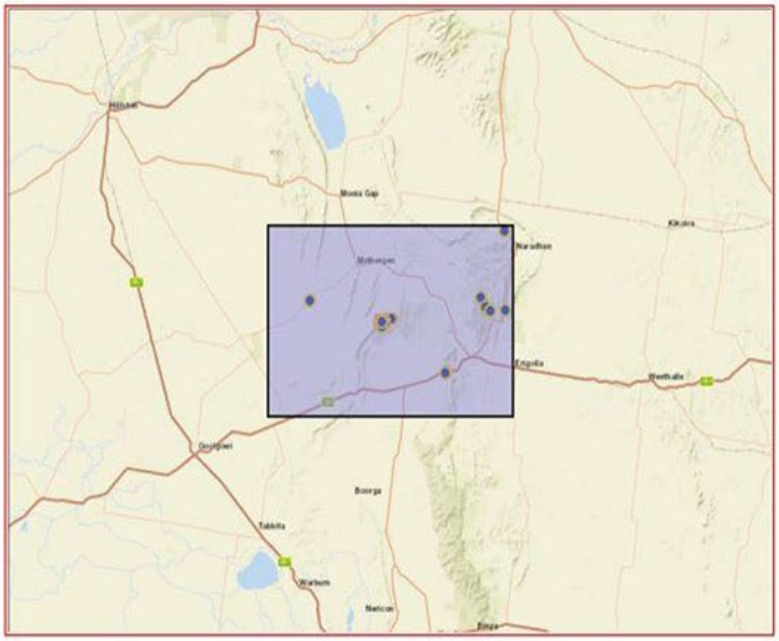
P.O.Box 8005 Kooringal Post Office
Kooringal New South Wales 2650
Attention: Mark Saddler

Email: marksad@live.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -33.9273, 145.8543 - Lat, Long To : -33.6499, 146.3487, conducted by Mark Saddler on 16 November 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

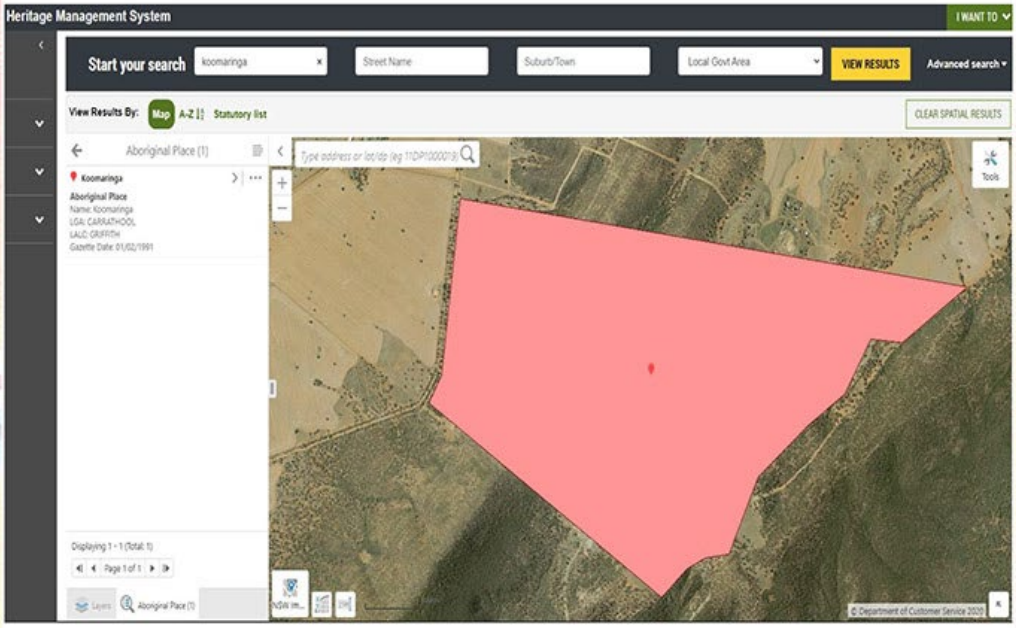


A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

36	Aboriginal sites are recorded in or near the above location.
1	Aboriginal places have been declared in or near the above location. *

ID	Aboriginal Place Name
18	Koomaringa

Maps and reference location to site:



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Site recordings and location of site cards relevant to this site:

Site name	Koomaringa AP, Rankin Springs, NSW		
Recorder	Mark Saddler		
Contact details	Ph 0412 693 030	Email:	marksad@live.com.au
Date prepared	26/11/2023	Web:	http://www.bundyiculture.com.au/

AHIMS ID (Site Card ID)	Site Type	Location of Site Cards on Web Page.	Date Recorded

Any site cards that have been done have been recorded by OzArk Environment & Heritage.
Please contact Ben Churcher
Principal Archaeologist Ph 0416 009 910

9

Contact Information

Stakeholder details	*Responsibilities*	
Jackie Taylor Senior Heritage Officer	*Heritage Programs, West - Heritage NSW*	*(02) 6229 7089*
National Parks and State Forests	*Head Office*	
Thomas Walter, Milbrae	*Reginal Quarry Manager*	*0407 324 586*
Bundyi Cultural Services, Mark Saddler	*Culture Advisor, Recorder, Knowledge Holder*	*0412 693 030*
Ben Churcher Principal Archaeologist. OzArk Environment & Heritage	*Heritage Consultant*	*0416 009 910*

To find out more about Cultural Site Management, rules and protection go to this these web page links for more in depth information.

Do you need to use the due diligence code?

http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf

*OEH **legislation** which ensures that Aboriginal cultural heritage must be considered as part of land management practices.*

http://www.environment.nsw.gov.au/conservation/aboriginalculture.htm

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Site Report and Recommendations.

26/11/2023

Koomaringa AP, Rankin Springs, NSW. Wiradjuri Country.

On my site inspection on 24/11/2023, I walked and covered a very large area of Koomaringa AP, Rankin Springs, to assist in trying to locate many hundreds of artifacts for safe keeping and protection. This work is to assist the current and former owners of the quarry site which sits inside the Aboriginal Place (AP).

Koomaringa is a very spiritual place for my Wiradjuri people and as such has many special places, songlines and dreaming places that my people have cared for and continue to have connection to for over 80,000 + years.

On my recent visit, I witnessed that no exclusion zones or fencing were evident in the area that needs protection from quarry works. As this AP has had many visits from OzArk and others, to record sites and places, (recordings from 1987 to current day) I struggle to understand why the old and current quarry owners have not been correctly informed on their responsibility to protect this ancient site from any further destruction?

I have several questions and also some statements that I will make that need to have urgent replies and action taken.

***Question:** Why is it that exclusion zones have not been erected in the areas of our artifacts and special places so as to protect from further damage?*

***Question:** Why is it that a "Plan of Management" (POM) has not been done or asked to done by those who have declared this place an AP, and why have the people who have written reports with regards to this place not insisted or enforced that a POM be done in the past?*

***Question:** On the day of my survey 24/11/2023, I saw a sign on the Northern Entrance that states that "Carrathool Shire" had an "Application of Development" lodged for a "Rock Quarry & Gravel Crushing Plant" I would ask to be able to see that application to verify the information and the approval processes that may or may not have taken place?*

***Statement:** Myself, Mark Saddler RAP, Uncle James Ingram, RAP and Uncle Rob Carroll, RAP are deeply concerned about what has happened to this AP. The reason why we attended this week onsite was because I was aware that WaterNSW had been accepting Basalt Rock from this quarry site and I was very concerned about the fact that this AP does not have a POM in place for the protection of our sites. I told WaterNSW to stop taking resources from this quarry site until we sort out the issues.*

Uncle James Ingram and Uncle Rob Carroll will, in due course, also write letters about their feelings and investigations of this appalling lack of attention to detail with regards to an AP and an ancient Wiradjuri site.

For those Ministers, Governments, councils, shires and other departments and staff, including archaeologists who have so badly disrespected this site and our Wiradjuri culture, by not ensuring and enforcing a POM be in place from before the AP declaration in 1991, I will be addressing your roles as well very shortly.

I believe that the previous and current quarry owners/operators have sought to get the right information from those who should know about these things. The quarry owners/operators should be very disappointed in how their monies have been spent for trying to gain

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assistance in how to protect and work in an AP area as the information and assistance has not been correctly done or supplied.

To date, I still have not seen any information on a POM, or how to fix what has gone wrong.

With regards to the AP and POM, I insist that myself, Uncle James Ingram and Uncle Rob Carroll be engaged for at least 5-7 days work to oversee the erection of exclusion zones, the expansion of recorded site areas, the more in depth and complete survey work and site recording, and the allowing of myself to do 3 D Drone Mapping of the area.

The 3 D Mapping is done for my information, if these are wanted by others then a set rate, which will be advised, will be charged.

Also, our contract rates for the above work will need to be negotiated with those concerned. As we already have our work rates and conditions for other jobs in place, these can be supplied in further discussions.

In conclusion, to have an ancient Wiradjuri quarry site of at least 40,000 years treated in these most disrespected ways just makes me shake my head and point my finger at those who have failed in their duties as public servants and professionals in their fields of expertise.

Yuwin Ngadhi Mark Saddler Ngurrigiilang Wiradjuri Gibirr!

(Name Mine Mark Saddler Proud Wiradjuri Man)

To understand more about working in and around aboriginal sites look at the procedures to work around Aboriginal sites. Information can be found at this link,

http://www.aboriginalheritage.org/sites/legislation/

12

References:

OEH, http://www.environment.nsw.gov.au/

Local Land Services, http://www.lls.nsw.gov.au/livestock/stock-routes

Mark Saddler, Cultural Advisor and Knowledge holder, www.bundyiculture.com.au

Goggle Earth Maps, https://www.google.com/earth/

Aboriginal Heritage, http://www.aboriginalheritage.org/sites/legislation/

Prepared by:
Mark Saddler, Bundyi Cultural Services
P.O.B 8005 Kooringal Post Office NSW 2650
Ph: 0412 693 030
Email: marksad@live.com.au
Web: www.bundyiculture.com.au

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Appendix 1 Figure 11: Letter from Robert Carroll (Miyagan Culture and Heritage), 29 November 2023.

Miyagan Culture and Heritage

ABN: 90613071198

Address: [redacted]

Email: [redacted]

Mobile: [redacted]

"Koomaringa Aboriginal Place & Quarry"

I write pertaining to my walk over and inspection of the above significant Wiradjuri site on the 24th November 2023, in the company of Mark Saddler – Bundyi Cultural Services, James Ingram – Bidya Marra consultancy, the current owner and various staff from the quarry.

I first visited the Koomaringa rural property with Roley Williams – Aboriginal site curator with the Wiradjuri RALC at the invitation of the then owner Glen Neyland way back in 1987, to inspect the size and significance of this unique Wiradjuri Aboriginal tool making site.

This was not the only occasion I have visited the site, in fact over the years I have been out to it previously with James Ingram, Roley Williams, Dennis Ingram, and Stephen Young on several occasions.

What astounded Roley, I and everyone else who has ever visited the site was its overall size, which included A & western Cultural B tool making sites and the sheer numbers of mounds of worked felsite debitage or tailing's, artefacts, bedrock anvils and the percussion scars that are clearly visible on the remaining felsite vein which were created by ancient Wiradjuri tool makers smashing larger basalt blocks into it to gather core material for further working.

In February of 1987, Dan Witter – Archaeologist with National Parks &Wildlife Service (NP&WS) at Coonabaraban completed an inspection and Report with Judith Webster also of NP&WS and commented that the:

"Koomaringa Aboriginal stone quarry is an outstanding example of its kind, he also estimated that it is between 5,000 and 20,000 years old and could have been used as an ancient Wiradjuri tool making site for up to 40,000 years".

What has disappointed me, and many other Wiradjuri people is that this important Aboriginal site has never been afforded the importance, care and protection that it rightfully warrants/deserves by previous or current owners of the Quarry or by any government agency that has the legislative responsibility for the ongoing protection of significant Aboriginal Places, sites or cultural material.

I remember in an earlier visit to the site, that I clearly noticed there were very visible steel star pegs with yellow plastic tips marking the buffer or exclusion area to the site, they all appear to have been removed, and only a few wooden pegs remain and the once very noticeable and prominent mounds of worked felsite debitage or tailings have all been scattered and are no longer visible.

My question is why was this allowed to happen and who was responsible for it happening? because it has completely ruined the protection and overall appearance and importance of the site to any potential future untrained Aboriginal or non-Aboriginal visitor to the site eg Elder or children's groups undertaking a cultural or education excursion.

These prominent Wiradjuri tool making felsite debitage mounds need to be re-established and fenced off for ongoing protection from native or feral animals such as emu's, kangaroos, pigs and goats.

Why are there no Cultural signs on the edge of the buffer or exclusion zone that clearly explains the history, significance, and importance of the Koomaringa Aboriginal Place to various traditional and contemporary Wiradjuri Aboriginal groups and communities?

Why has it taken so long to develop a "Plan of Management" for the Koomaringa Aboriginal Place, when you consider it was declared an Aboriginal Place back on the 1st of February 1991, and received a letter of support from the Griffith LALC to acquire government grant funding on the 25th of January 2019, and now finally there is light at the end of tunnel and a draft document.?

Why have members of various Wiradjuri Aboriginal communities and RAPs been effectively shut out of the "Komaringa Aboriginal Place" over the past 30 odd years and yet the various owners such as Milbrae Quarries Pty Ltd and EB Mawson & Sons Pty Ltd been allowed to mine non-stop, with no-one engaged on a full-time or part-time basis to regularly monitor the impacts or effects of the mining on the Aboriginal site or on nearby Aboriginal communities?

Have any of the previous or current mine owner provided any type of training or employment opportunities, educational scholarships/sponsorships or Aboriginal community development funding to Aboriginal individuals or Aboriginal communities during the life of the Koomaringa quarry, if not why hasn't this occurred?

Why hasn't a road been marked out and inspected for Aboriginal cultural material and then graded which would allow for easy walking or vehicle access to eastern Cultural site A?

There are so many other questions and concerns that need to be addressed around the ongoing quarrying within the "Koomaringa Aboriginal Place" and the ongoing protection of Wiradjuri Aboriginal Cultural Sites A & B.

I understand that Mark Saddler – Bundyi Cultural Services has made a number of recommendations within his comments, I strongly support his recommendations and I look forward to working with both Mark and James to immediately address some of our mutual concerns.

Mandaang Guwu (Thank you)

Robert Carroll
Wiradjuri Ngurrundra Gibir

Appendix 1 Figure 12: Letter from Mark Saddler (Bundyi Culture), 29 November 2023.

29th November 2023

To OzArk Environment & Heritage & Geoff Pigram PA Woods Pty Ltd.

My comments and replies to your Plan of Management Koomaringa Aboriginal Place, Rankin Springs, NSW, June 2023 are as follows.

Section 1.3.5 Historical management arrangements within the Aboriginal Place, Page 9.

Quote "The stakeholder and landowners will take steps to mitigate the harm to Aboriginal Places which may be caused by animals".

What steps WILL be enforced onto stakeholders and landholders?

Section 1.3.5 Historical management arrangements within the Aboriginal Place, Page 10.

Quote "Stakeholders and landowners will be encouraged to consider the need for buffer zones around specific, sensitive sites within the Aboriginal Place"

I insist that buffer zones be enforced and not just encouraged.

Section 1.4 CULTURAL HERITAGE VALUES Page 12,

Quote "On 25 January 2019 Mr. Ethan Williams on behalf of the Griffith Local Aboriginal Land Council wrote:

This unique Wiradjuri Aboriginal quarry is of enormous spiritual and cultural significance to many Aboriginal groups and communities throughout this Region, and needs to be afforded the cultural respect, appreciation and protection it deserves."

Why is it that Mr. Ethan Williams did not enforce that buffer zones and that fencing be erected for the protection of our ancient site back in 2019?

Just making statements does not give protection of sites, they are only words spoken!

Section 2 MANAGEMENT PLAN

2.1 WIRADJURI STAKEHOLDERS AND OTHER PARTIES

In this section it appears that my name and role has not been entered, please ensure that Mark Saddler, Bundyi Culture RAP is included.

Also, I state that I was not sent the draft POM at any stage during this process. I find that strange as I was the one that instigated the investigation into WaterNSW taking resources from an Aboriginal Place that had no POM in place. So why is it that I was not given the draft report POM until 28/11/2023?

Section 3.1 KOOMARINGA MANAGEMENT GROUP

I need this report to also reflect the high importance of local Wiradjuri RAP (Registered Aboriginal Parties) in the draft report POM. Not just LALC's. It appears as though RAPs have been excluded from this process and report, we must be included as RAPs and "Knowledge Holders" in all processes in this report and POM and also in the KOOMARINGA MANAGEMENT GROUP. Also be advised that Wiradjuri Quarry Sites are mainly areas for men.

4.7.2 Newly identified heritage items

2. Advice will first be sought from a qualified archaeologist to determine whether the find constitutes an Aboriginal object, or a historic item of heritage significance.

This point needs to be expanded to include that "Wiradjuri Knowledge Holders and RAPs" be included in the process of identifying our items. Archaeologists are not the knowledge holders of our culture, we are.

4.8 SPECIFIC MANAGEMENT MEASURES TO MITIGATE RISK TO KNOWN HERITAGE SITES

4.8.1 Site demarcation and signage

There are sixteen sites located outside the maximum limit of disturbance at the WRQ (Koomaringa OS-01, OS-02, OS-3, OS-4, OS-05, OS-06, OS-07, OS-8, OS-09, OS-10, OS-11, IF-01, IF-02, PL-01, PL-02, and ST-01). To protect these sites from any inadvertent impacts during the life of the WRQ, it is recommended that two-star pickets with a sign attached between them be installed at each site facing the most obvious direction of travel from the quarry area.

We local RAPs are to be involved in the process of marking these above areas. Remuneration must also be paid for the time our people spend to do this work.

4.8.3 Public / Aboriginal community access

Permission to access the Koomaringa AP must be sought in writing from the Koomaringa Management Group.

You have no contact details for the above group in your Contacts, Page 45.

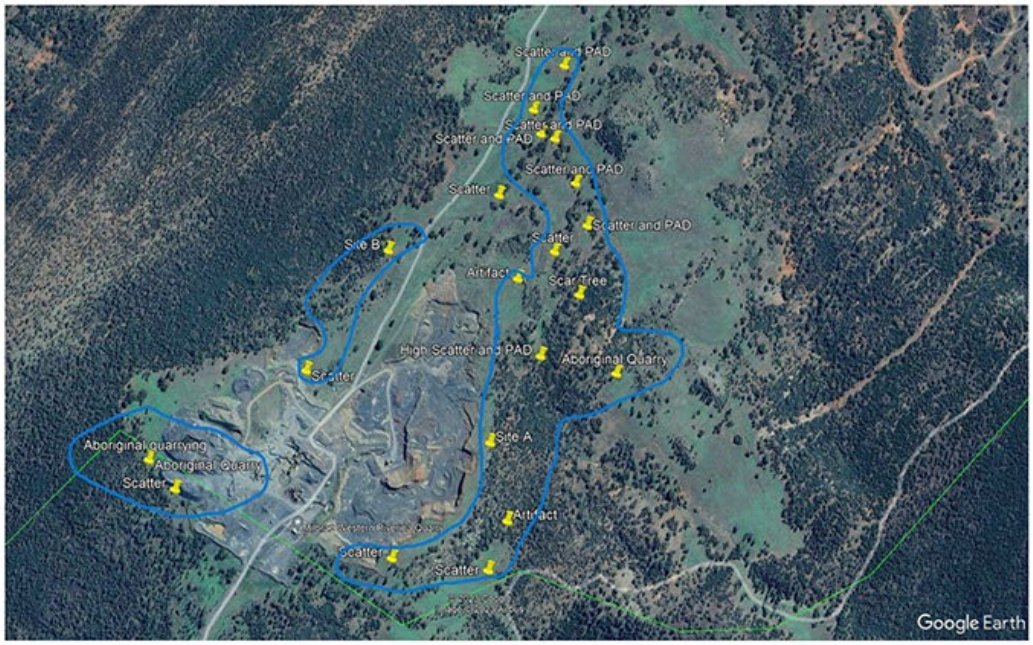
With regards to our survey work next week, James Ingram, Robert Carroll and Mark Saddler (RAPs) will be onsite and searching for the sites that have been recorded in your report, page 14.

We intend to also have Site A and Site B expanded so as to ensure that good coverage of artifacts and PADS are protected. We will be marking out places to have fencing erected as well.

Once the fencing is done (urgently) we will return to ensure that this has been done to our satisfaction. We would then insist that the new expanded areas and sites be updated on AHIMS to reflect the widened areas and protection zones.

I also have concerns about the Southern Side of the quarry site that has an area of high importance, site Koomaringa PL-01. This site has not been given exclusion zone status as have Sites A & B. Why is that? (see attached map next page)

My attached map also shows the extended areas of protection that I want to also have covered as we have many items and places that have already been recorded but have been left out of exclusion zone areas. Some areas are also very close to the places where this quarry operation are dumping their unwanted resources. Vehicles are driving over our sites.



Can I also have Ben Churcher supply me the GPS Eastings and Northings coordinates for the boundary areas of Sites A and B so that next week we can better identify the areas for widening fencing boundaries. Once done the areas then need to be surveyed again, GPS and recorded to AHIMS

I need to have my questions answered urgently and also need to have the GPS points sent to me this week.

Guwayu (safe travels)

Mark Saddler

Bundyi Culture

E: marksad@live.com.au

P: 0412 693 030

Appendix 1 Figure 13. Letter from Mark Saddler 3 January 2024.

"Plan Of Management (POM) for Koomaringa"

Important issues that need to be addressed and included in the POM Report.

- *A strong all-out effort/attempt must be made by NP&WS - Heritage NSW to elevate the importance and significance of the Wiradjuri Koomaringa tool making and cultural sites to government, mainstream community, Wiradjuri Aboriginal people and communities but also to anyone and everyone who has a deep interest in the ongoing protection and promotion of traditional Aboriginal culture and history.*

- *Registered Aboriginal Party (RAP) Names must be entered into the Plan Of Management as Mark Saddler - Bundyi Culture, James Ingram - Bidya Marra, Robert Carroll & Neerim Carroll -Miyagan Culture & Heritage.*

- *Four (4) Steel/aluminium signs are to be erected on steel poles at the North entrance, and just inside the individual boundary protection fences to major tool making Sites A, B and C (Which is located in a northern direction and adjacent to a massive pile of crushed rock/metal) at Koomaringa that advise of the importance of the area and also of the history of the Toolmaking site to Wiradjuri people and their traditional country. (The signs can be designed and produced at Design & Signs, Unit 2/68 Willandra Ave, Griffith - 02 69641488) These signs are to be designed by local RAPs and Aboriginal communities. The cost of the signs and their erection is to be to be paid for by the quarry owners.*

- *The ongoing monitoring of the quarry site and important cultural sites by the RAPs is to occur at least 4 times a year, these roles will be remunerated by agreed contracts.*

- *Feral animal "Eradication Programs' ' for feral pigs and goats need to be undertaken on an ongoing basis because these animals after wet weather are digging up the country, dispersing artefacts and destroying Wiradjuri sites.*

- *Community and individual access to Wiradjuri Cultural Places Toolmaking Sites A,B and C at Koomaringa is to be allowed to continue into the future with appropriate times and dates agreed to by all parties.*

- *A proportion of the existing poor road up to Site B Toolmaking site needs to be further developed/graded which would allow vehicle access for Aboriginal Elders and other interested groups entering from the "Northern Access Gate"*

- *A large "Car Park" and shelter area to be erected opposite Site A so that Wiradjuri Elders can undertake cultural training for our people as well as to non-Aboriginal people. Shelter should be large enough to accommodate at least 30 + people with some seating areas. and a Car Park for at least 10 cars.*

1

- *Cultural Training and Awareness Programs to be delivered to all staff who work on or with Koomaringa and any other quarry sites in Wiradjuri country. This will be delivered by Bundyi Culture as per an agreed contract. This must take place urgently.*

- *A written commitment to erect further fencing to protect additional recently identified Northern Wiradjuri cultural areas.*

Since Uncle Rob Carroll, Uncle James Ingram and myself have been out to Koomaringa and surveyed large areas, we are requesting that the exclusion zones for sites A, B and C be documented to AHIMS as we have extended those areas to try and cover as many special areas and Wiradjuri cultural items as possible.

Further sites to the North of Koomaringa also need to be protected and fenced in the very near future to ensure that these sites are also protected from any further quarry expansion. See Map 1 Page 3. Sites highlighted Red Circles.

We also need Site C, to the South of Quarry, also to be included in the AHIMS update as a protected area. This area also has had exclusion zone fencing erected. See Map 2, Page 3. Site highlighted Red Pins.

With regards to 1.3.3 Local development POM (Plan of Management) Report.

Western Riverina Quarry (WRQ), also known as Koomaringa Quarry, was originally granted development consent by the Carrathool Shire Council on 25 May 1987 with a modified development consent granted on 19 July 1991.

As WRQ are seeking an extension their quarry site, I request a copy of the "modified Development Consent" that was granted on 19th July 1991 as well as any other consents that may have been granted, so as we may read and understand the extent of the proposed expansion areas to assess what, if any, further interference with our Wiradjuri places and items may possibly occur.

As RAPs, Wiradjuri Senior Men and Uncles, we are satisfied that Mr Chris Woods has done what we have asked, with regards to erecting "Exclusion Zone Fencing" to try to protect our Wiradjuri culture and places.

Once we can see the revised POM (Plan of Management) written, commitments in writing with regards to our requests for Koomaringa and the extension of our exclusion zones recorded to AHIMS, we would be in agreement to have WaterNSW continue to source from Koomaringa Quarry Site knowing that a correct POM (Plan of Management) is in place.

Guwayu (Safe Travel)

Mark Saddler - Bundyi Culture (RAP)

James Ingram - Bidya Marra (RAP)

Robert Carroll & Neerim Carroll -Miyagan Culture & Heritage. (RAP)

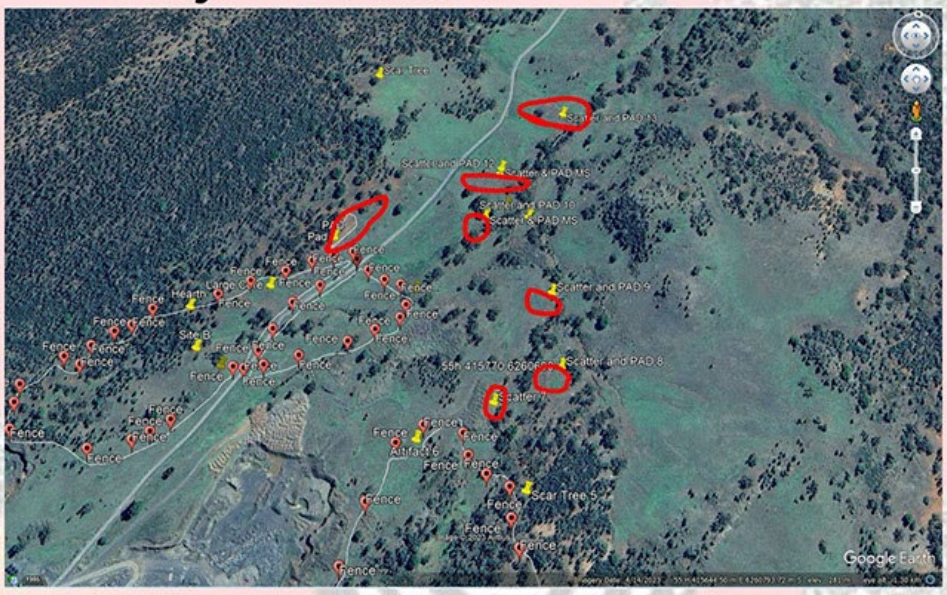
3rd January 2024.

Background Artwork, Murrawarra (Stand Your Ground) Mark Saddler

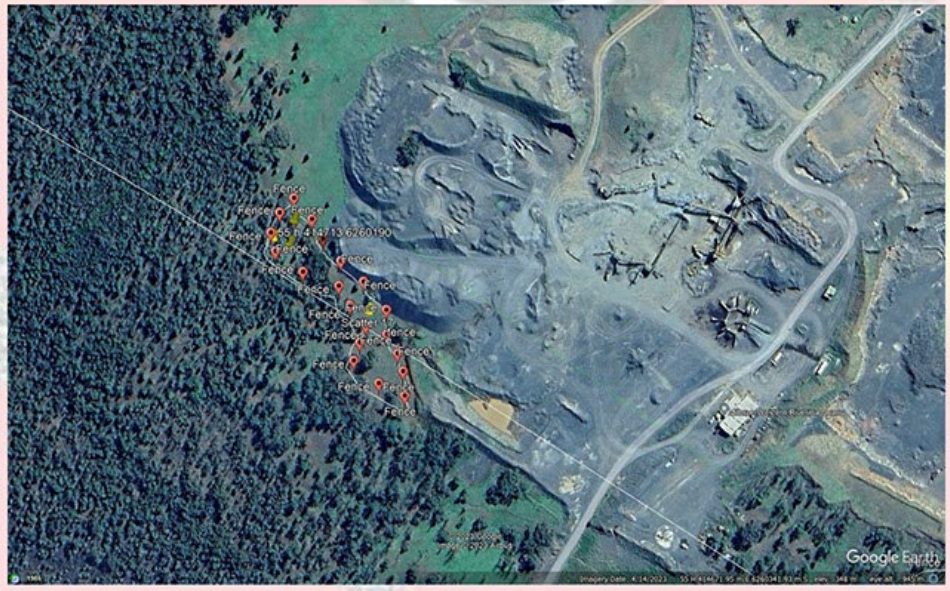
2

Map 1 Sites A & B

Wiradjuri Artifacts and Work Areas



Map 2 Site C



3

Appendix 1 Figure 14: OzArk response to RAP submissions.

Response to Robert Carroll - Miyagan Culture & Heritage

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18 February 2024

Robert Carroll & Neerim Carroll -Miyagan Culture & Heritage

KOOMARINGA ABORIGINAL PLACE PLAN OF MANAGEMENT
RESPONSE TO RAP SUBMISSIONS

Dear Robert,

Thank you for your letter of 29 November 2023 regarding the Plan of Management (POM) for Koomaringa Aboriginal Place.

I have taken the liberty to tabulate your main questions and have provided a response to each below.

Should anything here raise any concerns, please do not hesitate to get in touch.

Kind regards,

Ben Churcher
Principal Archaeologist
ben@ozarkehm.com.au

RAP comment	OzArk comment
I remember in an earlier visit to the site, that I clearly noticed there were very visible steel star pegs with yellow plastic tips marking the buffer or exclusion area to the site, they all appear to have been removed, and only a few wooden pegs remain and the once very noticeable and prominent mounds of worked felsite debitage or tailings have all been scattered and are no longer visible.	This concern has been acted on with the establishment of new fencing to protect Sites A, B, and C. OzArk is not aware of the 'felsite mounds' and has no comment on why they may not be present today.
My question is why was this allowed to happen and who was responsible for it happening? because it has completely ruined the protection and overall appearance and importance of the site to any potential future untrained Aboriginal or non-Aboriginal visitor to the site eg Elder or children's groups undertaking a cultural or education excursion.	To the best of OzArk's knowledge, Site A and Site B have not been disturbed by the activities at the Western Riverina Quarry (WRQ) and that all impacts have remained outside of the buffer established in 1987.
These prominent Wiradjuri tool making felsite debitage mounds need to be re-established and fenced off for ongoing protection from native or feral animals such as emu's, kangaroos, pigs and goats.	Sites have been demarcated with new fencing. While this fencing does not exclude wildlife, it will ensure that there is no inadvertent harm arising from the quarry activities.
Why are there no Cultural signs on the edge of the buffer or exclusion zone that clearly explains the history, significance, and importance of the Koomaringa Aboriginal Place to various traditional and contemporary Wiradjuri Aboriginal groups and communities?	E.B. Mawson & Sons Pty Ltd has undertaken to fund this. The location and wording of any signage will be discussed with the Koomaringa Management Group when it is formed. It is imagined that the signs would recognise the significance of the Aboriginal Place and provide site access details.
Why has it taken so long to develop a "Plan of Management" for the Koomaringa Aboriginal Place, when you consider it was declared an Aboriginal Place back on the 1st of February 1991, and received a letter of support from the Griffith LALC to acquire government grant funding on the 25th of January 2019, and now finally there is light at the end of tunnel and a draft document.?	OzArk is not aware of why it took so long for a Plan of Management to be developed but notes that this has now been completed.
Why have members of various Wiradjuri Aboriginal communities and RAPs been effectively shut out of the "Komaringa Aboriginal Place" over the past 30 odd years and yet the various owners such as Milbrae Quarries Pty Ltd and EB Mawson & Sons Pty Ltd been allowed to mine non-stop, with no-one engaged on a full-time or part-time basis to regularly monitor the impacts or effects of the mining on the Aboriginal site or on nearby Aboriginal communities?	As far as OzArk is aware, no one from the Wiradjuri Aboriginal community and RAPs have ever been excluded from the Quarry Site. E.B. Mawson & Sons Pty Ltd will maintain any site demarcation fencing and signage. It will be the responsibility of the E.B. Mawson & Sons Pty Ltd to monitor site buffers at the boundary of the WRQ operational areas on a regular basis and not less than every two years. Photos from the northern, southern, eastern, and western perimeters of the approved quarry site

OzArk Environment & Heritage

RAP comment	OzArk comment
	boundary will be taken to provide evidence that quarrying activities are within the approved quarry curtilage. Monitoring will be undertaken by at least two representatives of the Koomaringa Management Group, where practicable. At other locations within the Koomaringa AP, the Koomaringa Management Group should explore funding options with Heritage NSW (HNSW), to organise monitoring of the Koomaringa Aboriginal Place (AP) on at least a two-yearly basis.
Have any of the previous or current mine owner provided any type of training or employment opportunities, educational scholarships/sponsorships or Aboriginal community development funding to Aboriginal individuals or Aboriginal communities during the life of the Koomaringa quarry, if not why hasn't this occurred?	The WRQ has worked with the Aboriginal community and has an Indigenous engagement program in place. Past efforts of engagement have been unsuccessful as local groups did not have programs in place.
Why hasn't a road been marked out and inspected for Aboriginal cultural material and then graded which would allow for easy walking or vehicle access to eastern Cultural site A?	E.B. Mawson & Sons Pty Ltd have agreed to facilitate access to the significant cultural heritage sites near the WRQ. This includes providing a car park and arranging access visits based on staff availability (for escorts) and operations at the WRQ (i.e. access being unsafe).

Response to Mark Saddler - Bundyi Culture

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18 February 2024

Mark Saddler - Bundyi Culture

KOOMARINGA ABORIGINAL PLACE PLAN OF MANAGEMENT
RESPONSE TO RAP SUBMISSIONS

Dear Mark,

Thank you for your letter of 29 November 2023 regarding the Plan of Management (POM) for Koomaringa Aboriginal Place.

I have taken the liberty to tabulate your main questions and have provided a response to each below.

Should anything here raise any concerns, please do not hesitate to get in touch.

Kind regards,

Ben Churcher
Principal Archaeologist
ben@ozarkehm.com.au

POM recommendation	RAP comment	OzArk comment
Section 1.3.5 Historical management arrangements within the Aboriginal Place, Page 9.		
Quote "The stakeholder and landowners will take steps to mitigate the harm to Aboriginal Places which may be caused by animals".	What steps WILL be enforced onto stakeholders and landholders?	Feral animal control within the Koomaringa AP will be the responsibility of the Koomaringa Management Group who should explore funding options with HNSW to organise feral animal control. It is noted that this activity was also suggested by Mr Peter Ingram in his response to the Koomaringa AP Plan of Management. Table 3-1 of the Koomaringa AP Plan of Management allows poisoning of feral animals to proceed within the Koomaringa AP without further management.
Section 1.3.5 Historical management arrangements within the Aboriginal Place, Page 10.		
Quote "Stakeholders and landowners will be encouraged to consider the need for buffer zones around specific, sensitive sites within the Aboriginal Place"	I insist that buffer zones be enforced and not just encouraged.	This request has been completed and the fencing has been installed with the assistance of Registered Aboriginal Parties (RAPs).
2. Advice will first be sought from a qualified archaeologist to determine whether the find constitutes an Aboriginal object, or a historic item of heritage significance.	This point needs to be expanded to include that "Wiradjuri Knowledge Holders and RAPs" be included in the process of identifying our items. Archaeologists are not the knowledge holders of our culture, we are.	Advice from an archaeologist is only the first stage of identifying whether an Aboriginal object has been discovered. If the object is Aboriginal, RAPs will be consulted.
(Koomaringa OS-01, OS-02, OS-3, OS-4, OS-05, OS-06, OS-07, OS-8, OS-09, OS-10, OS-11, IF-01, IF-02, PL-01, PL-02, and ST-01). To protect these sites from any inadvertent impacts during the life of the WRQ, it is recommended that two-star pickets with a sign attached between them be installed at each site facing the most obvious direction of travel from the quarry area.	We local RAPs are to be involved in the process of marking these above areas. Remuneration must also be paid for the time our people spend to do this work.	RAPs will be engaged to assist with the fencing of sites as is set out Section 9.2.4 of the Aboriginal Cultural Heritage Assessment Report (ACHAR).

Response to Mark Saddler - Bundyi Culture, James Ingram - Bidya Marra, and Robert Carroll & Neerim Carroll - Miyagan Culture & Heritage.

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18 February 2024

Mark Saddler - Bundyi Culture
James Ingram - Bidya Marra
Robert Carroll & Neerim Carroll -Miyagan Culture & Heritage.

KOOMARINGA ABORIGINAL PLACE PLAN OF MANAGEMENT
RESPONSE TO RAP SUBMISSIONS

Dear Mark, James, and Robert

Thank you for your letter of 3 January 2024, "Plan of Management (POM) for Koomaringa".

I have taken the liberty to tabulate your main questions and have provided a response to each below.

Should anything here raise any concerns, please do not hesitate to get in touch.

Kind regards,

Ben Churcher
Principal Archaeologist
ben@ozarkehm.com.au

OzArk Environment & Heritage

RAP recommendation	OzArk comment
Four (4) Steel/aluminium signs are to be erected on steel poles at the North entrance, and just inside the individual boundary protection fences to major tool making Sites A, B and C (Which is located in a northern direction and adjacent to a massive pile of crushed rock/metal) at Koomaringa that advise of the importance of the area and also of the history of the Toolmaking site to Wiradjuri people and their traditional country. (The signs can be designed and produced at Design & Signs, Unit 2/68 Willandra Ave, Griffith - 02 69641488) These signs are to be designed by local RAPs and Aboriginal communities. The cost of the signs and their erection is to be to be paid for by the quarry owners.	E.B. Mawson & Sons Pty Ltd has undertaken to fund this. The location and wording of any signage will be discussed with the Koomaringa Management Group when it is formed. It is imagined that the signs would recognise the significance of the Aboriginal Place and provide site access details.
The ongoing monitoring of the quarry site and important cultural sites by the RAPs is to occur at least 4 times a year, these roles will be remunerated by agreed contracts.	E.B. Mawson & Sons Pty Ltd will maintain any site demarcation fencing and signage. It will be the responsibility of the E.B. Mawson & Sons Pty Ltd to monitor site buffers at boundary of the Western Riverina Quarry (WRQ) operational areas on a regular basis and not less than every two years. Photos from the northern, southern, eastern, and western perimeters of the approved quarry site boundary will be taken to provide evidence that quarrying activities are within the approved quarry curtilage. Monitoring will be undertaken by at least two representatives of the Koomaringa Management Group, where practicable. At other locations within the Koomaringa AP, the Koomaringa Management Group should explore funding options with Heritage NSW (HNSW), to organise monitoring of the Koomaringa Aboriginal Place (AP) on at least a two-yearly basis.
Feral animal "Eradication Programs' ' for feral pigs and goats need to be undertaken on an ongoing basis because these animals after wet weather are digging up the country, dispersing artefacts and destroying Wiradjuri sites.	Feral animal control within the Koomaringa AP will be the responsibility of the Koomaringa Management Group who should explore funding options with HNSW to organise feral animal control. It is noted that this activity was also suggested by Mr Peter Ingram in his response to the Koomaringa AP Plan of Management. Table 3-1 of the Koomaringa AP Plan of Management allows poisoning of feral animals to proceed within the Koomaringa AP without further management.

RAP recommendation	OzArk comment
Community and individual access to Wiradjuri Cultural Places Toolmaking Sites A, B and C at Koomaringa is to be allowed to continue into the future with appropriate times and dates agreed to by all parties.	E.B. Mawson & Sons Pty Ltd have agreed to facilitate access to the significant cultural heritage sites near the WRQ. This includes providing a car park and arranging access visits based on staff availability (for escorts) and operations at the WRQ (i.e. access being unsafe). Times and dates of site visits will need to be pre-arranged with the WRQ.
A proportion of the existing poor road up to Site B Toolmaking site needs to be further developed/graded which would allow vehicle access for Aboriginal Elders and other interested groups entering from the "Northern Access Gate"	The decision to allow access to Site B will be taken by the Koomaringa Management Group who can decide on the location and form of any proposed access track. Until such times as the access track is installed, E.B. Mawson & Sons Pty Ltd will assist with the transport of people to Site B when required.
A large "Car Park" and shelter area to be erected opposite Site A so that Wiradjuri Elders can undertake cultural training for our people as well as to non-Aboriginal people. Shelter should be large enough to accommodate at least 30 + people with some seating areas. and a Car Park for at least 10 cars.	The Aboriginal Cultural Heritage Report (ACHAR) indicates the location for the car park (**Figure 9-2**). The location and form of the picnic shelter will be determined by the Koomaringa Management Group. E.B. Mawson & Sons Pty Ltd have undertaken to provide reasonable funding to construct the shelter and a path connecting the shelter to the car park.
Cultural Training and Awareness Programs to be delivered to all staff who work on or with Koomaringa and any other quarry sites in Wiradjuri country. This will be delivered by Bundyi Culture as per an agreed contract. This must take place urgently.	E.B. Mawson & Sons Pty Ltd agree to arranging a one-off face to face induction for WRQ staff. The content of this induction will then be presented as a training package for later use. Both the face to face induction and the provision of a training package will be under an agreed contractual arrangement.
A written commitment to erect further fencing to protect additional recently identified Northern Wiradjuri cultural areas.	The location and form of the any site fencing outside of the WRQ Quarry Site will be determined by the Koomaringa Management Group. Fencing at Sites A, B, and C has been installed with the assistance of Registered Aboriginal Parties.
Since Uncle Rob Carroll, Uncle James Ingram and myself have been out to Koomaringa and surveyed large areas, we are requesting that the exclusion zones for sites A, B and C be documented to AHIMS as we have extended those areas to try and cover as many special areas and Wiradjuri cultural items as possible.	Sites A, B, and C are currently registered with AHIMS, and as they are within the Koomaringa AP, their significance is recognised, and their current condition is protected. Site C includes sites registered by OzArk as Koomaringa PL-01 (42-5-0023) and Koomaringa OS-11 (42-5-0020).

APPENDIX 2: AHIMS EXTENSIVE SEARCHES

Appendix 2 Figure 1: 12/09/2019 AHIMS search.

Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Western Riverina 20km
Client Service ID : 449021

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
42-5-0006	Melbergen Road 1	AGD	55	401730	6263820	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	
	Contact	Recorders	Ms Vanessa Edmonds					Permits		
42-5-0001	Rothdene: Cocoparra Nature Reserve;	AGD	55	421782	6241175	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0002	Rothdene: Cocoparra Nature Reserve;	AGD	55	421791	6240261	Open site	Valid	Modified Tree (Carved or Scarred): -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0004	Koomaringa	AGD	55	416000	6261200	Open site	Valid	Stone Quarry: -, Artefact: -	Quarry	
	Contact	Recorders	R Williams					Permits		
42-5-0005	Koomaringa	AGD	55	417000	6261000	Open site	Valid	Aboriginal Ceremony and Dreaming: -	Aboriginal Place	
	Contact	Recorders	Gazettal Notice					Permits		

Report generated by AHIMS Web Service on 12/09/2019 for Alyce Cameron for the following area at Datum : GDA, Zone : 55, Eastings : 394689 - 435771, Northings : 6239688 - 6281025 with a Buffer of 0 meters. Additional Info : Background. Number of Aboriginal sites and Aboriginal objects found is 5

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 acts or omission.

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Appendix 2 Figure 2: 09/08/2021 AHIMS search.

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

Your Ref/PO Number : WRQ update
Client Service ID : 612002

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0018	Koomaringa OS-09	GDA	55	415564	6260783	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0028	Koomaringa OS-7	GDA	55	415673	6260928	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0013	Koomaringa OS-01	GDA	55	415688	6260639	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0017	Koomaringa OS-08	GDA	55	415740	6261095	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0022	Koomaringa OS-13	GDA	55	415093	6260388	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0016	Koomaringa OS-03	GDA	55	415492	6259919	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0026	Koomaringa OS-05	GDA	55	415659	6260988	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0019	Koomaringa OS-10	GDA	55	415770	6260698	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0005	Koomaringa	AGD	55	417000	6261000	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Aboriginal Place	
	Contact	Recorders	Gazettal Notice					Permits		
42-5-0023	Koomaringa PL-01	GDA	55	414729	6260203	Open site	Valid	Stone Quarry : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0011	Koomaringa IF-02	GDA	55	415597	6260579	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0024	Koomaringa ST-01	GDA	55	415740	6260533	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0002	Rothdene;Cocoparra Nature Reserve;	AGD	55	421791	6240261	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		

Report generated by AHIMS Web Service on 09/08/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 26

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

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

Your Ref/PO Number : WRQ update
Client Service ID : 612002

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0009	Sims Gap Scar Tree	GDA	55	427441	6252733	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Department of Premier & Cabinet - Heritage (Albury),Mr.Sam Kirby					Permits		
42-5-0006	Melbergen Road 1	AGD	55	401730	6263820	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders	Ms.Vanessa Edmonds					Permits		
42-5-0015	Koomaringa OS-04	GDA	55	415640	6260394	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0014	Koomaringa OS-02	GDA	55	415749	6260802	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0020	Koomaringa OS-11	GDA	55	414784	6260133	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0008	Sims Gap Aboriginal Cultural Landscape	GDA	55	427147	6252571	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Department of Premier & Cabinet - Heritage (Albury),Mr.Sam Kirby					Permits		
42-5-0012	Koomaringa IF-03	GDA	55	415166	6259950	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0010	Koomaringa IF-01	GDA	55	415541	6260025	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0027	Koomaringa OS-6	GDA	55	415706	6260914	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0025	Koomaringa PL-02	GDA	55	415812	6260344	Open site	Valid	Artefact : -, Stone Quarry : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0001	Rothdene;Cocoparra Nature Reserve;	AGD	55	421782	6241175	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0021	Koomaringa OS-12	GDA	55	415276	6259956	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Doctor.Alyce Cameron					Permits		
42-5-0004	Koomaringa	AGD	55	416000	6261200	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	Contact	Recorders	R Williams					Permits		

Report generated by AHIMS Web Service on 09/08/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 26

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

Your Ref/PO Number : WRQ update
Client Service ID : 612002

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 09/08/2021 for Alyce Cameron for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 26

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Appendix 2 Figure 3: 24/05/2023 AHIMS search.

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

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 784830

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0018	Koomaringa OS-09	GDA	55	415564	6260783	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0028	Koomaringa OS-7	GDA	55	415673	6260928	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0013	Koomaringa OS-01	GDA	55	415688	6260639	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0017	Koomaringa OS-08	GDA	55	415740	6261095	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0037	Jimberoo9	GDA	55	433871	6264622	Open site	Valid	Artefact : 2		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0034	Jimberoo6	GDA	55	434982	6262756	Open site	Valid	Hearth : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0022	Koomaringa OS-13	GDA	55	415093	6260388	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0016	Koomaringa OS-03	GDA	55	415492	6259919	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0026	Koomaringa OS-05	GDA	55	415659	6260988	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0019	Koomaringa OS-10	GDA	55	415770	6260698	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0005	Koomaringa	AGD	55	417000	6261000	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Aboriginal Place	
	Contact	Recorders	Gazettal Notice					Permits		
42-5-0032	Jimberoo4	GDA	55	435065	6262729	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0023	Koomaringa PL-01	GDA	55	414729	6260203	Open site	Valid	Stone Quarry : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0011	Koomaringa IF-02	GDA	55	415597	6260579	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		

Report generated by AHIMS Web Service on 24/05/2023 for Imogen Crome for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 36

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

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 784830

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0024	Koomaringa ST-01	GDA	55	415740	6260533	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0029	Jimberoo1	GDA	55	435480	6262621	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0009	Sims Gap Scar Tree	GDA	55	427441	6252733	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Department of Premier & Cabinet - Heritage (Albury) ,Mr.Sam Kirby					Permits		
42-5-0033	Jimberoo5	GDA	55	435049	6262731	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0030	Jimberoo2	GDA	55	435454	6262635	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0006	Melbergen Road 1	AGD	55	401730	6263820	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders	Ms.Vanessa Edmonds					Permits		
42-5-0002	Rothdene;Cocoparra Nature Reserve;	AGD	55	421791	6240261	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0015	Koomaringa OS-04	GDA	55	415640	6260394	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0014	Koomaringa OS-02	GDA	55	415749	6260802	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0020	Koomaringa OS-11	GDA	55	414784	6260133	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0008	Sims Gap Aboriginal Cultural Landscape	GDA	55	427147	6252571	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Department of Premier & Cabinet - Heritage (Albury) ,Mr.Sam Kirby					Permits		
42-5-0012	Koomaringa IF-03	GDA	55	415166	6259950	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0010	Koomaringa IF-01	GDA	55	415541	6260025	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0027	Koomaringa OS-6	GDA	55	415706	6260914	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		

Report generated by AHIMS Web Service on 24/05/2023 for Imogen Crome for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 36

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 784830

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0025	Koomaringa PL-02	GDA	55	415812	6260344	Open site	Valid	Artefact : -, Stone Quarry : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor,Alyce Cameron					Permits		
42-5-0038	Jimberoo10	GDA	55	433641	6264825	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0036	Jimberoo8	GDA	55	434591	6263264	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0035	Jimberoo7	GDA	55	434613	6263227	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0001	Rothdene;Cocoparra Nature Reserve;	AGD	55	421782	6241175	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0021	Koomaringa OS-12	GDA	55	415276	6259956	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor,Alyce Cameron					Permits		
42-5-0004	Koomaringa	AGD	55	416000	6261200	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	Contact	Recorders	R Williams					Permits		
42-5-0031	Jimberoo3	GDA	55	435432	6262639	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 24/05/2023 for Imogen Crome for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 36

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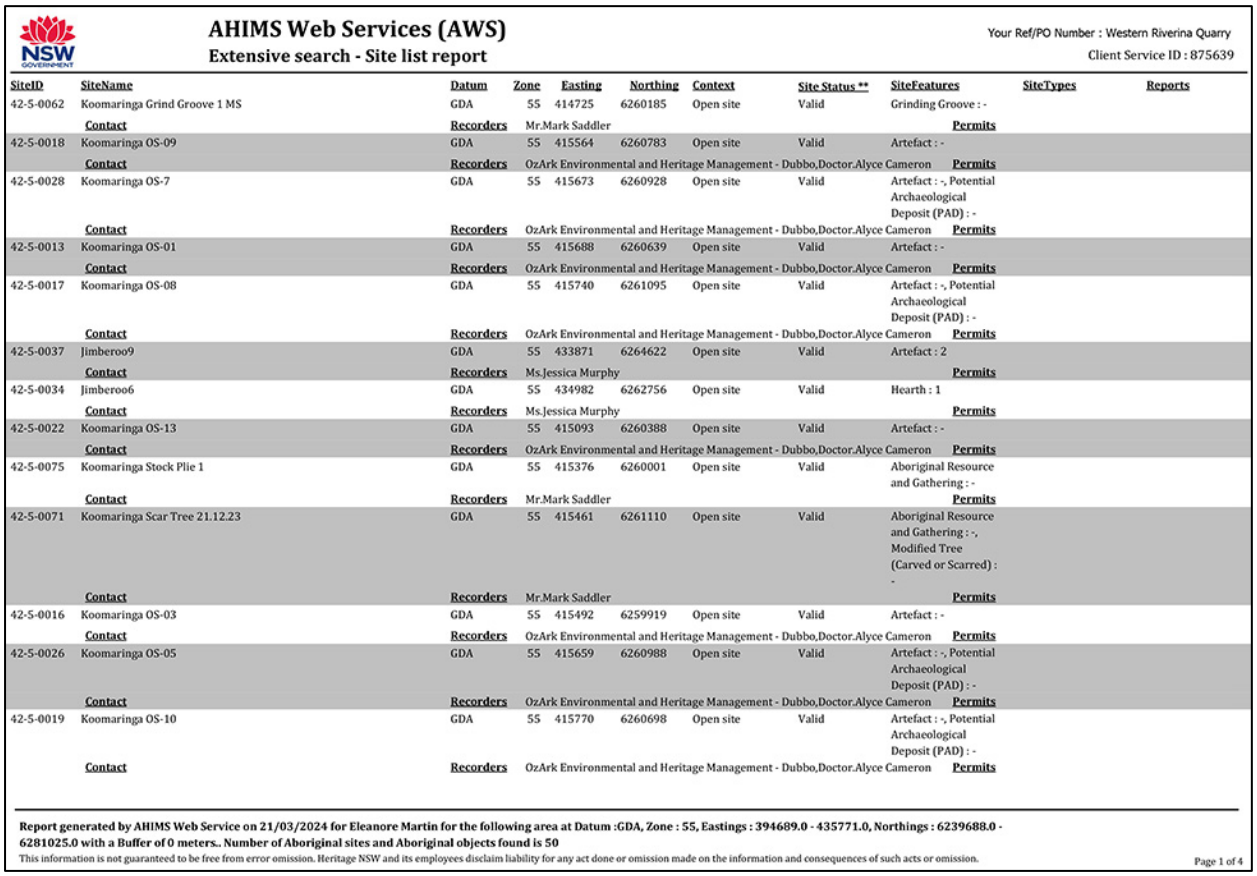
Appendix 2 Figure 4: 23/03/2024 AHIMS search.



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

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 875639

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0062	Koomaringa Grind Groove 1 MS	GDA	55	414725	6260185	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0018	Koomaringa OS-09	GDA	55	415564	6260783	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0028	Koomaringa OS-7	GDA	55	415673	6260928	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0013	Koomaringa OS-01	GDA	55	415688	6260639	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0017	Koomaringa OS-08	GDA	55	415740	6261095	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0037	Jimberoo9	GDA	55	433871	6264622	Open site	Valid	Artefact : 2		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0034	Jimberoo6	GDA	55	434982	6262756	Open site	Valid	Hearth : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0022	Koomaringa OS-13	GDA	55	415093	6260388	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0075	Koomaringa Stock Plie 1	GDA	55	415376	6260001	Open site	Valid	Aboriginal Resource and Gathering : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0071	Koomaringa Scar Tree 21.12.23	GDA	55	415461	6261110	Open site	Valid	Aboriginal Resource and Gathering : -, Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0016	Koomaringa OS-03	GDA	55	415492	6259919	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0026	Koomaringa OS-05	GDA	55	415659	6260988	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0019	Koomaringa OS-10	GDA	55	415770	6260698	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		

Report generated by AHIMS Web Service on 21/03/2024 for Eleanore Martin for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 50

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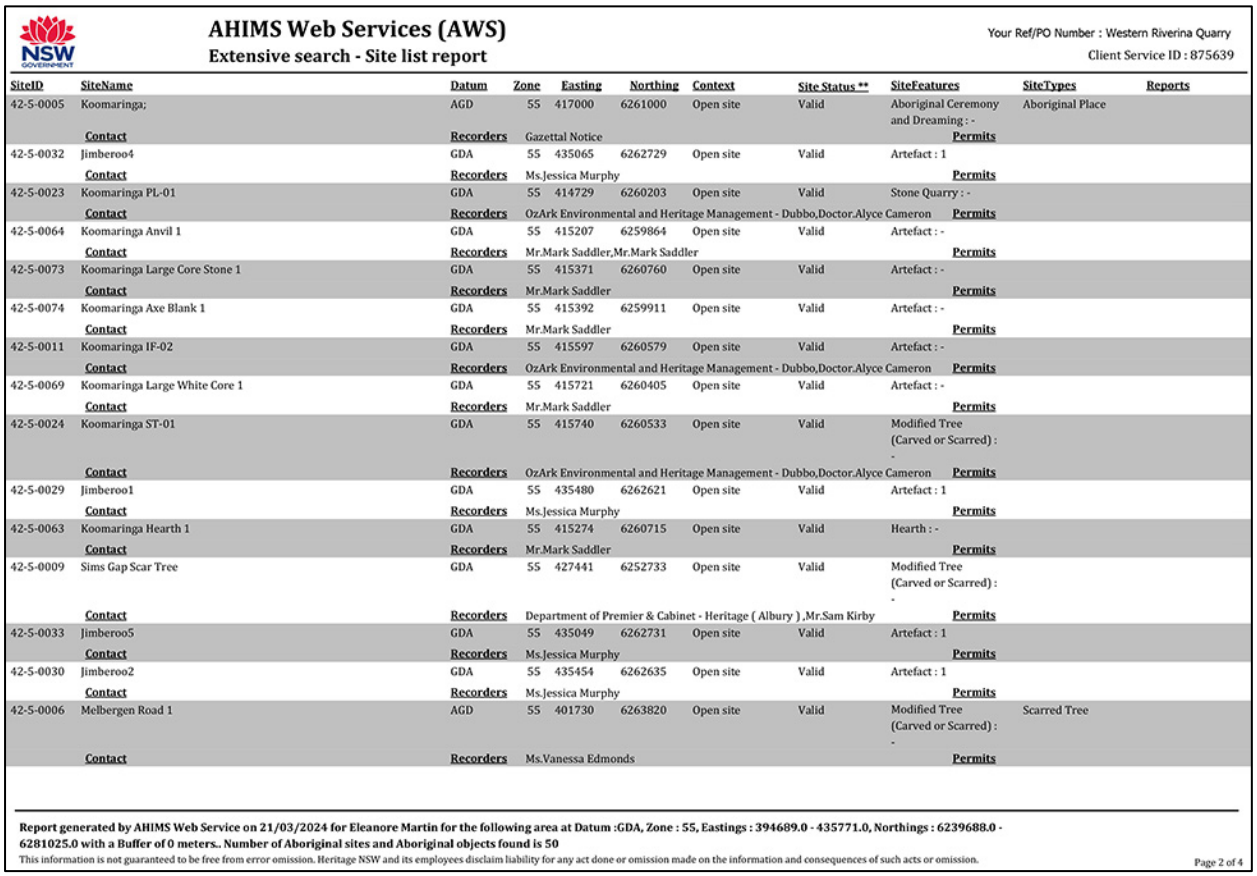

AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 875639

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0005	Koomaringa;	AGD	55	417000	6261000	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Aboriginal Place	
	Contact	Recorders	Gazettal Notice					Permits		
42-5-0032	Jimberoo4	GDA	55	435065	6262729	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0023	Koomaringa PL-01	GDA	55	414729	6260203	Open site	Valid	Stone Quarry : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0064	Koomaringa Anvil 1	GDA	55	415207	6259864	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Mark Saddler,Mr.Mark Saddler					Permits		
42-5-0073	Koomaringa Large Core Stone 1	GDA	55	415371	6260760	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0074	Koomaringa Axe Blank 1	GDA	55	415392	6259911	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0011	Koomaringa IF-02	GDA	55	415597	6260579	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0069	Koomaringa Large White Core 1	GDA	55	415721	6260405	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0024	Koomaringa ST-01	GDA	55	415740	6260533	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0029	Jimberoo1	GDA	55	435480	6262621	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0063	Koomaringa Hearth 1	GDA	55	415274	6260715	Open site	Valid	Hearth : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0009	Sims Gap Scar Tree	GDA	55	427441	6252733	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Department of Premier & Cabinet - Heritage (Albury),Mr.Sam Kirby					Permits		
42-5-0033	Jimberoo5	GDA	55	435049	6262731	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0030	Jimberoo2	GDA	55	435454	6262635	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0006	Melbergen Road 1	AGD	55	401730	6263820	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders	Ms.Vanessa Edmonds					Permits		

Report generated by AHIMS Web Service on 21/03/2024 for Eleanore Martin for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 50

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 875639

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
42-5-0002	Rothdene;Cocoparra Nature Reserve;	AGD	55	421791	6240261	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0070	Koomaringa Anvil 22.12.23	GDA	55	414841	6260441	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0072	Koomaringa PAD Site 21.12.23	GDA	55	415442	6260843	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0015	Koomaringa OS-04	GDA	55	415640	6260394	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0067	Koomaringa PAD 2 MS	GDA	55	415648	6260979	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0014	Koomaringa OS-02	GDA	55	415749	6260802	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0020	Koomaringa OS-11	GDA	55	414784	6260133	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0068	Koomaringa PAD 1 MS	GDA	55	415645	6260907	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0008	Sims Gap Aboriginal Cultural Landscape	GDA	55	427147	6252571	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Department of Premier & Cabinet - Heritage (Albury),Mr.Sam Kirby					Permits		
42-5-0012	Koomaringa IF-03	GDA	55	415166	6259950	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0065	Koomaringa Hammer Stone 1	GDA	55	415447	6259944	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0010	Koomaringa IF-01	GDA	55	415541	6260025	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0027	Koomaringa OS-6	GDA	55	415706	6260914	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0025	Koomaringa PL-02	GDA	55	415812	6260344	Open site	Valid	Artefact : -, Stone Quarry : -		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Western Riverina Quarry
Client Service ID : 875639

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0038	Jimberoo10	GDA	55	433641	6264825	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0036	Jimberoo8	GDA	55	434591	6263264	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0035	Jimberoo7	GDA	55	434613	6263227	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		
42-5-0001	Rothdene;Cocoparra Nature Reserve;	AGD	55	421782	6241175	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1267
	Contact	Recorders	ASRSYS					Permits		
42-5-0021	Koomaringa OS-12	GDA	55	415276	6259956	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
42-5-0004	Koomaringa	GDA	55	415300	6260684	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	Contact	Recorders	R Williams,OzArk Environmental and Heritage Management - Dubbo,Mr.Ben Churc					Permits		
42-5-0066	Koomaringa Scar 1	GDA	55	415569	6260039	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mr.Mark Saddler					Permits		
42-5-0031	Jimberoo3	GDA	55	435432	6262639	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Jessica Murphy					Permits		

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 21/03/2024 for Eleanore Martin for the following area at Datum :GDA, Zone : 55, Eastings : 394689.0 - 435771.0, Northings : 6239688.0 - 6281025.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 50

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APPENDIX 3: ABORIGINAL HERITAGE: UNANTICIPATED FINDS PROTOCOL

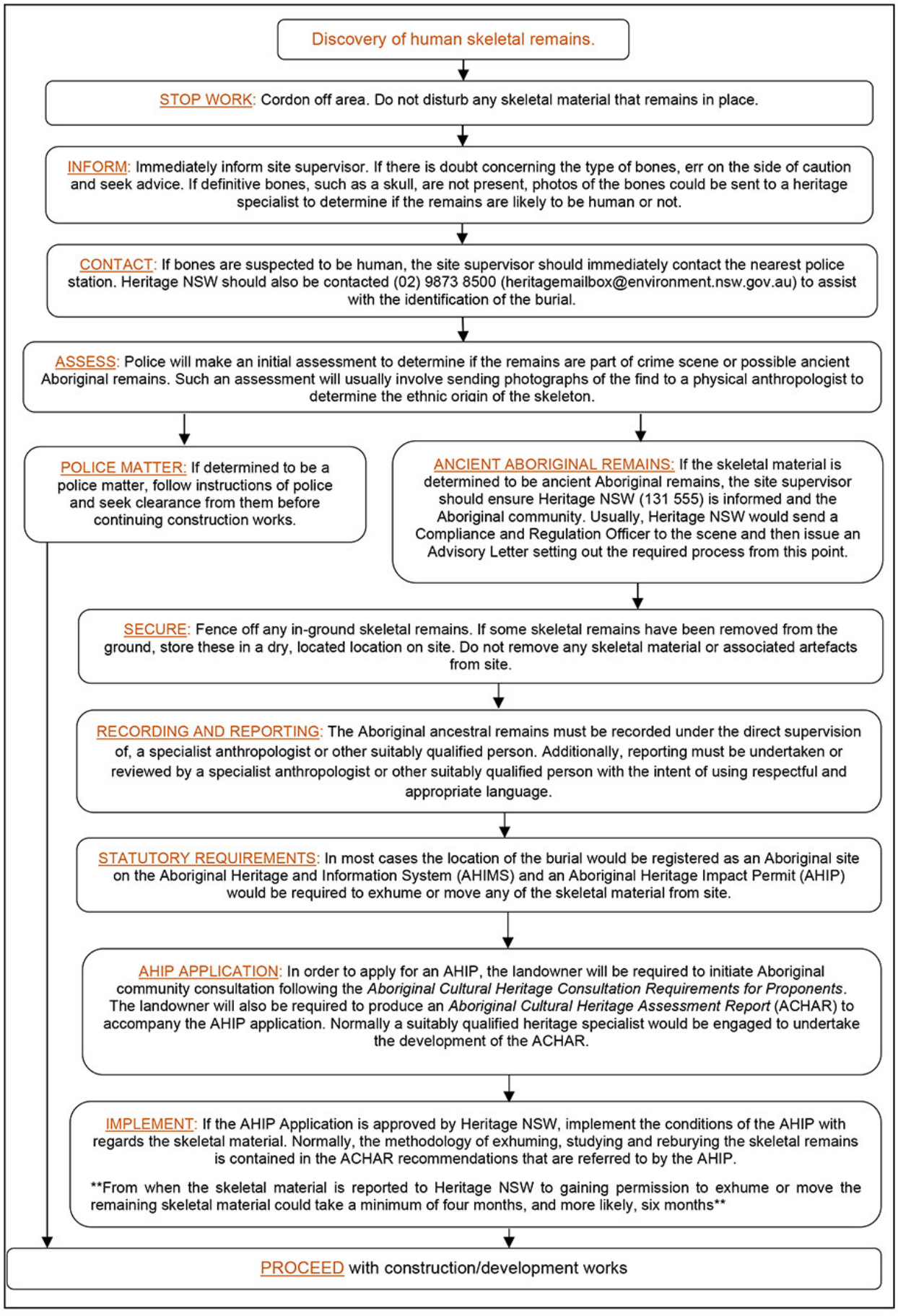
An Aboriginal artefact is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification; i.e., smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may also consider scientific and educational value.

Protocol to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered:

17. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, the Applicant must:
    a. Not further harm the object
    b. Immediately cease all work at the particular location
    c. Secure the area to avoid further harm to the Aboriginal object
    d. Notify HNSW as soon as practical on (02) 9873 8500 (heritagemailbox @environment.nsw.gov.au), providing any details of the Aboriginal object and its location
    e. Not recommence any work at the particular location unless authorised in writing by HNSW.
18. If Aboriginal burials are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and HNSW contacted (see **Appendix 4**).
19. Cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
    f. The recording and assessment of the find(s)
    g. The fulfilment of any legal constraints arising from the find(s), including complying with HNSW directions
    h. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
20. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from HNSW (normally an AHIP).

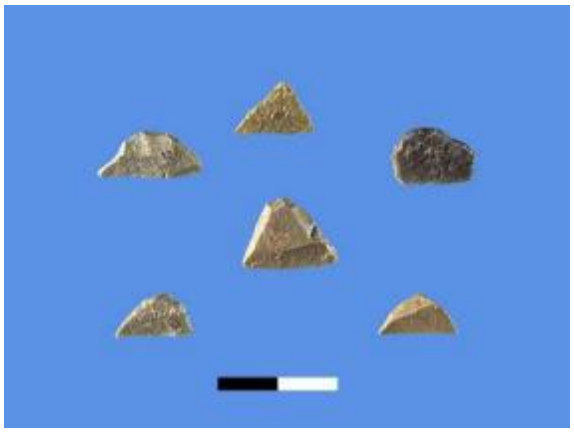
APPENDIX 4: UNANTICIPATED SKELETAL REMAINS PROTOCOL



APPENDIX 5: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION

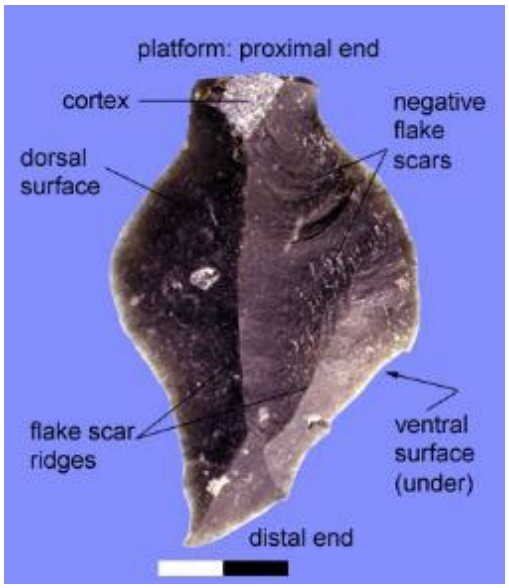
Retouched blades (scale = 1cm)

Flake

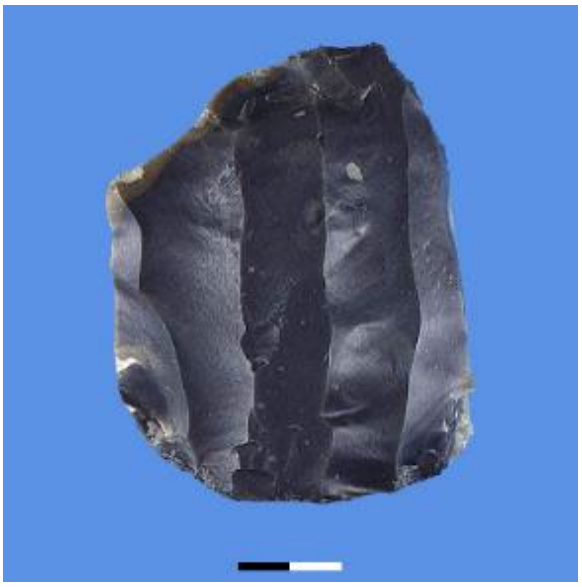


Microliths (scale = 1cm)

Scraper (scale = 1cm)



Flake characteristics (scale = 1cm)



Core from which flakes have been removed (scale = 1cm)

APPENDIX 6: ARTEFACT CATALOGUE

Site name	Art. ID	Art. Type	Art. Material	Material Colour	Integrity	Reduction	Platform	Termination	Length (mm)	Width (mm)	Thickness (mm)	Notes
Key: Artefact type F=flake, FP=flaked piece (debitage), C=core, HS=hammerstone, GP=grinding plate. Raw material F=felsite, S=silcrete, Qz=quartzite, Q=quartz, SS=sandstone. Integrity C=complete, PF=proximal fragment, DF=distal fragment, LB=longitudinal break. Reduction P=primary, S=secondary, T=tertiary.												
IF-01	A23	F	F	White	PF	T			32	35	1	Retouch
IF-02	A24	C	F		C	T			81	70	75	
IF-03	A74	C	F		C	T			50	50	20	
OS-01	A40	F	F		PF	T			58	35	18	
OS-01	A41	FP	F		C	S			35	30	5	5% cortex
OS-01	A42	F	F	White/red	PF	T			45	25	10	Approximately 20 broken flakes and flaked pieces surrounding point
OS-02	A35	F	F	White/grey	C	T			40	25	7	
OS-02	A36	C	F	Tan/orange	C	T			78	60	50	
OS-02	A37	C	F		C	T			35	45	34	Unidirectional. More than 10 flake scars present. Less than 5% cortex
OS-02	A38	FP	F		C	S			53	40	20	
OS-02	A39	F	F		C	T			78	100	35	Retouch. Scraper.
OS-03	A10	F	F	Grey	C	T			30	25	8	
OS-03	A11	F	F	Grey	C	T	Simple	Feather	25	20	5	
OS-03	A12	F	F	Tan	C	T	Simple	Feather	30	20	7	
OS-03	A13	FP	F	Grey	C	T			13	15	4	
OS-03	A14	F	F	White	C	T	Flaked	Hinge	27	20	6	
OS-03	A15	FP	F	Tan	C	T			12	15	3	
OS-03	A16	FP	F	White	C	S			30	40	5	
OS-03	A17	F	F		C	T			40	20	8	
OS-03	A18	FP	F		C	T						
OS-03	A19	FP	F									
OS-03	A20	F	F	White	PF	T			25	20	5	
OS-03	A21	FP	F		C	S						

Site name	Art. ID	Art. Type	Art. Material	Material Colour	Integrity	Reduction	Platform	Termination	Length (mm)	Width (mm)	Thickness (mm)	Notes
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OS-03	A22	FP	F		C	S						
OS-04	A76	F	F	Grey	C	S	Simple	Feather	100	90	20	
OS-04	A77	F	F		C	T	Simple	Feather	30	20	5	
OS-04	A78	FP	F						20	15	8	
OS-04	A79	F	F	Cream	PF	T			25	22	9	
OS-04	A80	H	B			P			150	200		
OS-04	A81	F	F	Cream/grey	C	T	Simple	Feather	48	20	5	
OS-04	A82	FP	F	Cream/grey	C	T			23	15	10	
OS-04	A83	FP	F	Grey	C	T			35	30	10	
OS-04	A84	SS	F	Grey	C	T	Flaked		65	55	20	Retouch.
OS-04	A85	F	F	White	PF	T	Simple		25	18	5	
OS-04	A86	F	F		PF	T						
OS-04	15 artefacts	F & FPs	F									In a 0.5 m by 0.5 m square
OS-04	17 artefacts	F & FPs	F									In a 0.5 m by 0.5 m square
OS-04	19 artefacts	F & FPs	F									In a 0.5 m by 0.5 m square
OS-04	3 artefacts	F & FPs	F									In a 0.5 m by 0.5 m square
OS-04	8 artefacts	F & FPs	F									In a 0.5 m by 0.5 m square
OS-05	A47	F	F		C	T	Simple	Hinge/Step	40	42	10	
OS-05	A48	F	F		C	T	Simple	Feather	40	18	4	
OS-05	A49	FP	F		C	T			25	26	5	
OS-05	A50	F	F		C	S	Simple	Feather	70	60	15	
OS-05	A51	FP	F						30	25	3	
OS-05	A52	FP	F						40	20	10	

Site name	Art. ID	Art. Type	Art. Material	Material Colour	Integrity	Reduction	Platform	Termination	Length (mm)	Width (mm)	Thickness (mm)	Notes
Key: Artefact type F=flake, FP=flaked piece (debitage), C=core, HS=hammerstone, GP=grinding plate. Raw material F=felsite, S=silcrete, Qz=quartzite, Q=quartz, SS=sandstone. Integrity C=complete, PF=proximal fragment, DF=distal fragment, LB=longitudinal break. Reduction P=primary, S=secondary, T=tertiary.												
OS-05	A53	GP	SS		LB				120	80	30	Slight patina on flat edge, rough on other side. Broken in half
OS-05	A54	F	F		C	S	Crushed	Feather	98	65	28	
OS-06	A25	F	F		C	T			75	80	30	
OS-06	A26	FP	F		C	T			20	18	5	
OS-06	A27	FP	F						18	15	2	
OS-06	A28	F	F	Red/black	C	T	Flaked	Feather	110	82	30	Retouch
OS-06	A29	F	F	Grey/red	C	T	Flaked	Feather	40	20	8	
OS-06	A30	FP	F		C	T			20	22	3	
OS-06	A31	F	F		DF	T			0-20			
OS-06	A32	F	F		C	S			0-20			
OS-06	A33	F	Q		PF	T			0-20			
OS-06	A34	C	F		C	T			70	65	30	
OS-06	A87	H	F		C	Nil			100	90	110	Pitting around edges
OS-07	A45	F	F		C	S	Simple	Hinge/Step	30	33	7	Cortex on outer side of flake
OS-07	A46	F	F		C	T	Simple	Hinge/Step	50	43	15	
OS-08	A55	FP	F		C	T			65	30	17	
OS-08	A56	F	F		C	T	Flaked	Hinge/Step	45	80	15	Use wear
OS-08	A57	F	F		C	T	Simple	Feather	30	20	3	
OS-08	A88	F	F	Yellow	C	T	Simple	Hinge/Step	20	20	3	
OS-09	A43	F	F		C	T	Simple	Hinge/Step	52	35	10	
OS-09	A44	FP	F		C	T			25	10	10	
OS-10	A94	FP	F	White	C	S			30	34	4	
OS-10	A95	FP	F	White	C	T			20	22	3	
OS-10	A96	FP	F	White	C	T			40	30	10	
OS-11	A60	F	F	Red	C	T	Simple	Feather	20	15	5	Thumbnail scraper

Site name	Art. ID	Art. Type	Art. Material	Material Colour	Integrity	Reduction	Platform	Termination	Length (mm)	Width (mm)	Thickness (mm)	Notes
Key: Artefact type F=flake, FP=flaked piece (debitage), C=core, HS=hammerstone, GP=grinding plate. Raw material F=felsite, S=silcrete, Qz=quartzite, Q=quartz, SS=sandstone. Integrity C=complete, PF=proximal fragment, DF=distal fragment, LB=longitudinal break. Reduction P=primary, S=secondary, T=tertiary.												
OS-11	A61	FP	F	Red	C	S			40	30	10	50% cortex
OS-11	A62	FP	F	Cream	C	T			50	35	15	
OS-11	A63	F	F	Red	C	T	Simple	Hinge/Step	42	25	6	
OS-11	A64	C	F	Red/Orange	C	S			80	50	30	50% cortex, unidirectional, 2 flake scars
OS-11	A65	FP	F	Cream	C	T			70	30	10	
OS-11	A66	C	F	Red	C	T			45	40	30	50% cortex, unidirectional, 2 flake scars, opportunistic core
OS-11	A67	F	F	Tan	C	S	Simple	Feather	50	30	10	20% cortex
OS-11	A89	FP	F									
OS-11	A90	C	F	Grey/orange	C	S			53	40	20	50% cortex, reduced/globular core
OS-11	A91	C	F	Grey	C	S			200	150	180	Opportunistic core, unidirectional
OS-11	A92	FP	F	Cream	C	T						
OS-12	A1	F	F	White	PF	T			30	27	8	
OS-12	A2	FP	F	White	C	T			30	25	13	
OS-12	A73	F	F	White	LB	T	Cortex	Feather	30	25	7	
OS-12	A75	C	F	White/cream	C	T			30	100	90	Unidirectional. 13 flake scars. Horse
OS-12	A93	F	F	Red/orange	PF	T	Simple		40	35	8	
OS-13	A68	F	F	Red	C	T	Simple	Feather	35	25	7	
OS-13	A69	F	F	Cream	C	T	Crushed	Hinge/Step	45	60	15	
Site A	A3	F	F		PF	T			45	40	5	
Site A	A4	F	F		C	T			48	22	1	
Site A	A5	F	F		PF	T			40	22	6	
Site A	A6	FP	F									
Site A	A7	FP	F									
Site A	A8	C	F									

Site name	Art. ID	Art. Type	Art. Material	Material Colour	Integrity	Reduction	Platform	Termination	Length (mm)	Width (mm)	Thickness (mm)	Notes
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Site A	A9	FP	F		C	S			20	24	1	
Site A	A97	C	F									
Site B	A72	C	F	Tan/green	C	T			150	110	50	

APPENDIX 7: HISTORIC HERITAGE: UNANTICIPATED FINDS PROTOCOL

A historic artefact is anything which is the result of past activity not related to the Aboriginal occupation of the area. This includes pottery, wood, glass and metal objects as well as the built remains of structures, sometimes heavily ruined.

Heritage significance of historic items is assessed by suitably qualified specialists who place the item or site in context and determine its role in aiding the community's understanding of the local area, or their wider role in being an exemplar of state or even national historic themes.

The following protocol should be followed if previously unrecorded or unanticipated historic objects are encountered:

1. All ground surface disturbance in the area of the finds should cease immediately, then:
    a) The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted
    b) The site supervisor will be informed of the find(s).
2. If finds are suspected to be human skeletal remains, then NSW Police must be contacted as a matter of priority.
3. If there is substantial doubt regarding the historic significance for the finds, then gain a qualified opinion from an archaeologist as soon as possible. This can circumvent proceeding further along the protocol for items which turn out not to be significant. If a quick opinion cannot be gained, or the identification is that the item is likely to be significant, then proceed to the next step.
4. Notify HNSW as soon as practical on (02) 9873 8500 (heritagemailbox @environment.nsw.gov.au),providing any details of the historic find and its location.
5. If in the view of the heritage specialist or HNSW that the finds appear not to be significant, work may recommence without further investigation. Keep a copy of all correspondence for future reference.
6. If in the view of the heritage specialist or HNSW that the finds appear to be significant, facilitate the recording and assessment of the finds by a suitably qualified heritage specialist. Such a study should include the development of appropriate management strategies.
7. If the find(s) are determined to be significant historic items (i.e. of local or state significance), any re-commencement of ground surface disturbance may only resume following compliance with any legal requirements and gaining written approval from HNSW.