

Appendix 5

Aboriginal Cultural Heritage and Archaeological Report (Updated)

prepared by

Past Traces Pty Ltd

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Monaro Rock Quarry Project –Aboriginal Cultural Heritage and
Archaeological Report - Royalla, NSW



Report Prepared for Monaro Rock Pty Ltd

Past Traces Pty Ltd

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Disclaimer

Past Traces Pty Ltd has undertaken this assessment in accordance with the relevant Federal, State and Local Government legislation. Past Traces accepts no liability for any damages or loss incurred as a result of use for any purpose other than that for which it was commissioned.

Field survey effectiveness is based on ground conditions. The absence of identified sites does not imply that the area is free of heritage potential. In the event that any cultural material or other heritage items are discovered during works, the Unexpected Finds Protocol included in the appendix must be applied

Restricted Information

Information contained within this report is culturally sensitive and should not be made publicly available. The information that is restricted includes (but is not limited to):

- ❖ Maps, Mapping Grid Reference Co-ordinates or images for Aboriginal heritage sites, places and objects.
- ❖ Location or detailed information regarding places of Aboriginal cultural significance, as expressed or directed by Representative Aboriginal Organisations, Aboriginal elders, or members of the wider Aboriginal community.
- ❖ Other culturally appropriate restricted information as advised by Aboriginal representatives and traditional knowledge holders.

Information in the report covered by the above categories should be redacted before being made available to the general public. This information should only be made available to those persons with a just and reasonable need for access.

ACKNOWLEDGEMENTS

We acknowledge the traditional custodians of the Country on which we live and work and pay our respects to Elders past, present and emerging. We thank all the community members who have taken the time to speak with us, share their knowledge and express their wishes for the area under assessment.

Past Traces acknowledges the assistance of the following people and organisations in the preparation of this report:

- ❖ Didge Ngunawal Aboriginal Corporation
- ❖ PD Ngunawal Consultancy
- ❖ King Brown Tribal Group
- ❖ Ngambri LALC
- ❖ Muragadi Aboriginal Corporation
- ❖ Buru Ngunawal Aboriginal Corporation
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- ❖ Ngunawal Heritage Aboriginal Corporation
- ❖ Corroboree
- ❖ Ngarigu Currawong Clan
- ❖ Konango
- ❖ Thunderstone Aboriginal Corporation
- ❖ Yurwang Gundana
- ❖ Djirringanj Elders Federation

Note on Terms

We have followed the NSW Heritage convention using terms such as 'Aboriginal' and defining groups of community, based on wide language groups i.e. 'Ngunnawal/ Wiradjuri. We apologise to any First Nations members who find this usage offensive.

Limitations

This assessment, whilst including discussions with RAPs in regards to intangible cultural heritage values does not include detailed cultural values mapping. All information is based from onsite discussions and feedback from RAPs.

This report covers the area of Aboriginal Cultural Heritage and does not include an assessment of historical archaeology or built heritage items. If the survey identifies these values as present, recommendations to further assessment would result.

History of the region is based on review of sources and does not constitute original or exhaustive historical research.

ABBREVIATIONS

ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AR	Archaeological Report
DECCW	NSW Department of Environment, Climate Change and Water now NSW Heritage
GPS	Global Positioning System
GSV	Ground Surface Visibility
LALC	Local Aboriginal Land Council
MGA	Map Grid of Australia
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party
SU	Survey Unit

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EXECUTIVE SUMMARY

Monaro Rock Pty Ltd are proposing to construct and develop a hard rock quarry in Royalla, NSW on land located adjacent to the ACT/NSW border, approximately 5km north of the intersection of Monaro Highway and Old Cooma Road. The project area covers the impact areas for the following components of the project infrastructure:

- ❖ Extraction area that would be developed in four stages within an area of approximately 21.1ha and to approximately 87 mbgl (a final floor elevation of 795AHD)
- ❖ Processing and stockpiling area that would be developed in two stages covering an area of approximately 17.9ha;
- ❖ Infrastructure Area comprising administration buildings, weighbridge, car parking area, fuel storage and workshop within an area of approximately 2.7ha;
- ❖ Quarry Access roads that would extend over approximately 4.0kms and connect the Project Site to the public road network via the Monaro Highway
- ❖ Visibility Barrier that would be developed in two stages within an area of approximately 16.1ha and
- ❖ Associated with these components would be additional infrastructure to support the project.

The project area is located to the east and northeast of Enchanted Hill, and is directly to the west of Beatty Hill, two prominent local topographical features. The project area is located within:

- ❖ Lot 1 & 2 DP555380
- ❖ Lot 6,152,255,256,257,258,259,282,283,301,302 DP754912
- ❖ Lot 7002 DP1019607
- ❖ Lot 6403 DP12449622
- ❖ Lot 5403 DP1244966
- ❖ Various unnamed Crown roads within the Property Boundary and proposed access to the Quarry
- ❖ And within the ACT, Tuggeranong Block 1414

The project area is shown in a regional context in Figure 1 with the proposed quarry layout in Figure 2.

The Monaro Rock quarry has been classified as a State Significant Development (SSD) and the development application will be assessed by the Department of Planning, Housing and Infrastructure (DPHI).

A range of environmental assessments are required to support this determination, including an Aboriginal Cultural Heritage Assessment Report (ACHAR) and consultation with the Aboriginal community. An ACHAR has been completed for the project in 2022 with survey of the original project site and consultation with Aboriginal representatives. Following the 2022 findings, redesign of the project has been undertaken and due to the lapse in time since the completion of the ACHAR, an updated ACHAR is required. The revised design reduced the footprint removing sections of the 2022 survey area from the project area. The updated ACHAR includes renewed consultation with the Aboriginal community, updates to heritage register searches, and updated assessment of heritage impacts against the revised impact footprint. These requirements are addressed in this report as well as providing the original information from the 2022 assessment.

Consultation with the Aboriginal community has been undertaken to assist the heritage team in assessing significance of identified heritage sites and to provide guidance in the development of culturally appropriate management strategies. Consultation was in accordance with the *Consultation Guidelines for Proponents NSW* (DECCW 2010a). Aboriginal representatives participated in the field survey undertaken for the 2022 assessment, and subsurface testing completed in 2026, in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b).

As a result of the background research, Aboriginal heritage field survey and consultation with the local Aboriginal community, thirty one (31) Aboriginal items consisting of 16 isolated finds and artefact scatters, two culturally modified trees (CMTs), seven (7) artefact scatters with areas of PAD and 6 areas of PAD are present within the 2022 survey area. Based on field survey findings, redesign was undertaken reducing the project footprint and additional areas surveyed.

As a result of the revised design twenty-one (21) sites are within the NSW section of the project area and require mitigation measures. Subsurface testing was undertaken in 2026 at eight areas of PAD (six of which are associated with surface sites). The testing revealed that low-density dispersed deposits were present at all eight areas and have been registered with AHIMS as subsurface deposits.

The project extends into the ACT, to provide connective access from the Monaro Hwy. Within this short section (approximately 150m) one Aboriginal heritage site is present, consisting of a single flake with an associated area of potential. A separate report has been commissioned on the ACT section of works for approval from ACT Heritage of surface collection and test excavations.

Based on assessment of significance, there are no items of high significance within the project area (NSW and ACT) that would preclude development with the implementation of the mitigation measures and following approval of impacts.

As heritage sites are present and impacts will result, mitigation measures will be required to allow the project to progress.

The following heritage recommendations should be implemented for the project:

- ❖ The project area contains twenty one (21) Aboriginal heritage sites. Of these 21 sites impacts will occur to 19 heritage sites. As these impacts are unavoidable, , approvals must be granted allowing works to proceed. No impacts may occur to any of the

identified Aboriginal Heritage sites unless approvals have been granted allowing harm to occur. The impacted sites are shown on Figure 22 with their required mitigation measures.

- ❖ Temporary barrier fencing will be required to be installed prior to any works commencing in the vicinity of sites that are not to be impacted as listed in the following recommendations. Temporary barrier fencing will consist of at a minimum, star pickets with hi-visibility flagging. The no harm areas will be marked on construction mapping and personnel informed at inductions of the heritage requirements to avoid all harm. Following completion of construction works in their vicinity, the temporary barrier fencing would be removed.
- ❖ Sites MQ8 and MQ9 are Culturally Modified Trees (CMTs), a rare site type and harm must be avoided. These sites are excluded from harm due to their significance and will not be impacted. Monaro Rock will install temporary barrier fencing of heritage sites MQ8 and MQ9 with a 10m buffer to prevent impact prior to any works in their vicinity commencing.
- ❖ Following approval, salvage collection of the eleven (11) surface artefact sites within the impact footprint, in line with the methodology provided in Section 9 would occur prior to works commencing in their vicinity. This applies to sites MQ1, MQ3, MQ4, MQ5, MQ6, MQ7, MQ10, MQ11, MQ14, MQ15, and MQ17.
- ❖ Following approval, salvage collection of the six (6) surface sites with associated subsurface deposits within the impact area, in line with the methodology provided in Section 9 would occur prior to works commencing in their vicinity. This applies to MQ2PAD, MQ13PAD, MQ16PAD, MQ19PAD, MQ20PAD and MQ32PAD. The subsurface testing revealed that these sites hold low significance.
- ❖ Subsurface investigation of the two (2) areas of PAD within the impact area was undertaken and revealed that sites MQ26PAD and MQ30PAD feature low-density dispersed deposits and have been registered as heritage sites on AHIMS. Approval of impacts will be required for these two sites.
- ❖ Installation of temporary barrier fencing with a 10m buffer to protect areas of PAD and heritage sites in the vicinity of works but located outside of project area is recommended to prevent accidental vehicle impact, as these sites are located in an open paddock context. Temporary barrier fencing as specified above should be installed prior to work commencing. This applies to sites, MQ12, MQ18, MQ21, MQ22, MQ23, MQ24, MQ25, and MQ29. Barrier fencing may be removed following completion of works. No impacts are approved for these sites.
- ❖ Three heritage sites MQ27, MQ28 and MQ31 are located distant to works following redesign. These sites will be marked on construction mapping as areas of avoidance and included in site inductions. No further actions are required for their protection under current design. If any future works are to occur within 20m of the sites, then

installation of temporary barrier fencing will be required. At completion of works this fencing may be removed

- ❖ Sites within the ACT are present on the access road to the project area. Approvals will be required from ACT Heritage Council for works to proceed. A separate ACT report has been completed for this purpose.
- ❖ Any recovered artefacts from the surface collections or subsurface testing stages, following analysis should be returned to country in line with the Return To Country protocol to be developed for the project.
- ❖ It is an offence to disturb an Aboriginal site without approvals as all Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974*. Should any Aboriginal objects be encountered during works not covered by approvals, then works must cease and a heritage professional contacted to assess the find. Works may not recommence until cleared by NSW Heritage. In this event the Unexpected Finds Protocol attached at Appendix 6 should be implemented.
- ❖ Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the RAPs for the project and may include further field survey.
- ❖ Continued consultation with the RAPs for the project should be undertaken. RAPs should be informed of any major changes in project design or scope, further investigations or finds.
- ❖ No further heritage investigations are required, other than those listed, should the project be approved, except in the event that unanticipated Aboriginal Objects and/or human remains are unearthed during any phase of the Project. If these events occur, the unexpected finds Protocol attached at Appendix 6 should be implemented.
- ❖ Monaro Rock has committed to implement these heritage measures, as components of the project approvals and management documentation. Monaro Rock has accepted these recommendations and would include them in the Heritage Management System for the Project.
- ❖ An Aboriginal Cultural Heritage Management Plan (ACHMP) should be developed to guide the construction and operational phases of the project. The ACHMP must:
 - be prepared by a suitably qualified and experienced person;
 - be prepared in consultation with the RAPs and reviewed by Heritage NSW;
 - include a description of the measures (and associated methodologies) that would be implemented for (where relevant):
 - surface collection and archaeological excavations;
 - post-excavation analysis and reporting of any archaeological works;

-
- avoiding and conserving areas of PAD and cultural sensitivity identified during the ACHAR, including fencing off or otherwise demarcating scarred tree sites;
 - long-term conservation options for areas of PAD and other registered sites within and adjacent to the project area, including ongoing monitoring of scarred trees and artefact sites;
 - ensuring workers on site receive suitable heritage inductions prior to carrying out any development on site, and that records are kept of these inductions;
 - ongoing consultation with RAPs during the implementation of the ACHMP;
 - Include a contingency plan and reporting procedure including an Unexpected Heritage Finds and Human Remains Procedure prepared in relation to Aboriginal cultural heritage, with these measures to be prepared in accordance with the guidelines and standards specified by Heritage NSW, be implemented for the duration of the project and to include the requirement to register any newly identified Aboriginal objects or sites in the AHIMS database.
 - Include a program to monitor and report on the effectiveness of these measures and any heritage impacts of the project.

1 INTRODUCTION

1.1 PROJECT BRIEF

Monaro Rock Pty Ltd (Monaro Rock), is proposing to construct and develop a hard rock quarry in Royalla, NSW, on land located adjacent to the ACT/NSW border, approximately 5km north of the intersection of Monaro Highway and Old Cooma Road (hereafter referred to as the Project).

The project area is located to the east of Enchanted Hill, and is directly to the west of Beatty Hill, two prominent local topographical features. The project area is located within:

- ❖ Lot 1 & 2 DP555380
- ❖ Lot 6,152,255,256,257,258,259,282,283,301,302 DP754912
- ❖ Lot 7002 DP1019607
- ❖ Lot 5403 DP1244966
- ❖ Various unnamed Crown roads within the Property Boundary and proposed access to the Quarry
- ❖ And within the ACT, Tuggeranong Block 1414

The project area is shown in a regional context in Figure 1 with the proposed quarry layout in Figure 2.

The topography of the local area is characterised by rolling hills and cleared paddocks at elevations above 850m with northwest trending ridgelines that are incised by steep gullies. The land is predominantly used for low productivity grazing or large lot rural residential development, with little significant vegetation remaining except for the ridgelines to the west that are vegetated with predominantly Monaro-Queanbeyan Rolling Hills Grassy Forest and Yellow Box Grassy Woodland (Capital Ecology, 2025).

The Project would initially be developed to provide hard rock aggregates and other products to concrete batching operations associated with the Company. However, it is planned that the operation would be expanded progressively to provide products to local and regional infrastructure and construction activities. The proposed rate of production would be scaled to meet demand.

The principal products that would be produced from the quarry would include the following:

- ❖ Concrete aggregates (typically 5mm to 20mm)
- ❖ Manufactured sand for use in the production of concrete
- ❖ Low grade aggregates
- ❖ Non-specified road pavement products
- ❖ Gabion rock for use in gabion baskets, retaining walls and drainage applications (typically 150mm to 30mm).

As a State significant quarry development, project components would consist of the following:

- ❖ Extraction area that would be developed in four stages within an area of approximately 21.1ha and to approximately 87 mbgl (a final floor elevation of 795AHD)
- ❖ Processing and stockpiling area that would be developed in two stages covering an area of approximately 17.9ha;
- ❖ Infrastructure Area comprising administration buildings, weighbridge, car parking area, fuel storage and workshop within an area of approximately 2.7ha;
- ❖ Quarry Access roads that would extend over approximately 4.0kms and connect the Project Site to the public road network via the Monaro Highway
- ❖ Visibility Barrier that would be developed in two stages within an area of approximately 16.1ha and
- ❖ Associated with these components would be additional infrastructure to support the project.

The development would have the potential to impact on any recorded and unrecorded Aboriginal heritage items that may be located within the project area. The proposed works would involve the substantial displacement and removal of soil and the importation of materials. Ground disturbance has the potential to impact on Aboriginal heritage sites and objects which are protected under the NSW *National Parks and Wildlife Act 1974* or historical sites which are protected under the NSW *Heritage Act 1977*. The purpose of the assessment is therefore to investigate the presence of any heritage sites and to assess the impacts and management strategies that may mitigate any impacts.

To assess impacts an Aboriginal Cultural Heritage Assessment, including consultation with Aboriginal community, desktop research and field survey was undertaken in 2022 identifying a number of heritage impacts. The project was then halted to allow for redesign and has now recommenced in 2024. To update the report, renewed consultation was commenced with a new assessment against the revised footprint undertaken, resulting in mitigation measures and recommendations (see Section 9).

The aim of this assessment is to use archaeological methods and consultation with the Aboriginal Community to identify potential risks to sites, locations or values that may hold cultural or archaeological significance. The report informs Monaro Rock of its responsibilities in regards to cultural heritage sites that exist within the project area by updating the 2022 report with the results of new consultation and updated impact assessment against the revised footprint.

This report will provide supporting documentation if harm will occur to heritage sites and approvals required. Reporting will follow the guidelines of NSW Heritage, in particular the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a), the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010). The requirements of the SEARs and reporting standards as outlined in the Burra Charter (ICOMOS 2013) have also been followed and implemented where applicable.

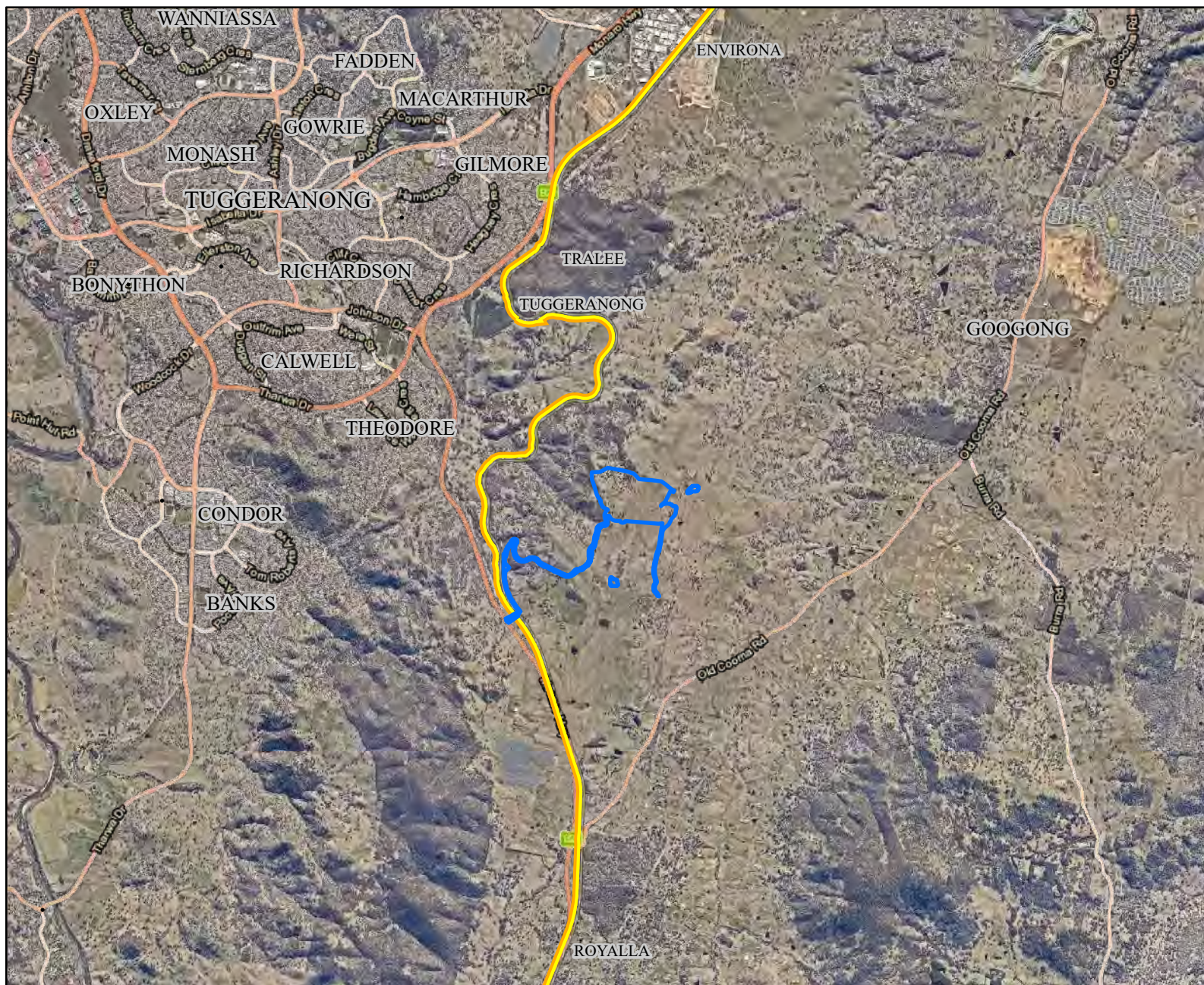
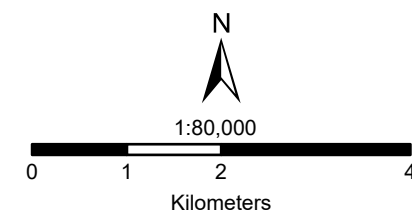


Figure 1: Regional Context

Legend

-  Project Area
-  ACT - NSW Border

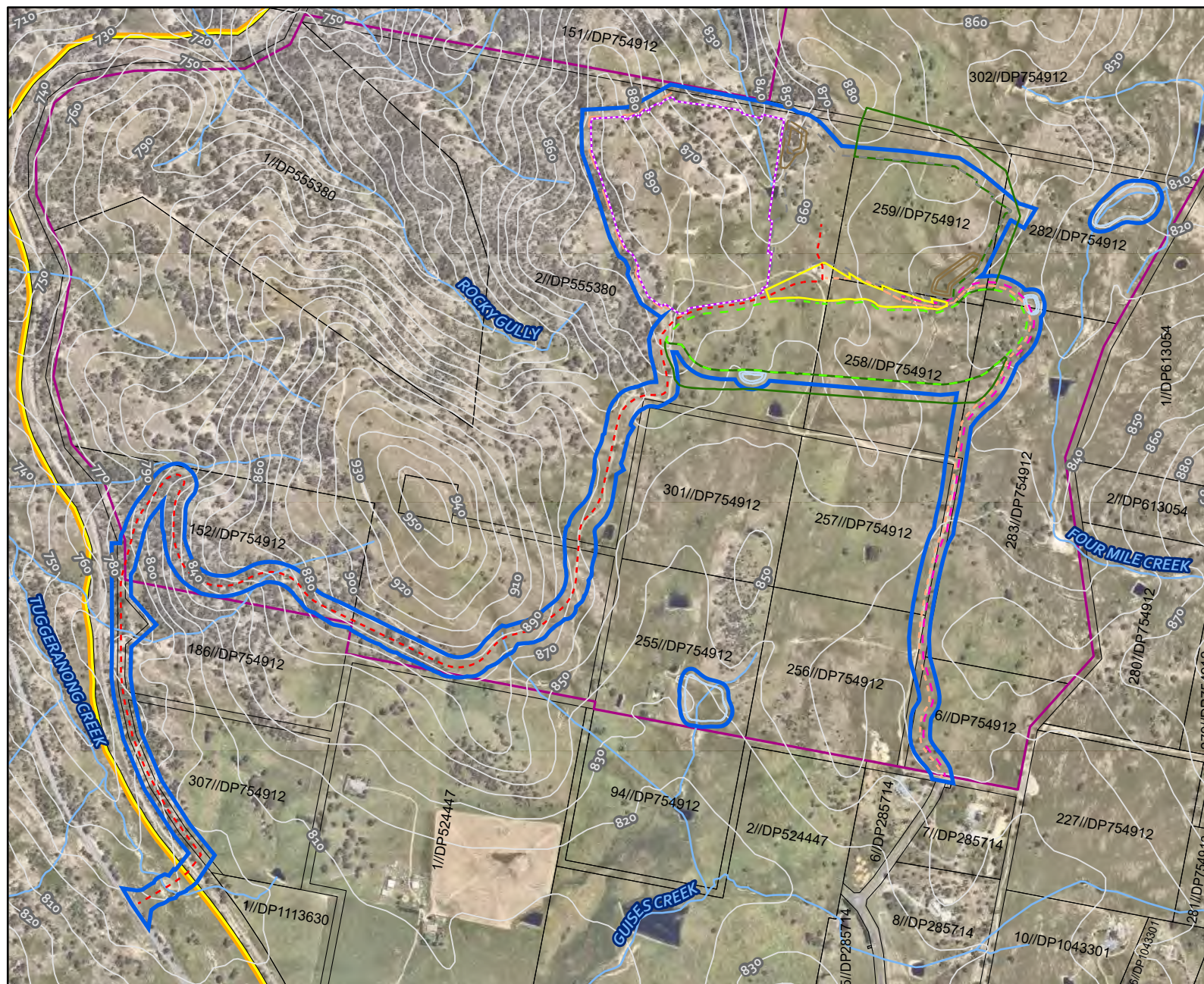


Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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Figure 2: Study Area

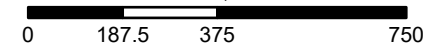


Legend

- Contour - 10m
- Watercourse
- Cadastre
- Property Boundary
- Project Area
- Extraction Area
- Internal Road
- Proposed Power Line
- Processing and Stockpiling Area
- Infrastructure Area
- Visibility Barrier
- Tree Screening
- Quarry Access Road
- Secondary Access Road
- Clean Water Dam
- Sediment Basin



1:15,000



Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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1.2 LEGISLATIVE CONTEXT

Under the *Environmental Planning and Assessment Act 1979* projects can be classified as State significant development (SSD) or infrastructure (SSI) - often referred to as major projects. The reasons and process for declaration of an SSD are set out in the *State Environmental Planning Policy (State & Regional Development) 2011*.

These major projects are assessed under Division 4.7 of the *Environmental Planning and Assessment Act 1979* and require development consent from the Minister for Planning (or delegate) before they may proceed. In accordance with Section of the Environmental Planning and Assessment Act 1979, an Aboriginal heritage impact permit under Section 90 of the National Parks and Wildlife Act 1974 is not required for a State significant development. Impacts to heritage items are assessed by the relevant authority, however a separate permit is not required.

The Department of Planning, Housing and Infrastructure (DPHI) co-ordinates the whole-of-government assessment of the merits of these projects.

The Heritage Council and Heritage NSW provide comments to DPE regarding major projects prior to their approval and may recommend conditions of consent for the project including but not limited to further investigations and salvage of any impacted sites.

The NSW Parks and Wildlife Act 1974 (Section 86) prohibit both knowingly and unknowingly causing harm to any Aboriginal object or place without an AHIP or other suitable defence from the Act. As a SSD an AHIP is not required to harm sites, which may, following project approvals, be impacted in line with conditions of consent. This does not diminish the level of assessment and scrutiny applied.

Penalties for impacting Aboriginal heritage sites without approvals are provided under Section 86 of the NSW Parks and Wildlife Act 1974:

Sec. 86 Harming or desecrating Aboriginal objects and Aboriginal places

(1) A person must not harm or desecrate an object that the person knows is an Aboriginal object.
Maximum penalty—

(a) in the case of an individual—2,500 penalty units or imprisonment for 1 year, or both, or (in circumstances of aggravation) 5,000 penalty units or imprisonment for 2 years, or both, or

(b) in the case of a corporation—10,000 penalty units.

(2) A person must not harm an Aboriginal object.
Maximum penalty—

(a) in the case of an individual—500 penalty units or (in circumstances of aggravation) 1,000 penalty units, or

(b) in the case of a corporation—2,000 penalty units.

(3) For the purposes of this section, circumstances of aggravation are—

(a) that the offence was committed in the course of carrying out a commercial activity, or

(b) that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.

This subsection does not apply unless the circumstances of aggravation were identified in the court attendance notice or summons for the offence.

(4) A person must not harm or desecrate an Aboriginal place.

Maximum penalty—

(a) in the case of an individual—5,000 penalty units or imprisonment for 2 years, or both, or

(b) in the case of a corporation—10,000 penalty units.

1.3 ASSESSMENT OBJECTIVES

The following is a summary of the major objectives of the assessment undertaken in 2022 and updated in 2024:

- ❖ Identify, register and consult with Registered Aboriginal Parties (RAPs).
- ❖ Search the AHIMS register and relevant heritage listings (e.g. local environmental plans) to identify listed Aboriginal cultural heritage sites within the project area and surrounding area.
- ❖ Review previous heritage reports in the vicinity of the project area in order to recognise any pattern in Aboriginal site distribution.
- ❖ Develop a predictive site location model.
- ❖ Conduct field surveys across the project area to identify / confirm areas of archaeological potential, recorded sites and disturbance.
- ❖ Complete subsurface testing in areas of potential archaeological deposits (PAD)
- ❖ Through consultation with the Aboriginal community assess the significance of identified heritage sites and develop culturally appropriate mitigation strategies.
- ❖ Identify the impacts of the proposed development on heritage sites within the project area.
- ❖ Develop management strategies for the identified heritage sites within the project area.

1.4 INVESTIGATORS AND CONTRIBUTORS

1.4.1 *Lyn O'Brien*

This report has been prepared by Lyn O'Brien, Director of Past Traces Pty Ltd with over 25 years' experience in the heritage profession. Since completing her BA (Hons) in Archaeology at the Australian National University (ANU) in 1996, Lyn has held a variety of consulting positions, from field assistant through to regional manager/senior archaeologist. As a senior archaeologist Lyn has extensive experience managing major and small scale projects, conducting numerous field surveys and excavations and authoring reports across both Aboriginal and Historical archaeology.

1.4.2 *Nathaniel Cracknell*

Nathaniel is a graduate of the University of Wollongong (Bachelor of Arts (Hons) majoring in History 2017). In 2021 he graduated with a Masters of Archaeological and Evolutionary Science, specialising in Bioarchaeology and Forensic Anthropology from the Australian National University. He has experience in field mapping, GIS, test excavations, salvage, and has assisted with surveys and excavations in both NSW and the ACT.

1.4.3 *Georgia Scully*

Georgia was employed during 2021 and is a graduate of the University of Sydney (Bachelor of Arts majoring in Archaeology 2016) and the Australian National University (Graduate Certificate of Studies, specialising in Forensic Archaeology and Paleopathology 2017). Georgia completed the field surveys in 2021. She has experience in field mapping, test excavations, salvage, artefact recording and section recording and has assisted with excavations in NSW and the ACT.

2 ABORIGINAL CONSULTATION

Consultation with the Aboriginal community has been undertaken to assist the heritage team in assessing significance of any identified heritage sites and to provide guidance in the development of culturally appropriate management strategies. Consultation was in accordance with the *Consultation Guidelines for Proponents NSW* (DECCW 2010a) completed in 2021 and updated in 2024. The *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* guideline (DECCW 2010a) outlines the following process to be undertaken:

- ❖ Notification of project proposal to Aboriginal stakeholders and invitation to register interest.
- ❖ Presentation of information about the proposed project and methodology to be followed.
- ❖ Gathering information about cultural significance from registered stakeholders by inviting comments, and input into management recommendations and significance
- ❖ Completion of any field work or site visits
- ❖ Review of draft cultural heritage assessment report to ensure views are adequately captured and recommendations incorporated into report.

The consultation log for the project detailing the consultation steps completed, a full list of RAPs and the consultation documentation is provided in Appendix 1.

As outlined above, Aboriginal community feedback has been sought during the design of the heritage assessment methodology and findings. The RAPs for the project provided information in relation to cultural values and site significance.

- ❖ Representatives of the Aboriginal community (Djirringanj Elders Federation,, Ngarigo Elders and Ngambri LALC) were present during the survey fieldwork and provided feedback on the project and significance assessment. Representatives Jason Davison and Ngambri LALC assisted with the subsurface testing program. Draft reports have been provided to all RAPs with request for feedback and any comments received have been included in the final report.

The consultation steps completed are provided in the consultation log for the project attached at Appendix A. A full list of the RAPs is also provided within the consultation log. Details of the steps completed for each of the stages are provided below. Additional documentation consisting of emails and all correspondence have been provided as supporting documentation, separate to this report to address privacy concerns.

2.1 2021 CONSULTATION

Step 1. A public notice was placed in the local newspaper the Canberra Times (22/5/2021) and Queanbeyan Age (25/5/2021) seeking registrations of interest from Aboriginal stakeholders. A copy of this public notice is attached at Appendix A.

Notification letters detailing the project with a request for Aboriginal stakeholders were sent to NSW Heritage (07/05/2021) the Ngambri Local Aboriginal Land Council (LALC), and various statutory authorities, as identified under the consultation requirements on the 26/5/2021. Following feedback from NSW Heritage, notification letters were then sent to identify stakeholders on the 26/5/2021 with a 14 day registration period of interest.

In response to the public notice and notification letters, eighteen groups registered their interest in participating in the project and holding cultural connection to the project area. The Aboriginal stakeholders who registered for the project (the Registered Aboriginal Parties – RAPs) are:

- ❖ Didge Ngunawal Aboriginal Corporation
- ❖ PD Ngunawal Consultancy
- ❖ King Brown Tribal Group
- ❖ Ngambri LALC
- ❖ Muragadi Aboriginal Corporation
- ❖ Buru Ngunawal Aboriginal Corporation
- ❖ Karlari Ngunnawal Pajong/Wallabaloa Descendents
- ❖ Ngunnawal Pajong/Wallabaloa Descendents
- ❖ Mirrabee
- ❖ Ngarigo Elders
- ❖ Freeman and Marx
- ❖ Ngunawal Heritage Aboriginal Corporation
- ❖ Corroboree
- ❖ Ngarigu Currawong Clan
- ❖ Konango
- ❖ Thunderstone Aboriginal Corporation
- ❖ Yurwang Gundana
- ❖ Djirringanj Elders Federation

Step 2. Project pack containing further details and mapping of the project was sent to each RAP on the 26/5/2021 with the invitation to register letter.

Step 3. A Methodology Pack outlining the proposed methodology to be followed for the project was sent to all RAPs for review on the 11/6/2021. RAPs were invited to provide comments on the proposed methodology and to provide any information that they may hold in relation to the cultural values of the project area.

Step 4: Field survey over the areas of impact was undertaken on the 13th, 14th and 15th of September 2021 with the participation of Ngarigo/Djirringanj Elders Foundation, Ngambri LALC and Ngunnawal Elders Corporation.

Step 5. Based on feedback from RAPs on two culturally significant sites, the Project was adjusted to avoid impact to these sites and provide a 10m buffer from any disturbance. The adjusted Project design has been incorporated into this report.

Step 6. Emails were sent at regular intervals (every 12 weeks) to maintain contact with RAPs and invite any comments on aspects of the project ceasing mid 2023.

2.2 2024 CONSULTATION

Step 1. A public notice was placed in the local newspaper the Canberra Times (17/2/2024) and Queanbeyan Age (20/2/2024) seeking registrations of interest from Aboriginal stakeholders. A copy of this public notice is attached at Appendix A.

Notification letters detailing the project with a request for Aboriginal stakeholders were sent to NSW Heritage, the Ngambri Local Aboriginal Land Council (LALC), and various statutory authorities, as identified under the consultation requirements on the 20/2/2024. Following feedback from NSW Heritage, notification letters were then sent to identify stakeholders on the 28/2/2024 with a 14 day registration period of interest.

In response to the public notice and notification letters, twenty three groups registered their interest in participating in the project and holding cultural connection to the project area. The Aboriginal stakeholders who registered for the project (the Registered Aboriginal Parties – RAPs) are:

- ❖ Ngambri LALC
- ❖ Serena Williams
- ❖ Byamee Williams -
- ❖ MAH – Rob Williams on behalf of Arnold Williams
- ❖ John Dixon
- ❖ Adrian Brown
- ❖ James Mundy
- ❖ Coroboree
- ❖ Didge Ngunawal
- ❖ Kamilaroi
- ❖ Sonione Rogers
- ❖ King Brown
- ❖ Bradley Bell
- ❖ Konnango
- ❖ Mirrabee
- ❖ Jason Davison
- ❖ Clorine Lyons
- ❖ Merrigarn
- ❖ Buru Ngunawal
- ❖ Guntawang
- ❖ Mundawari
- ❖ Ngunawal Elder

❖ Little Gudgenby

Step 2. Project pack containing further details and mapping of the project was sent to each RAP on the 08/05/2024.

Step 3. A Methodology Pack outlining the proposed methodology to be followed for the project was sent to all RAPS for review on the 21/5/2024. RAPs were invited to provide comments on the proposed methodology and to provide any information that they may hold in relation to the cultural values of the project area.

Step 4: An email was sent to all RAPS on the 20/10/2024 providing an status update on the redesign process and report preparation. A further update was provided on the 19/4/2025.

Step 5 - A draft version of this report was supplied to the RAPs on 06/06/25 with a timeframe of 28 days to provide feedback on the report and suggest amendments.

Step 6 – Following comments from NSW Heritage in regards to subsurface testing (SST) requirements, the draft SST was provided to all RAPs on the 30/10/25 with a 28 day period for comments.

Step 7 – SST was undertaken in February and March 2026 with the participation of the Ngambri LALC and RAP Jason Davison.

Step 8 – A draft version of the report was supplied to the RAPs on the 13/4/2026 with a timeframe of 28 days to provide feedback on the report.

2.3 ABORIGINAL COMMUNITY FEEDBACK

Throughout the life of the project Aboriginal community feedback has been sought in regards to the methodology to be undertaken and the results of the heritage assessment. No information has been provided showing that the project area holds specific cultural values or that known heritage sites are located within the project area that have not been identified during the heritage assessment.

Members of the RAPs (Ngarigo/Djirringanj Elders Foundation, Ngambri LALC and Ngunnawal Elders Corporation) participated in the field survey and provided guidance on cultural significance and culturally appropriate management strategies for the identified sites.

Members of the Ngambri LLAC and RAP Jason Davison participated in the subsurface testing and provided guidance on cultural significance and management recommendations.

All responses received from the RAPs have been incorporated into the final report. No objections to the proposal have been raised by the RAPs for the project following the inclusion of the recommended mitigation measures and avoidance of high significance sites by the proponent.

3 ABORIGINAL ARCHAEOLOGICAL CONTEXT

A desktop assessment has been undertaken to review the existing archaeological record for the project area, and the wider Royalla region in accordance with Requirements 1 to 4 of the Code of Practice. This information has been used to identify previously recorded sites and to develop an Aboriginal site prediction model for the project area.

3.1 ABORIGINAL GROUPS WITHIN THE PROJECT AREAS

The major language group identified in the project area region by Norman Tindale (1974) in his seminal work on Aboriginal tribal boundaries are the Ngarigo and Wolgalu people. The boundaries of the Ngarigo covered most of the Monaro Tablelands and extended into the Australian Alps covering the area of Mt Kosciusko and Jindabyne. To the south of Bombala the Bidawal people occupied the area to the coast. This distribution with minor amendments is still accepted and the review of tribal boundaries undertaken in the 1990s (Horton 1996) confirmed these earlier linguistic divisions. The area of Queanbeyan is considered to be the boundary of the Wolgalu people and the area to the east of Queanbeyan was probably visited by people from both groups and the area of Canberra was the traditional lands of the Ngambri and Ngannawal people.

The Ngarigo lived permanently on the Monaro tablelands travelling to other areas for trade and ceremonies. Their northern tribal boundaries approximated that of the Cooma-Monaro Shire, probably about one third of their territory which extended over to Thredbo, down to Bombala and across the NSW Victorian border to Suggan Buggan. (Plowman 2007:4).

Currie and Ovens in 1823 encountered Aboriginal people recording details about the land and the people:

"...passed through a chain of clear downs to some very extensive ones, where we met a tribe of natives. From these natives we learned that the country before us was called Monaroo which they described as very extensive" (Mitchell 1926).

One of the best sources for observations of the Indigenous inhabitants of the Monaro region is Helms who noted many features and traditions of Aboriginal life (1895). His observations must be viewed as from a white perspective and filtered through his cultural traditions as with all cross cultural ethnography, but despite these limitations, his work is a valuable reference for the region. His reflections on the Aboriginal life of the region provide a glimpse of a functioning hunter and gatherer lifestyle with a cycle of repeated visits to areas at times of seasonable resource availability and a ceremonial life that imposed duties and responsibilities on members of the group.

Mitchell (1926) in Back to Cooma notes that the Ngarigo were numerous with gatherings of over 500 people not unusual and that the Bogong Moth was hunted annually with other 'tribes' joining the Ngarigo in the mountains. He notes that relations between neighbouring groups was friendly and large corroborees frequent with body painting, dancing and music (Pg 34-35).

When groups from the Monaro travelled to the Mountains for the annual Bogong Moth gatherings, this was a time of tribal exchange of goods and information (Kamminga 1992, Plowman 2007:4). The annual passage of the Bogong Moth represented a time of plenty when time could be spared for ceremonial and social activities that strengthen familial and trading networks across boundaries. The pathways to the Bogong grounds are remembered and still utilised as modern walking trails in many instances.

Contact with European Settlement was disastrous for the Ngarigo traditional way of life with their disappearance noted :

Years ago hundreds of them would come in and about the towns to share in the annual distribution of blankets. To-day, and for a number of years past one might search Manaro, and fail to find a full-blooded native. The last of these in Cooma was one known throughout the district as "Biggenhook." He was a son of Bony Jack... (Mitchell 1926:34-35).

Despite the impacts, the Aboriginal community was resilient and today descendants are present throughout the region and actively work on strengthening community and cultural knowledge through different websites, communities and organisations.

3.2 PREVIOUS ARCHAEOLOGICAL WORK

Heritage assessments have been undertaken in increasing frequency due to the level of increased development and increased legislative requirements. As a result a number of cultural heritage surface surveys and sub-surface excavations have been conducted throughout the Royalla region. Review of this body of work allows for the development of regional settlement models; landscape usage; the use of resources; group movements; and site locations for the Royalla Region.

3.2.1 Royalla Region

A number of heritage assessments have been undertaken in the vicinity of the project area. These studies have been commissioned mainly due to residential developments and rural subdivisions, but regional studies of the Tinderry Reserve and infrastructure projects have also been undertaken. Of these many studies, the most relevant are summarised below.

An archaeological survey was carried out for the Electricity Commission of NSW (Barz 1980) along the route of the Canberra/Royalla 330/132kv Transmission Line. The surveyed route was approximately 44km, running north-south and crosses the Molonglo, Murrumbidgee and Naas rivers. The survey identified 10 surface sites of scattered artefacts, 2 isolated finds, 7 archaeological deposits, 2 historic sites and 1 possible quarry sites.

In 1999 Archaeological Heritage Survey (AHS) conducted an archaeological assessment of the 'Little Burra' residential estate, east of the Queanbeyan-Cooma Road, approximately covering 590ha. This assessment identified twenty Aboriginal sites. The majority of sites were artefact scatters located on the banks of a tributary creekline. The dominant material was quartz, normal for the region, followed by chert, silcrete and quartzite.

AHS (1999) completed a survey for the Royalla Residential Development, located approximately 3km to the south west of the current project. The survey area covered 1200 ha providing a large area of coverage of the region. Twelve artefact scatters, twenty isolated finds and one scarred tree was recorded during the fieldwork. The majority of sites were located along tributary creeklines with the dominant material consisting of quartz.

AHS (2001) completed the assessment for Stage 4 of the Royalla Station Development. The survey located five artefact scatters, five isolated finds and three areas of potential archaeological deposit (PAD). All the sites were located in association with tributary creeklines.

AHS (2002) completed the assessment for the Old Cooma Road upgrade between Jerrabomberra Creek and the Monaro Highway. A length of 5km was surveyed along the road alignment with no sites recorded.

Thompson (2002) surveyed a proposed 185ha rural subdivision on Burra Station locating a scatter of five black chert flaked pieces, an isolated silcrete flake and an isolated quartzite flaked piece. One of the isolated finds was located near a creek and the other sites were on slopes and crests.

AHS in 2003 investigated the proposed 243ha "Mount Burra Estate" approximately 15km south of the current study area. Ten artefact scatters and three potential archaeological deposits (PADs) were recorded. The sites were all located in level or gently sloping terrain within 200m of a water source. Artefacts included flakes, flaked pieces, cores, blades and a ground-edged hatchet head. Quartz and volcanics were the dominant raw materials with minor percentages of chert, silcrete and rhyolite.

AHS (2005) completed archaeological investigations for Stage 5 of the Royalla Estate. This assessment covered the 244 ha between Little Burra and Royalla developments, south of the current project area. The survey identified eight artefact scatters and three isolated finds. The sites were located on level areas of ground, most in creek line locations but some were on upper slopes. Quartz again dominated the assemblage.

Cultural Heritage Management Australia (CHMA 2012) assessed the proposed Royalla solar farm located 1.5kms to the southwest of the project area. The development covered approximately 100 hectares, with an additional 4km of underground electrical cable easement corridors. Thirty eight sites mainly artefact scatters were identified and assessed as holding low significance.

CHMA (2013) was engaged by ACCIONA Energy to undertake additional heritage investigation works for the Royalla Solar Farm. These works followed on from their previous survey and consisted of sub-surface investigations, salvage of Aboriginal heritage sites, survey assessments of areas, and the establishment of protective measures around heritages sites, all within the development footprint. Due to a realignment of the underground cable route, CHMA was then engaged to conduct an archaeological impact assessment of the realignment. Subsurface testing was conducted, and as part of the test pitting program, surface artefacts associated within each site were salvaged by CHMA and RAO representatives, and the artefacts relocated. From test pitting across two realignment sites, 12 artefacts were recovered, and seventeen artefacts were recovered from surface scatters.

CHMA (2014) also produced an addendum report in conjunction with previous heritage assessments following ACCIONA Energy's finalized alignment of the underground cable route, and a further six alterations of the original surveyed route. No areas of Aboriginal heritage sites were identified in the areas of realignment.

AHS (2014a) completed a heritage assessment over a large area (259ha) for the proposed Mt Burra Residential Estate, located to the south of the current project area. Fifteen Aboriginal sites (small artefact scatters) and three area of PAD were identified. Ten of the sites and all of the PADs are located in direct association with tributary creek lines to Burra Creek. The remainder of the sites are located on low spur crests. The predictive model developed and followed for the project followed from AHS' 2003 and 2005 study.

Navin Officer Heritage Consultants (NOHC) in 2015 commenced assessment of the Mt Pleasant Residential subdivision on Burra Road. Twenty-three surface sites were identified, and subsurface testing undertaken along the margins of Church Creek. The results of the survey and archaeological test excavation program at Mount Pleasant confirms the predictive model for the region, showing that permanent sources of water were used as a focus of activities by Aboriginal people with small artefact scatters across the landscape, growing in frequency closer to more permanent water sources.

Bowen Heritage Management Pty Ltd Australia (2016) were commissioned to complete an Archaeological Heritage Assessment of Lot 1 (DP 456367) and Lot 2 (DP 131294) of the property, 8360 Monaro Highway, Royalla, NSW, covering approximately 29ha. The property is on the eastern Australian Capital Territory's border, 13.5km from the Hume and 19km south of Queanbeyan. In the study area no Aboriginal sites were identified.

In December 2020, Past Traces Pty Ltd conducted a Due Diligence Assessment of Lots 227 and 281 DP754912 and Lot 213 DP1134841 for a proposed subdivision. The property was used as an open paddock, located at 1291 Old Cooma Road, Royalla. No areas of Aboriginal heritage or sites were identified by this assessment.

These previous assessments for the region have returned consistent results and confirmed the importance of level areas adjacent to water ways such as permanent creek lines for site location. As a result, the areas of level terrace or rises in the vicinity of creek lines are considered to hold moderate potential (dependent of degree of disturbance) along creek lines, but sites should be small and consist of common materials.

3.3 AHIMS SEARCH AND SITE ANALYSIS

3.3.1 2021 Site Search

A search of the NSW Heritage Aboriginal Heritage Information Management System (AHIMS) database was undertaken on the 18th of February 2021 covering the 1km surrounding area centred on the project area. The extensive search revealed no recorded sites within the project area with twenty-six previously recorded heritage site within the region.

The location of the listed AHIMS sites from the 2021 search is shown in Figure 3 in relation to the project area. A simple analysis of these site types is provided in Table 1 showing that the majority of sites in the region consist of small artefact scatters or isolated finds of stone artefacts. This conforms with findings through the region (see Section 3.2.1) with lithic sites being the most prevalent site type. A copy of the extensive search report is attached for reference at Appendix 2.

Table 1. Recorded AHIMS sites

Site Type	No	%
Potential Archaeological Deposit	5	19.2%
Isolated Finds	7	26.9%
Artefact scatters	11	42.3%
Scarred Trees	3	11.5%

An updated AHIMS Search was undertaken on the 26/8/2024 with 41 recorded sites within the surrounding area of the project at Royalla.

Twenty five of these forty-one sites are the result of the 2021 field survey for the original footprint for the current project. A number of discrepancies are apparent on the AHIMS register which have now been corrected by submission of updated site cards.

3.3.2 2026 AHIMS Site Search

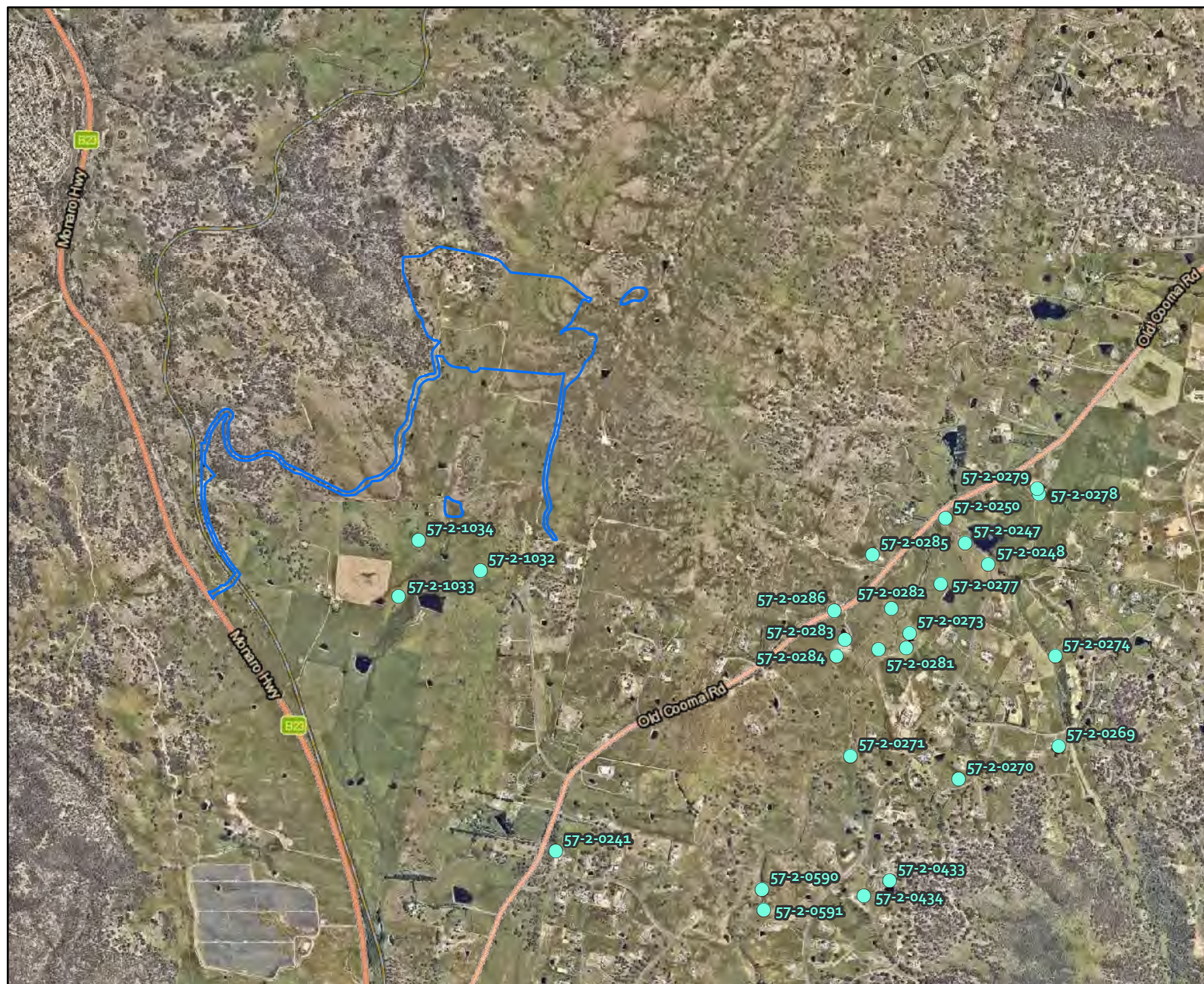
An updated AHIMS Search was undertaken on the 2/06/2024 with 49 recorded sites within the surrounding area of the project at Royalla. This updated site search is provided in Appendix 2. The locations of the 2026 AHIMS search is shown in Figure 3a.

Twenty-five of these forty-nine sites are the result of the 2021 field survey for the original footprint for the current project. These sites are listed in Table 2. Details of these sites are provided in section 5.5 under the 2021 Field survey results. A number of discrepancies are apparent on the AHIMS register which have now been corrected by submission of updated site cards, as well as updated as a result of the subsurface testing.

Table 2. 2026 AHIMS Sites

Site Type	No.	%
Artefact scatters/isolated finds	40	66.67%
Sites with associated PADs	15	25%
Culturally Modified Trees (CMTs)	5	8.33%

Figure 3: AHIMS Sites



Legend

- AHIMS Site
- Project Area



1:35,000

0 0.42 0.85 1.7

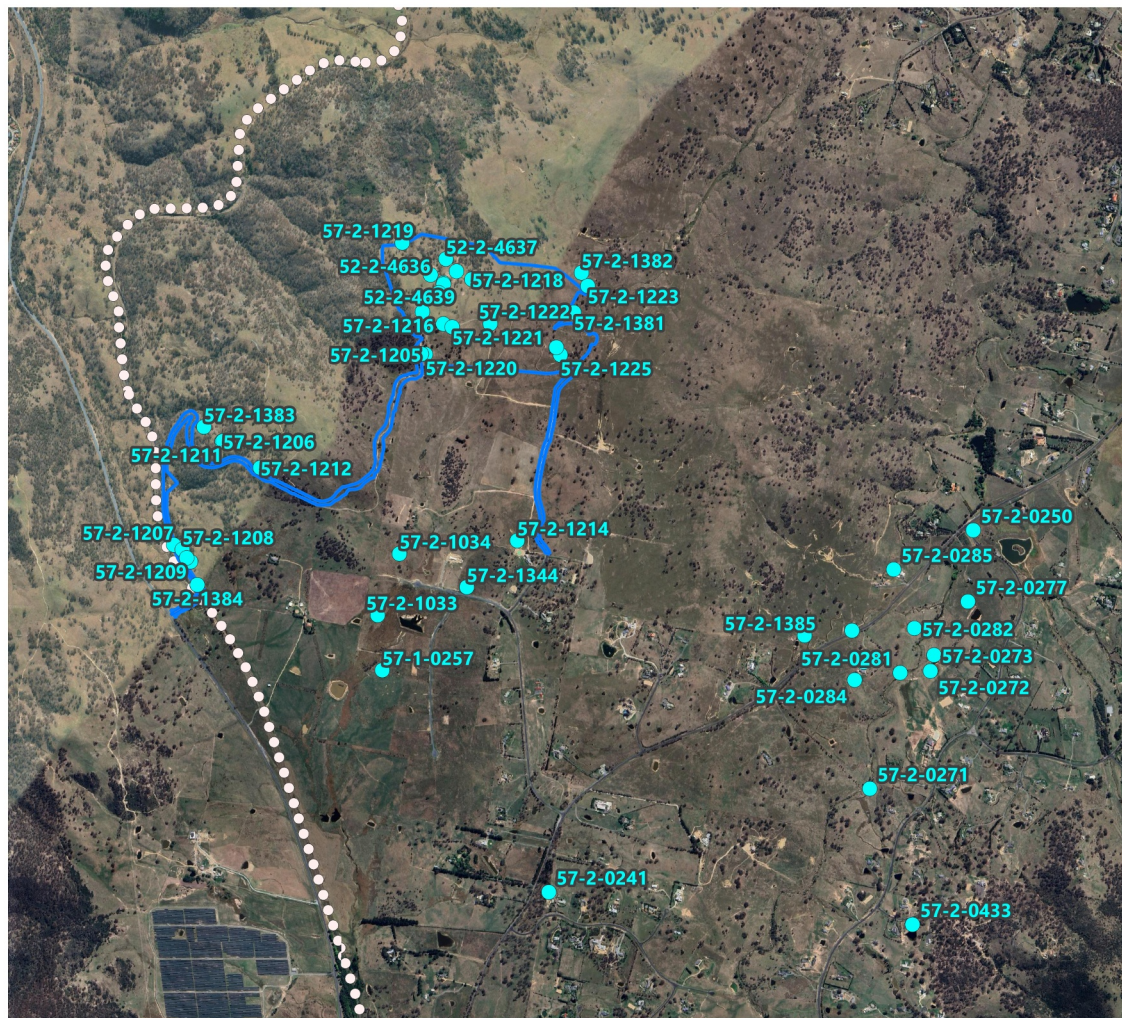
Kilometers

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces
Heritage Consultants

Figure 3a: AHIMS Sites 2026



Legend

- Project Area
- NSW/ACT Border
- AHIMS Sites (2026)



1:30,000

0 500 1,000 1,500 m



GDA 1994 MGA Zone 55

Imagery: Google Maps

3.4 HISTORICAL CONTEXT

The rural locality of Royalla was formally known as Rob Roy, taking its name from the nearby Mount Rob Roy to the west. The name was changed to Royalla in 1905, though the reason for this change is unclear. The township began as a railway settlement along the Bombala railway line, which was completed in stages between Queanbeyan and Cooma from 1887 to 1888.

Following a three-year drought in the Sydney Basin region and increasing population pressures, Governor Macquarie (1810-21) opened up the country west and south of the Blue Mountains for grazing. The key pastoralists/explorers John Oxley, James Meehan, Hamilton Hume and Charles Throsby explored the areas of the Southern Tablelands and the modern Canberra region between 1817-1820 (Pearson & Lennon 2010:8-11). After hearing from a local Aboriginal guide about the Murrumbidgee River, Throsby informed his nephew, Charles Throsby Smith, and in 1820 Charles Throsby Smith, Joseph Wild and James Vaughan set out to find the river. They were unsuccessful; however, the party did sight the junction of the Queanbeyan and Molonglo Rivers and the Limestone Plains including the area now known as Queanbeyan (Higgins 2011: 23; Lea-Scarlett 1968: 2).

Charles Throsby himself set out for the Murrumbidgee in 1821 successfully locating it in the vicinity of Tharwa, before following it for a distance. In 1823, Captain Mark Currie, Brigade Major Ovens and Joseph Wild also ventured to the upper Murrumbidgee and Monaro. The land that later became Royalla, was described by Capt. Currie as an area of 'fine forest country intersected by stony ridges' (Moore 1981: 10).

Throsby and Curries' expeditions prompted further European speculation of the region, in particular Joshua John Moore, an officer of the Supreme Court of NSW. Moore saw the agricultural potential of the area and established his station *Canberry*, which featured sheep farming and cereal crops on the Limestone Plains, along the Molonglo River banks by 1824. Robert Campbell also took up land in this region with *Duntroon* in 1824, followed by his brother-in-law, John Palmer in the Jerrabomberra and Queanbeyan areas. The prime lands in Goulburn, Yass and Canberra regions were settled by the mid 1820's with settlement around Braidwood by 1830 (Pearson & Lennon 2010: 11).

In 1832-35 Robert Hoddle surveyed the area between Yass and Michelago, describing the land as 'open grassy plains' or 'fine open grassy forest', which were dominated by Kangaroo Grass, Blakely's Red Gum, Ribbon Gum or Apple Box. He also described the area surrounding Jerrabomberra Creek and Burra as 'scrubby plains'. At this time most watercourses are described as chains of ponds, with the larger Murrumbidgee River noted as a 'rapid stream with a stony bed, difficult to ford in many places, with high rocky banks, and abounds with fish and wild fowl' (Gammage 2011: 275-276).

Under the NSW Government, Free Government land grants were given to those in the favour of the colonial Governor, those to whom the Government owed for services rendered or those with already established capital. These land grants allowed settlers to claim free land parcels of approximately 640 acres, for every £500 or stock possessed by colonial settlers, limited to 2000 acres, later increased to 2560 acres (Ellis 1989: 33). The introduction of this colonial system saw much of the region's best land portions – such as Duntroon, Acton, Jerrabomberra and areas surrounding Queanbeyan – taken up by absentee landowners using tenant farmers to work the land. For instance, Moore never lived on

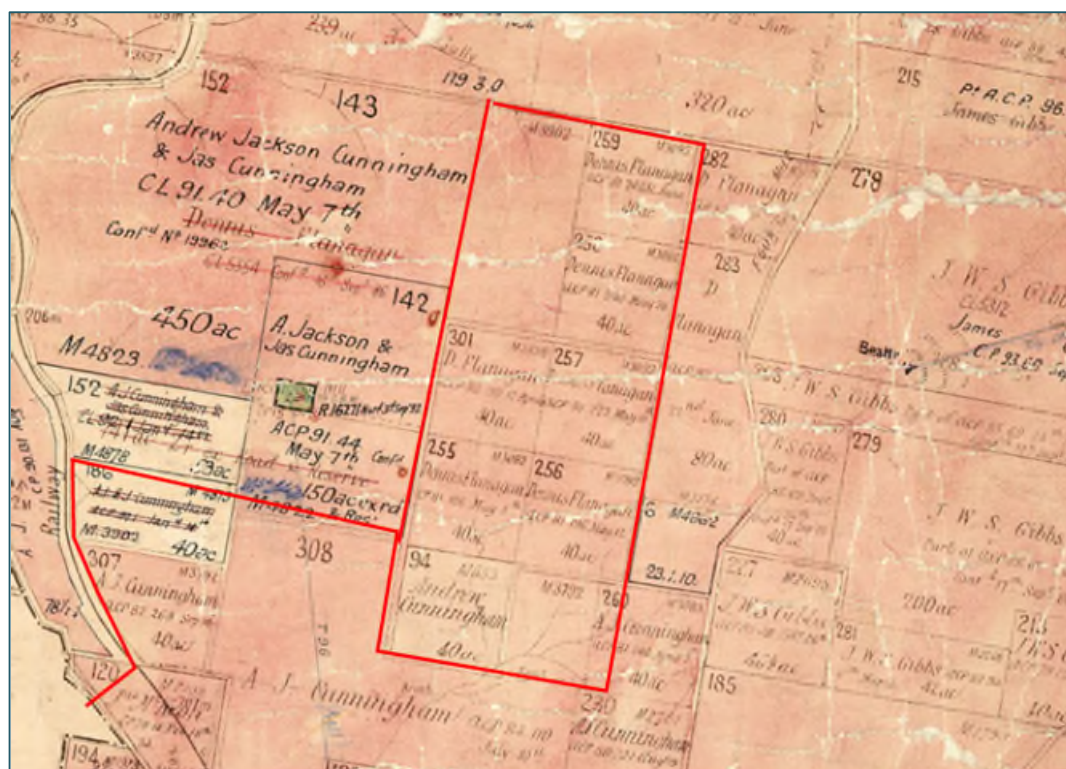
his station of Canberry and instead had it tended by an overseer and six convict stockmen (Fitzhardinge). According to the 1828 Census, no settlements were recorded in the Burra, and likely the Royalla areas. Duntroon had the highest population at the time, with the overseer, Charles Campbell, managing eighteen employees. Overseers in Jerrabomberra and Canberry each managed six employees, with the five overseers of the area being recorded as Scottish (Lea-Scarlett 1968: 56; Moore 1981: 17-18).

By 1829, the Canberra, Monaro, Queanbeyan and Royalla regions were declared the County of Murray, including the Limestone Plains, Queanbeyan and Royalla areas (Higgins 2011: 23; Lea-Scarlett 1968: 10). Following this proclamation of the County of Murray, Governor Darling (1825 – 1831) attempted to curtail the expansion of stock, by proclaiming the now Nineteen Counties to be the limits of legal settlement. However, as evidenced by Campbell's stock expansion, this did little to prevent pastoralists from using the available grasslands for their stock and continuing to occupy Crown Lands (Brown 2014: 11; Moore 1981: 6-8).

By the 1830s a small European farming population had been established in the Royalla district growing pasture and running horses, cattle and sheep. Campbell's stock were grazing the areas of Queanbeyan, the length of Jerrabomberra Creek and almost to the Victorian border and had built outstations at Mt. Campbell and Burra. By 1934, Campbell's sheep had greatly increased from the original 800 to over 25,000 head (Moore 1981: 5 - 7).

In 1838, Captain James Richard Booth purchased the 1,200 acre Portion 174, becoming the first official owner of the area of Royalla with it first being known as 'Booth's Flat' (Moore 1981:17). In 1860 Archibald McDonald purchased Portion 174 from Booth (Moore 1981: 18-20). Around 1885, the McDonald family built a house near the Monaro Highway location, where Archibald resided until his death in 1872 (Cannon 2015: 26). His property was then split amongst his three sons, Coll, John, and Alexander, with Coll inheriting the Royalla property. Coll continued to run the Royalla property until his death in 1918 where his son, also named Archibald McDonald, took over the farm.

The 1889 2nd Parish of Tuggeranong Map (Figure 4) shows the project area under the ownership of two people: Dennis Flannagan and Andrew Cunningham of Tuggeranong Station. No structures or buildings are recorded on the plans as present within the blocks that make up the project area. Both the Flanagans and Cunninghams held additional lands with the blocks within the project area only a proportion of their holdings. By the time of the 1911 parish map all of the project area is within the larger Cunninghams holdings of Tuggeranong Station.



Prior to construction of the railway line, the Monaro Road provided a considerable benefit for those farmers settled along it, providing access to passing traffic, as well as allowing easier travel to and from. A minor road is shown on Thomas Mitchell's 1834 map of the Nineteen Counties of New South Wales (Figure 5). The road runs from Bungendore south, then turns west at the current location of Queanbeyan (the confluence of the Queanbeyan and Molonglo Rivers). From here the road runs southward towards the "Miccaligo Plains" (Michelago).

In 1841, 'The Blazing Arms Inn' at Royalla (then Booth's Flat) received the first liquor licence for the area. Over time the name of the inn changed several times, whereby it was named the 'Rob Roy Inn' after the nearby Mount Rob Roy. This was then replaced by 'Booth's Flat' and finally 'Royalla' following the naming of the railway station by the railway authority (Hall Museum and Heritage Centre 2019; Moore 1981: 41). The benefits from access to the Monaro Road were furthered by the construction of the Queanbeyan to Bombala railway.

The Monaro Highway was created in 1938 along the earlier road alignment, resulting in a high degree of impact within the road easement. Within NSW, the highway was designated as State Highway 19 within the Department of Main Roads. Route markers were first introduced in 1954 and the Monaro Highway in NSW now carries the B23 route marker (https://en.wikipedia.org/wiki/Monaro_Highway). The Highway has been duplicated and upgraded many times since its original construction.



4 LANDSCAPE CONTEXT

The following section briefly summarises the geology and landforms, flora and fauna of the project area. The discussion focuses on those elements of the natural environment that may have influenced past human behaviour and archaeological site formation processes.

4.1 GEOLOGY AND TOPOGRAPHY

The project area is located within the Limestone Plains region, and is settled in a valley between Enchanted Hill and Beatty Hill, with the former to the west and latter to the east. The Limestone Plains comprises of plains, hill slopes, spur lines and valleys with a base geology of Colinton Volcanic rock which forms a triangular-shaped belt pointed north towards Queanbeyan.

The geology of the area is of near equal parts Colinton Volcanics and Deakin Volcanics separated by the estimated location of the Royalla fault line. The Colinton Volcanics is situated predominately across the western portion of the project area, while Deakin Volcanics covers the eastern area. The terrain is of undulating hillslopes, creek ridgelines and valleys, steep midslopes and level areas of creek flats. The Geology of the project area is shown on Figure 6.

4.2 SOILS

Two distinct soil landscapes are present within the project area. These soil types are (running west to east) the Campbell and Burra soil landscapes. This distribution of soils is shown on Figure 7. These different soil landscapes consist of the following:

- ❖ The Campbell Soil landscape: The Campbell Soils are colluvial and are located on rounded, steep to rolling mountains and hills on Silurian volcanics with commonly occurring rock outcrops. Grades from steep narrow crests to long waning slopes. Soils consist of shallow (<50 cm), well-drained Lithic Tenosols (Lithosols) and Brown Kandosols (Yellow Earths) on crests and upper slopes. Moderately deep (50 - 100 cm), well-drained to imperfectly drained Red and Brown Chromosols and (Red and Yellow Podzolic Soils) and occasional Red Kandosols (Red Earths) on side slopes. Moderately deep (50 - 150 cm), imperfectly to poorly drained Brown Chromosols and Sodosols (Yellow Podzolic Soils) on lower slopes and drainage lines (Jenkins 2000:52). Generally the soils are not cultivated with high degree of terracing on steep slopes and gully erosion.
- ❖ The Burra Soil landscape: The Burra soil landscape is described as being on 'undulating to rolling low hills and alluvial fans over the Silurian Volcanics (Jenkins 2000:44). The Burra Group soils are moderately deep and well drained Kurosols and Chromosols. Shallow earthy sands (Lithosols) are present on upper slopes and crests. Red and Brown Kandosols and Kurosols occupy mid slopes and most lower slopes. Brown chromosols are present along minor drainage lines (Jenkins 2000:44).

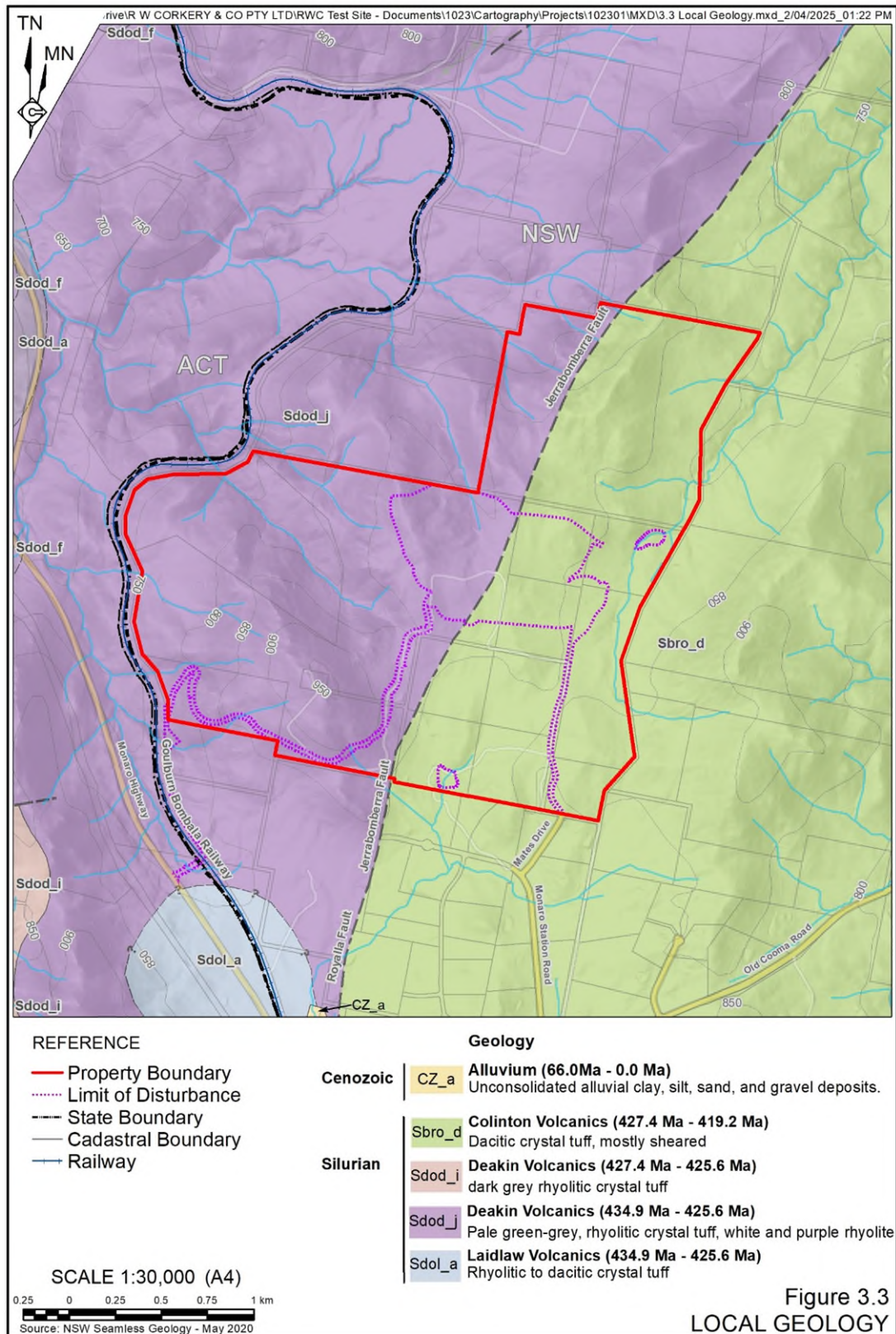
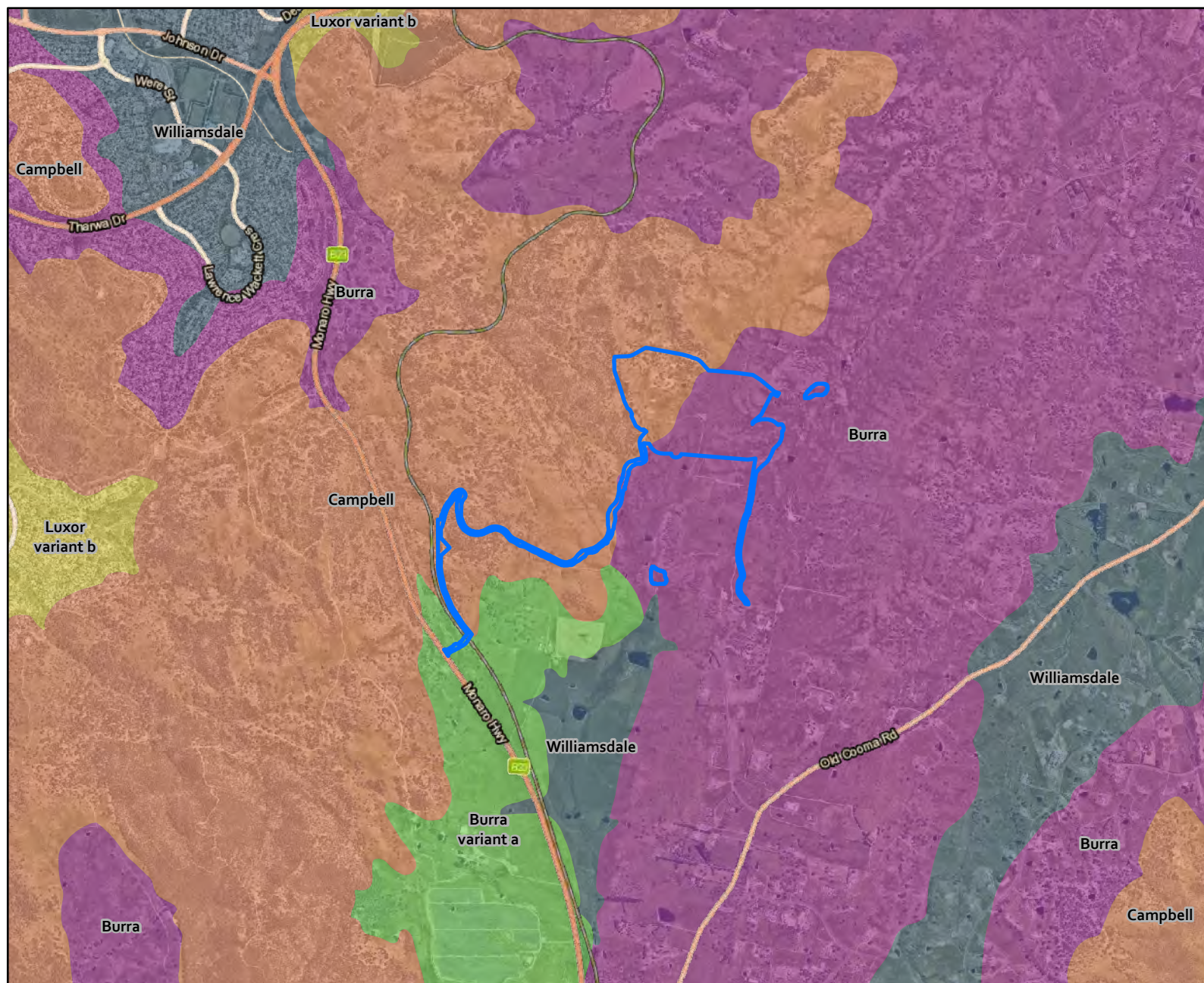


Figure 6. Geology of project area

Figure 7: Soils



Legend

Project Area

Soil Landscape

- Burra
- Burra variant a
- Campbell
- Celeys Creek
- Luxor variant b
- Williamsdale



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Kilometers

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces
Heritage Consultants

4.3 FLORA AND FAUNA

The project area has been altered since the time of European settlement for pastoral grazing and agriculture. Prior to European settlement the area probably supported open-forest (dry sclerophyll forest) to low woodland on exposed crests and bordering frost hollows. Gum trees such as *Eucalyptus bridgesiana* (apple box) and *E. melliodora* (yellow box) would be present on areas containing deeper soils. In areas of shallow rocky soils *E. pauciflora* (snow gum), *E. mannifera* (brittle gum), *E. rossii* (scribbly gum), *E. dives* (broad-leaved peppermint) and *E. rubida* (candlebark), *E. macrorhyncha* (red stringybark) would have been present. Intervening shrubs would have consisted of wattles. Grasses present would have included wallaby, spear and kangaroo grass species (Jenkins 2000:43)

Review of aerial photography indicates that pasture improvement has increased the grassy understorey with remnant native trees and low level bush areas also present, although not dominant. Remnant mature native Eucalypt trees have the potential to contain Aboriginal cultural scars.

4.3.1 Landscape Context

The landscape elements within the project area affect the findings of archaeological potential, based on the conditions for use and occupation of the landscape and the availability of resources present in the region. The presence or absence of landscape features, degree of slope and exposure to wind or cold drainage all affect the assessment of potential and influence predictive modelling for the presence of Aboriginal sites. In this instance, the project area is confined to undulating slopes, spur line crests, side slopes and creek flats.

The mapping of previous sites in the region suggests that the area of creek lines would be a focus of activity as water is a main resource. Being prone to flooding this landform may have held banks of rushes and may have been water laden during periods of rainfall resulting in 'boggy' ground. Preferred resting or camping locations would then be located on small rises of dry ground probably situated on alluvial terraces. Previous studies in the immediate vicinity (AHS 2003, 2005) have recorded a concentration on ridgeline and descending spurlines for small site locations. These areas (generally classified as PADs) have been investigated in previous studies, consistently returning low density presence of Aboriginal artefacts.

The landscape of the project area suggests that Aboriginal groups would have travelled across and utilised the area but no known areas of specific or clustered resources appears to be present suggesting frequent visitation or larger group activities. Two topographical features, Enchanted Hill and Mt Beatty are in proximity to the project area, but no cultural information on the significance of these features has been provided by the RAPs for the project.

4.4 PREDICTIVE MODEL

Based on the body of previous heritage work summarised in Section 3.2, the landscape context and previous disturbance to the area a site prediction model has been developed for the project. This site location model is based on the findings of previous reports for the immediate region (AHS 1999, CHMA 2013, 2014; NOHC 2013).

Using this information, the site prediction model, detailed in Table 3 is based on:

- ❖ Landscape features within the project area
- ❖ Probability of site type to be present within the project area
- ❖ Natural resources that may have been present and of use to Aboriginal people within the project area
- ❖ Opportunities for movement through the landscape

Table 3 Site Prediction Model

Probability	Site Type	Definition	Landform
Moderate	Isolated finds and surface scatters of stone artefacts	Stone artefacts ranging from single artefact to high numbers	Creek lines, terraces and terminations of spur lines. Broad spur crests overlooking creek junctions. Features are present within the study area.
Moderate	Potential Archaeological Deposits (PADS)	Area considered on landform to hold higher potential for unidentified subsurface deposits	Varies, but most frequent on elevated terraces along creek lines and broad crest spur lines. Erosion levels indicate lower potential
Low	Culturally Modified Trees (CMTs)	Trees which have been modified by scarring, marking or branch twining	Wherever old remnant trees remain - few remaining within the project area.
Low	Stone quarries/Ochre sources	Quarry sites where resources have been mined.	Any landform. No known resources in project area.
Nil	Stone arrangements	Arrangements of stones by human intention, including circles lines or patterns.	Crest lines or large ceremonial areas on creek flats, but may occur on any landform. Rare site type.
Nil	Axe grinding grooves	Grooves in stone caused by the grinding of stone axes	Usually in creek lines, as water is used as abrasive with sand. None present in project area.
Nil	Burials	Burials of Aboriginal persons	Usually requiring deep sandy soils on eastern facing slopes – not present in project area.

From review of aerial photos of the project area it would appear that the slope gradient across the majority of the access roads holds low potential for unrecorded sites. Areas of moderate potential may be present in the sections of the project area overlooking the creek lines (terraces or spur lines) and in the vicinity of spur line crests (if broad).

Within the gently undulating areas of the proposed extraction, infrastructure and amenity areas, potential for sites is assessed as low, as pastoral impacts are present and no proximity to clustered resources are present, such as large waterways, wetlands or forest ecotones.

Clearance of trees has been undertaken for pastoral use, but isolated remnants of older growth remain which may hold culturally modified trees. Determination of the area of potential and degree of disturbance in these remnant areas was one of the major aims of the field survey. Whilst no age for culturally modified trees is stated in the NSW legislation, the Aboriginal Scarred Trees Manual (Long 2005) states that authentic scarred trees will be a minimum of 100 years in age.

5 ARCHAEOLOGICAL FIELD SURVEY

A field survey consisting of pedestrian transects across the project area was undertaken by Georgia Scully of Past Traces with the participation of three RAP groups on the 13/9/2021, 14/9/2021 and 15/9/2021 to identify any unrecorded heritage sites that may be present within the project area. An alternative option for the access road was also considered, with a survey of this alternative proposed route conducted on 25/8/22 by Nathaniel Cracknell (Past Traces) and one RAP member. These field transects also provided an assessment of the ground surface visibility of the project area, levels of prior disturbance and landform potential based on the predictive modelling. The field survey conditions, limitations and results, are discussed in more detail in the following sections.

The field survey aims and sampling strategy are provided below.

5.1 ARCHAEOLOGICAL SURVEY AIMS

The principle aims of the survey were to:

- ❖ Visual inspection of the Project Area to identify/confirm landforms, areas of archaeological potential and indications of historic disturbance.
- ❖ Complete pedestrian transects of the Project Area visually inspecting areas and landforms with the potential for Aboriginal heritage.
- ❖ Identify and record any heritage sites visible on the ground surface.
- ❖ Identify and record areas of potential archaeological deposits (PADs).

5.2 FIELD SURVEY SAMPLING STRATEGY

The project area covers a range of landforms. The predictive model indicates a significant difference in the potential among the different land forms, particularly with distance from small ephemeral creek lines and lower potential along the long side slopes. The survey covered all areas within the impact area of the project regardless of the predicted potential to achieve the greatest coverage possible of all landforms. As a result, all landforms within the project area were sampled during the field survey though ground surface visibility (GSV) varied due to grass length, previous disturbance and erosional exposures at the time of survey.

The project area consists of undulating lower, middle and upper slopes with descending spur crests across the upper and middle slopes. Within the project area, one first order drainage line (ephemeral) runs to Tuggeranong Creek located to the north west of the project area. Three first order creeklines join Guises Creek the southwest and south and to the east one ephemeral drainage line runs to Four Mile Creek which then feeds into Jerrabomberra Creek. As a result, no reliable water source is present within the project area, with intermittent water (during wet periods) available in the surrounding area.

Survey Units were based on fence lines divisions and proposed access road routes. The commencement point of each SU was accessed by vehicle and pedestrian transects completed (walked) across the SU returning to the vehicle location. As a result the project area was divided into eight main survey units. The distribution of landforms across the project area are shown in Figure 8 with the approximate locations of the pedestrian transects shown in Figure 9.

5.3 FIELD SURVEY METHODS

The archaeological surveys were conducted on foot in accordance with the archaeological survey requirements of the Code of Practice (DECCW 2010). The survey of the quarry extraction site and associated infrastructure was conducted by Georgia Scully (Past Traces), John Dixon (Ngarigo/Djirringanj Elders Foundation), Daniel Williams (Ngambri LALC) and Robert Williams (Ngunnawal Elders Corporation). The survey of the access road was conducted by Nathaniel Cracknell (Past Traces) and Sonione Rogos (Ngambri LALC).

All surveyed areas and items of interest were recorded on a topographic map of the study area, along with levels of visibility, erosion, soil conditions, and evidence of land disturbance.

Information that was recorded during the survey included:

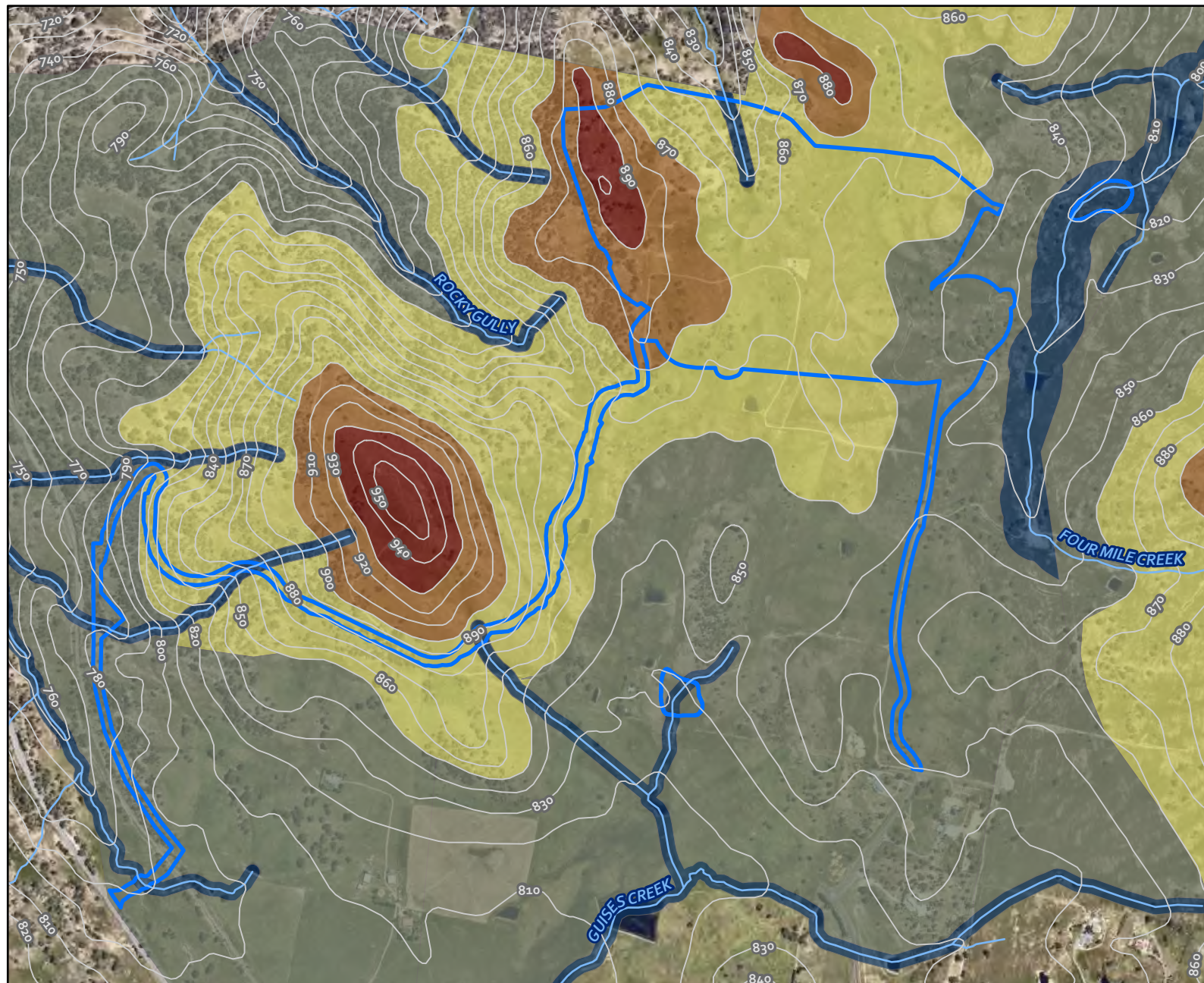
- ❖ Aboriginal sites identified during the survey – contents/extent.
- ❖ Survey coverage.
- ❖ Natural resources utilised by Aboriginal people.
- ❖ Landforms
- ❖ Photographs of the project area
- ❖ Ground surface visibility (GSV) and areas of exposure.
- ❖ Levels of disturbance

5.4 ARCHAEOLOGICAL SURVEY RESULTS

The field surveys were conducted in September 2021 and August 2022, with pedestrian transects aimed to cross different landforms and provide coverage of all landforms and areas of identified potential. The survey was undertaken at a time when surface visibility was low to moderate across the project area, some areas of the project area had consistent grass coverage with an average grass length of approximately 1m. Regular exposures were numerous across existing access roads, dam walls, fence lines, drainage bunds, beneath trees and stock trails. The locations of the pedestrian transects and landforms across the project area are shown on Figures 8 and 9.

The 2021 transects completed in areas now outside of the project area have been removed for clarity. Sites recorded outside of the project area during these earlier survey have been removed from the report with their detailed recording provided in Appendix 3. These sites are however, in close proximity in an open paddock context and as such have been included in the impact and mitigation sections to prevent inadvertent impacts.

Figure 8: Landforms



Legend

Contour - 10m

Watercourse

Project Area

Landform

Crest

Upper Slopes

Middle Slopes

Lower Slopes

Drainage



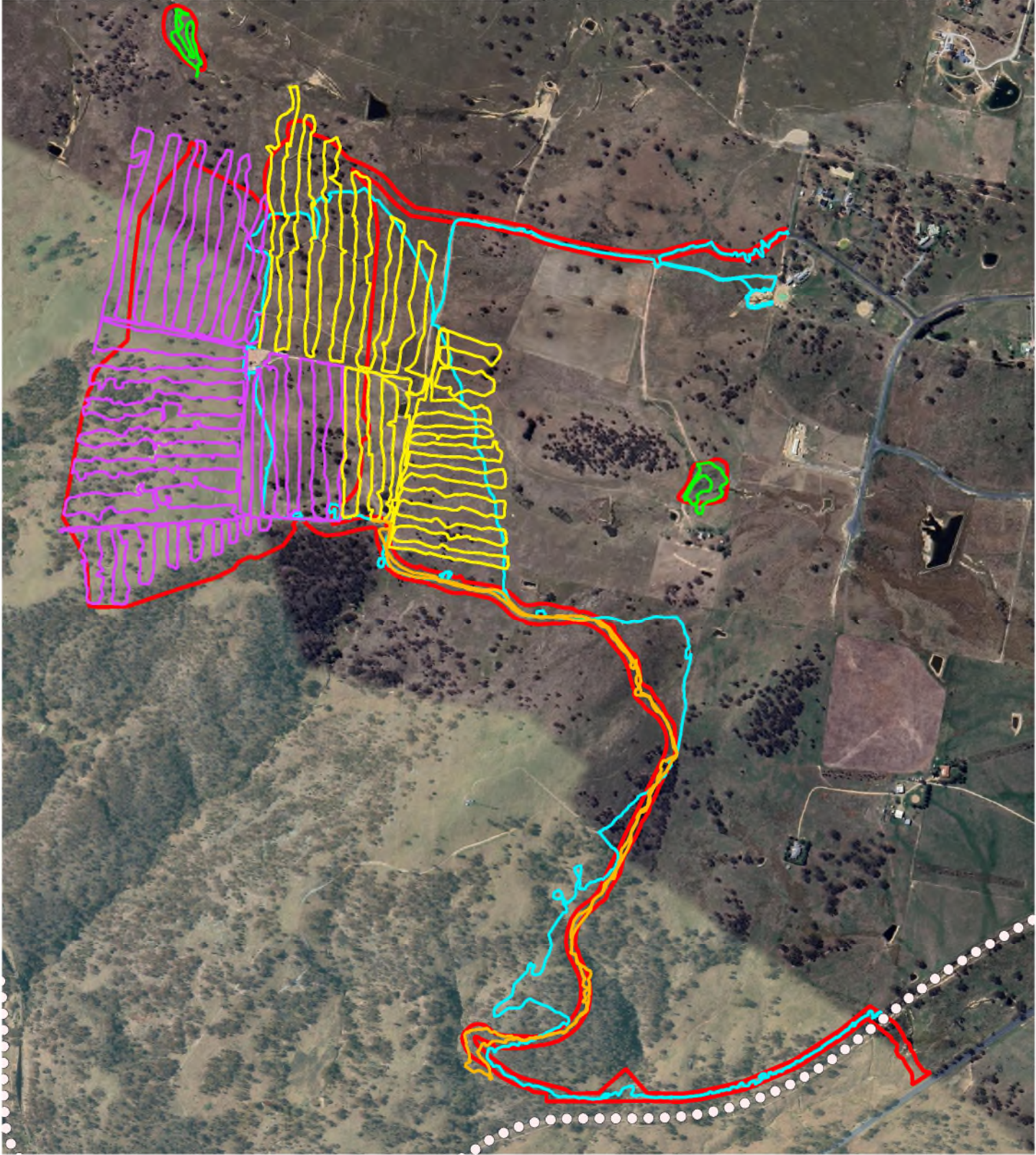
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0 187.5 375 750
Meters

Coordinate System:
GDA 1994 MGA Zone 55

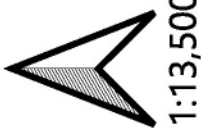
PastTraces
Heritage Consultants

**Figure 9: Pedestrian
Transects**



Legend

- Current Project Area
- ACT/NSW Border
- Transect 4 - 2025
- Transect 3
- Transect 2
- Transect 1
- Transect Access



0 150 300 450 m

GDA 1994 MGA Zone 55

Imagery: Google Maps

5.4.1 Ground Surface Visibility (GSV) and Levels of Disturbance

Ground Surface Visibility (GSV) is the percentage of ground that can be visibly assessed. GSV varies by the degree of grass coverage across the ground surface, presence of leaf litter, branches and the presence of natural gravels. Exposures are areas that provide high levels of GSV and usually result from erosion, stock impacts, clearing, previous construction or vehicle trails. The higher the rate of exposures and the background GSV of a survey unit (SU) the higher the effectiveness of the field survey.

Background GSV varied through the project area, due to the grass coverage and varying degree of previous disturbance. GSV was highest along the areas of vehicle access, and on crest and ridgelines. GSV was lowest along the slopes and descending spur lines. Grass coverage was moderate to high and GSV was generally estimated at 40%. Small areas of exposure were present at gate locations as well as along the vehicle access tracks, but outside of these small sections, the project area consisted of long, extensive grass coverage.

Transects were positioned to cover all landforms present within the Project Area. Landforms consisted of, crests (spurlines), simple slopes (upper, middle and lower) and open creek flats in the vicinity of creek and drainage lines.

Plates 1 to 6 show indicative areas of landforms and exposures within the project area.



Plate 1. Northeast facing, view of extraction area creekline and ridges.



Plate 2. GSV for extraction area at time of survey.



Plate 3. East facing, creek flats of infrastructure area.



Plate 4. GSV and exposure example extraction area.



Plate 5. Example of lowslopes with area of erosion along a drainage bund at northern portion of access road (Facing East)



Plate 6. Looking across low slopes to creek flats, with Old Cooma Road visible in the southern portion of the proposed access road (South)

5.4.2 Survey Coverage

The factors of GSV, level of disturbance, the number of survey participants and the spacing of transects all combine to provide estimates of survey coverage and effectiveness.

Four team members completed the field survey of the quarry extraction and associated infrastructure sites, with two team members surveying the access road. Team members were spread approximately 10m apart during the pedestrian walkover, considered to be the maximum distance of effective coverage (Burke and Smith 2004). The physical area inspected with the GSV and exposure rate for each Survey Unit and Landform taken into account provides the survey coverage. At the levels recorded for the field survey, the effectiveness of the field survey is considered to be moderate.

5.5 FIELD SURVEY RESULTS

The field survey resulted in the identification of a number of surface sites and areas of PAD for the original and revised design. As a result, a number of sites were identified and recorded which are now outside of and distant to works. These sites are detailed in Appendix 3 for information and context.

Twenty-One (21) Aboriginal sites were identified during the field survey within the current project footprint and an additional 8 sites in proximity with three sites distant and no longer relevant to the project. The sites identified are listed in Table 4 for sites within the project area, Table 5 for those in immediate proximity and Table 6 for those sites that are distant to all works.

Table 4. Sites within the Project Area

AHIMS	Site name	Site type	Type of harm	Degree of harm	Mitigation Measures
57-2-1216	MQ1	Isolated Find	Direct	Total	Salvage
52-2-4636	MQ2	Artefact Scatter & Subsurface Deposit	Direct	Total	Salvage
52-2-4637	MQ3	Isolated Find	Direct	Total	Salvage
52-2-4638	MQ4	Isolated Find	Direct	Total	Salvage
52-2-4639	MQ5	Isolated Find	Direct	Total	Salvage
57-2-1217	MQ6	Isolated Find	Direct	Total	Salvage
57-2-1218	MQ7	Isolated Find	Direct	Total	Salvage
57-2-1219	MQ8	Ring tree	Indirect	Nil	Fence during construction only/Avoid
57-2-1220	MQ9	Scarred tree	Indirect	Nil	Fence during construction only/Avoid
57-2-1221	MQ10	Isolated Find	Direct	Total	Salvage
57-2-1222	MQ11	Isolated Find	Direct	Total	Salvage
57-2-1224	MQ13	Isolated Find & Subsurface Deposit	Direct	Partial	Salvage
57-2-1225	MQ14	Isolated Find	Direct	Total	Salvage
57-2-1215	MQ15	Isolated Find	Direct	Total	Salvage
57-2-1213	MQ16	Isolated Find & Subsurface Deposit	Direct	Total	Salvage
57-2-1205	MQ17	Artefact Scatter	Direct	Total	Salvage
57-2-1211	MQ19	Isolated Find & Subsurface Deposit	Direct	Partial	Salvage
57-2-1207	MQ20	Isolated Find & Subsurface Deposit	Direct	Partial	Salvage
57-2-1380	MQ26	Subsurface Deposit	Direct	Total	Can be impacted under approved AHIP
57-2-1384	MQ30	Subsurface	Direct	Total	Can be impacted under approved AHIP

AHIMS	Site name	Site type	Type of harm	Degree of harm	Mitigation Measures
		Deposit			
57-2-1379	MQ32	Artefact scatter & Subsurface Deposit	Direct	Total	Salvage

Table 5. Sites in proximity to project area

AHIMS	Site name	Site type	Type of harm	Degree of harm	Mitigation Measures
57-2-1223	MQ12	Isolated Find	Nil	Total	Fence during construction only
57-2-1206	MQ18	Isolated Find/PAD	Indirect	Nil	Fence during construction only
57-2-1208	MQ21	Isolated Find/PAD	Indirect	Partial	Fence during construction only
57-2-1209	MQ22	Artefact Scatter	Indirect	Partial	Fence during construction only
57-2-1210	MQ23	Isolated Find	Indirect	Partial	Fence during construction only
57-2-1212	MQ24	Isolated Find	Indirect	Partial	Fence during construction only
57-2-1214	MQ25	Artefact Scatter	Indirect	Nil	Fence during construction only
57-2-1383	MQ29	PAD	Indirect	Nil	Fence during construction only

Table 6. Sites distant to works

AHIMS	Site name	Site type	Type of harm	Degree of harm	Mitigation Measures
57-2-1381	MQ27	PAD	Nil	Nil	No action – temporary fence if works in vicinity (20m) during construction
57-2-1382	MQ28	PAD	Nil	Nil	No action – temporary fence if works in vicinity (20m) during construction
57-2-1385	MQ31	PAD	Nil	Nil	No action – temporary fence if works in vicinity (20m) during construction

The sites mainly consisted of isolated finds, followed by small artefact scatters. However, a rare ring tree and a scarred tree were also recorded within the project area. Details of each of the recorded sites within the project area are provided below under their individual site designation. Details of recorded sites from the 2021 field survey that are outside of or distant to the project area are provided in Appendix 3. All site locations are mapped on Figure 12 for reference.

5.5.1 MQ1 – 57-2-1216

MGA Grid Reference 695524.6074210

MQ1 consists of an isolated find of a flake, located on an east aspect, moderate-gradient midslope in the west area of the proposed extraction area, in an exposure near gates and a fence line convergence. This site is in a disturbed context and not considered to feature intact subsurface deposits due to disturbance and slope gradient. Images of the isolated find are shown in Plates 7 and 8.



Plate 7. Ventral view of isolated find of MQ1



Plate 8. Dorsal view of isolated find of MQ1.

5.5.2 MQ2/PAD – 52-2-4636

MGA Grid Reference 695564.6074378

MQ2 consists of three silcrete flakes located on a rocky spur crest that descends to the east towards a 1st order drainage line, and features ephemeral drainage lines to the south. This site has an associated area of PAD located to the north in a level to gentle-gradient area of midslopes overlooking the 1st order drainage line 170m east. The rocky spur crest itself features low subsurface potential due to previous disturbance in the form of a worn vehicle track across the site and significant erosion revealing frequent rock outcrops and very thin soils. The area of PAD is located adjacent to the north and is estimated to cover an area of approximately 100 x 40m centred on 695570.6074417, which is the area with the highest potential for intact deposits (MQPAD 2).

Images of the artefact scatter are shown in Plates 9 to 11.



Plate 9. Silcrete flake dorsal surface, MQ2



Plate 10. Silcrete flake ventral surface,



Plate 11. Silcrete flake ventral surface, MQ2.

5.5.3 MQ3 – 52-2-4637

MGA Grid Reference 695656.6074506

MQ3 consists of an isolated find, a small quartz flake, located on a moderate-gradient midslope in the west of the proposed extraction area. Soils are thin in this location and no subsurface potential is present. An image of the isolated find is shown in Plate 12.



Plate 12. Quartz Flake

5.5.4 MQ4 – 52-2-4638

MGA Grid Reference 695642.6074365

Site MQ4 consists of an isolated silcrete flake. The flake was located within an area of exposure on the spur crest overlooking a 1st order drainage line 130m to the east. This site is within a disturbed context along a worn vehicle track in the area of a rocky spur with no subsurface potential present. Images of the isolated find are shown in Plates 13 and 14.



Plate 13. Silcrete flake, dorsal surface, MQ4.



Plate 14. Silcrete flake, ventral surface, MQ4.

5.5.5 MQ5 – 52-2-4639

MGA Zone 55 695642.6074371

Site MQ5 is located 6m to the north of MQ4, also on the spur crest overlooking a 1st order drainage line 130m to the east. This site is also in a disturbed context with exposed rock and shales present and holding no subsurface potential. This find consisted of a quartz flake and is considered to be an extension of the one site MQ4.

Images of the find are shown in Plates 15 and 16.



Plate 15. Quartz flake ventral surface, MQ5.



Plate 16. Quartz flake, dorsal surface, MQ5.

5.5.6 MQ6 – 57-2-1217

Grid Reference 695715.6074437

Site MQ6 consists of an isolated find, a small silcrete flake, on the moderate-gradient midslope in an area of erosion and stock disturbance. Due to disturbance and midslope location no subsurface potential is considered to be present. This site is located 60m west of a 1st order drainage line. Images of the find are shown in Plates 17 and 18.



Plate 17. Silcrete flake dorsal surface, distal portion, MQ6.



Plate 18. Silcrete flake ventral surface, distal portion, MQ6.

5.5.7 MQ7 – 57-2-1218

Grid reference MGA 55 695801.6074392

MQ7 consists of an isolated find, a small silcrete flake, found on the eastern edge of a 1st order drainage line, along the dam wall within a large section of exposure. The artefact is within the dam spoil and is a disturbed location with no subsurface potential. Images of the find are shown in Plates 19 and 20.



Plate 19. Silcrete flake, dorsal surface MQ7.



Plate 20. Silcrete flake, ventral surface, MQ7.

5.5.8 MQ8 Ring Tree – 57-2-1219

Grid reference MGA Zone 55 695411.6074597

This site consists of a ring tree, where Aboriginal modification has resulted in a joining of tree limbs. The ring is placed on the northern side of the tree, visible on the west and east of the tree. This tree is on the crest of the western most ridgeline of the property, overlooking south Canberra and Namadgi National Park to the west.

The age of the tree is unknown but considering the diameter of the trunk is highly likely to be over 100 years old.

Culturally Modified ring trees are a rare site type within NSW and the ACT and have only been recorded within the region in the last decade. Due to the removal of trees across the landscape since European settlement and natural causes such as bushfires, old remnant trees that hold these cultural modifications are extremely rare and hold high cultural significance. Due to the high significance of this site, redesign has been undertaken by Monaro Rock to avoid all impact, and place the tree within an area of conservation.

Images of the ring tree are shown in Plates 21 and 22.



Plate 21. Ring tree, facing west, MQ8 Tree.



Plate 22. Ring tree, facing east, MQ8 Tree.

5.5.9 MQ9 Tree – 57-2-1220

Grid reference MGA 55 - 695541.6073971

This site consisted of a culturally modified scar tree, the remaining trunk of a gum tree, with the scar on the northern side of the tree trunk. This tree is located on a creek flat of the southwest area of the proposed extraction area. No impacts will occur to this location due to redesign to avoid the scarred tree. Images of the scarred tree are shown in Plate 23.



Plate 23. Scarred tree, facing south, MQ9 Tree.

5.5.10 MQ10 – 57-2-1221

Grid Reference MGA 55 - 695691.6074124

MQ10 consists of an isolated find, a small quartz flake, found on the southern edge of the existing access road, within a gentle-gradient saddle feature. This site is considered to be in a disturbed context with no subsurface potential. Image of the find are shown in Plate 24.



Plate 24. Quartz flake ventral surface, MQ10.

5.5.11 MQ11 – 57-2-1222

Grid Reference – MGA 55 695904.6074143

This site consists of an isolated find, a small silcrete flake, located on the northern edge of the existing access road amidst disturbed soils. The access road runs along the southern boundary of the proposed extraction area, along undulating slopes and adjacent to a pig enclosure, shed and outbuildings. No subsurface potential is associated with the find. Image of the find is shown in Plate 25.



Plate 25. Silcrete flake, ventral surface, MQ11.

5.5.12 MQ13/PAD – 57-2-1224

Grid Reference MGA 55 - 696298.6074024

MQ13 consists of an isolated find, a silcrete blade flake with an area of associated PAD located within the gentle-gradient low slopes overlooking Four Mile Creek, 250m to the east. This area of PAD covers an area of approximately 100 x 50m centred on 696275.6074010 and is considered to hold moderate to high potential for subsurface deposits due to its proximity to Four Mile Creek. Image of the find is shown in Plate 26.



Plate 26. Silcrete flake, ventral surface, MQ13.

5.5.13 MQ14 – 57-2-1225

Grid Reference MGA 55 - 695641.6074142

MQ14 consists of an isolated find, a large quartz flake, found on the northern edge of the existing access road, on the western crest of a gentle-gradient saddle feature. This site is considered to be in a disturbed context with no subsurface potential.

Images of the find are shown in Plates 27 and 28.



Plate 27. Quartz flake, ventral surface, MQ14.



Plate 28. Quartz flake, dorsal surface, MQ14.

5.5.14 MQ15 – 57-2-1215

Grid Reference MGA 55 - 695519.6074065

MQ15 consists of an isolated find, a silcrete flake. The site is located on the route of the proposed access road, on the edge of a spur crest, south of the proposed extraction area. Soils are thin with shales present, and considered to hold no subsurface potential.

Images of the find are shown in Plates 29 and 30.



Plate 29. Silcrete flake, ventral surface, MQ15.



Plate 30. Silcrete flake, dorsal surface, MQ15.

5.5.15 MQ16 – 57-2-1213

Grid Reference MGA 55 - 695518.6073973

MQ16 consists of a silcrete flake located on the existing access road, on the southern border of the proposed extraction area. This site is associated with an area of PAD located on an area of moderate-gradient midslopes to the east of the spur, overlooking an ephemeral drainage line to the east, adjacent to the existing access road. The area of PAD is estimated to hold moderate potential and covers an approximate 150 x 50m centred on 695537.6073982. The isolated find is shown in the below Plate.



Plate 31. Silcrete flake, dorsal surface, MQ16.

5.5.16 MQ17 – 57-2-1205

Grid Reference MGA 55 - 695386.6073687

MQ17 consists of an artefact scatter, comprised of one chert and three quartz flakes. This scatter is located on the existing access road, part of the proposed access road route, heading westward, to the west of the creek flats of the extraction area southern border. The existing road is considered to be highly disturbed in this section and holding no subsurface potential.

Example images of the artefacts are shown in Plates 32 and 33.



Plate 32. Chert flake, ventral surface, MQ17.

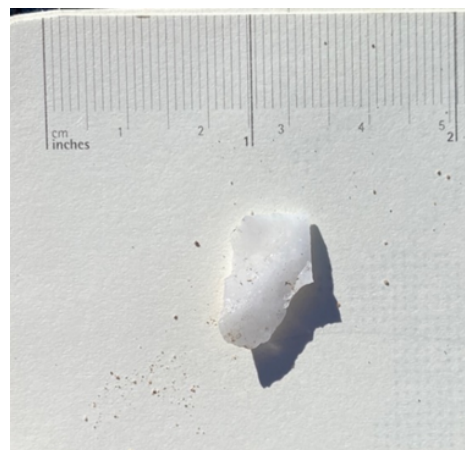


Plate 33. Quartz flake, dorsal surface, MQ17.

5.5.17 MQ19/PAD – 57-2-1211

Grid Reference MGA 55 – 694401.6073483

Site MQ19 consists of a broken hammer stone located within an area of PAD on undisturbed middle slopes on the west edge of a steep spur crest. Within these steep slopes, area of gentle gradient are considered to hold higher potential. The isolated find is shown in Plate 34 and the site location in Plate 35.



Plate 34. Isolated artefact

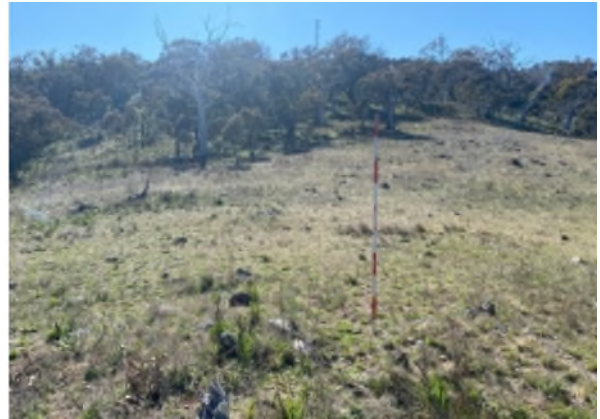


Plate 35. Site location midslopes

5.5.18 MQ20/PAD - 57-2-1207

Grid reference MGA 55 – 694130.6072902

Site MQ20 consists of an isolated find of a quartz flake located in an area of exposure on impact trails within a section of low to moderate gradient middle slopes within steeper slopes. The area of PAD assessed to hold moderate potential. The artefact and site location are shown on Plates 36 and 37.



Plate 36. Isolated artefacts



Plate 37. Site location

5.6 ABORIGINAL AREAS OF PAD

Areas of PAD are defined as landforms that hold higher potential than their surrounds to contain subsurface deposits of past Aboriginal occupation. Based on a review of previous studies completed for the region, areas of PAD would be located in association with waterways (1st or 2nd order streams) on level ground or along spur crest and ridge lines.

While a survey of these sensitive landforms identified no surface Aboriginal objects or cultural material and confirmed that a long history of agriculture and pastoral use has modified the upper soil profiles, these factors do not automatically eliminate subsurface archaeological potential. Artefacts may still be present, albeit in a modified context, within the soils of the landforms. Previous land clearance impacts have been undertaken across parts of the project area, however the removal of trees for the development of pastoral land does not preclude the presence of remnant archaeological deposits.

The 2021 field survey identified seven areas of PAD within the project area associated with surface sites (MQ2, MQ13, MQ16, MQ19, MA20) and have been described in the previous section. Two additional areas of PAD (MQ26 and MQ30) were identified based on landform without any surface expression of artefacts.

An additional four additional areas of PAD were recorded based on landform indicators (MQ27, MQ28, MQ29, & MQ31) outside of the revised project boundaries. MQ29 is located adjacent to the project area, but outside of planned impacts. This PAD may be indirectly impacted due to close proximity. The remaining three sites MQ31, MW27 and MW28 are distant to works, separated by boundary fencing and should not be impacted by the development.

Areas of PAD were primarily located associated with multiple creek lines that run through the project area, on elevated areas overlooking creek flats and associated ridgelines and crests. Other areas were identified on landforms such as midslopes and spur lines. The locations of these areas of PAD are consistent with the predictive model developed for the region and discussed in Section 3.

Previous studies in the immediate vicinity (AHS 2003, 2005) have investigated similar areas of PAD in these landforms for previous studies, consistently returning low density presence of Aboriginal artefacts. The main artefacts and materials recovered from these previous studies have been common artefact types such as flakes and cores, mainly quartz, silcrete, tuff and various small occurrences of volcanics. This typical composition is generally considered to hold low scientific and cultural significance.

The locations of the two identified areas of PAD (without associated surface finds) are provided in Table 7 and the remaining four areas of PAD outside of the project area are listed in Table 8. All PAD locations are shown on Figure 10 in relation to the project area for reference.

Table 7. Details of identified PAD areas within Project Area

Site Name	Location	MGA Zone 55 Grid reference
(MQ26)	Located on the level area of a creek ridge, placed on the northwest area of the proposed extraction area. Covering an area of approximately 100x30m.	695616.6074316
(MQ30)	Located on level area on creek ridge, placed in the access route on the southern boundary. Covering an area of approximately 55 x 40m	694262.6072678

Table 8. PAD areas outside of current Project Area

Site Name	Location	MGA Zone 55 Grid reference
(MQ27) Located outside of the project area.	Located on the level area of a low slope, on the south side of a ridgeline, east of the proposed infrastructure area. The PAD extends outside of the impact area and covers an area of approximately 80 x 130m.	696373.6074206
(MQ28) Located outside of the project area	Located on a crest feature amidst undulating slopes. The PAD extends eastwards outside of the impact area of Stage 1 and covers an area of approximately 40 x 150m.	696416.6074429
(MQ29) Located outside of works but in proximity	Located on a crest feature amidst rolling slopes. The PAD is located outside of the proposed access road but in close proximity. This PAD covers an area of approximately 75 x 30m	694299.6073564
(MQ31) Located outside of the project area	Located on a raised area adjacent to a drainage line tributary of Jerrabomberra Creek, within area of the proposed access road. Covering an area of approximately 50x60m.	697667.6072394

5.7 ADDITIONAL SURVEY 2025

In 2025 additional survey was completed due to design revisions which included the addition of two water holding dams. These two dams are proposed to be constructed along a section of Four Mile Creek in the north eastern section and on a first order tributary to Guises Creek in the south. The location of the two dams are shown in Figures 10 and 11.

Field survey over the two dam areas was undertaken by Lyn O'Brien on the 5 May 2025. Pedestrian survey followed the methodology outlined in Section 5. The results of the field survey are provided below for each area. One additional surface site with associated area of PAD MG32 was recorded.

5.7.1 Clean Water Dam 1

The area for Clean Water Dam 1 is located on Four Mile Creek and covers an approximate area of 100 x 40m centred on the creek line. The western bank is steeply sloping and is considered to hold low potential for sites due to the gradient slopes. The eastern bank section of creek flats is gently sloping but varies from almost level open ground to rocky outcrops. Soils appear thin in all areas. Due to the presence of the rock outcrops and the higher gradients further from the creek line, the majority of the eastern bank is also considered to hold low potential. The conditions at the time of survey are shown in Plates 38 to 41.



Plate 38. View north Four Mile Creek



Plate 39. View northeast – eastern bank



Plate 40. View south – eastern bank

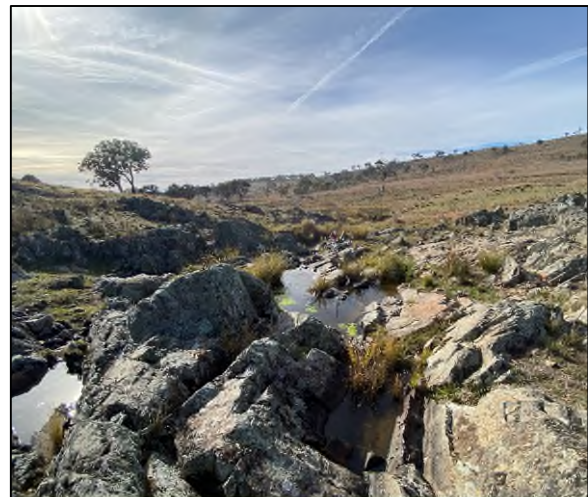


Plate 41. View north Four Mile Creek – note rocks in creekline and steep west bank

MQ 32/PAD– MGA 55 Grid Reference 696722.6074347

Located on the north eastern bank is an area of creek flats that are almost level and converges with another drainage line into Four Mile Creek. The area of the creek adjacent to this level area contains a deep water hole, which would have provided fishing opportunities and held water except in the driest conditions. Due to the level nature of the landform, this area is considered to hold moderate potential for subsurface deposits and will require further investigation, consisting of sub surface testing prior to construction. The area of PAD is shown in the following plates



Plate 42. View north - eastern PAD area



Plate 43. View north – area of PAD

Visual inspection of this area also identified surface artefacts, located in one of three areas of exposure resulting from water erosion. This site was named MQ32 (57-2-1379) and classified as an artefact scatter with an associated area of PAD. The recovered artefacts consist of two quartz flakes. The location of site MQ32 and area of PAD are shown on Figure 10.

The site location of MQ32 and the recorded artefacts located in the 1st area of erosion as shown by the ranging pole are shown in Plates 44 and 45.



Plate 44. View South east across areas of erosion.



Plate 45. Recorded artefacts

5.7.2 Clean Water Dam 2

The location of Clean Water Dam 2 is located on a first order tributary to Guises Creek and covers an area of gently sloping creek flats. These long side slopes continue to the north and south of the proposed dam location, with no features indicating that this stretch of creek line would have focused attention. The creek line was dry at the time of survey and would have been intermittent as a water source. In the north, a vehicle access track currently crosses the creek line resulting in a long area of linear exposure. The location of the proposed dam is shown in Figure 11.

Pedestrian survey over this area did not identify any areas of potential or surface artefacts. The survey conditions and area of the proposed dam are shown in the following plates.



Plate 46. View north west



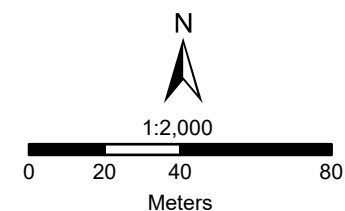
Plate 47. View north along drainage line



Figure 10: North Eastern Dam

Legend

-  Contour - 10m
-  Watercourse
-  Cadastre
-  Property Boundary
-  Project Area
-  Clean Water Dam
-  Site
-  Area of PAD



Coordinate System:
GDA 1994 MGA Zone 55

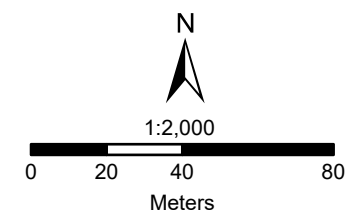
Imagery: © Nearmap



**Figure 11. Clean Water Dam
2**

Legend

-  Contour - 10m
-  Watercourse
-  Cadastre
-  Property Boundary
-  Project Area
-  Clean Water Dam
-  Site
-  Area of PAD



Coordinate System:
GDA 1994 MGA Zone 55

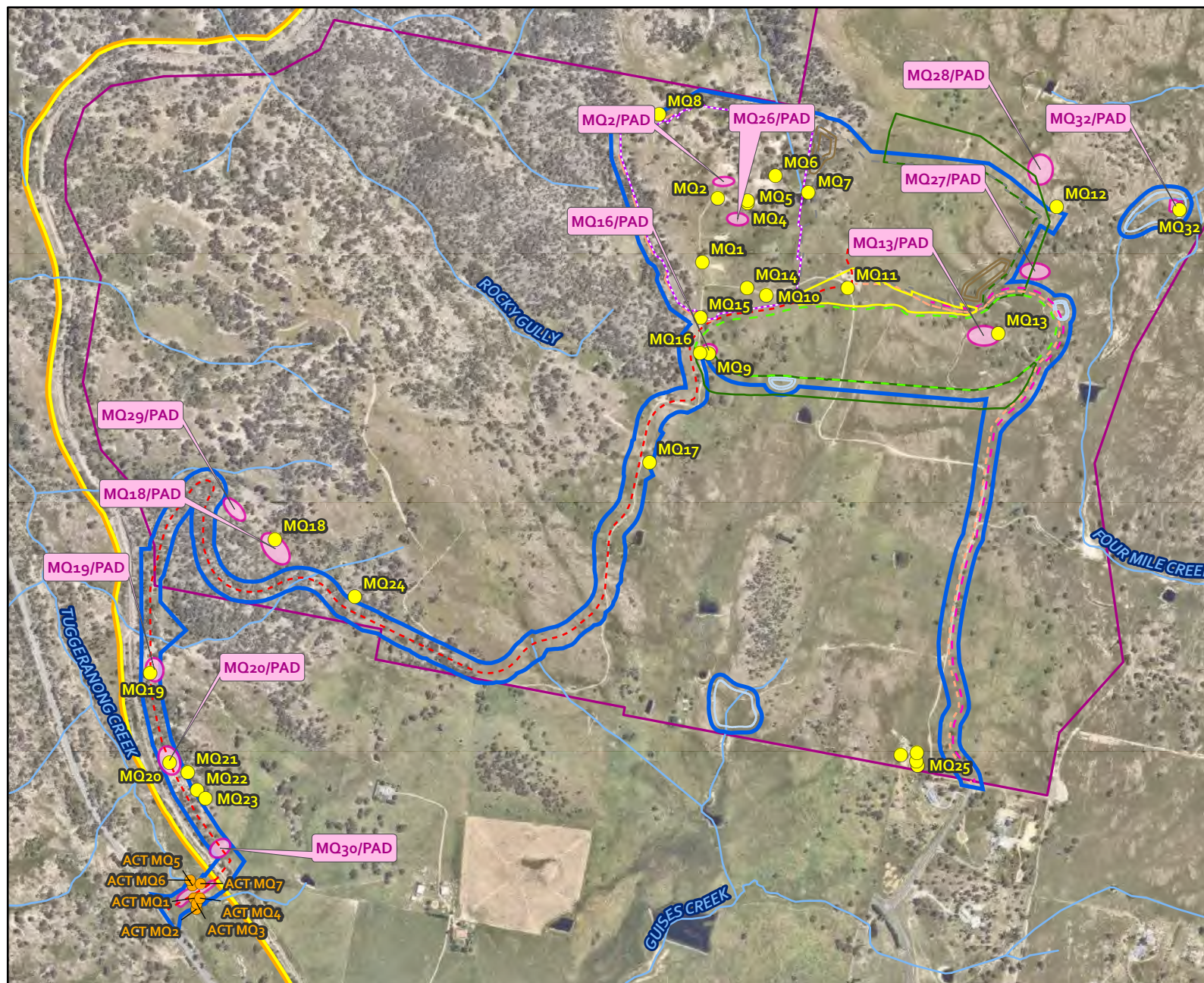
Imagery: © Nearmap

5.8 SUMMARY OF ARCHAEOLOGICAL SURVEY RESULTS

The field survey identified heritage sites within the project area boundaries and as a result mitigation measures will be required to minimise heritage impacts. The following findings from the field survey apply:

- ❖ Prior to the 2021 survey, no previously recorded sites are present within the project area, based on heritage register searches and background review. This is a result of lack of previous survey.
- ❖ Following the 2021 and 2025 field surveys twenty-one (21) heritage sites are present in the project area (Table 4) consisting of PADs, surface sites and CMTs. Impacts will occur to these heritage sites and areas of PAD within the project boundary and as a result, subsurface testing and mitigation measures (see Section 9) will be required. Results of the field surveys are shown on Figure 12.
- ❖ Eight sites are within the proximity of works (20m) are at risk of indirect (accidental) impacts from construction, due to the open paddock context (Table 5). As a result, barrier fencing will be required to prevent accidental harm.
- ❖ The remaining three sites are distant to works and will not be impacted in any manner. No further actions are required in relation to these three sites.
- ❖ GSV was generally moderate across the project area with consistent grass coverage of varying lengths with some areas of high GSV due to sparse grass coverage. Numerous areas of exposure estimated at 35% were present due to erosion scours, stock impacts, dam structures, fence lines, gates and vehicle impact tracks. GSV in these exposures was estimated at 80-90%. As a result, the survey is considered to be effective in ground coverage.

Figure 12: Results of Field Survey



Legend

- Site
- ACT Site
- Contour - 10m
- Watercourse
- Major Road
- Minor Road
- - Track-Vehicular
- Cadastre
- Property Boundary
- Area of PAD
- Project Area
- ACT - NSW Border
- - Extraction Area
- - Internal Road
- - Proposed Power Line
- - Processing and Stockpiling Area
- - Infrastructure Area
- - Visibility Barrier
- - Tree Screening
- - Quarry Access Road
- - Secondary Access Road
- Clean Water Dam
- Sediment Basin



1:15,000

0 187.5 375 750

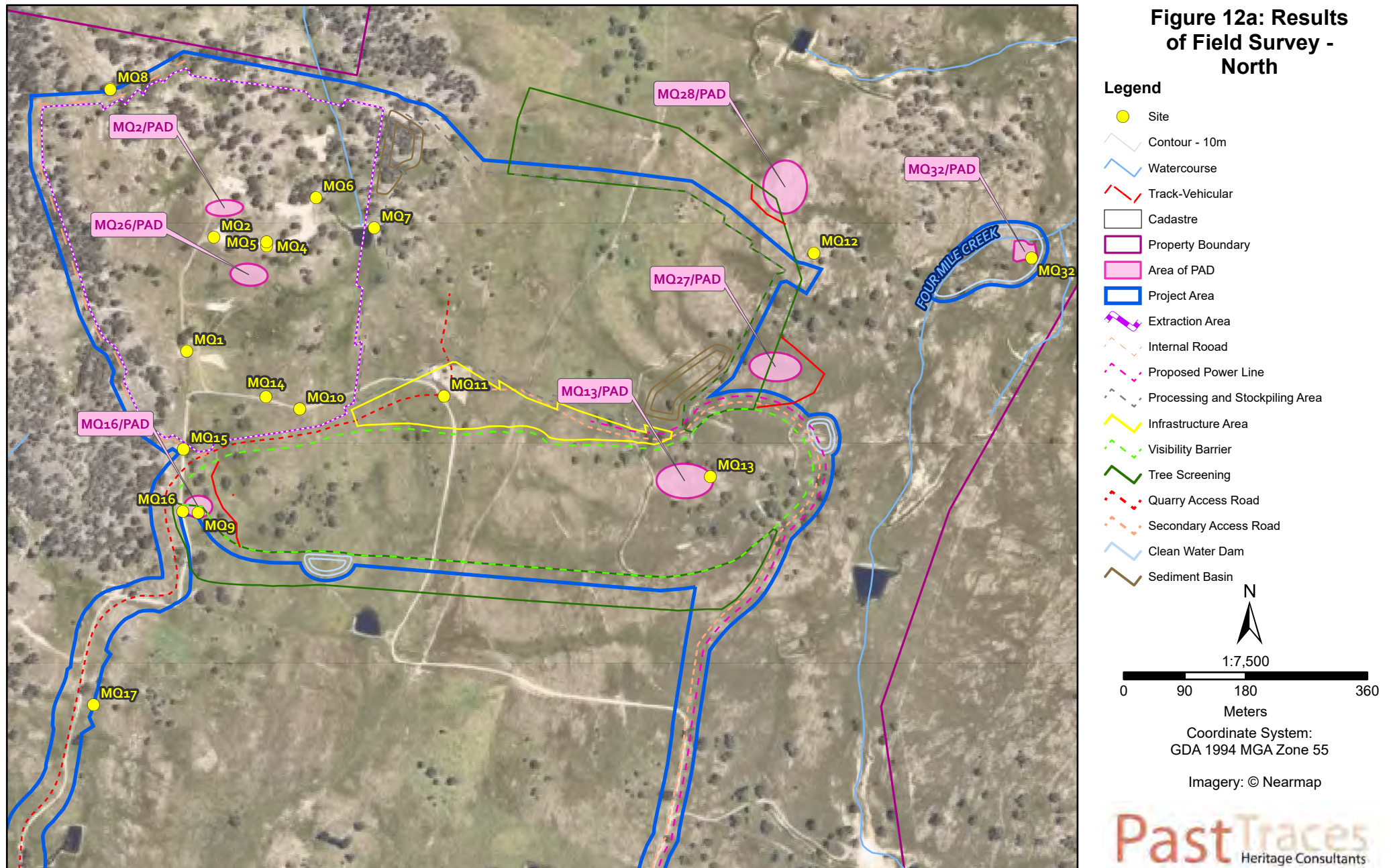
Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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Heritage Consultants

**Figure 12a: Results
of Field Survey -
North**



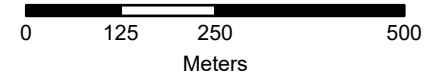
**Figure 12b: Results b
of Field Survey -
South East**

Legend

-  Site
-  Contour - 10m
-  Watercourse
-  Major Road
-  Minor Road
-  Track-Vehicular
-  Cadastre
-  Property Boundary
-  Area of PAD
-  Project Area
-  Proposed Power Line
-  Secondary Access Road



1:10,000



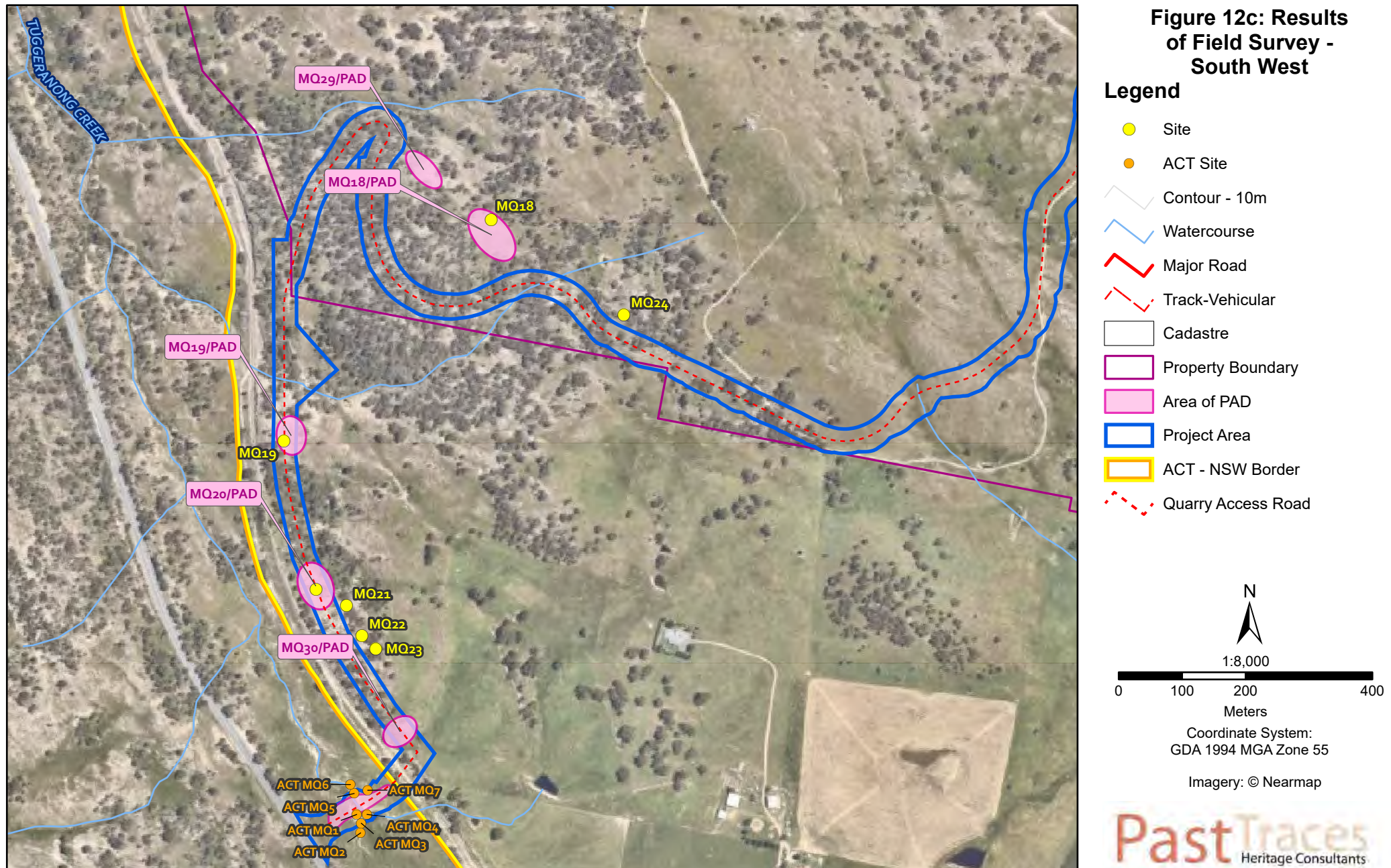
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces
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**Figure 12c: Results
of Field Survey -
South West**



6 SUBSURFACE TESTING

As defined previously in Section 4.5, areas of PAD are landforms with a higher potential to contain subsurface deposits of past Aboriginal occupation than the surrounding landscape. NOHC in 2003 (Bungendore HQ assessments) stated:

"A potential archaeological deposit, or PAD, is defined as any location where the potential for sub-surface archaeological material is considered to be moderate or high, relative to the surrounding study area landscape" (NOHC 2003:7).

Eight areas of PAD are present within the project area requiring subsurface testing to determine the presence, extent and significance of subsurface deposits. This testing was completed in March 2026, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010) and the methodology detailed in Section 6.2.

As set out in Section 3.1 of the Code of Practice (DECCW 2010), subsurface testing is only permissible where "sub-surface objects have a high probability of being present and the area cannot be avoided by the proposed development". The purpose of subsurface testing is "to collect information about the nature and extent of sub-surface deposits based on a sample recovered from the sub-surface investigations". Based on the recovered sample, the archaeologist uses the sample's data to calculate the probability of the site continuing in area. By extrapolating artefact density from the excavated test pits, the probability of further subsurface deposits being present and their significance is assessed.

Requirement 15b of the Code states that the excavation strategy must "describe the differentiation of the PAD to be test-excavated from the surrounding archaeological landscape (i.e. explain why the PAD is anticipated to be of higher significance than the continuous distribution of archaeological material in which it exists)" (DECCW 2010: 25)

Under this requirement, if a large landform with high potential is identified, an area of PAD within that landform must hold an additional feature indicating the need and/ or appropriateness of undertaking test excavations within the broad landform.

Requirement 16a of the Code states that the "test excavation should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area" (DECCW 2010:27).

Requirement 17 (DECCW 2010:28) provides guidance on when a test excavation is to cease:

"Any test excavation carried out under this Requirement must cease when:

- 1). suspected human remains are encountered (see Section 3.6), or
- 2). enough information has been recovered to adequately characterise the objects present with regard to their nature and significance."

Enough information is defined in the explanatory notes: "the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance" (DECCW 2010: 28). Consequently, test excavation must cease when the archaeologist has recovered sufficient information from the test excavations, irrespective of whether all planned test pits have been completed or the extent of the

entire impact area has been physically investigated. Continuance is only permitted if there is reason to believe that a significant variance may occur within the investigation area.

6.1 AIMS OF THE SUBSURFACE TEST EXCAVATIONS

Subsurface testing was undertaken to determine the presence, significance and extent of any archaeological subsurface deposit which may be present within the identified areas of potential archaeological deposit (PAD). Subsurface testing ceased when enough information has been gathered to fulfil these aims.

The aims of the testing program were to:

- ❖ Investigate whether sub surface deposits are present which may be impacted by the development.
- ❖ If identified, to determine the extent and nature of the deposits.
- ❖ Identify the degree of disturbance within the PAD area by examining the soil profile and stratigraphy.
- ❖ Analyse any Aboriginal material recovered.
- ❖ In consultation with RAPs determine the significance of any cultural material.
- ❖ Develop management strategies for any heritage items identified by the subsurface testing program.

6.2 EXCAVATION METHODOLOGY

The following excavation methodology was developed in consultation with RAPs. As a result of this process a series of test pits measuring 50 x 50cm were excavated across the identified area of PAD, sampling the area to determine the presence of subsurface deposits and to locate any areas of differing density of artefacts.

The test pits will be excavated to the underlying clay strata in a 50cm x 50cm test pit. A 10m spacing was decided based on the typical non-uniform distribution of artefacts in open site contexts. For dispersed sites, a 10m spacing has been shown to be effective to determine overall site extent and locations of clustered distributions (Way 2014: 38).

The following methodology was followed:

- ❖ Undertake excavation of 50 x 50cm test pits by hand excavation using mattocks, shovels and trowels to determine the presence of deposits.
 - o Hand excavation using shovels and trowels, pits to be a minimum of 50cm x 50cm in area.
 - o Removal of initial deposit in 5cm levels or 'spits' with subsequent spits at 10cm unless features found requiring a different strategy.
 - o Excavate to a maximum of 60cm or if cultural material is located to culturally sterile layers. Excavation would cease if no material has been discovered at a maximum depth of

60centimetres as previous research in the area indicates that materials are most likely to occur in the surface layers. Soil types are deep but in most cases are alluvial.

- o Placement of excavated deposit in buckets labelled by spit and test square.
- o Transfer of buckets to sieve station.
- o Sieving of deposits through 5mm mesh (dry sieving or wet sieving will be undertaken depending on soil conditions).
- o Removal of any cultural material from sieves, bag and labelled for analysis.
- o Proceed with excavation until completed.
- o Section drawings and photographs of each test pit will be taken and pH measurements for representative soil samples taken.
- ❖ Analysis of any recovered artefacts on site and reburial in test pits in accordance with Code of Practice Requirements or in conformance with a return to country protocol which will be developed for the ACHAR.
- ❖ At completion of excavation, backfill test pits (with sieved material if possible or clean fill if required)

The test pit spacing is at 10m intervals on transect spaced at 10m (10m grid). This provides coverage over the areas of PADs.

To test the PAD boundaries, in the event of revealing of artefacts or deposits within a test pit, it is proposed that the methodology be adaptive with additional test pits placed at 10m intervals to the artefact locations to determine boundaries of the area of PAD. Additional test pits will not be placed between two test pits if both reveal artefacts but will be confined to the outer edges to determine extent. This adaptive methodology will apply to both PAD areas.

Should a test pit reveal high density artefact concentrations (i.e. greater than 40 artefacts per square metre) or archaeological features such as hearths, a recommendation of salvage under the future AHIP will be made in the report.

6.3 ANALYSIS OF CULTURAL MATERIAL

All lithic items were examined in detail using a low-power hand lens and microscope. A basic analysis of lithic variables such as raw material, size, primary and secondary flaking characteristics (platform and termination type, degree of retouch) was undertaken on recovered lithics from subsurface contexts for the study area as an assemblage.

On completion of the lithic analysis the items were stored individually in resealable plastic bags marked with their identification number and provenance. Artefacts are being held in temporary storage at the office of Past Traces for analysis while the AHIP process is undertaken.

Lithic categories are based as follows:

- ❖ Flakes – dorsal and ventral face, platform and termination.
- ❖ Retouched flakes – negative scars removed after ventral face creation (flake detachment).

- ❖ Flaked pieces – negative scars on dorsal face but ambiguous ventral face and striking platform.
- ❖ Cores – one or more negative scars but no positive scars.
- ❖ Angular shatter – indistinct scar faces assumed to be cultural based on association with cultural material.

6.4 RESULTS OF SUBSURFACE TESTING PROGRAMME

The subsurface testing program was undertaken on the 11,13, and 16-20 February and 6 and 11 March 2026 with two representatives of the RAPS.

Results of the test pitting programme for the eight areas of PAD (MQ2 PAD, 13, 16, 19, 20, 26, 30 & 32) are detailed in the following sections with all coordinates displayed in GDA94 MGA55. Appendix 4 contains test pit photos for each test pit with the lithic database at Appendix 5. The test pit locations are shown on Figure 21. Site cards have been submitted to AHIMS to reflect the results of the test pitting program.

6.4.1 MQ2PAD – Approx. Centre 695570.6074417

This area of PAD is located on a level area on the midslopes overlooking a creek line. The area of PAD is estimated to cover an area of approximately 100 x 40m centred on 695570.6074417.

An initial sixteen test pits were plotted along three west/east aligned transects across the central PAD area at a 10m spacing from each other. The central transects followed the centre of the gentle-gradient to level terrace area which was considered to hold the highest potential for subsurface deposits. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance to determine the extent of deposits across the area of development. One artefact was recovered from TP9 in the centre of the PAD area and therefore no further expansion pits were necessary. The location of the completed test pits for MQ2PAD are shown in Figure 13 and in Plates 48 and 49.



Plate 48. View across length of MQ2PAD
(Facing east)



Plate 49. View of MQ2PAD area (northeast)

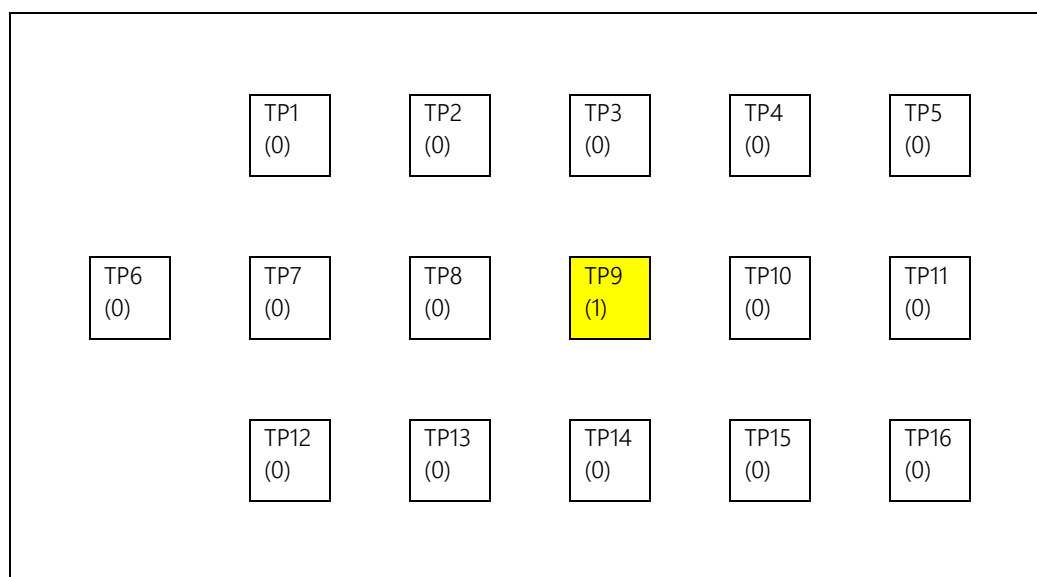


Figure 13. End of Excavation test pit layout for MQ2PAD

with artefact counts in parentheses. (not to scale)

The basal clay levels were generally reached from 30-50cm in the test pits. Soil depths were highest in the east area of PAD and consisted of heavily mixed silty loam overlaying a compacted clay substrate with frequent saprolitic gravels. Test pits were excavated to a depth of 40cm in most test pits.

The representative stratigraphy of MQ2PAD is shown in TP6. The soil section is provided in Table 9. The soils within the test pit consisted of highly mixed brown/tan coloured silty loam overlain on a compacted white and orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 9. Testpit 6 (MQ2PAD) Section

Spit	Description	Photo
1a: 0-5cm	Light Brown silty loam with small inclusions including coarse sand grains and small angular gravels. Soil is powdery when dry and highly friable. Shallow grass roots.	
1b: 5-10cm	Light Brown silty loam continued, transition at approximately 10cm depth.	
2: 10-20cm	Tan silty loam. Increasing size and frequency of angular gravels as well as saprolite.	
3: 20-30cm	Continued to ~25cm depth. Sandy loam with clay content increasing with depth and rock inclusion frequency.	
4: 30-40cm	Continued sandy loam with clay content increasing with depth to base of white/grey clay at ~38cm depth.	

Only one artefact was identified during the subsurface testing of MQ2PAD. This quartz artefact was recovered from TP9 in Spit 2 (10-20cm depth) and is depicted in the below Plate.



Plate 50. Quartz artefact from TP9 (dorsal surface)

6.4.2 MQ13PAD – Approx. Centre 696275.6074010

This area of PAD is located on the crest of the ridgeline west of Four Mile Creek, near the property boundary fence line, covering an area of approximately 100 x 50m centred on 696275.6074010.

An initial twenty-four test pits were plotted along three west/east aligned transects across the central PAD area at a 10m spacing from each other. The central transects followed the centre of the gentle-gradient to level crest area which was considered to hold the highest potential for subsurface deposits. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance. Of the initial twenty-four test pits, ten pits recovered artefactual material. As a result of the expansions, a total of 23 artefacts were recovered from 12 of the total 34 excavated test pits. Two test pits were not excavated as they were located within a highly disturbed drainage bank and a tree.

The location of the completed test pits for MQ13PAD are shown in Figure 14 and in the below Plates.

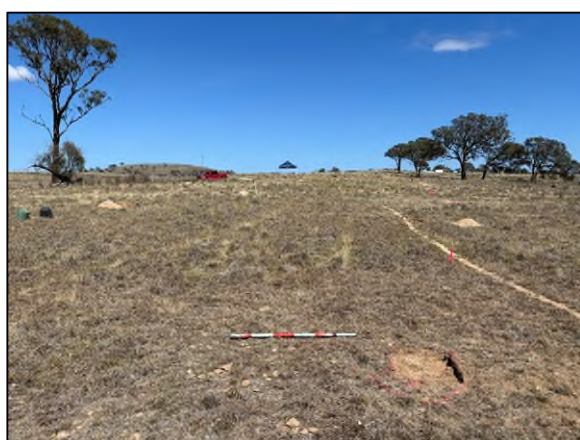


Plate 51. View across length of MQ16PAD looking upslope (Facing west)



Plate 52. View across length of MQ16PAD looking downslope (east)

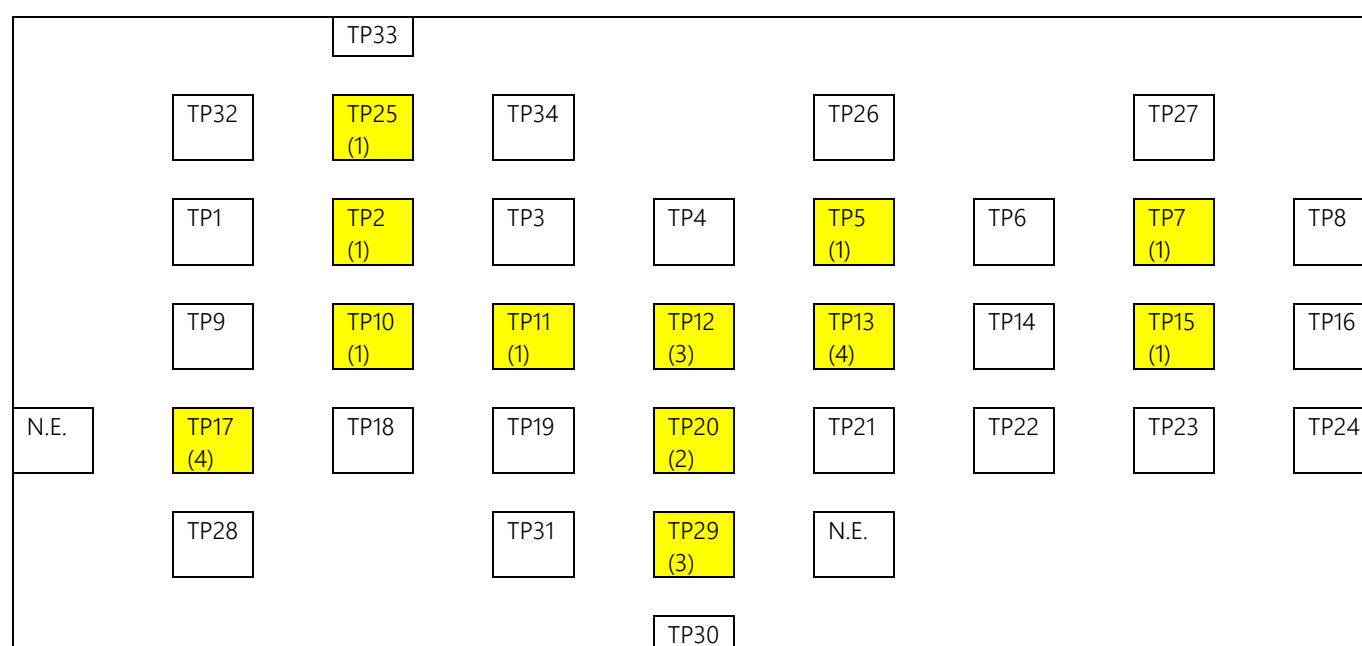


Figure 14. End of Excavation test pit layout for MQ13PAD
with artefact counts in parentheses (not to scale).

The basal clay levels were generally reached from 30cm in the test pits. Soils consisted of heavily mixed brown loam and saprolite overlaying a compacted clay substrate. Test pits were excavated to a depth of 30cm in most test pits.

The representative stratigraphy of MQ13PAD is shown in TP7. The soil section is provided in Table 10. The soils within the test pit consisted of highly mixed brown-coloured loam and frequent saprolite overlain on a compacted orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 10. Testpit 7 (MQ13PAD) Section

Spit	Description	Photo
1a: 0-5cm	Brown loam with small inclusions including small angular gravels. Soil is powdery when dry and highly friable. Dense but loosely compacted grass roots.	
1b: 5-10cm	Between 5-10cm depth soil transitions to sandy brown loam surrounding weak saprolite rocks.	
2: 10-20cm	Saprolitic sandy loam continued with increased saprolite content.	
3: 20-30cm	Continued to ~25cm depth. Saprolitic sandy loam continues to heavily compacted orange clay layer.	

A total of 23 artefacts were recovered from twelve of the 34 excavated pits during the subsurface testing of MQ13PAD. All of these artefacts were identified within Spit 1 (0-10cm depth) with examples depicted in the below Plates.



Plate 53. TP12 Artefacts (Dorsal surfaces)



Plate 54. TP17 Artefacts (Dorsal surfaces)

6.4.3 MQ16PAD – Approx. Centre 695537.6073982

This area of PAD is located above an area of creek flats, adjacent to the existing access road. The area of PAD is estimated to cover approximately 150 x 50m centred on 695537.6073982.

An initial twelve test pits were plotted along four west/east aligned transects across the central PAD area at a 10m spacing from each other. The central transects followed the centre of the gentle-gradient area which was considered to hold the highest potential for subsurface deposits. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance to determine the extent of deposits across the area of development. One artefact was recovered from TP5 and one artefact from TP10, both of which were located within the centre of the PAD area and therefore no further expansion pits were necessary. The location of the completed test pits for MQ16PAD are shown in Figure 15 and in the below Plates.



Plate 55. View across MQ16PAD above rock outcrops (Facing north)



Plate 56. View downslope across MQ16PAD (east)

The basal clay levels were generally reached from 30-50cm in the test pits. Soils consisted of heavily mixed silty loam overlaying a compacted clay substrate. Test pits were excavated to a depth of 40cm in most test pits.

The representative stratigraphy of MQ16PAD is shown in TP1. The soil section is provided in Table 11. The soils within the test pit consisted of highly mixed light brown-coloured silty loam overlain on a compacted tan/orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

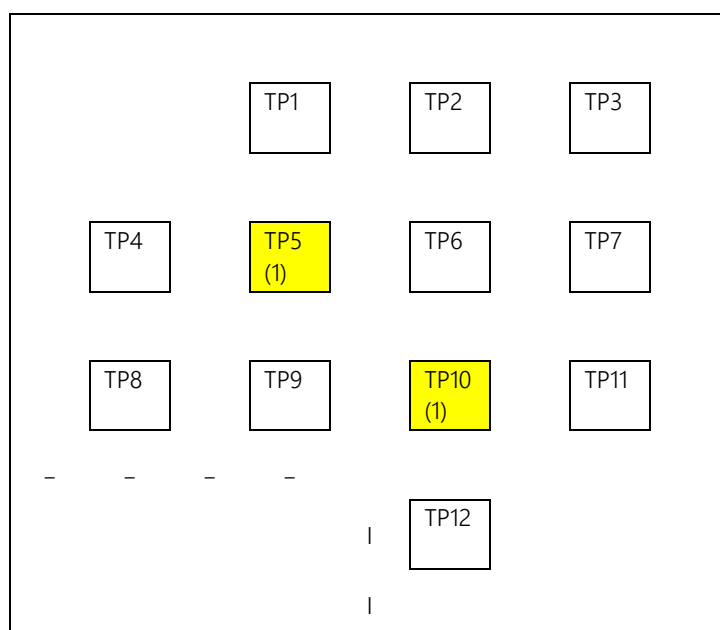


Figure 15. End of Excavation test pit layout for MQ16PAD
with artefact counts in parentheses (not to scale).

Table 11. Testpit 1 (MQ16PAD) Section

Spit	Description	Photo
1a: 0-5cm	Light Brown silty loam with frequent inclusions of small angular gravel and large angular rocks (<20cm diameter). Soil is highly compacted though powdery when dry and friable. Shallow grass roots.	
1b: 5-10cm	Light Brown silty loam continued, with gentle transition to light brown sandy loam. Increased frequency of small rounded saprolite and angular gravels.	
2: 10-20cm	Continued light brown sandy loam. Increasing frequency of rounded gravels and coarse sand. Increasing compaction with depth.	
3: 20-30cm	Continued light brown sandy loam, no clear change. Increasing compaction with depth.	
4: 30-40cm	Continued light brown sandy loam, no clear change. Increasing compaction with depth.	
5: 40-50cm	Continued light brown sandy loam with clay content increasing with depth. At approximately 48cm depth, mottled orange and grey clay base with saprolitic rocks on clay surface. End of Excavation at ~50cm	

A total of two artefacts were identified during the subsurface testing of MQ16PAD.

One chert core was recovered from TP5 in Spit 1 (0-10cm depth) and one quartz proximal flake was recovered from TP10 in Spit 1 (0-10cm depth). These artefacts are depicted in the below Plates.



Plate 57. Chert core artefact

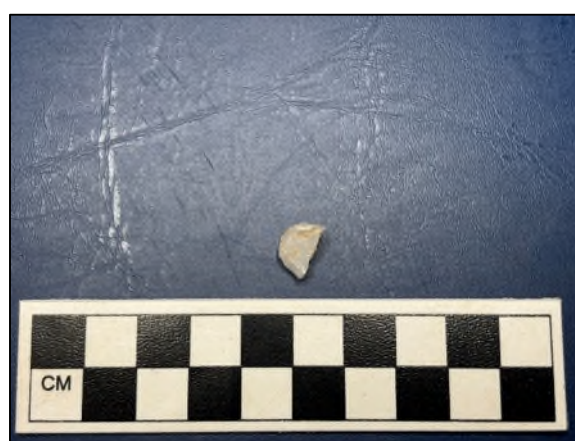


Plate 58. Quartz proximal flake (dorsal surface)

6.4.4 MQ19PAD – Approx. Centre 694091.6073144

This area of PAD was recorded across a mid-slope terrace feature along the proposed access road. The majority of this 60x45m area of PAD is located to the east, with only the 20m wide road corridor to be subject to subsurface testing.

An initial six test pits were plotted along a north/south aligned transect across the centre of the road corridor at a 10m spacing from each other. One of the test pits could not be excavated, as it was located within a large rock outcrop, so an additional pit was excavated to the south. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance to determine the extent of deposits across the area of development.

One artefact was recovered from TP3 in the centre of the PAD area and therefore no further expansion pits were necessary. The location of the completed test pits for MQ19PAD are shown in Figure 16 and in the below Plates.

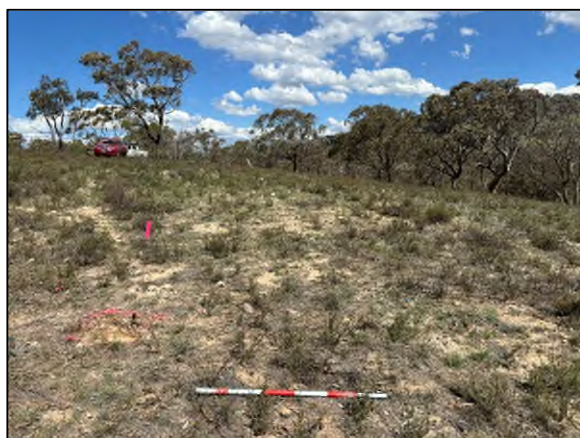


Plate 59. View across length of MQ19PAD
(Facing south)



Plate 60. View of MQ19PAD area (north)

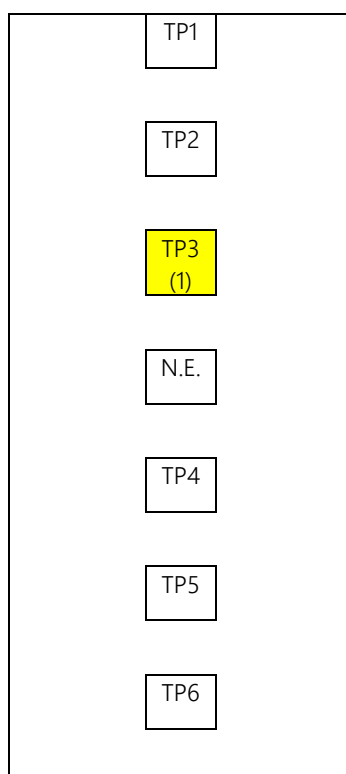


Figure 16. End of Excavation test pit layout for MQ19PAD with artefact counts in parentheses (not to scale).

The basal clay levels were generally reached from 20-30cm in the test pits. Soil depths were highest in the northern area of PAD and consisted of heavily mixed silty loam overlaying a compacted clay substrate. Test pits were excavated to a depth of 30cm in most test pits.

The representative stratigraphy of MQ19PAD is shown in TP4. The soil section is provided in Table 12. The soils within the test pit consisted of highly mixed brown-coloured silty loam overlain on a compacted rocky clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 12. Testpit 4 (MQ19PAD) Section

Spit	Description	Photo
1a: 0-5cm	Brown silty loam with small inclusions including small angular and rounded gravels and larger shale rock. Soil is compact and highly friable. Dense but shallow grass roots.	
1b: 5-10cm	Change at approximately ~5cm depth to light brown silty loam with increasing size and frequency of rock inclusions.	
2: 10-20cm	Continued light brown silty loam with frequent rocks (<10cm diameter) and gravels. Highly compacted.	
3: 20-30cm	Continued.	
4: 30-40cm	Continued light brown sandy loam with rocky clay layer at ~32cm depth.	

Only one artefact was identified during the subsurface testing of MQ19PAD. This quartz artefact was recovered from TP3 in Spit 2 (10-20cm depth) and is depicted in the below Plate.



Plate 61. Quartz artefact from TP3 (dorsal surface)

6.4.5 MQ20PAD – Approx. Centre 694129.6072907

This area of PAD is located on the middle/upper slopes assessed to hold moderate potential. The area of PAD is estimated to cover an area of approximately 75x45m centred on 694129.6072907 with only the 20m wide road corridor to be subject to subsurface testing.

An initial six test pits were plotted across the centre of the road corridor, aligned roughly northwest/southeast, at a 10m spacing from each other. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance to determine the extent of deposits across the area of development. One artefact was recovered from TP2 and one artefact from TP5 in the centre of the PAD area and therefore no further expansion pits were necessary. The location of the completed test pits for MQ20PAD are shown in Figure 17 and in the below Plates.



Plate 62. View across length of MQ20PAD from east extent (Facing northwest)



Plate 63. View of MQ20PAD area (southwest)

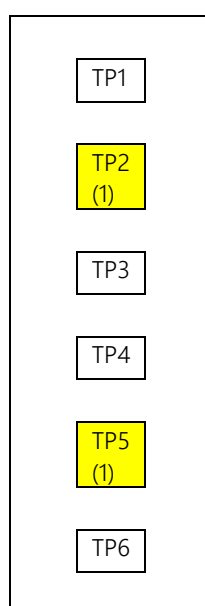


Figure 17. End of Excavation test pit layout for MQ20PAD with artefact counts in parentheses (not to scale).

The basal clay levels were generally reached from 20-30cm in the test pits. Soils consisted of heavily mixed silty loam overlaying a compacted clay substrate. Test pits were excavated to a depth of 30cm in most test pits.

The representative stratigraphy of MQ20PAD is shown in TP1. The soil section is provided in Table 13. The soils within the test pit consisted of highly mixed brown-coloured silty loam transitioning to a tan very-fine sandy silt overlain on a compacted orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 9. Testpit 6 (MQ20PAD) Section

Spit	Description	Photo
1a: 0-5cm	Compact brown silty loam with inclusions of small angular and rounded gravels. Soil is moisture holding with dense grass roots.	
1b: 5-10cm	Brown silty loam continued.	
2: 10-20cm	Uneven transition at ~15cm depth to tan sandy loam. Increasing size and frequency of natural gravels.	
3: 20-30cm	Continued tan sandy loam with coarse sand grains, frequent gravels and occasional rock (<10cm) inclusions. Increasing clay content with depth. Highly compacted.	
4: 30-40cm	Continued to highly compacted mottled grey/orange clay at ~30-35cm depth.	

A total of two artefacts were identified during the subsurface testing of MQ20PAD. One volcanic proximal flake was recovered from TP5 in Spit 2 (10-20cm depth) and one quartz flake was recovered from TP10 in Spit 1 (0-10cm depth). These artefacts are depicted in the below Plates.



Plate 64. TP2 Volcanic artefact (dorsal surface)



Plate 65. TP5 Quartz artefact (dorsal surface)

6.4.6 MQ26PAD – Approx. Centre 695616.6074316

This area of PAD is located on the level area of a creek ridge, placed on the northwest area of the proposed extraction area. Covering an area of approximately 100x30m centred on 695616.6074316.

An initial sixteen test pits were plotted along three roughly west/east aligned transects across the central PAD area at a 10m spacing from each other. The central transects followed the centre of the gentle-gradient to level ridge area which was considered to hold the highest potential for subsurface deposits. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance to determine the extent of deposits across the area of development. One artefact was recovered from TP13 requiring one expansion pit, for a total of seventeen pits excavated. The location of the completed test pits for MQ26PAD are shown in Figure 18 and in the below Plates.



Plate 66. View across length of MQ26PAD looking downslope (Facing east)



Plate 67. View of MQ26PAD area (west)

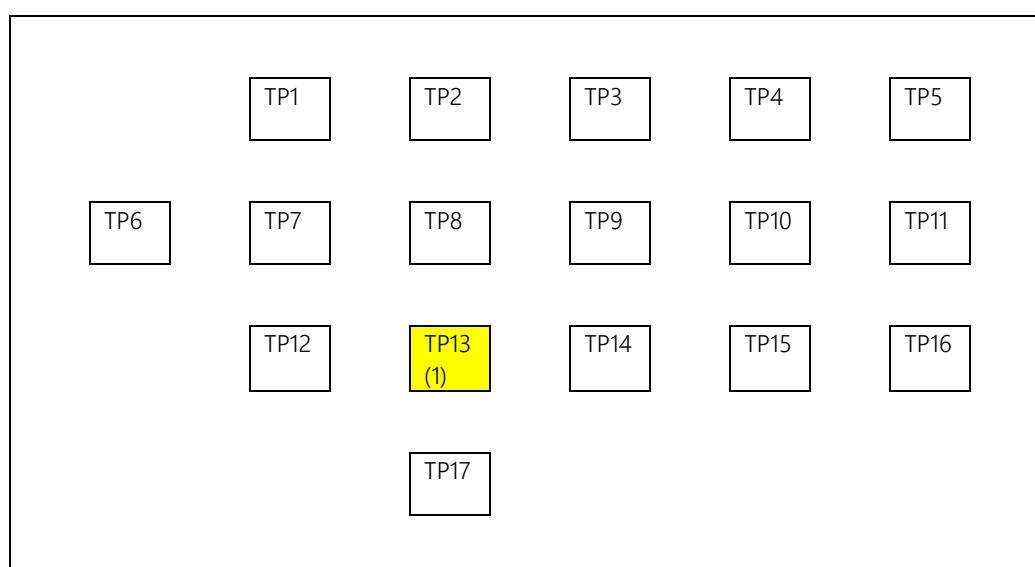


Figure 18. End of Excavation test pit layout for MQ26PAD
with artefact counts in parentheses.(not to scale)

The basal clay levels were generally reached from 20-30cm in the test pits. Soils consisted of heavily mixed silty loam overlaying a compacted rocker layer and clay substrate. Test pits were excavated to a depth of 30cm in most test pits.

The representative stratigraphy of MQ26PAD is shown in TP5. The soil section is provided in Table 14. The soils within the test pit consisted of highly mixed brown-coloured silty loam overlain on a compacted tan and orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 14 Testpit 5 (MQ26PAD) Section

Spit	Description	Photo
1a: 0-5cm	Compact brown silty loam with inclusions including small rounded and angular gravel. Soil is powdery when dry and highly friable. Shallow grass roots.	
1b: 5-10cm	Transition at ~5cm to a light brown silty loam with increasing coarse sand and rock inclusions.	
2: 10-20cm	Continued with increasing frequency and size of rocks and gravels. Increasing compaction with depth. Rocky layer at ~16cm depth. Frequent gravels and larger rocks (<20cm diameter) with sandy loam.	
3: 20-30cm	Continued to ~27cm depth to base of highly compacted mottled tan and orange clay.	

Only one artefact was identified during the subsurface testing of MQ26PAD. This quartz artefact was recovered from TP13 in Spit 4 (30-40cm depth) and is depicted in the below Plate.



Plate 68. Quartz artefact from TP13 (dorsal surface)

6.4.7 MQ30PAD – Approx. Centre 694262.6072678

This area of PAD is Located on level area on creek ridge, and covers an area of approximately 55 x 40m centred on 694262.6072678, with only the 20m wide road corridor to be subject to subsurface testing.

An initial eight test pits were planned along three roughly northwest/southeast aligned transects across the central PAD area at a 10m spacing from each other. However, when placing the test pits on site, it was noted that the west transect was located along the rocky margin between the gentle-gradient ridge and the moderate to steep gradient slope descending to the creek line. Due to this, TP1, TP2, TP3 and TP4 were not excavated. Artefacts were recovered from TP6 (one artefact), TP7 (two artefacts) and TP8 (one artefact). No expansion pits were excavated as they were either located outside the impact area, or on a rock outcrop. The location of the completed test pits for MQ30PAD are shown in Figure 19 and in the below Plates.



Plate 69. View along length of MQ30PAD
(Facing southeast)



Plate 70. View of MQ30PAD area (northwest)

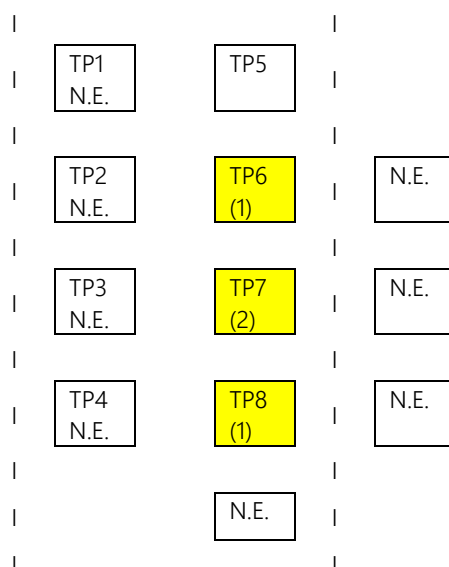


Figure 19. Test pit layout for MQ30PAD

with artefact counts in parentheses.(not to scale)

The representative stratigraphy of MQ30PAD is shown in TP6. The soil section is provided in Table 15. The soils within the test pit consisted of highly mixed brown-coloured silty loam to tan sandy loam overlain on a compacted tan and orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 15. Testpit 6 (MQ30PAD) Section

Spit	Description	Photo
1a: 0-5cm	Brown loam with small inclusions including small angular gravels. Soil is powdery when dry and highly friable. Dense but loosely compacted grass roots.	
1b: 5-10cm	Between 5-10cm depth soil transitions to tan-coloured sandy loam with an increased frequency of small gravels/	
2: 10-20cm	Continued.	
3: 20-30cm	Continued tan-coloured sandy loam with coarse sand grains and frequent small rounded gravels. Increasing compaction with depth.	
4: 30-40cm	Continued with increasing clay content to ~37cm depth. Highly compacted mottled tan and orange clay layer.	

A total of three artefacts were identified during the subsurface testing of MQ30PAD.

One quartz flake was recovered from TP6 in Spit 2 (10-20cm depth), one chert medial flake from TP7 in Spit 1 (0-10cm depth) and one quartz flaked piece was recovered from TP8 in Spit 2 (10-20cm depth). These artefacts are depicted in the below Plates.



Plate 71. TP6 Quartz artefact (dorsal surface)



Plate 72. TP7 Chert artefact (dorsal surface)



Plate 73. TP8 Quartz artefact (dorsal surface)

6.4.8 MQ32PAD – Approx. Centre 696722.6074347

This area of PAD is located on the southern banks of an area of creek flats that are almost level with a confluence present further downstream with another drainage line into Four Mile Creek. The area of the creek adjacent to this level area contains a deep-water hole, which would have provided fishing opportunities and held water except in the driest conditions. This area is considered to hold moderate potential for subsurface deposits. The area of PAD is estimated to cover an area of approximately 35x 30m centred on 696722.6074347.

An initial twelve test pits were plotted along three west/east aligned transects across the central PAD area at a 10m spacing from each other. When artefacts were encountered, as set out in the methodology, an additional test pit was excavated at 10m distance to determine the extent of deposits across the area of development. One artefact was recovered from TP7 in the centre of the PAD area requiring no further expansion pits and one artefact was recovered from TP12, where two additional pits were excavated. Two artefacts were therefore recovered from two of the fourteen test pits excavated at this location. The location of the completed test pits for MQ32PAD are shown in Figure 20 and in the below Plates.



Plate 74. View across MQ32PAD (Facing northwest)



Plate 75. View of MQ32PAD area (southeast)

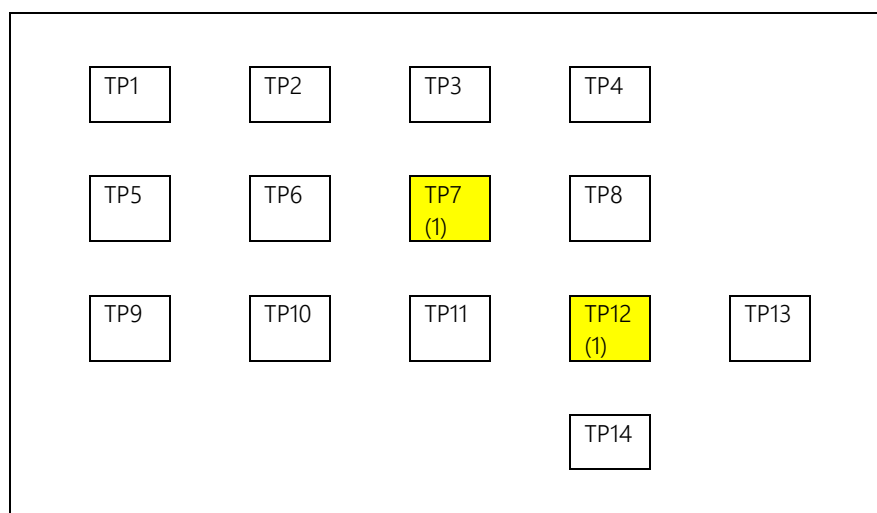


Figure 20. End of Excavation test pit layout for MQ32PAD
with artefact counts in parentheses (not to scale).

The basal clay levels were generally reached from 10-40cm in the test pits. Soils consisted of heavily mixed silty loam overlaying a compacted clay substrate. Test pits were excavated to a depth of 20cm in most test pits.

The representative stratigraphy of MQ32PAD is shown in TP8. The soil section is provided in Table 16. The soils within the test pit consisted of highly mixed brown-coloured silty loam overlain on a compacted orange clay base. Test pit photos are provided in Appendix 3 for all excavated test pits within the area of PAD.

Table 10. Testpit 8 (MQ32PAD) Section

Spit	Description	Photo
1a: 0-5cm	Light Brown silty loam with small inclusions including coarse sand grains and small angular gravels. Soil is powdery when dry and highly friable. Shallow grass roots.	
1b: 5-10cm	Light Brown silty loam continued, gentle transition at approximately ~6cm depth.	
2: 10-20cm	Continued light brown silty loam. Increasing size and frequency of rounded and angular gravels.	
3: 20-30cm	Continued to ~21cm depth. Gentle transition to tan sandy loam with clay content increasing with depth and rock inclusion frequency. Highly compacted mottled tan and orange clay layer reached at 26cm.	

A total of two artefacts were identified during the subsurface testing of MQ36PAD.

One quartz flake was recovered from TP7 in Spit 3 (20-30cm depth) and one quartz flake was recovered from TP12 in Spit 2 (10-20cm depth). These artefacts are depicted in the below Plates.

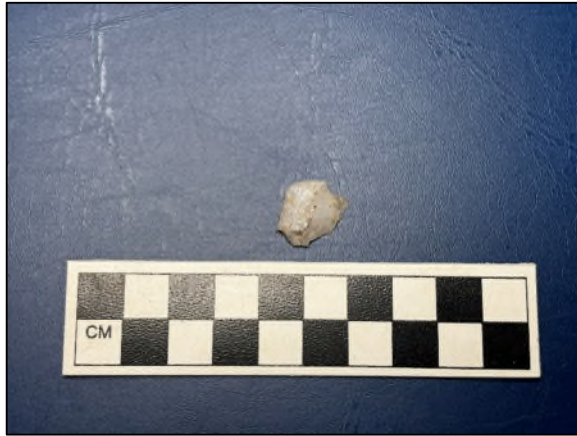


Plate 76. TP7 Quartz (dorsal surface)



Plate 77. TP12 Quartz artefact (dorsal surface)

Figure 21a: MQ2PAD

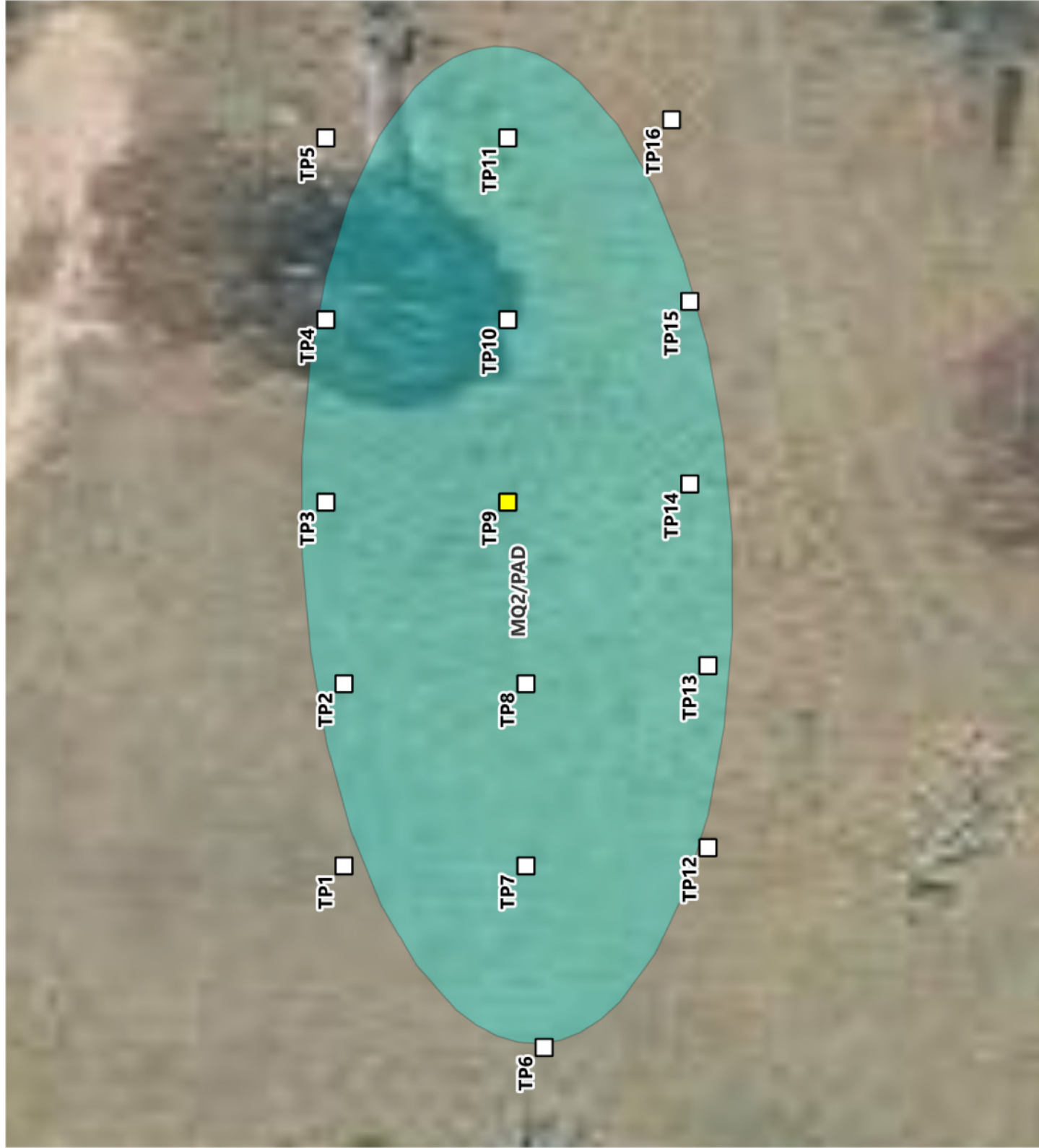
Legend

- Test Pit Locations
- Testpits with Artefacts
- Recorded Area of PAD



GDA 1994 MGA Zone 55

Imagery: Google Maps



**Figure 21b:
MQ13PAD**

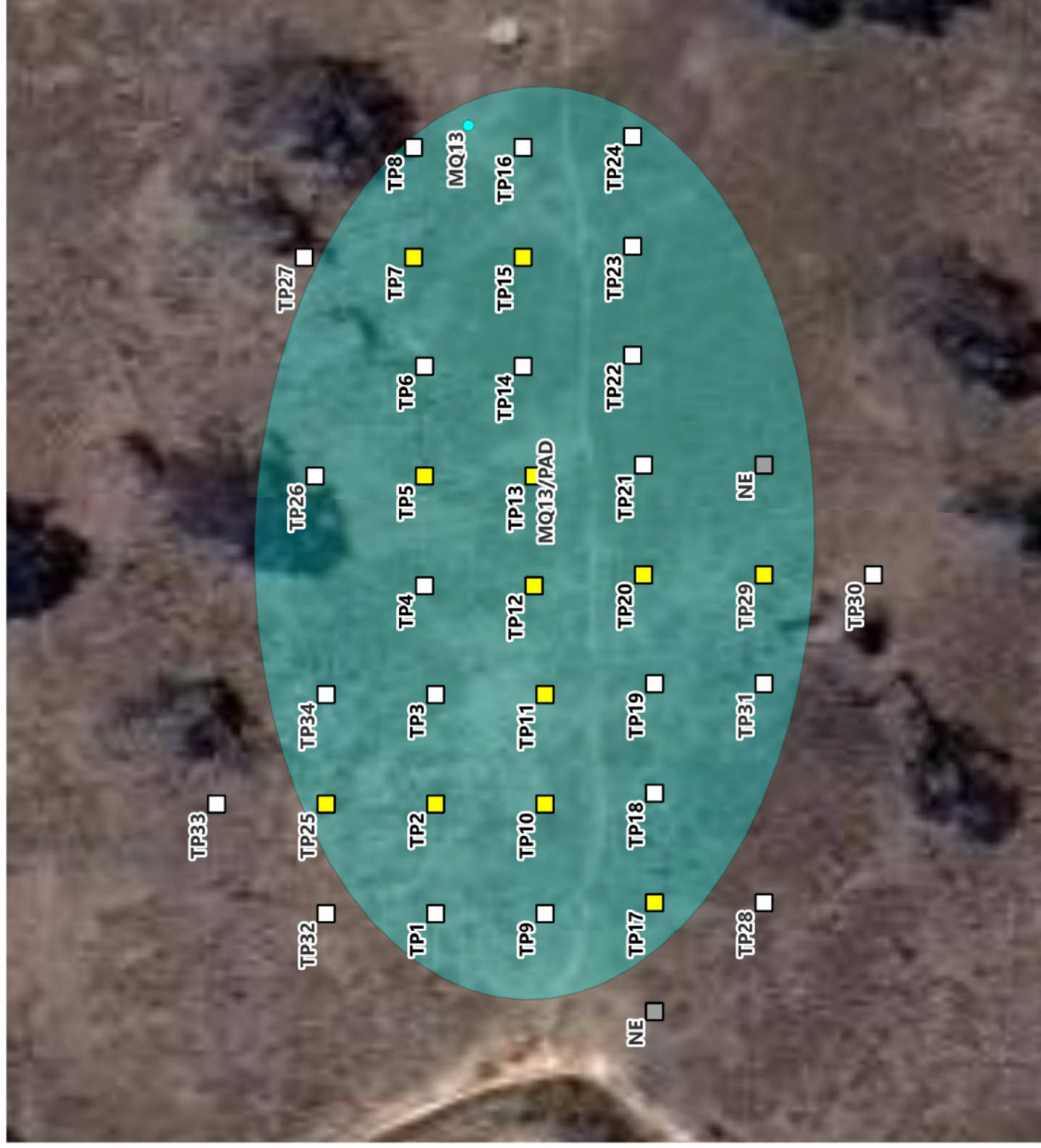
Legend

-  Test Pit Location
-  Testpits with Artefacts
-  Non-excavated Testpits
-  Recorded Area of PAD



0 5 10 15 m

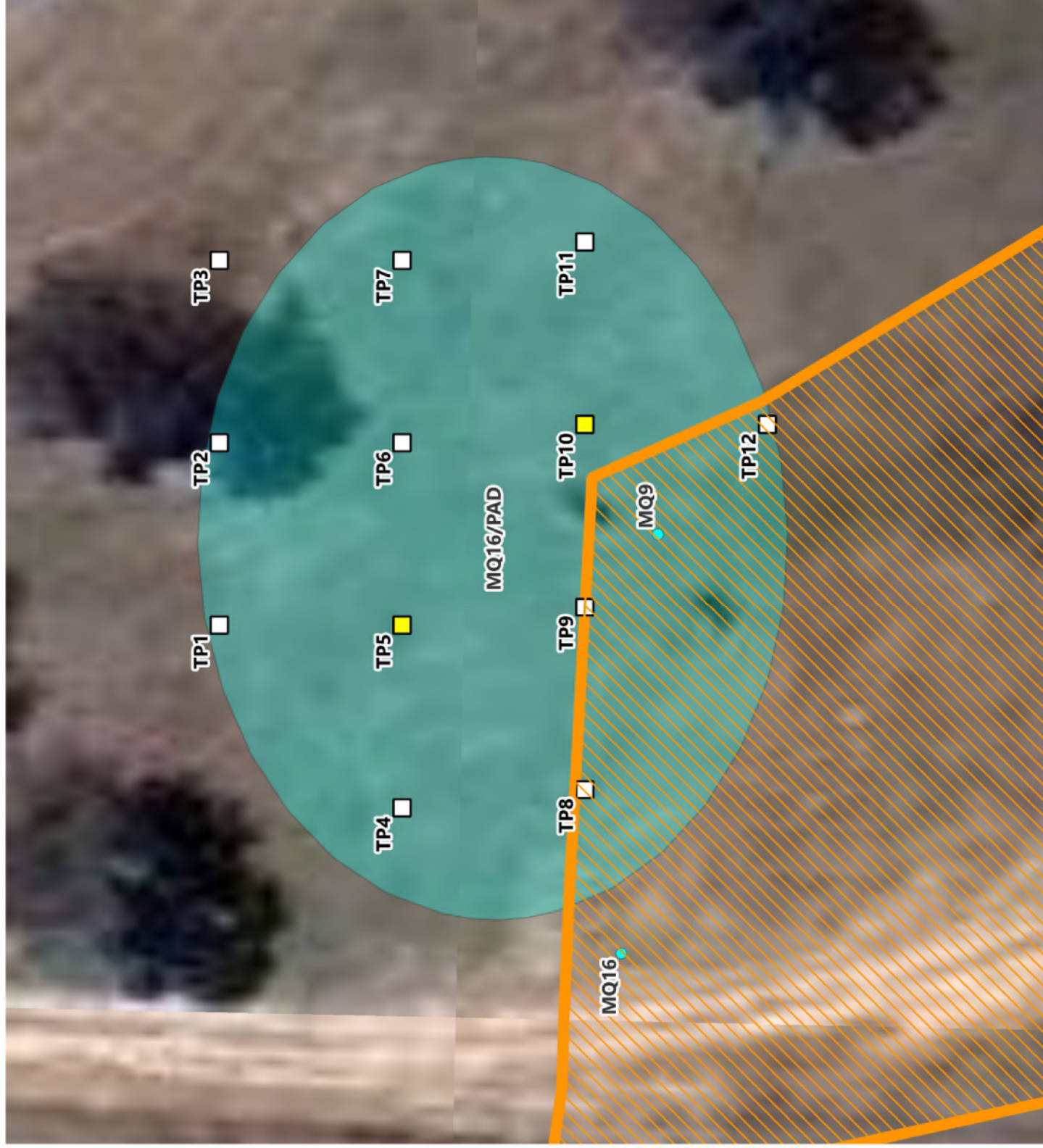
GDA 1994 MGA Zone 55
Imagery: Google Maps



**Figure 21c: MQ16
PAD**

Legend

-  Test Pit Locations
-  Testpits with Artefacts
-  Non-Excavated Testpits
-  Recorded Heritage Sites
-  Limit of Disturbance
-  Recorded Area of PAD



GDA 1994 MGA Zone 55

Imagery: Google Maps

**Figure 21d: MQ19
PAD**

Legend

-  Test Pit Locations
-  Testpits with Artefacts
-  Non-Excavated Testpits
-  Recorded Heritage Sites
-  Limit of Disturbance
-  Recorded Area of PAD



0 5 10 15 m



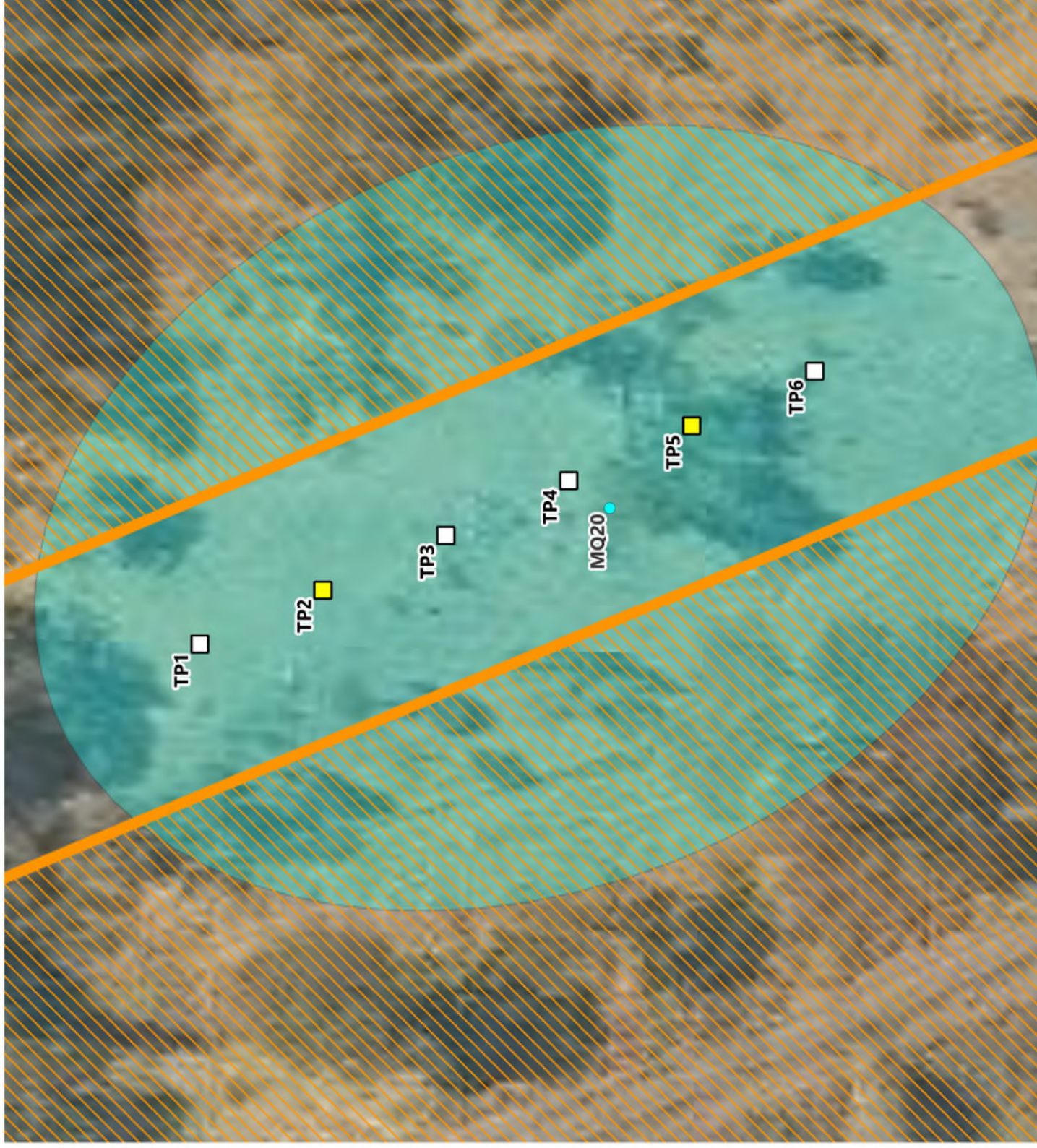
GDA 1994 MGA Zone 55

Imagery: Google Maps

**Figure 21e: MQ20
PAD**

Legend

-  Test Pit Locations
-  Testpits with Artefacts
-  Non-Excavated Testpits
-  Recorded Heritage Sites
-  Limit of Disturbance
-  Recorded Area of PAD



0 5 10 15 m

GDA 1994 MGA Zone 55

Imagery: Google Maps

Figure 21f: MQ26 PAD



GDA 1994 MGA Zone 55

Imagery: Google Maps

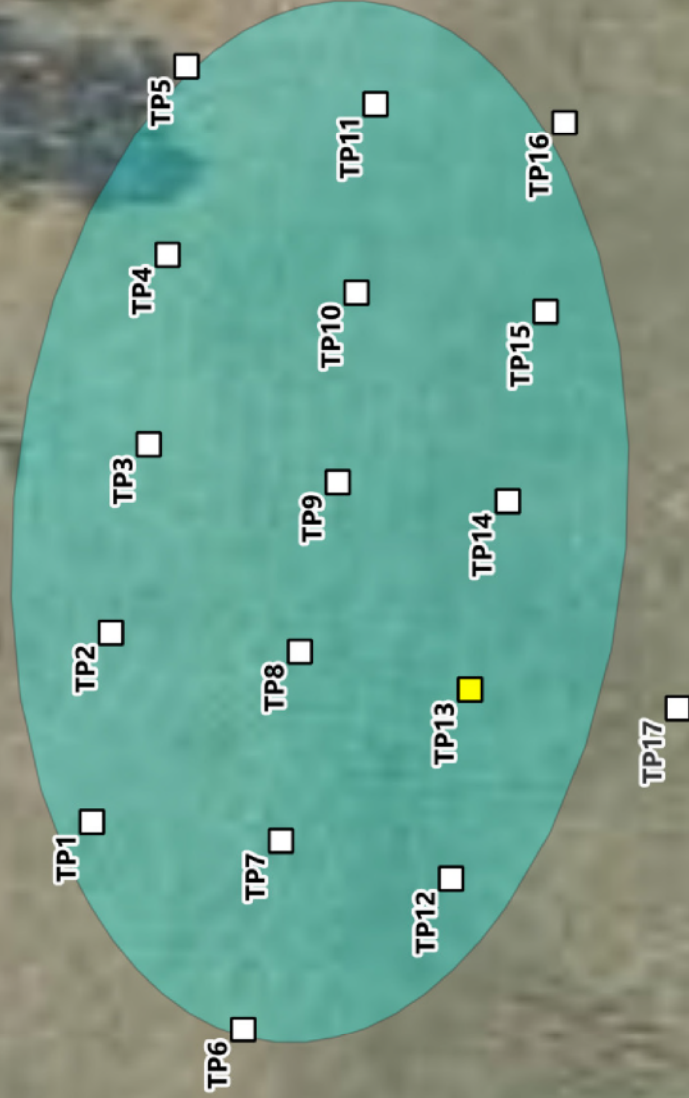


Figure 21g: MQ30
PAD

Legend

-  Test Pit Locations
-  Testpits with Artefacts
-  Non-Excavated Testpits
-  Recorded Heritage Sites
-  Limit of Disturbance
-  Recorded Area of PAD



0 5 10 15 m

GDA 1994 MGA Zone 55

Imagery: Google Maps



**Figure 21h: MQ32
PAD**

Legend

-  Test Pit Locations
-  Testpits with Artefacts
-  Non-Excavated Testpits
-  Recorded Heritage Sites
-  Limit of Disturbance
-  Recorded Area of PAD



0 5 10 15 m

GDA 1994 MGA Zone 55

Imagery: Google Maps

6.5 TESTPIT PROGRAMME RESULTS SUMMARY

The test pitting programme has shown that low-density, dispersed cultural deposits are present within all eight areas of PAD that were subject to subsurface testing (MQPAD2, 13, 16, 19, 20, 26, 30 & 32).

The recovered artefacts as discussed in section 6.4 were representative of sites in the region and consisted of common materials and artefact types. The below Table summarises the results of the subsurface testing programme.

Table 11. Summary of Subsurface Testing Results

Area of PAD	No. Recovered Artefacts	Test pits with artefacts	Total test pits
MQ2PAD	1	1	16
MQ13PAD	23	12	34
MQ16PAD	2	2	12
MQ19PAD	1	1	6
MQ20PAD	2	2	6
MQ26PAD	1	1	17
MQ30PAD	4	3	4
MQ32PAD	2	2	14
TOTAL	36	24	109

The subsurface testing programme indicated that artefactual material is sparsely and discontinuously distributed across all tested areas of PAD, with no discrete concentrations or areas of elevated density identified. This distribution likely reflects the original deposition of artefacts on crest landforms, with subsequent disturbance and dispersal resulting from a long history of pastoral land use. Activities such as cultivation, pasture improvement, stock movement, and erosion have likely contributed to the breakdown of any former spatial patterning. Site MQ13PAD produced the highest number of artefacts recovered during testing.

Where any of the recorded sites have the potential to be impacted by the proposed works, an approved Aboriginal Heritage Impact Permit (AHIP) must be obtained prior to the commencement of any ground-disturbing activities. If any of the present sites have the potential to be impacted by the proposed works, then an approved AHIP application must be obtained prior to works occurring.

The significance of the sites in a scientific and regional context are assessed and discussed in the following section.

7 SIGNIFICANCE ASSESSMENT

7.1 INTRODUCTION TO THE ASSESSMENT PROCESS

The NSW heritage assessment criteria is set out in the NSW Heritage guideline Assessing Heritage Significance (Dept Planning and Environment 2025) and requires assessment against the four values in the Australia ICOMOS Burra Charter (2013) generally accepted as heritage best practice.

These values are (as defined in DPE 2025):

- ❖ Historic significance - An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).
- ❖ Historical association - An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area).
- ❖ Aesthetic/creative/technical achievement - An item is important in demonstrating aesthetic characteristics and/ or a high degree of creative or technical achievement in NSW (or the local area).
- ❖ Social, cultural, and spiritual - An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural, or spiritual reasons.
- ❖ Research potential - An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area).
- ❖ Rare - An item possesses uncommon, rare, or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).
- ❖ Representative - An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).

For assessing the significance of Aboriginal sites the two main sections that are applicable are cultural values to the Aboriginal community and archaeological (scientific) values (ICOMOS 2013).

There are two criteria generally used in assessing the scientific significance of heritage sites:

- ❖ Research potential – the potential of a site to provide information which is of value in the scientific analysis of research questions.
- ❖ Representativeness – an assessment of whether the artefact or place is a good representative of its type within its regional or local setting.

Cultural value to the Aboriginal community can only be assessed by discussion with RAPs and feedback provided in response to the site identifications.

7.2 SCIENTIFIC SIGNIFICANCE ASSESSMENT

The following archaeological significance assessment is based on Requirement 11 of the *Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Using the Burra Charter assessment criteria of representativeness, condition and research potential, a rating of scientific significance was determined for the identified heritage sites. Table 18 provides the results of the archaeological significance assessment.

Table 12: Scientific significance assessment of archaeological sites recorded for the Project.

AHIMS	Site name	Site type	Research Potential	Representativeness	Condition	Scientific Significance	Degree of harm
57-2-1216	MQ1	Isolated Find	Low	Common	Disturbed/ poor	Low	Direct/Total
52-2-4636	MQ2	Artefact Scatter & Subsurface Deposit	Low	Common	Disturbed/ poor	Low	Direct/Total
52-2-4637	MQ3	Isolated Find	Low	Common	Disturbed/ poor	Low	Direct/Total
52-2-4638	MQ4	Isolated Find	High	Common	Fair	Low	Direct/Total
52-2-4639	MQ5	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1217	MQ6	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1218	MQ7	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1219	MQ8	Ring tree	High	Rare	Good	High	Direct/Total
57-2-1220	MQ9	Scarred tree	High	Uncommon	Good	High	Direct/Total
57-2-1221	MQ10	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1222	MQ11	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1224	MQ13	Isolated Find & Subsurface Deposit	Low	Common	Fair	Low	Direct/Partial
57-2-1225	MQ14	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1215	MQ15	Isolated Find	Low	Common	Fair	Low	Direct/Total
57-2-1213	MQ16	Isolated Find & Subsurface Deposit	Low	Common	Fair	Low	Direct/Total
57-2-1205	MQ17	Artefact Scatter	Low	Common	Fair	Low	Direct/Total
57-2-1211	MQ19	Isolated Find & Subsurface Deposit	Mod	Common	Fair	Low	Direct/Partial
57-2-1207	MQ20	Isolated Find & Subsurface Deposit	Mod	Common	Fair	Low	Direct/Partial
57-2-1380	MQ26	Subsurface Deposit	Low	Common	Fair	Low	Direct/Total
57-2-1384	MQ30	Subsurface Deposit	Low	Common	Fair	Low	Direct/Total

AHIMS	Site name	Site type	Research Potential	Representativeness	Condition	Scientific Significance	Degree of harm
57-2-1379	MQ32	Artefact scatter & Subsurface Deposit	Low	Common	Fair	Low	Direct/Total

7.3 CULTURAL SIGNIFICANCE

All heritage sites are important to Aboriginal people and all represent the past occupation and use of the region by Aboriginal people. As a reminder of the widespread and longstanding nature of Aboriginal occupation, sites provide a physical guide to usage, and points for education, discussion and if important enough cultural transmission of knowledge.

The sites within the project area are mainly small and common in their nature. They conform to the known preferred camping locations of past peoples and confirms landscape use. The information they provide will further support existing information but will not provide new or innovative research themes. Aboriginal communities do not accept the western view of site importance with all sites being considered to be of overall importance within the landscape.

The Aboriginal RAPs have stated that all of the sites hold significance and that impacts should be minimised and if unavoidable surface artefacts collected and curated or returned to country to maintain their connection

The ring tree and the scarred tree sites are of high cultural importance being rare and little studied site types. These sites must be protected from harm to protect these cultural values. This view has been incorporated into the revised design with the exclusion of both of these locations from the development area by Monaro Rock.

7.4 STATEMENT OF ARCHAEOLOGICAL SIGNIFICANCE

The Project Area overall has twenty one (21) Aboriginal heritage sites consisting of isolated finds, small artefact scatters, potential culturally modified trees and subsurface deposits. Site locations are mainly confined to the level areas of creek ridgelines, descending spur lines and creek flats.

The isolated stone artefact sites, small artefact scatters and the low-density subsurface deposits located within the study area represent common site types found throughout New South Wales and consist of common materials and artefact types for the Royalla/Burra region. The recorded sites within the impact area are considered to hold low cultural and scientific values. Recording of these sites will assist in regional studies aimed at assessing Aboriginal usage of the landscape, technology and raw material trade and sourcing. Due to the nature of the sites they are considered to hold a local level of significance not warranting conservation within the disturbed areas. A process of salvage collection and return to country is the most appropriate strategy for the recorded sites.

The scarred tree and ring tree sites (MQ8 & MQ9) hold high cultural significance. These are rare site types that warrant a high level of protection and have been avoided by Monaro Rock, through the redesign process based on their cultural values and in line with the wishes of the RAPs. These sites

will be further protected from any accidental construction impacts by installation of barrier fencing prior to any construction works. No harm areas will be marked on project mapping and all personnel will be informed of their heritage responsibilities as a component of site inductions.

The impacts from the proposed development are discussed in the following section.

8 IMPACT ASSESSMENT

8.1 DEVELOPMENT IMPACTS

The proposed development requires a high level of disturbance within the Project Area due to the nature of the development. The proposed quarry will cause disturbance in the form of soil and rock excavation, vegetation removal, infrastructure installation, heavy vehicle and plant movement across the site and revegetation following completion of works. Disturbance will be extensive across the areas of quarry operations, access roads and associated infrastructure.

The types of activities that will impact the ground surface and sub-soils include:

- ❖ Extraction area that would be developed in four stages within an area of approximately 21.1ha and to approximately 87 mbgl (a final floor elevation of 795AHD)
- ❖ Processing and stockpiling area that would be developed in two stages covering an area of approximately 17.9ha;
- ❖ Infrastructure Area comprising administration buildings, weighbridge, car parking area, fuel storage and workshop within an area of approximately 2.7ha;
- ❖ Quarry Access roads that would extend over approximately 4.0kms and connect the Project Site to the public road network via the Monaro Highway
- ❖ Visibility Barrier that would be developed in two stages within an area of approximately 16.1ha and
- ❖ Associated with these components would be additional infrastructure to support the project.

Land use in areas outside the proposed development would continue under their current usage with no additional impacts from the proposed quarry development. Heritage sites in these locations will not be impacted by the development. However, those in direct proximity may suffer accidental impact from vehicles as they are located in open paddock context. To avoid these accidental impacts, mitigation measures in the form of fencing should be applied.

Design of the development has been undertaken to avoid or reduce impact to the heritage sites. However, due to the nature of the development, under the current layout, impacts will occur to a portion of the identified Aboriginal sites. Redesign has been successful in removing all high significance sites from the project area with the remaining sites that will be impacted all holding low significance, consisting of isolated finds or small artefact scatters.

The assessed level of impact to each of the Aboriginal archaeological sites in the Project Area is summarised below in Table 19 with site in the immediate proximity summaries in Table 20. The proposed mitigation measures to address the degree and/or potential for harm at each site is listed against each site. The recommended mitigation measures are discussed further in Section 8.

Table 13: Sites within Project Area - Summary of archaeological impact

AHIMS	Site name	Site type	Type of harm	Degree of harm	Mitigation Measures
57-2-1216	MQ1	Isolated Find	Direct	Total	Salvage
52-2-4636	MQ2	Artefact Scatter & Subsurface Deposit	Direct	Total	Salvage
52-2-4637	MQ3	Isolated Find	Direct	Total	Salvage
52-2-4638	MQ4	Isolated Find	Direct	Total	Salvage
52-2-4639	MQ5	Isolated Find	Direct	Total	Salvage
57-2-1217	MQ6	Isolated Find	Direct	Total	Salvage
57-2-1218	MQ7	Isolated Find	Direct	Total	Salvage
57-2-1219	MQ8	Ring tree	Indirect	Nil	Fence during construction only/Avoid
57-2-1220	MQ9	Scarred tree	Indirect	Nil	Fence during construction only/Avoid
57-2-1221	MQ10	Isolated Find	Direct	Total	Salvage
57-2-1222	MQ11	Isolated Find	Direct	Total	Salvage
57-2-1224	MQ13	Isolated Find & Subsurface Deposit	Direct	Partial	Salvage
57-2-1225	MQ14	Isolated Find	Direct	Total	Salvage
57-2-1215	MQ15	Isolated Find	Direct	Total	Salvage
57-2-1213	MQ16	Isolated Find & Subsurface Deposit	Direct	Total	Salvage
57-2-1205	MQ17	Artefact Scatter	Direct	Total	Salvage
57-2-1211	MQ19	Isolated Find & Subsurface Deposit	Direct	Partial	Salvage
57-2-1207	MQ20	Isolated Find & Subsurface Deposit	Direct	Partial	Salvage
57-2-1380	MQ26	Subsurface Deposit	Direct	Total	Can be impacted under approved AHIP
57-2-1384	MQ30	Subsurface Deposit	Direct	Total	Can be impacted under approved AHIP
57-2-1379	MQ32	Artefact scatter & Subsurface Deposit	Direct	Total	Salvage

Table 20. Sites in proximity to project area – potential impacts

AHIMS	Site name	Site type	Type of harm	Degree of harm	Mitigation Measures
57-2-1223	MQ12	Isolated Find	Indirect	Total	Fence during construction only
57-2-1206	MQ18	Isolated Find/PAD	Indirect	Nil	Fence during construction only
57-2-1208	MQ21	Isolated Find/PAD	Indirect	Nil	Fence during construction only
57-2-1209	MQ22	Artefact Scatter	Indirect	Nil	Fence during construction only
57-2-1210	MQ23	Isolated Find	Indirect	Nil	Fence during construction only
57-2-1212	MQ24	Isolated Find	Indirect	Nil	Fence during construction only
57-2-1214	MQ25	Artefact Scatter	Indirect	Nil	Fence during construction only
57-2-1383	MQ29	PAD	Indirect	Nil	Fence during construction only

8.2 SUSTAINABLE DEVELOPMENT PRINCIPLES

Australia's *National Strategy for Ecologically Sustainable Development (1992)* defines ecologically sustainable development as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.

In regards to cultural heritage the main aspects of the ESD principles are intergenerational equity and the assessing of cumulative impacts on the heritage resource.

8.2.1 Intergenerational Equity

The concept of Intergenerational equity can be explained as the concept that resources (such as heritage sites) do not belong to any generation but are to be administered in trust for all future generations.

A key factor in intergenerational equity is the preservation of sites to ensure cultural information can be communicated to future generations. This concept can be also be explained as sites that if lost cause pain or sorrow to the community. This is generally understood as sites that are highly valued by the community and play an active role in the transmission, education and continuance of Aboriginal tradition.

Within Aboriginal communities intergenerational equity is maintained by the transmission of cultural knowledge, traditions and continued access and visitation to cultural sites. Loss of cultural knowledge, heritage sites or access to highly significant sites is detrimental to the current and future communities.

Destruction of cultural heritage sites may impact on future generations if by the action the cultural record is significantly altered or a continuing traditional link is broken. Assessing these impacts can be addressed by understanding the significance of sites, the range and variety of the site type that is present in the area and the role that the site plays with the Aboriginal community. Sites may play various roles as teaching sites, ceremonial areas or areas for cultural traditions (birthing trees, scarred trees, rock shelters for example).

In assessing the role of the sites at Royalla, and the effects of removal from the archaeological record the main factors are the archaeological and cultural values.

Archaeological

- ❖ The sites' significance in the region
- ❖ The frequency of occurrence of this type of site in the region
- ❖ The effect of removal of the site on the regional archaeological record

The majority of the sites consist of a low-density lithic scatter or isolated find. Based on the assessment criteria in Section 6, the sites consist of artefacts and materials common to the region, resulting in a finding of low scientific significance.

Cultural

- ❖ Whether sites are highly valued by community
- ❖ Play or may play an active role in communicating cultural information
- ❖ Whether the removal of these sites would result in **significant** loss of cultural knowledge or result in break of cultural tradition.

The sites to be impacted at Royalla are considered to be of low cultural significance by the community. This association is mainly with the role of the sites as a marker of past utilisation of the region, reflecting use of the landscape.

The sites at Royalla are not currently playing any role in ongoing cultural traditions, transmission of knowledge or learning for the next generation. The site type of subsurface lithic deposits are generally included in landscape discussions of cultural transmission in regards to connection to country, obligations to country and song lines. More visible sites such as large surface scatters, rock art, scarred trees or resource areas (waterholes, rivers, woodland, wetlands) are preferred centres for learning, generating discussion between participants. Whilst using the visible sites as anchors for discussions, intangible values, creation lore and song lines are often the main focus.

The identified sites have not played any role in ongoing cultural traditions, transmission of knowledge or learning for the next generation as there has been no available access to them. As such, the impacts to the sites will not have a detrimental effect on continuing traditions and the transmission of knowledge to future generations, as they play no active role in the current and future community. Preservation of these sites would not increase cultural knowledge or provide a ready pathway of communication of cultural values.

These factors for assessing cultural impact are provided in Table 21.

Table 21. Site Factors

Factor	Role
Highly valued by Community	No
Plays active role in communicating cultural information	No
Loss will result in significant change in cultural record	No
Loss will result in break with cultural tradition	No
Frequency of site type in wider area	Common
Site occurrence in protected areas	Common

8.2.2 Cumulative Impacts

Developments in the Royalla area mainly consist of required infrastructure upgrades and residential rural subdivisions. Cumulative impacts are, as a result, small, due to the larger surrounding areas that remain unimpacted by any current or proposed future works. Despite this, the cumulative impacts by the continued destruction of sites is of concern to the community and should be addressed by continued assessments and focus on preserving sites that are either intact, contain many artefacts, or are significant to the community. The determination of which sites warrant conservation should be undertaken by heritage professionals and the Aboriginal community through a process of consultation and involvement.

The cumulative impact of the current development at Royalla will be minimal, with the identified sites (both within NSW and the ACT section) that will be impacted consisting of low significance and low density artefact scatters. Conservation of the all high value sites, has been undertaken, with environmentally sensitive design and minimisation of impacts, an aim of the project. These areas are assessed as holding high significance and their exclusion from the development footprint is a reflection of the need for conservation whenever possible.

Any future infrastructure developments in the Royalla area will need to be assessed for their heritage impacts during the development assessment process and consultation with the Aboriginal community undertaken to mitigate impacts whenever possible.

By applying this process, heritage sites can be identified prior to construction and a conservation approach can be applied to reduce or remove development impacts through these areas and conserve sites of importance.

9 MANAGEMENT AND MITIGATION STRATEGY

Avoidance of impact to archaeological and cultural heritage sites through design of the development is the primary mitigation and management strategy, and has been implemented where practicable. In cases where avoidance and conservation is not practical, the salvage of artefacts, with the gathering of information through collection and interpretation are suggested mitigation options.

The small size of the majority of the surface sites and the low significance of the site contents within the boundaries of the project area do not warrant exclusion from the area of impact in the form of a conservation area as they are considered to be common, consisting of common artefact types and materials. As a result of this composition, they are considered to hold low scientific and cultural significance. Salvage of these sites should be undertaken if impacts cannot be avoided to retain the maximum amount of archaeological information and allow for return to country by the Aboriginal community. Approvals should be sought to allow for salvage and destruction of these sites with appropriate mitigation measures as provided below for each of the identified sites.

9.1 MITIGATION MEASURES

For the twenty-one (21) sites identified by the heritage assessment (Table 16), mitigation measures should be applied to retain the maximum amount of archaeological and cultural information possible. The mitigation measures have been discussed with the RAPs whilst on site and provided to each of the RAPs for their comments in the form of the draft report.

RAPS should be provided with an opportunity to participate in each of the below listed mitigation measures which will be undertaken under the guidance of a qualified heritage consultant. Approvals will be required to allow for the completion of these mitigation measures.

The following mitigation measures have been developed for the impacted sites:

1. Salvage (surface collection) of eleven (11) surface sites located within the development area is required. This applies to sites MQ1, MQ3, MQ4, MQ5, MQ6, MQ7, MQ10, MQ11, MQ14, MQ15, and MQ17. Salvage will follow the methodology outlined at point 3.
2. Salvage collection of the six (6) surface sites with associated areas of PAD is required. This applies to MQ2PAD, MQ13PAD, MQ16PAD, MQ19PAD, MQ20PAD and MQ32PAD. Salvage will follow the methodology outlined at point 3.
3. Salvage (Surface Collection) methodology to be followed would consist of:
 - Returning to GPS location and flagging all surface artefacts within a 10m radius of site location
 - Each artefact to be collected, given a number and bagged individually with their GPS location
 - Artefacts to be analysed (noting materials, basic technological attributes) and an AHIP Compliance works report submitted to NSW Heritage including the results of the surface collection

4. Installation of barrier fencing with a 10m buffer to protect areas of heritage sites in the vicinity of works will be required prior to works commencing. This applies to sites MQ12, MQ18, MQ21, MQ22, MQ23, MQ24, MQ25 and MQ29. Barrier fencing may be removed following completion of works.
5. Sites MQ8 and MQ9 are of high significance and they cannot be impacted. Installation of barrier fencing with a 10m buffer to protect the two heritage sites in the vicinity of works will be required prior to works commencing. The location of barrier fencing will be demarcated, installed or verified by the heritage team prior to any works in the vicinity commencing. MQ9 is within an area of visibility barrier. Works must avoid the site and fencing must be installed prior to any works in vicinity occurring. Barrier fencing may be removed following completion of works.
6. Sites MQ27, MQ28 and MQ31 are located distant to works and should not be impacted in any manner by the proposed works. The site locations will be marked on construction mapping and included in site inductions to prevent any accidental impacts. If any works are to be undertaken within 20m of the sites then barrier fencing will be required to be installed prior to works commencing.
7. The recovered artefacts from the surface collection and the test pitting program will be returned to country following their analysis. A return to country protocol is under discussion with the proponents and RAPs and is the preferred option of RAPs. The return to country protocol will be discussed and developed in consultation with RAPs. The Return to Country protocols when developed, will form part of the Heritage Management System for the project.

The location of the heritage sites that will be impacted with their accompanying mitigation measures are shown on Figure 22.

9.2 MANAGEMENT RECOMMENDATIONS

Based on results of the archaeological program and consultation with the Registered Aboriginal Parties the following recommendations have been developed in regards to Aboriginal Cultural Heritage values and heritage sites located within the Project Area and immediate surround. Monaro Rock has accepted these recommendations and would include them in the Heritage Management System for the Project. Following the implementation of these heritage recommendations prior to construction commencing, development of the area should be able to proceed.

The following heritage recommendations should be implemented for the project:

- ❖ The project area contains twenty one (21) Aboriginal heritage sites. Of these 21 sites impacts will occur to 19 heritage sites. As these impacts are unavoidable, , approvals must be granted allowing works to proceed. No impacts may occur to any of the identified Aboriginal Heritage sites unless approvals have been granted allowing harm to occur. The impacted sites are shown on Figure 22 with their required mitigation measures.

- ❖ Temporary barrier fencing will be required to be installed prior to any works commencing in the vicinity of sites that are not to be impacted as listed in the following recommendations. Temporary barrier fencing will consist of at a minimum, star pickets with hi-visibility flagging. The no harm areas will be marked on construction mapping and personnel informed at inductions of the heritage requirements to avoid all harm. Following completion of construction works in their vicinity, the temporary barrier fencing would be removed.
- ❖ Sites MQ8 and MQ9 are Culturally Modified Trees (CMTs), a rare site type and harm must be avoided. These sites are excluded from harm due to their significance and will not be impacted. Monaro Rock will install temporary barrier fencing of heritage sites MQ8 and MQ9 with a 10m buffer to prevent impact prior to any works in their vicinity commencing.
- ❖ Following approval, salvage collection of the eleven (11) surface artefact sites within the impact footprint, in line with the methodology provided in Section 9 would occur prior to works commencing in their vicinity. This applies to sites MQ1, MQ3, MQ4, MQ5, MQ6, MQ7, MQ10, MQ11, MQ14, MQ15, and MQ17.
- ❖ Following approval, salvage collection of the six (6) surface sites with associated subsurface deposits within the impact area, in line with the methodology provided in Section 9 would occur prior to works commencing in their vicinity. This applies to MQ2PAD, MQ13PAD, MQ16PAD, MQ19PAD, MQ20PAD and MQ32PAD. The subsurface testing revealed that these sites hold low significance.
- ❖ Subsurface investigation of the two (2) areas of PAD within the impact area was undertaken and revealed that sites MQ26PAD and MQ30PAD feature low-density dispersed deposits and have been registered as heritage sites on AHIMS. Approval of impacts will be required for these two sites.
- ❖ Installation of temporary barrier fencing with a 10m buffer to protect areas of PAD and heritage sites in the vicinity of works but located outside of project area is recommended to prevent accidental vehicle impact, as these sites are located in an open paddock context. Temporary barrier fencing as specified above should be installed prior to work commencing. This applies to sites, MQ12, MQ18, MQ21, MQ22, MQ23, MQ24, MQ25, and MQ29. Barrier fencing may be removed following completion of works. No impacts are approved for these sites.
- ❖ Three heritage sites MQ27, MQ28 and MQ31 are located distant to works following redesign. These sites will be marked on construction mapping as areas of avoidance and included in site inductions. No further actions are required for their protection under current design. If any future works are to occur within 20m of the sites, then installation of temporary barrier fencing will be required. At completion of works this fencing may be removed

- ❖ Sites within the ACT are present on the access road to the project area. Approvals will be required from ACT Heritage Council for works to proceed. A separate ACT report has been completed for this purpose.
- ❖ Any recovered artefacts from the surface collections or subsurface testing stages, following analysis should be returned to country in line with the Return To Country protocol to be developed for the project.
- ❖ It is an offence to disturb an Aboriginal site without approvals as all Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974*. Should any Aboriginal objects be encountered during works not covered by approvals, then works must cease and a heritage professional contacted to assess the find. Works may not recommence until cleared by NSW Heritage. In this event the Unexpected Finds Protocol attached at Appendix 6 should be implemented.
- ❖ Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the RAPs for the project and may include further field survey.
- ❖ Continued consultation with the RAPs for the project should be undertaken. RAPs should be informed of any major changes in project design or scope, further investigations or finds.
- ❖ No further heritage investigations are required, other than those listed, should the project be approved, except in the event that unanticipated Aboriginal Objects and/or human remains are unearthed during any phase of the Project. If these events occur, the unexpected finds Protocol attached at Appendix 6 should be implemented.
- ❖ Monaro Rock has committed to implement these heritage measures, as components of the project approvals and management documentation. Monaro Rock has accepted these recommendations and would include them in the Heritage Management System for the Project.
- ❖ An Aboriginal Cultural Heritage Management Plan (ACHMP) should be developed to guide the construction and operational phases of the project. The ACHMP must:
 - be prepared by a suitably qualified and experienced person;
 - be prepared in consultation with the RAPs and reviewed by Heritage NSW;
 - include a description of the measures (and associated methodologies) that would be implemented for (where relevant):
 - surface collection and archaeological excavations;
 - post-excavation analysis and reporting of any archaeological works;
 - avoiding and conserving areas of PAD and cultural sensitivity identified during the ACHAR, including fencing off or otherwise demarcating scarred tree sites;

-
- long-term conservation options for areas of PAD and other registered sites within and adjacent to the project area, including ongoing monitoring of scarred trees and artefact sites;
 - ensuring workers on site receive suitable heritage inductions prior to carrying out any development on site, and that records are kept of these inductions;
 - ongoing consultation with RAPs during the implementation of the ACHMP;
 - Include a contingency plan and reporting procedure including an Unexpected Heritage Finds and Human Remains Procedure prepared in relation to Aboriginal cultural heritage, with these measures to be prepared in accordance with the guidelines and standards specified by Heritage NSW, be implemented for the duration of the project and to include the requirement to register any newly identified Aboriginal objects or sites in the AHIMS database.
 - Include a program to monitor and report on the effectiveness of these measures and any heritage impacts of the project.

Figure 22 : Mitigation Measures

Mitigation Measures

- Fence
- Fence/Avoid
- None
- Salvage and SST
- Salvage
- SST
- Site
- Area of PAD
- Project Area
- Extraction Area
- Internal Road
- Proposed Power Line
- Processing and Stockpiling Area
- Infrastructure Area
- Visibility Barrier
- Tree Screening
- Quarry Access Road
- Secondary Access Road
- Clean Water Dam
- Sediment Basin

N



1:20,000



Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces
Heritage Consultants

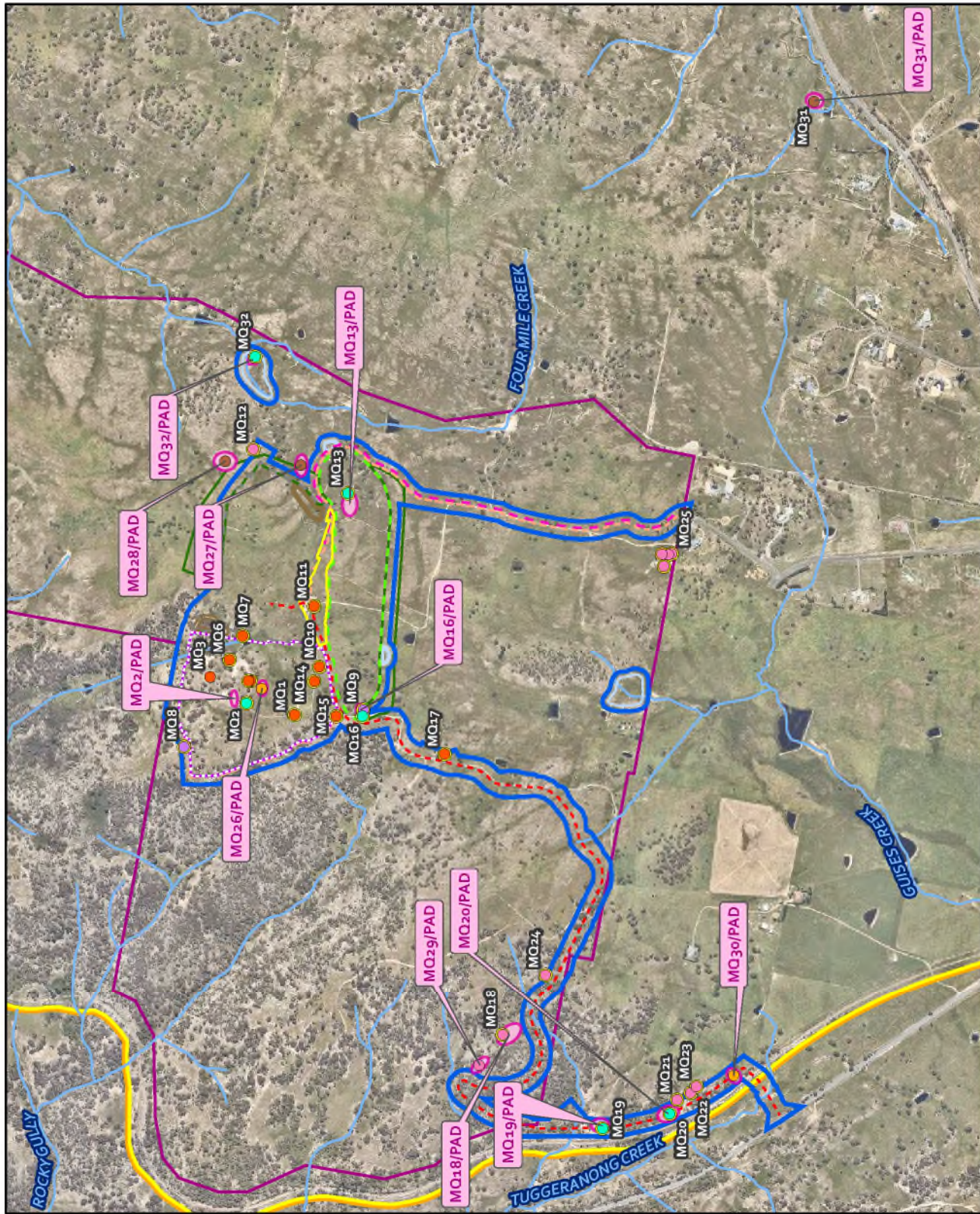


Figure 22a : Mitigation Measures North

Mitigation Measures

- Fence
- Fence/Avoid
- None
- Salvage and SST
- Salvage
- SST
- Site
- Area of PAD
- Project Area
- Extraction Area
- Internal Road
- Proposed Power Line
- Processing and Stockpiling Area
- Infrastructure Area
- Visibility Barrier
- Tree Screening
- Quarry Access Road
- Secondary Access Road
- Clean Water Dam
- Sediment Basin

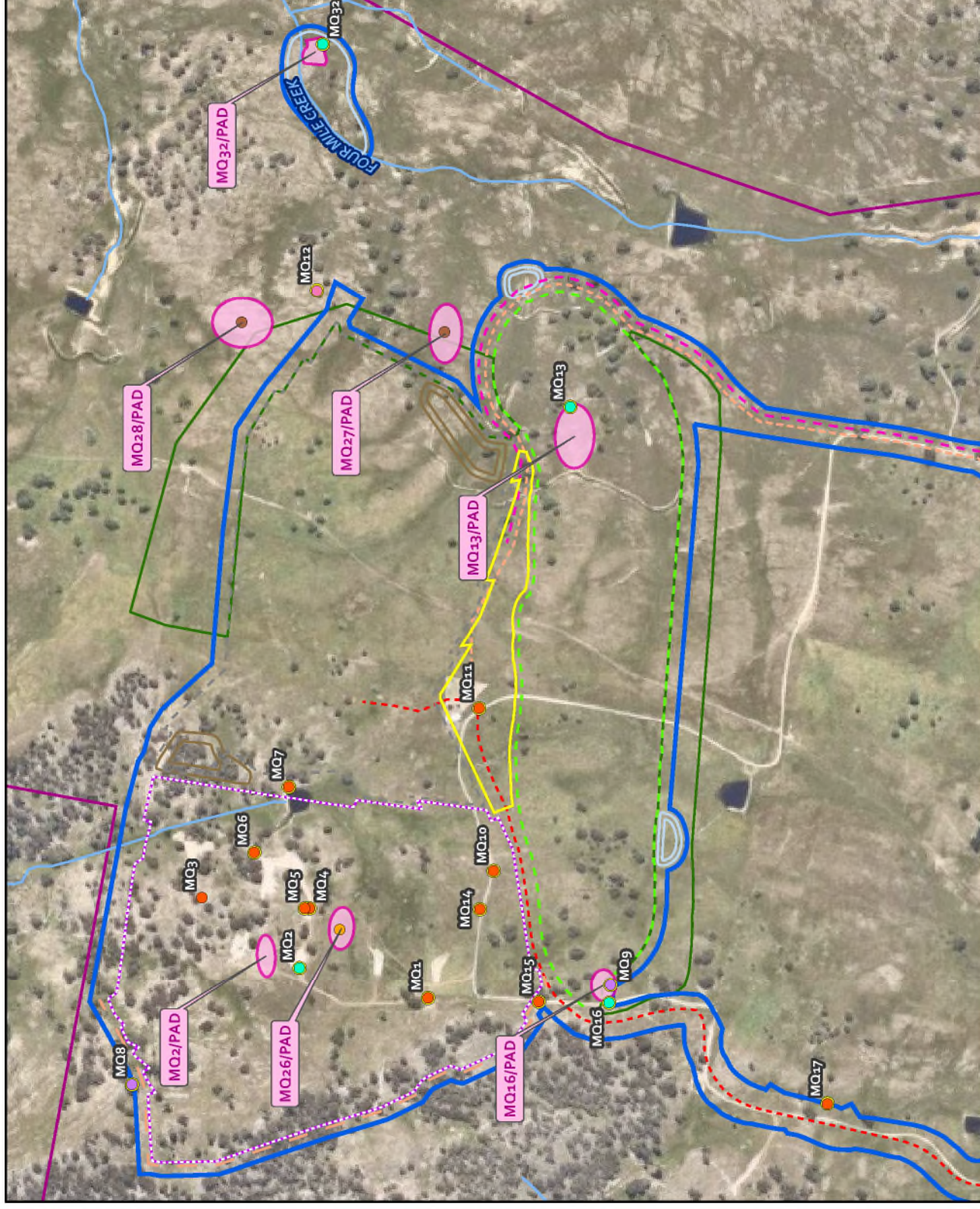


Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces
Heritage Consultants



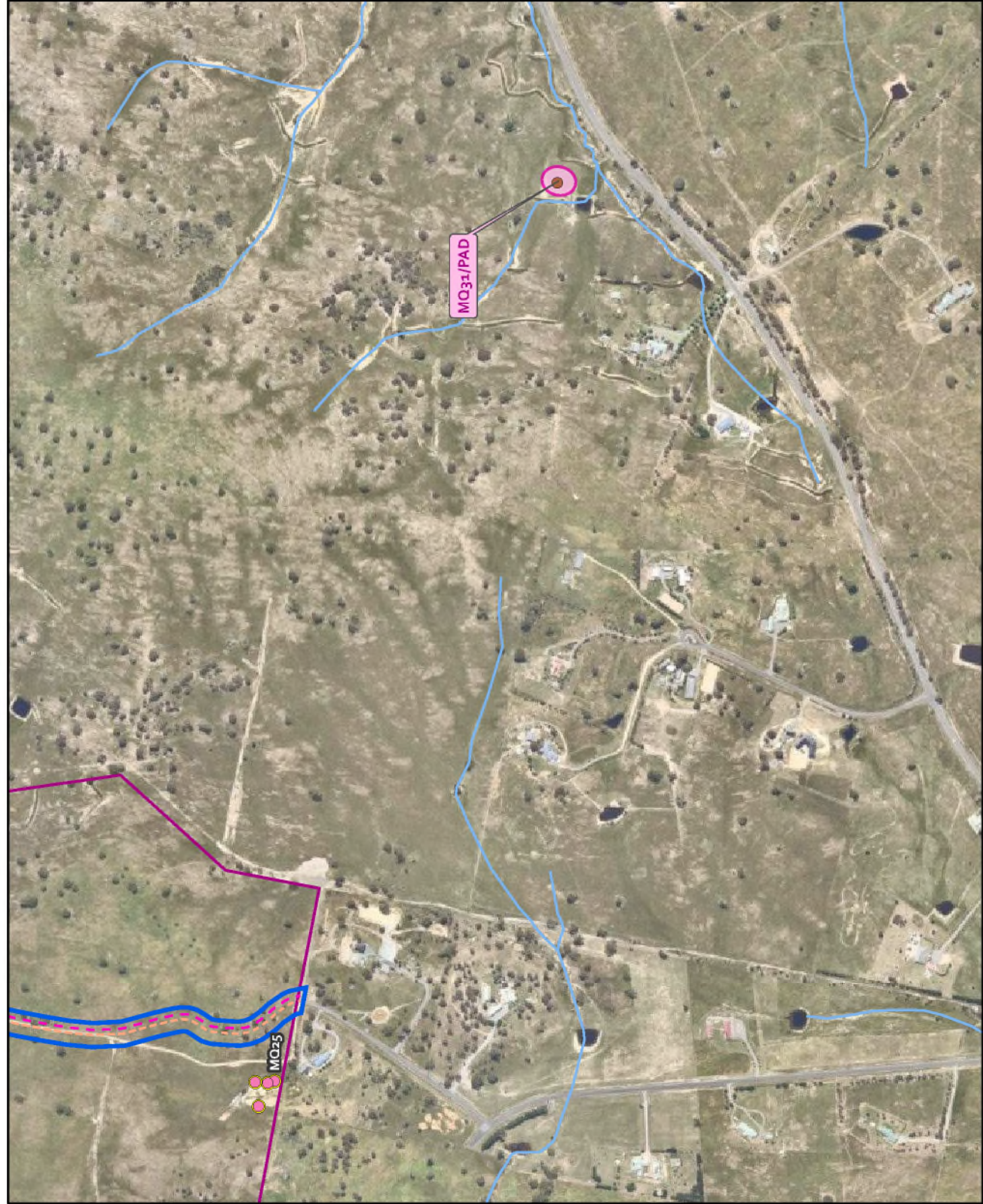


Figure 22b: Mitigation Measures - South East

Mitigation Measures

- Fence
- None
- Site
- Area of PAD
- Project Area
- Proposed Power Line
- Secondary Access Road



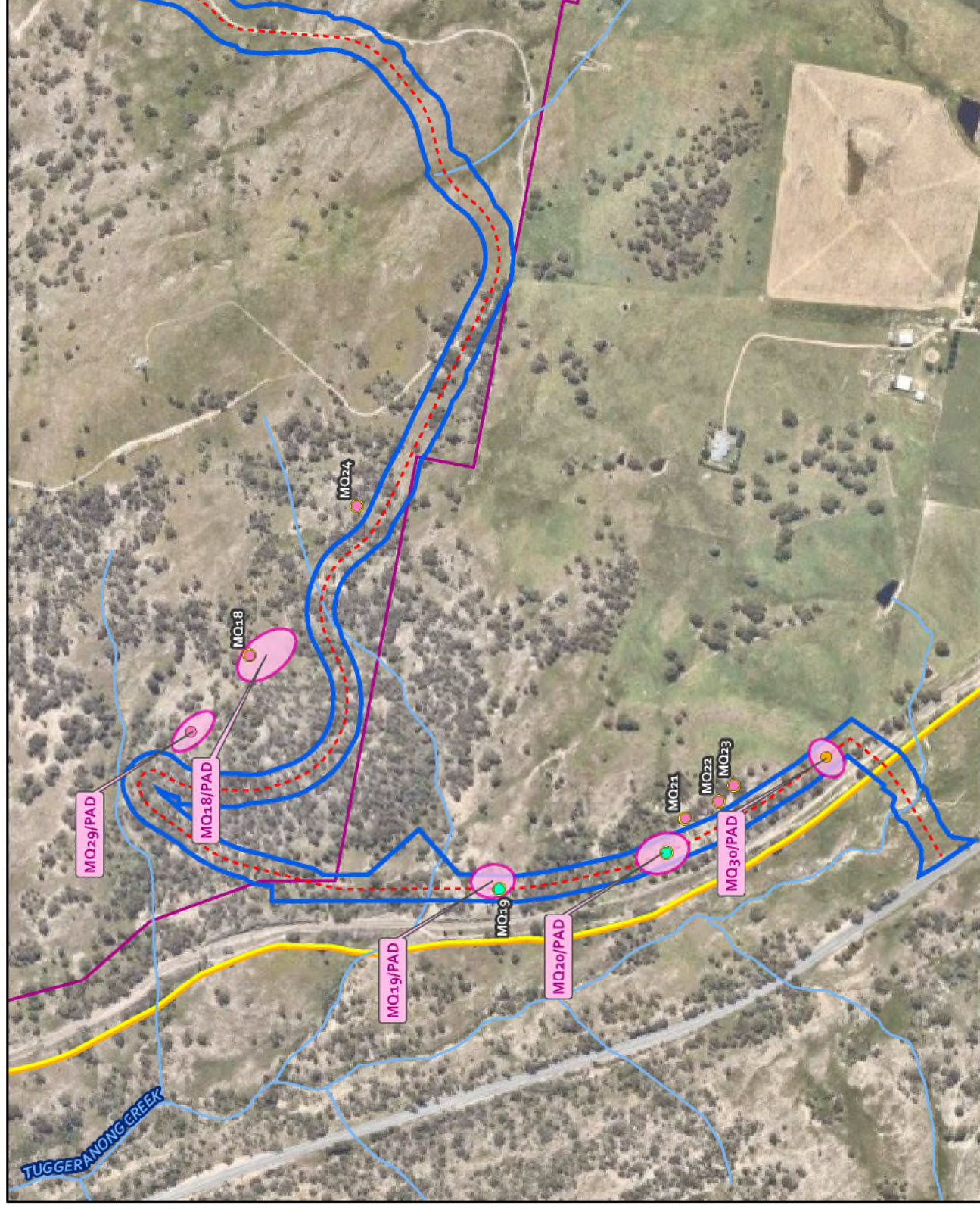
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

Figure 22c: Mitigation Measures - South West

Mitigation Measures

- Fence
- Salvage and SST
- SST
- Site
- Area of PAD
- Project Area
- Quarry Access Road



1:8,000



Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

10 REFERENCES

- Archaeological Heritage Surveys . (2002). *Little Burra - Subsurface testing in Two areas of Archaeological Potential*. Report to Canberra Investment Corporation Limited.
- Archaeological Heritage Surveys. (1999). *Little Burra - Aboriginal and European Archaeological Assessment*. Report to David Richardson Environmental Planning.
- Archaeological Heritage Surveys. (1999). *Royalla Aboriginal Survey*. Report to Link Management Pty Ltd.
- Archaeological Heritage Surveys. (2001). *Royalla Estate Stage 4 Aboriginal Archaeological Assessment*. Report to Don Fox Planning .
- Archaeological Heritage Surveys. (2002). *Royalla Estate Stage 5 Aboriginal Archaeological Assessment*. Report to Don Fox Planning .
- Archaeological Heritage Surveys. (2003). *Proposed Rural Residential Subdivision Burra Creek NSW. Cultural Heritage Assessment*. Report to Bill Swan and Associates.
- Archaeological Heritage Surveys. (2005). *Royalla Estate Stage 5 Aboriginal Archaeological Assessment Report*. Report to Don Fox Planning Pty Ltd.
- Archaeological Heritage Surveys. (2014). *Mt Burra Estate 1758 Burra Road Burra NSW Archaeological Assessment Summary*. Report for Robfam Pty Ltd.
- Barz, R. (1980). *An Archaeological survey of the route of the Canberra/Royalla 330/132kV transmission line corridor*. Report to NSW Electricity Commission.
- Bowen Heritage Management. (2016). *Cultural Heritage Report for Lots 1 & 2 (DP456367) and Lot 2 (DP131294) 8360 Monaro Highway Royalla NSW* . Report for V & S Drew.
- Cultural Heritage Management Australia . (2012). *Royalla 1 Solar PV Generating Facility Heritage Investigations and Management Plan* . Prepared for FRV Services Australia .
- Cultural Heritage Management Australia. (2013). *Royalla Solar Stage 2: Additional heritage works to support the CHMP*. Report to FRV.
- Cultural Heritage Management Australia. (2014). *Royalla Solar Farm: Emendments to Underground Cable Route*. Report to Acciona.
- DECCW. (2010). *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*. . Sydney : DECCW.
- DECCW. (2010). *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* . Dept of Conservation, Climate Change and Water .
- Ellis, N. (1989). *Braidwood, Dear Braidwood*. Canberra : Pirie Printers .
- Fitzhardinge, L. (1983). *Old Canberra and the Search for a Capital*. Canberra District and Historical Society: Canberra .
- Gammage, B. (2011). *The Biggest Estate on Earth*. Allen and Unwin NSW.

- Helms, R. (1895). *Report on a collecting trip to Mt Kosciusko*. Records of the Australian Museum 1(1): 11-16.
- Horton, D. (1994). *The Encyclopidea of Aboriginal Australia: Aboriginal and Torres Strait Islander History, Society and Culture*. Canberra: Aboriginal Press Studies.
- ICOMOS. (2013). *The Burra Charter: The Australian ICOMOS Charter for Places of Cultural Significance*. Australian ICOMOS.
- Jenkins, B. (2000). *Soil Landscapes of the Canberra 1:100 000 Sheet*. Sydney: Department of Land and Water Conservation.
- Kamminga, J. (1992). Aboriginal Settlement and Prehistory of the Snowy Mountains. *Cultural Heritage of the Australian Alps: proceedings of the symposium held at Jindabyne 16-18 october 1991* (pp. 101-124). Canberra: Australian Alps Liaison Committee.
- Lea Scarlett, L. (1968). *Queanbeyan - District and People*. Queanbeyan Municipal Council.
- Mitchell, F. (1926). *Back to Cooma Celebrations*. Sydney NSW: Direct Publicity Co.
- Moore, B. (1981). *Burra, County of Murray: A History of Burra in the County of Murray in the Queanbeyan District*. Bruce Moore, Pearce ACT.
- Navin Officer Heritage Consultants. (2015). *Mt Pleasant Subdivision Burra Road - Archaeological Assessment and Aboriginal Cultural Heritage Assessment*. Report to CIC Australia Pty Ltd.
- OEH. (2011). *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales*. Office of Environment and Heritage.
- Past Traces. (2020). *Aboriginal Cultural Heritage Due Diligence Assessment 1291 Old Cooma Road Burra*. Report for Ellerton Developments Pty Ltd.
- Pearson, M. a. (2010). *Pastoral Australia: Fortunes, Failures and Hard Yakka A Historical Overview 1788 -1967*. Canberra: CSIRO Publishing.
- Plowman, S. (2007). *Thematic History 1823-1945 Cooma-Monaro New South Wales*. Report for Cooma-Monaro Shire Council.
- Thompson, L. (2002). *Burra Station Aboriginal Archaeological Survey Report*. Report to Laylos Pty Ltd.
- Tindale, N. (1974). *Aboriginal Tribes of Australia*. Canberra: ANU Press.

A.1 CONSULTATION LOG AND DOCUMENTATION

Monaro quarry 2024

Date/Time	Type of Consultation	Organisation	Response
	Step 1 – Public Notice (insert name of paper) and end of review period date	Queanbeyan Age 20/2 – ends 06/03/2023 Canberra Times 17/2 - ends 06/03	
	Step 2 – Notice to Regulators	Ends 05/03/2024	
20/02/2024	Online search	NNTT	
	Email	NTSCorp	
	Email	NSW Heritage	28/2 – list provided
	Email	Palerang – Queanbeyan Local Council	
	Email	Registrar ALR	
	Email	Ngambri LALC	
	Email	South East Land Services	
	Step 3 – letter/email to identified stakeholders from Above		
28/02/2024	Email to NSW Heritage listing - ends 13/03/2024		
	Step 3A – List of Registrations		
27/2/2027	Ngambri LALC		
19/02/2024	Serena Williams -		
20/02/2024	Byamee Williams - 0423 753 919	Byamee@native-fusion.com.au	
	MAH – Rob Williams on behalf of Arnold Williams		
23/02/2024	John Dixon		
24/2/2024	Ngunnawal Elders Corp	Arnold Williams	
28/2/2024	Adrian Brown		
28/2/2024	James Mundy	Phone	
	Corroboree	Marilyn	
	Didge Ngunawal	Lilly Carrol	
	Kamilaroi	Phil Khan	
	Sonione Rogers		
	King Brown	Tina Brown	
	Bradley Bell		
	Konnango	Robert Young	
	Mirrabee	Paul House	
1/3	Jason Davison		
	Clorine Lyons		
1/3	Merrigarn	Shaun Carroll	
3/3	Buru Ngunawal	Wally Bell	
4.3	Guntawang	Wendy Morgan	
6.3	Mundawari	Dean Delponte	
13/3	Thunderstone	Tyronee Bell	
15/3/2024	Little Gugenby	Antionette House - anhouse1@hotmail.com	

Monaro quarry 2024

Date/Time	Type of Consultation	Organisation	Response
	Step 3A - List of RAPs to NSW Heritage and LALC (by 28 days from 13/03/24)		
7/5/2024	Email	NSW Heritage	
7/5/2024	Email	Ngambri LALC	
	Step 4 – Project Pack		
8/5/2024	To all RAPS by email		
	Step 5 – Methodology pack (end review period 18/6/2024)		
21/5/2024	Email to all RAPs		
24/5/2024	Email	Adrian Brown	Supports methodology
24/5/2024		Didge Ngunawal	Supports methodology
30/5/2024		Guntawang	Supports methodology
03/06/2024		Murrabidgee Mullangarri	Supports methodology
17/6/2024		Phil Khan	Supports methodology
17/6/2024		Konango	Supports methodology
	Step 6 – Status Updates		
20/10/2024	Email all RAPs – redesign based on findings to minimise impacts		
19/4/2025.	Email to all RAPs – Redesign avoiding CMTs		
	Step 9 - Draft Reports ends 4/7/2025		
06/06/2025	Email to all RAPs		No Responses
30/10/2025	Subsurface testing methodology - end 28/11/2025		
	Emailed to all RAPS		
31/10/2025	Email	Adrian Brown	Supports methodology
31/10/2025	Email	Buru Ngunawal	Supports methodology
1/11/2025	Email	Merrigarn	Supports methodology
3/11/2025	Email	Guntawang	Supports methodology
	Field work Invitations		
	Email	Ngambri LALC	
	Email	Jason Davison	
24/02/2026	Email	Ngambri LALC	
24/02/2026	Email	John Dixon	
	Notification of commencement of testing		
22/12/2025	Email	NSW Heritage	
	SST		
	11/2/26 – 20/2/26	Ngambri LALC	
		Jason Davison	

Monaro quarry 2024

Date/Time	Type of Consultation	Organisation	Response
	2/3/26 – 12/2/2026	Ngambri LALC	
		John Dixon	
	Notification of Completion of Testing		
9/4/2026	Email	NSW Heritage	
	Draft Report		
19/4/2026	Email	All RAPs	No Comments Received

A.2 AHIMS SITE SEARCH

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Monaro Quarry 2026

Client Service ID : 1136730

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status **</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
52-2-4636	MQ2	GDA	55	695570	6074417	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Ryan Desic,EMM Consulting - Individual users,Ms.Lyn O'Brien,Past Traces Pty L							<u>Permits</u>
57-2-1205	MQ17	GDA	55	695518	6073973	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Georgia Scully							<u>Permits</u>
57-2-1212	MQ24	GDA	55	694615	6073335	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Georgia Scully							<u>Permits</u>
57-2-1222	MQ11	GDA	55	695904	6074143	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Georgia Scully							<u>Permits</u>
57-2-0283	OCR8 - A3	AGD	55	697885	6072060	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	<u>Contact</u>	<u>Recorders</u>	Ms.Trish Saunders							<u>Permits</u>
52-2-4639	MQ5	GDA	55	695642	6074371	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Ryan Desic,EMM Consulting - Individual users,Miss.Georgia Scully							<u>Permits</u>
57-2-0285	OCR8 - A5	AGD	55	698054	6072580	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Ms.Trish Saunders							<u>Permits</u>
57-2-1381	MQ27	GDA	55	696373	6074206	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.Lyn O'Brien,Past Traces Pty Ltd							<u>Permits</u>
52-2-4638	MQ4	GDA	55	695642	6074365	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Ryan Desic,EMM Consulting - Individual users,Miss.Georgia Scully							<u>Permits</u>
57-2-1211	MQ19	GDA	55	694401	6073483	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Ms.Lyn O'Brien,Past Traces Pty Ltd,Miss.Georgia Scully							<u>Permits</u>
57-2-1214	MQ25	GDA	55	696056	6072926	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Georgia Scully							<u>Permits</u>
57-2-1218	MQ7	GDA	55	695801	6074392	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Georgia Scully							<u>Permits</u>
57-2-1225	MQ14	GDA	55	696298	6073968	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Miss.Georgia Scully							<u>Permits</u>

Report generated by AHIMS Web Service on 02/06/2026 for Nathaniel Cracknell for the following area at Lat, Long From : -35.487, 149.1278 - Lat, Long To : -35.452, 149.1896. Number of Aboriginal sites and Aboriginal objects found is 49

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.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
57-2-0284	OCR8 - A4	AGD	55	697835	6071960	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact									Permits
57-2-1385	MQ31	GDA	55	697667	6072394	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact									Permits
57-2-0241	Royalla 4-10	AGD	55	696120	6070770	Open site	Valid	Artefact : 5		
	Contact									Permits
52-2-4637	MQ3	GDA	55	695656	6074506	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Artefact : -		
	Contact									Permits
57-2-1206	MQ18	GDA	55	694406	6073485	Open site	Valid	Artefact : -		
	Contact									Permits
57-2-1210	MQ23	GDA	55	694224	6072808	Open site	Valid	Artefact : -		
	Contact									Permits
57-2-1219	MQ8	GDA	55	695411	6074597	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact									Permits
57-2-0271	Little Burra A12	AGD	55	697920	6071350	Open site	Valid	Artefact : 2		
	Contact									Permits
57-2-1383	MQ29	GDA	55	694299	6073564	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact									Permits
57-2-1384	MQ30	GDA	55	694262	6072678	Open site	Valid	Potential Archaeological Deposit (PAD) : -, Artefact : -		
	Contact									Permits
57-2-0277	Little Burra A18	AGD	55	698470	6072400	Open site	Valid	Artefact : 56		
	Contact									Permits
57-2-1215	MQ15	GDA	55	695641	6074142	Open site	Valid	Artefact : -		
	Contact									Permits
57-2-1216	MQ1	GDA	55	695524	6074210	Open site	Valid	Artefact : -		
	Contact									Permits

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
57-2-1217	MQ6	GDA	55	695715	6074437	Open site	Valid	Artefact : -		
	Contact	Recorders	Miss.Georgia Scully							
57-2-1223	MQ12	GDA	55	696451	6074355	Open site	Valid	Artefact : -		
	Contact	Recorders	Miss.Georgia Scully							
57-2-0286	OCR8 - A6	AGD	55	697820	6072237	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Trish Saunders							
57-2-1379	MQ32	GDA	55	694262	6072678	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Ms.Lyn O'Brien,Ms.Lyn O'Brien,Past Traces Pty Ltd,Past Traces Pty Ltd							
57-2-1380	MQ26	GDA	55	695616	6074316	Open site	Valid	Potential Archaeological Deposit (PAD) : -, Artefact : -		
	Contact	Recorders	Ms.Lyn O'Brien,Ms.Lyn O'Brien,Past Traces Pty Ltd,Past Traces Pty Ltd							
57-2-1382	MQ28	GDA	55	696416	6074429	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Ms.Lyn O'Brien,Past Traces Pty Ltd							
57-2-0250	Little Burra Area 18 (a)	AGD	55	698500	6072800	Open site	Valid	Artefact : 10		
	Contact	Recorders	Archaeological Heritage Surveys							
57-1-0257	RS1-Royalla Subdivision 1	GDA	55	695299	6072199	Open site	Partially Destroyed	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Navin Officer Heritage Consultants Pty I							
57-2-1220	MQ9	GDA	55	695541	6073971	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Ms.Lyn O'Brien,Past Traces Pty Ltd,Miss.Georgia Scully							
57-2-0433	R5-A1	AGD	55	698159	6070588	Open site	Valid	Artefact : 3		99586
	Contact	Recorders	Charles Dearling Archaeological and Cultural Heritage Consultants							
57-2-1344	RS2 and PAD	GDA	55	695773	6072665	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Ms.Lyn O'Brien,Past Traces Pty Ltd							
57-2-1033	RSPAD1	GDA	55	695273	6072508	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Navin Officer Heritage Consultants Pty I							
57-2-1213	MQ16	GDA	55	695518	6073973	Open site	Valid	Artefact : -		

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-0281	OCR8 - A1	AGD	55	698090	6072000	Open site	Valid	Artefact : 5, Modified Tree (Carved or Scarred) : 2		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-0282	OCR8 - A2	AGD	55	698170	6072250	Open site	Valid	Artefact : 8		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-0272	Little Burra A13	AGD	55	698260	6072010	Open site	Valid	Artefact : 2		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-0273	Little Burra A14	AGD	55	698280	6072100	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-1034	RSPAD2	GDA	55	695395	6072852	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : 1		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-1207	MQ20	GDA	55	694130	6072902	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-1208	MQ21	GDA	55	694178	6072876	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-1209	MQ22	GDA	55	694202	6072829	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-1221	MQ10	GDA	55	695691	6074124	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		
57-2-1224	MQ13	GDA	55	696275	6074010	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>						<u>Permits</u>		

** 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

A.3 RECORDED SITES 2021 SURVEY OUTSIDE OF PROJECT AREA

10.1.2 MQ12 – 57-2-1223

Grid Reference MGA 55 - 696451.6074355

MQ12 consists of an isolated find, a hatchet blank or manuport fragment, within the south-eastern midslope of a ridgeline to the west of Four Mile Creek. This site is located outside of the impact area to the north east of the proposed infrastructure area.

Image of the isolated find is shown in plate 26.



Plate 1. MQ12.

10.1.3 MQ18/PAD – 57-2-1206

Grid reference MGA 55 – 694406.6073485

Site consists of an isolated find of anvil within an associated area of PAD on middle slopes. This site is outside of the road corridor but close to the proposed access route. Pitting from flake production is present in the centre of the large cobble.



Plate 2. MQ18

10.1.4 MQ21/PAD - 57-2-1208

Grid Reference MGA 55 – 694178.6072876

Isolated Quartz flake with an area of PAD amidst creek lower flats. Potential for further surface artefacts to be present amidst vegetation coverage. The identified site and location are shown in the following plates.

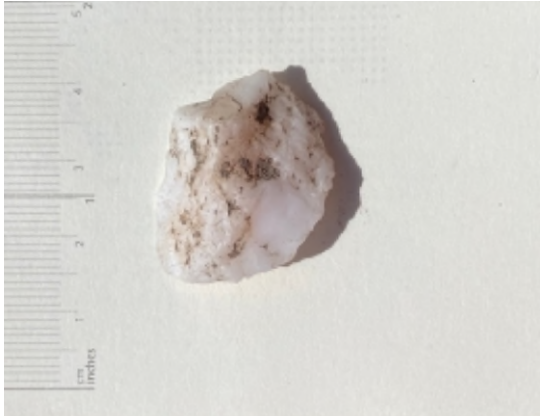


Plate 3. Quartz Flake



Plate 4. Site Location

10.1.5 MQ22 – 57-2-1209

Grid Reference MGA 55 – 694202.6072829

Site MQ22 consists of two quartz flake in an area of exposure outside of the impact area, along a section of lower slopes. The site location and identified artefacts are shown in the following plates.

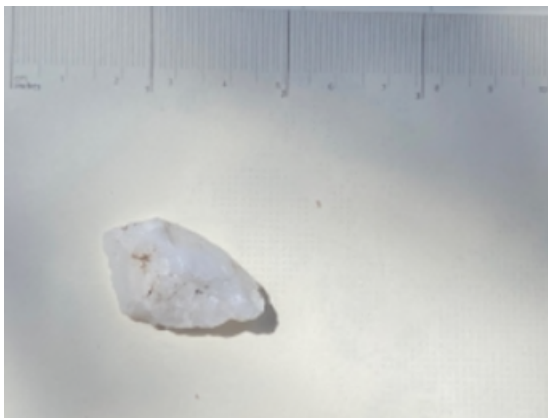


Plate 5. Artefact 1

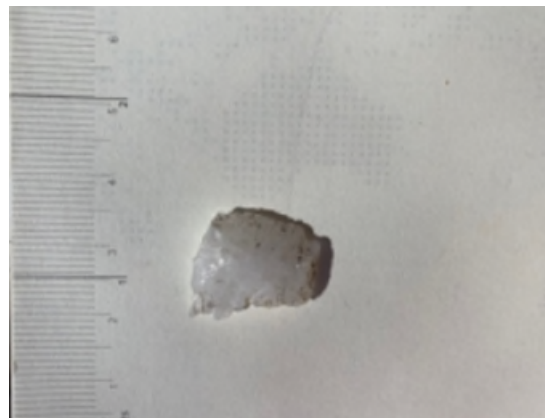


Plate 6. Artefact 2



Plate 7. Site location

10.1.6 MQ23 – 57-2-1210

Grid Reference MGA 55 – 694224.6072808

Site MQ23 consists of a single quartz flake located amidst granite outcrops on the upper slopes of a rolling crest. Soils very thin with no subsurface potential. The isolated find is shown in Plate 45 and the site location in Plate 46.



Plate 8. Quartz Flake



Plate 9 Site location

10.1.7 MQ24 – 57-2-1212

Grid reference MGA 55 – 694615.6073335

Site MQ24 consists of an isolated find located on an impact trail on steep middle slopes. The isolated find consists of a large cobble with pitting in the centre indicating use as an anvil. The identified artefact and the site location are shown in the following plates.



Plate 10. Isolated Find



Plate 11. Site Location

10.1.8 MQ25 57-2-1214

Grid reference MGA 55 - 696056. 6072926

This site contains an artefact scatter, comprised of nine quartz flakes, one chert flake, two hammer stones and one quartz core. This site is located on and around an area of creekline erosion within the creek flats. This site is within 10m of the existing access road at the current Mates Drive entrance of the quarry on the boundary of the project area. Whilst the site is located outside of the project area, the proximity to works may result in impacts if management measures are not applied.

Images of the artefact scatter are shown in plates 49 to 60.



Plate 12. Chert flake, ventral surface.

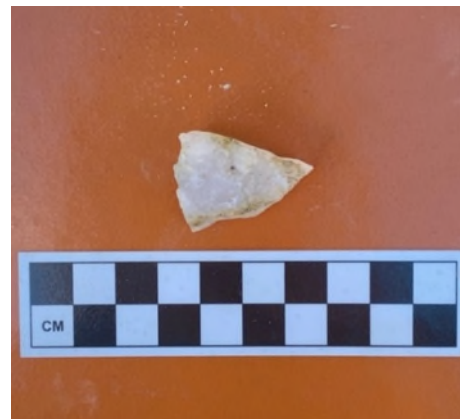


Plate 13. Quartz flake, ventral surface.



Plate 14. Quartz flake, ventral surface



Plate 15. Quartz flake, dorsal surface.



Plate 16. Quartz core.



Plate 17. Quartz flake, dorsal surface.



Plate 18. Quartz flake, ventral surface.



Plate 19. Hammerstone, pitting on surface.



Plate 20. Quartz flake, ventral surface.



Plate 21. Anvil with pitting.



Plate 22. Quartz flake, ventral surface.



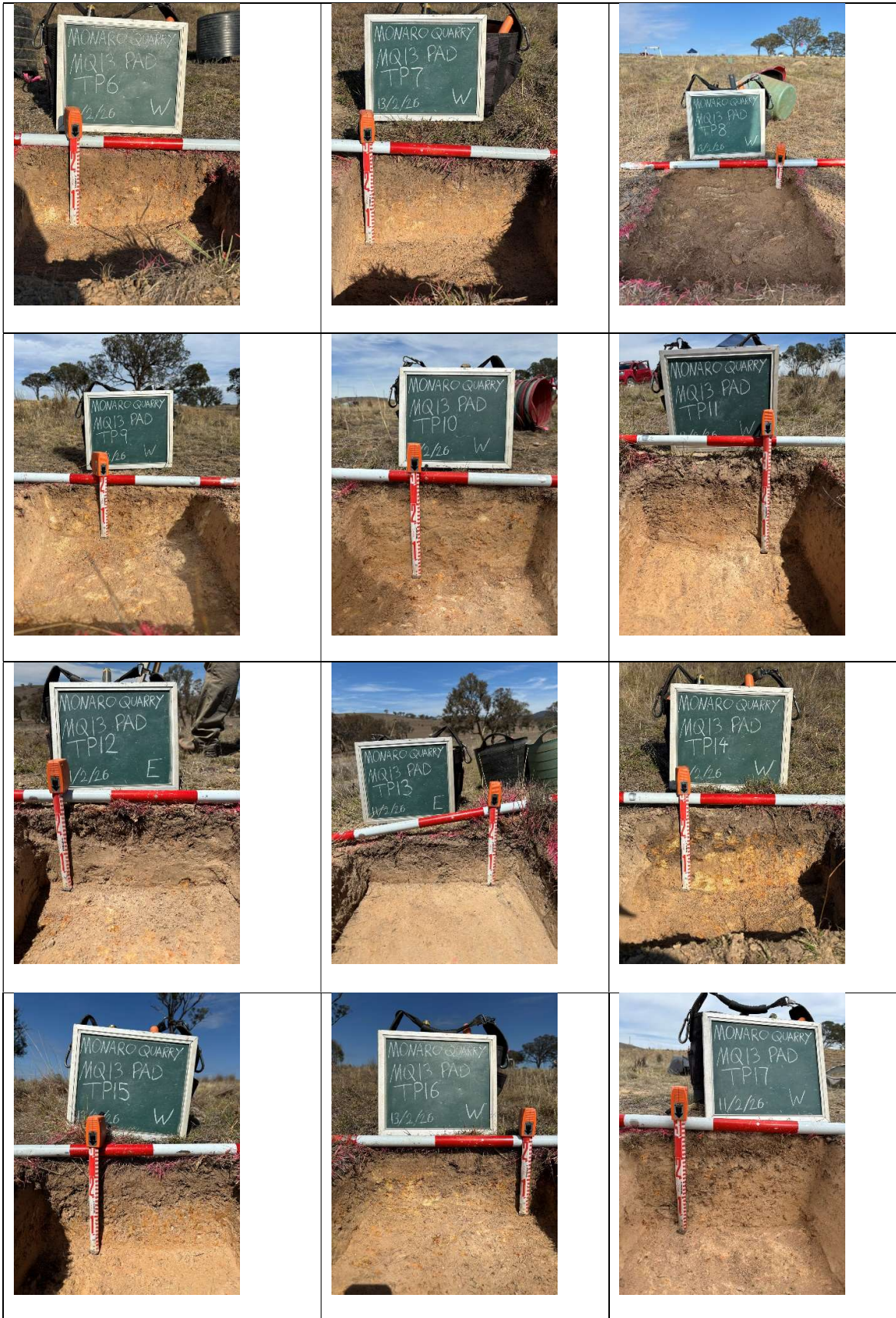
Plate 23. Quartz flake, dorsal surface.

A.4 TEST PIT PHOTOS

MQ2 PAD



		
		
MQ13 PAD		
		





		
		
MQ16 PAD		
		

		
		
		
MQ19 PAD		



MQ20 PAD



		
MQ26 PAD		
		
		

		
		
		
MQ30 PAD		

		
MQ32 PAD		
		
		



A.5 LITHIC DATABASE

Monaro NSW Lithic Database

PAD	Pit	Spit	Material	Colour	Lithic Type	Platform type	Features	Termination	Retouch	Length	Width	Breadth
2	9	2	Quartz	White	Proximal Flake	Flat	1 neg scar	Feather	Nil	17.01	10.86	2.82
13	2	1	Quartz	White/Semi-Transparent	Medial Flake	Nil	3 neg scars, 2 broken edges	Nil	Nil	11.99	6.76	2.84
	5	1	Chert	Brown	Flake	Flat	Chert silcrete, 4 neg scars, overhang removal, 25% cortex, chattering retouch along right margin	Hinge	Yes	22.56	16.53	9.09
	7	1	Quartz	Semi-Transparent	Backed Blade	Nil	5 retouch scars adding 'backing', cutting edge is damaged	Nil	Yes	11.13	10.37	3.79
	10	1	Chert	Brown	Flaked Piece	Nil	7 neg scars, 10% cortex	Nil	Nil	23.57	19.28	9.38
	11	1	Quartz	White	Flake	Focal	3 neg scars	Feather	Nil	8.82	12.95	3.28
	12	1	Silcrete	Light Brown	Flake	Flat	2 neg scars, right margin damage	Feather	Nil	11.25	11.66	2.08
	12	1	Silcrete	Brown	Medial Flake	Nil	3 neg scars, 2 transverse breaks	Nil	Nil	9.85	9.48	3.81
	12	1	Quartz	White	Distal Flake	Nil	2 neg scars	Feather	Nil	10.23	6.77	2.44
	13	1	Quartz	White	Core	Nil	8 neg flakes, multidirectional, exhausted core	Nil	Nil	25.81	19.51	12.51
	13	1	Quartz	White	Flake	Abraided	2 neg, distal tip damage	Outrepasse	Nil	20.97	11.96	6.29
	13	1	Quartz	White/Semi-Transparent	Proximal Flake	Crushed	2 neg scars, transverse break	Nil	Nil	11.8	8.25	2.84
	13	1	Quartz	White	Distal Flake	Nil	3 neg scars, transverse break	Feather	Nil	8.53	7.91	2.94
	15	1	Quartz	White	Flaked Piece	Nil	5 neg scars, 10% cortex	Nil	Nil	17.26	12.07	7.71
	17	1	Quartz	White	Core	Nil	8 neg flakes, multidirectional, exhausted core	Nil	Nil	19.04	15.85	9.98
	17	1	Quartz	White	Distal Flake	Nil	3 neg scars, transverse break	Nil	Nil	12.54	7.3	3.68
	17	1	Quartz	White	Medial Flake	Nil	1 neg scar, 2 transverse breaks	Nil	Nil	15.11	10.69	3
	17	1	Quartz	White	Flake	Flat	2 neg scars	Feather	Nil	16.59	5.99	3.86
	20	1	Quartz	White	Flake	Flat	2 neg scars	Outrepasse	Nil	18.21	15.6	5.93
	20	1	Quartz	White	Flake	Crushed	Part of Right Margin broken, 2 neg scars	Step	Nil	16.05	15.14	8.17
	25	1	Quartz	White	Core	Nil	8 neg flakes, multidirectional, rough core	Nil	Nil	55.7	58.97	32.59
	29	1	Silcrete	Grey	Proximal Flake	Flat	3 neg scars, transverse break	Nil	Nil	14.01	9.75	4.48
	29	1	Quartz	White	Flake	Facetted	4 neg scars	Feather	Nil	14.15	10.1	6.62
	29	1	Quartz	White	Flake	Flat	3 neg scars	Outrepasse	Nil	13.35	13.99	6.78
16	5	1	Chert	Dark Brown and white	Core	Nil	9 neg flakes, multidirectional, exhausted core	Nil	Nil	22.82	15.87	14.6
	10	1	Quartz	White	Flaked Piece	Nil	4 neg scars	Nil	Nil	11.99	7.21	7.05
19	3	2	Quartz	Semi-Transparent	Flake	Facetted	3 neg scars, 4 retouch flakes on left margin	Hinge	Yes	17.14	13.84	7.46
20	2	2	Volcanic	Grey	Proximal Flake	Flat	2 neg scars, overhang removal, rough flake, transverse break	Nil	Nil	14.75	18.01	3.81
	5	1	Quartz	White	Flake	Flat	1 neg scar, rough flake	Feather	Nil	14.33	6.83	4.72
26	13	4	Quartz	Semi-Transparent	Flake	Abraided	2 neg scars, overhang removal	Feather	Nil	14.02	16.09	4.41
30	6	2	Quartz	White	Flake	Flat	Left margin broken (longitudinally split) 1 neg scar	Feather	Nil	15.9	8.19	5.91
	7	1	Chert	Dark Brown	Medial Flake	Nil	2 Transverse breaks, 1 neg scar	Nil	Nil	10.85	7.24	2.07
	8	2	Quartz	White/Semi-Transparent	Flaked Piece	Nil	4 negative scars, 2 broken surfaces	Nil	Nil	11.51	10.81	4.75
32	7	3	Quartz	Semi-Transparent	Flake	Abraided	3 neg scars	Feather	Nil	14.28	16.36	4.81
	12	2	Quartz	Semi-Transparent	Flake	Flat	4 neg scars, rotated flake removals on dorsal	Feather	Nil	15.35	7.67	4.26



MQ2 TP9 Spit2



MQ13 TP2 Spit1



MQ13 TP5 Spit1



MQ13 TP7 Spit1



MQ13 TP10 Spit1



MQ13 TP11 Spit1



MQ13 TP12 Spit1



MQ13 TP13 Spit1



MQ13 TP15 Spit1



MQ13 TP17 Spit1



MQ13 TP20 Spit1



MQ13 TP25 Spit1



MQ13 TP29 Spit1



MQ16 TP5 Spit1



MQ16 TP10 Spit1



MQ19 TP3 Spit2



MQ20 TP2 Spit2



MQ20 TP5 Spit1



MQ26 TP13 Spit4



MQ30 TP6 Spit2



MQ30 TP7 Spit1



MQ30 TP8 Spit2



MQ32 TP7 Spit3



MQ32 TP12 Spit2

A.6 UNEXPECTED FIND PROTOCOL

Appendix 6. Unexpected Finds Protocol

Due to the long occupation of the country, the possibility of Aboriginal items remaining within the work area is still present, though the potential for unrecorded finds is assessed as low.

If any items are uncovered during the course of works, which are considered to possibly be of Aboriginal significance the following Unexpected Find Protocol should be activated. All Aboriginal heritage places or objects are protected under the NSW *National Parks and Wildlife Act 1974*. If any items are identified, then the following process outlined below should be followed to avoid breaching obligations under the Act.

1. Unexpected discovery of aboriginal cultural heritage

If suspected Aboriginal Heritage items (including but not limited to isolated stone artefacts, artefact scatters, archaeological deposits or scarred trees) are found then the following management process must be implemented:

1. Work must immediately stop in the area within a buffer zone of 10 metres from the primary grid coordinate.
2. A suitably qualified heritage advisor must be engaged to assess the potential site.
3. If the items are not considered to be Aboriginal, activity may recommence.
4. If the items are considered to be Aboriginal, all steps will be taken to avoid and minimise harm to the Aboriginal cultural heritage item, and the Proponent must avoid or minimise harm whenever possible.
5. If the items are considered to be Aboriginal, an assessment report will need to be prepared and submitted to NSW Heritage. This will require consultation with RAPS. After approval from the NSW Heritage, the artefacts should be recorded and salvaged in accordance with the approved methodology.
6. After completion of heritage works, barrier fencing can be removed and works can recommence.

2. Unexpected discovery of Human Remains

The discovery of human remains during works is a rare but highly sensitive occurrence. If any suspected human remains are discovered during any works, all activity in the area must cease immediately. The remains may be heritage items or the remains of current crime.

In the event that human remains or suspected human remains are discovered, the following actions must be taken:

1. **Immediate Cessation of Works** – All works in the immediate vicinity must stop immediately.
2. **Notification of Project Manager** – The Project Manager must be contacted immediately.
3. **Contact NSW Police** – NSW Police must be notified immediately, providing full details of the location and nature of the remains.

4. **Secure the Area** – All non-essential personnel must vacate the area, and access must be restricted, in accordance with NSW Police directions.
5. **Leave Remains in Place** – The remains must not be moved, disturbed, or interfered with, and must be protected from harm or damage until further instruction is provided by NSW Police.
6. **Notification of Heritage NSW** – If there are reasonable grounds to believe the remains are Aboriginal, Heritage NSW must be contacted immediately on 02 9873 8500.
7. **Transfer of Control** – Where NSW Police determine that the remains are Aboriginal, control of the site will be transferred to Heritage NSW.
8. **Consultation and Management** – Heritage NSW, in consultation with the Registered Aboriginal Parties (RAPs) and the Local Aboriginal Land Council (LALC), will determine an appropriate assessment, salvage, or management strategy. A suitably qualified heritage specialist will then be engaged to implement the directions from Heritage NSW including consultation with the RAPs in regards to appropriate actions.