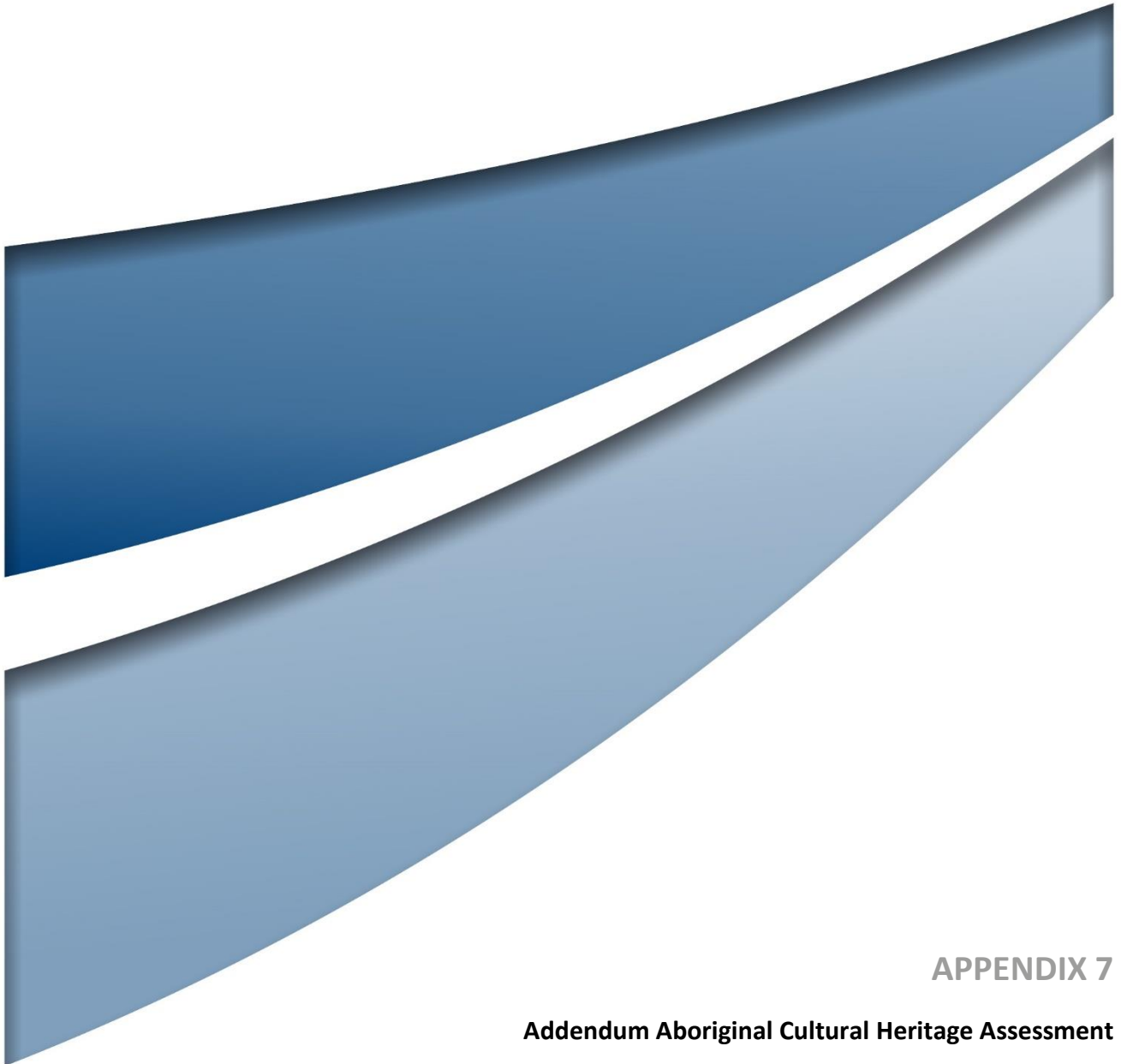




APPENDIX 7

Addendum Aboriginal Cultural Heritage Assessment

**ADDENDUM ABORIGINAL CULTURAL
HERITAGE ASSESSMENT REPORT**

FINAL

May 2024

ADDENDUM ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
RES Pty Ltd

Project Director: Malinda Facey
Project Manager: Marion O'Neil
Technical Director: Ryan Desic
Technical Manager: Andrew Crisp
Report No. 21139/R20
Date: May 2024



QMS Certification Services

This report was prepared using
Umwelt's ISO 9001 certified
Quality Management System.

Acknowledgement of Country

Umwelt Environmental and Social Consultants (Umwelt) and RES Australia Pty Ltd would like to acknowledge the traditional custodians of the Beryl, Gulgong, Tallawang and Barneys Reef areas and pay respect to their cultural heritage, beliefs and continuing relationship with the land.

Umwelt and RES Australia Pty Ltd would also like to acknowledge the post-contact experiences of Aboriginal people who have attachment to the area in which the Tallawang Solar Farm is located.

We pay our respect to the Elders – past, present and future – for they hold the memories, traditions, culture and hopes of Aboriginal people in the area.

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Document Status

Rev No.	Reviewer		Approved for Issue	
	Name	Date	Name	Date
Final	Marion O’Neil	16/05/2024	Malinda Facey	16/05/2024

Abbreviations

Abbreviation	Definition
Addendum Survey Area	Land which forms part of the additional Aboriginal cultural heritage investigations for the Amended Project which includes the proposed site for the TWA Facility and new areas included in the Project Area associated with proposed road upgrades.
AHD	Australian Height Datum
ACHA/ACHAR	Aboriginal cultural heritage assessment report
AHIMS	Aboriginal Heritage Information Management System
ACHMP	Aboriginal Cultural Heritage Management Plan
cm	centimetres
DEC	Department of Environment and Conservation, now Heritage NSW
DECCW	Department of Environment Climate Change and Water, now Heritage NSW
DPC	Department of Premier and Cabinet
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
g	grams
GIS	geographical information system
GPS	global positioning system
ha	hectare
km	kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
m	metres
m ²	square metres
mm	millimetres
NSW	New South Wales
PAD	Potential archaeological deposit
RAP	Registered Aboriginal Party
SEARs	Secretary's Environmental Assessment Requirements
TWA Facility	Temporary workers accommodation facility

Executive Summary

Overview

RES Australia Pty Ltd (RES) is seeking to develop the proposed Tallawang Solar Farm (the Project) in the Central West region of New South Wales (NSW), approximately 8 kilometres (km) northwest of Gulgong within the Mid-Western Local Government Area (LGA).

An Aboriginal Cultural Heritage Assessment (ACHA) was prepared in support of the Environmental Impact Statement (EIS) for the Tallawang Solar Farm (Umwelt, 2022) and was placed on public exhibition in late 2022.

Following exhibition of the EIS, RES is proposing to make amendments to the Project as presented in the EIS to address community and agency submissions. These include:

- Introduction of a 400-person Temporary Workers Accommodation (TWA) facility.
- Updated design for the proposed intersection upgrade on the Castlereagh Highway.
- Removal of proposed 13 km overhead ETL traversing through Barneys Reef Wind Farm as it is now part of the proposed CWO Transmission project being planned by EnergyCo.
- Increased BESS capacity from 200MW/400MW-h to 500MW/1000MW-h.
- Minor layout refinements to optimise the solar array layout within already disturbed areas.
- Minor Project Area boundary adjustments due to some of the above amendments.

This resulted in new areas that were not assessed or fully covered in the ACHA. This Addendum ACHA assesses the impacts of these changes and identifies any revised management and mitigation measures to be implemented as part of the amended Project. Furthermore, a submission was received from Heritage NSW in relation to the exhibited ACHAR, which has been addressed in this Addendum ACHA. This report should be read in conjunction with the previous investigations documented in the ACHAR and EIS.

The draft of this Addendum ACHA was provided to the RAPs for review and comment on 13 March 2024, with a 28-day review period. Umwelt requested RAPs provide information on the cultural significance of the area and of any sites located in the area, for inclusion in the final Addendum ACHA.

Subsequent to the draft Addendum ACHA being issued to the RAPs, the following design change was made:

- TWA Access – the proposed TWA access track will traverse through the solar farm site, and no longer along the council road directly south of the solar farm project. The new alignment for the TWA access is approximately 2.25 km long, starting at the Project's primary access point on the Castlereagh Highway and traversing through the solar farm site, to the TWA facility. The access track will be an all-weather road of approximately 8 m wide and will be designed to accommodate heavy vehicles with a minimum curve radius of 15 m. Three waterway crossings (involving two 1st order creek lines and one 2nd order creek line) have been identified along this alignment, requiring single or multi-barrel RCP culvert installations based on flood depth assessments. The number of culverts and their sizes will be determined during detailed design following site investigations.

The above design change required updating of the draft Addendum ACHA and a re-issuing of the report to the RAPs. The draft of this updated Addendum ACHA was provided to the RAPs for review and comment on 12 April 2024, with a 28-day review period. It was asked that the RAPs provide information on the cultural significance of the area and of any sites located in the area, for inclusion in the final Addendum ACHA.

Assessment Methods

The overarching objective of this ACHA Addendum is to assess the new areas introduced to the proposed Tallawang Solar Farm as a result of the proposed Project amendments and assess any resulting changes to impacts and management in relation to Aboriginal cultural heritage.

Primarily Umwelt sought to identify additional areas not assessed as part of the Tallawang Solar Farm ACHA (Umwelt 2022), determine where archaeological survey was required (in alignment with the established predictive model), review and update the impact assessment (if required) based on the results of additional archaeological survey. It has also aimed to update RAPs about the proposed works, involve RAP representatives in survey, and provide RAPs with an ACHA Addendum to document the assessment.

This ACHA Addendum has not re-assessed any areas that were previously considered as part of the Tallawang Solar Farm ACHA (Umwelt 2022).

Aboriginal Community Consultation

The Draft Addendum ACHA was provided to all project RAPs on 13 March 2024, with a 28-day review period. However, a design change to the TWA access required updating of the draft report and re-issuing to the RAPs. The draft of this updated Addendum ACHA was provided to the RAPs for review and comment on 12 April 2024, with a 28-day review period. It was asked that the RAPs provide information on the cultural significance of the area and of any sites located in the area, for inclusion in the final Addendum ACHA. Two responses were received in support of the draft Addendum ACHA, one from Corroboree Aboriginal Corporation and the other from Wellington Valley Wiradjuri Aboriginal Corporation. Both responses are provided in Section 2 of this report.

Consultation with Aboriginal parties was undertaken for Tallawang Solar Farm as part of the ACHA (Umwelt 2022) in accordance with consultation requirements prescribed by the NPW Regulation and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a) (the Consultation Requirements). Section 3 of the Mod-1 ACHA (Umwelt 2022) provides detail about Aboriginal consultation up until the completion of the Mod-1 ACHA.

To maintain consistency and cohesion with the previous survey program undertaken for the Tallawang Solar Farm ACHA (Umwelt 2022) the same RAP survey participants were invited to participate in the survey program for the ACHA Addendum.

Archaeological Investigations

Umwelt conducted an archaeological field survey of the Addendum Survey Area with the assistance of RAP site officers. The survey was undertaken on 4 October 2023.

No Aboriginal objects were identified during the survey.

The Addendum Survey Area comprised landforms that do not provide direct access to perennial water resources, have limited depth of topsoil or have been substantially disturbed.

When considered with reference to the archaeological pattern identified within the local area and the criteria for differing levels of archaeological potential described in Section 6.5 of the original ACHA (Umwelt 2022), the Addendum Development footprint is assessed as having low archaeological potential to feature subsurface archaeological deposits.

Impacts and Management Measures

The scope of additional disturbance areas posed by the construction of the TWA Facility, environmental and cultural context of the wider Tallawang Solar Farm Project Area, and the archaeological survey results have been used to identify potential impacts to Aboriginal cultural heritage values within the Addendum Survey Area. The impact assessment can be summarised as follows:

- No further Aboriginal cultural heritage objects or sites were identified as part of the survey and there is low potential for unknown sites to be present within the Addendum Development footprint.

Considering the above, the additional proposed works will not result in additional impacts to known Aboriginal objects. It is also unlikely that additional measurable impacts will occur to any unknown Aboriginal objects as the Addendum Development footprint is considered to have low archaeological potential.

The management measures presented in the Tallawang Solar Farm ACHA (Umwelt 2022) remain relevant for the Addendum Survey Area. Accordingly, any future preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP) for the Project should be developed based on the measures set out in Section 11.0 of the Tallawang Solar Farm ACHA (Umwelt 2022).

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1.0 Introduction

1.1 Background

RES Australia Pty Ltd (RES) is seeking to develop the proposed Tallawang Solar Farm (the Project) in the Central West region of New South Wales (NSW), approximately 8 km northwest of Gulgong within the Mid-Western Local Government Area (LGA) (refer to **Figure 1.1**).

Umwelt was engaged by RES to prepare an Aboriginal Cultural Heritage Assessment (ACHA) as part of the Environmental Impact Statement (EIS) for the Project. The ACHA was prepared in accordance with the requirements of the Planning Secretary's Environmental Assessment Requirements (SEARs) (SSD-23700028) for the Project, *National Parks and Wildlife Act 1974*, *National Parks and Wildlife Regulation 2019* (NPW Regulation), the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011), with all consultation undertaken in accordance with Clause 60 of the *NPW Regulation and the Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a) (the consultation requirements). The ACHA incorporated required archaeological technical information in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010c) (the Code of Practice).

The draft ACHA Report (ACHAR) was made available to the registered Aboriginal Parties (RAPs) for review and feedback between April and May 2022. Responses received from RAPs were incorporated into the final ACHAR which was lodged with the (former) NSW Department of Planning and Environment (DPE) in August 2022 as part of the EIS. The EIS was placed on public exhibition between October and November 2022. A submission was received from Heritage NSW dated 24 November 2022 in relation to the ACHAR, which has been addressed in **Appendix B** of this Addendum ACHA.

Following analysis of the EIS submissions, RES undertook a thorough review of the Project's design and layout. As a result, RES is proposing to amend the Project as presented in the EIS in response to concerns raised in the EIS submissions and based on further consultation with agencies, landholders and key stakeholders. The proposed amendments include the introduction of a 400-person Temporary Workers Accommodation (TWA) facility, removal of the proposed overhead electricity transmission line (ETL), Battery Energy Storage System (BESS) capacity increase and an updated treatment design for the proposed intersection upgrade at the new site access on the Castlereagh Highway (the Amended Project). Some minor layout refinements and readjustment of the Tallawang Solar Farm Project Area boundary and development footprint are also proposed as part of the Amended Project.

This resulted in new areas that were not assessed or fully covered in the ACHA as they fell outside the Tallawang Solar Farm Project Area at time of survey and assessment. This Addendum ACHA assesses the potential impacts of these changes to Aboriginal cultural heritage values and identifies any revised management and mitigation measures to be implemented as part of the Amended Project. This report should be read in conjunction with the previous investigations documented in the ACHAR (Umwelt 2022) and EIS (Umwelt 2022).

The draft of this Addendum ACHA was provided to the RAPs for review and comment on 13 March 2024, with a 28-day review period. It was asked that the RAPs provide information on the cultural significance of the area and of any Aboriginal sites located in the area, for inclusion in the final Addendum ACHA.

Subsequent to the draft Addendum ACHA being issued to the RAPs the following design change was made:

- TWA Access – the proposed TWA access track will traverse through the solar farm site, and no longer along the council road directly south of the solar farm project. The new alignment for the TWA access is approximately 2.25 km long, starting at the Project's primary access point on the Castlereagh Highway and traversing through the solar farm site, to the TWA facility. The access track will be an all-weather road of approximately 8 m wide and will be designed to accommodate heavy vehicles with a minimum curve radius of 15 m. Three waterway crossings (involving two 1st order creek lines and one 2nd order creek line) have been identified along this alignment, requiring single or multi-barrel RCP culvert installations based on flood depth assessments. The number of culverts and their sizes will be determined during detailed design following site investigations.

The above design change required updating of the draft Addendum ACHA and a re-issuing of the report to the RAPs. The draft of this updated Addendum ACHA was provided to the RAPs for review and comment on 12 April 2024, with a 28-day review period. It was asked that the RAPs provide information on the cultural significance of the area and of any sites located in the area, for inclusion in the final Addendum ACHA.

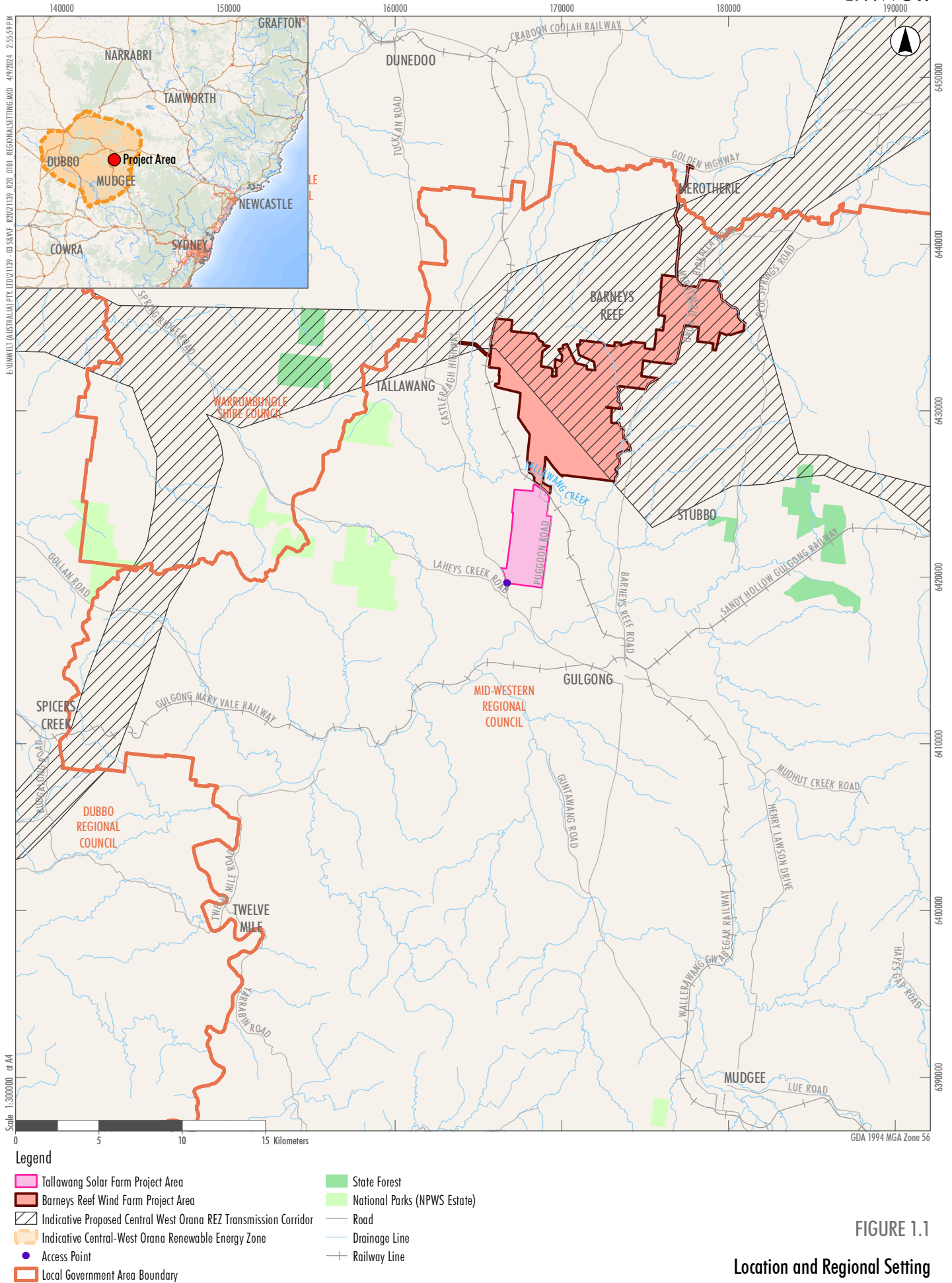


FIGURE 1.1

Location and Regional Setting

1.2 Overview of the Amended Project

The Project remains generally as described in Section 3 of the EIS (Umwelt 2022). However, some key design amendments have been made to the Project in response to public and agency submissions received during the exhibition period and based on further consultation with agencies, affected landholders and stakeholders more broadly. These include:

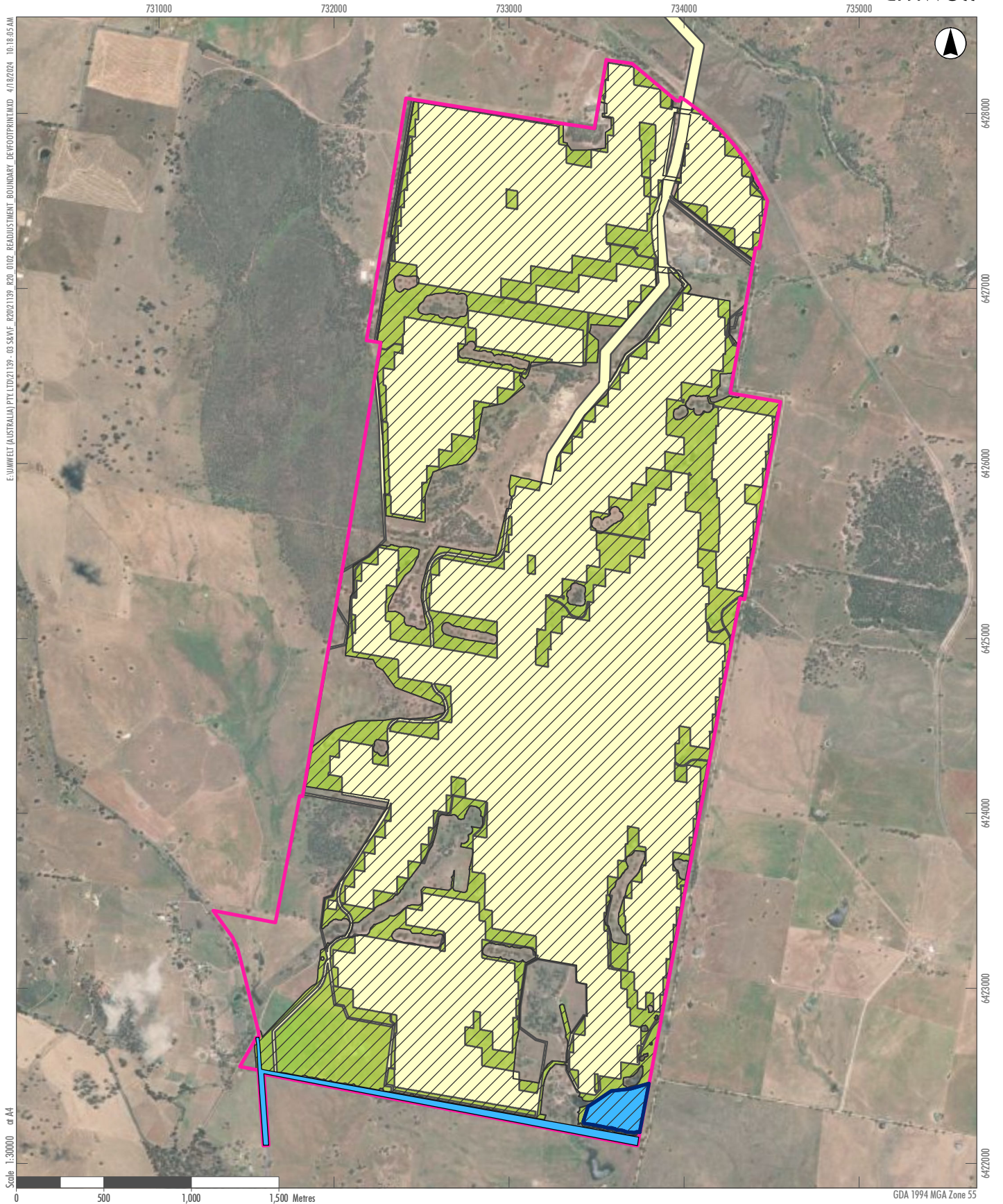
- Introduction of a 400-person Temporary Workers Accommodation (TWA) facility, including a dedicated internal access track of approximately 2.25 km long, starting at the Project's primary access point on the Castlereagh Highway and traversing through the solar farm site. The access track will be an all-weather road of approximately 8 m wide and will be designed to accommodate heavy vehicles with a minimum curve radius of 15m. The construction disturbance footprint encompasses a 16 m wide corridor (8 m on each side of the track centreline). Three waterway crossings (involving two 1st order creek lines and one 2nd order creek line) have been identified along this alignment, requiring single or multi-barrel RCP culvert installations based on flood depth assessments. The number of culverts and their sizes will be determined during detailed design following site investigations.
- Updated design for the proposed intersection upgrade on the Castlereagh Highway.
- Removal of proposed 13 km overhead ETL traversing through Barneys Reef Wind Farm as it is now part of the proposed CWO Transmission project being planned by EnergyCo.
- Increased BESS capacity from 200MW/400MW-h to 500MW/1000MW-h.
- Minor layout refinements to optimise the solar array layout within already disturbed areas.
- Minor Project Area boundary adjustments due to some of the above amendments.

A detailed description of the Amended Project is provided in the Amendment Report prepared separately by Umwelt.

As a result of the Amended Project, new areas have been introduced to the development footprint and the Project area that were not assessed or fully covered as part of the ACHA (hereafter referred to as the Addendum Survey Area as a whole and the Addendum Development footprint regarding where ground disturbance activities are proposed). These include:

- a section of the Castlereagh Highway and associated road reserve for the proposed intersection upgrade
- the local unsealed/gravel road directly south of the Project to facilitate vehicular access to the proposed TWA facility (*Note: a portion of this survey area that crosses a third order stream is longer apart of the Addendum Development Footprint due to the TWA access design change*)
- the south-east corner of the Project Area where the TWA facility is proposed.

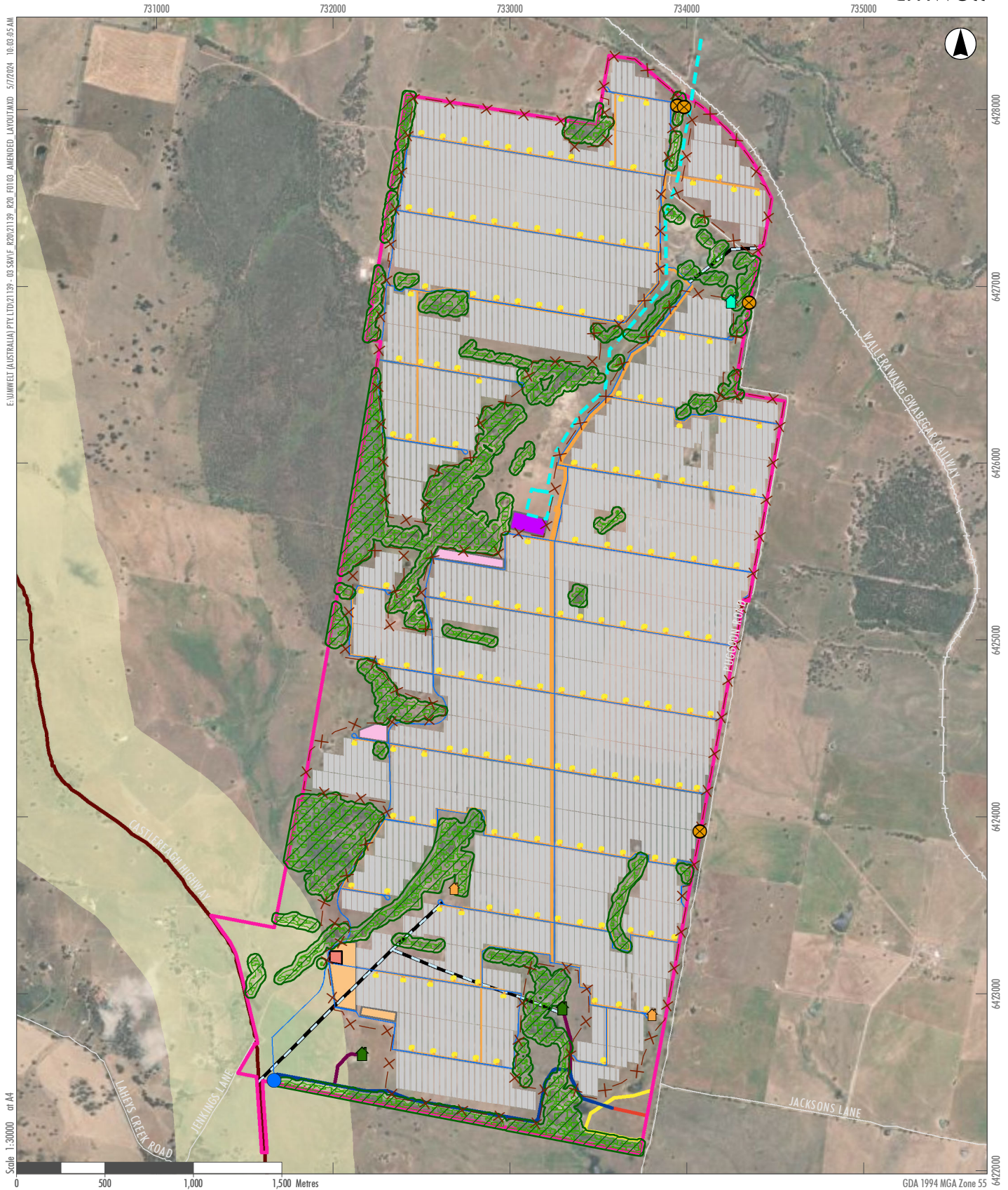
The Amended Project's Development Footprint is shown in **Figure 1.3**, with further detail on the TWA and its access track provided in **Figure 1.4**.



- Legend**
- Project Area Boundary
 - Amended Development Footprint
 - Original Development Footprint
 - Change in Development Footprint
 - Addendum Survey Area
 - TWA Site

FIGURE 1.2

**Amended Project Area Boundary and
Development Footprint**



Legend

- | | | |
|--|---|--|
| Project Area Boundary | --- Grid Connection Infrastructure (proposed by EnergyCo) | Native Vegetation Buffer, 20m |
| Proposed Single Axis Tracker | ● Primary Project Access | Local Road |
| Temporary Workers Accommodation (TWA) | ● Secondary Access | State Road |
| BESS and DC-DC Coupled PCS with Hardstanding | X Security Fence | State Road (Highway) Buffer 500m |
| Proposed Medium Voltage Reticulation | --- Proposed Landowner Access Track | --- 22kV Distribution Line (to be rerouted where necessary) |
| Proposed Access | --- Temporary Workers Accommodation (TWA) Access | |
| Construction Compound | --- Proposed Post Construction Landowner Access Track | |
| Temporary Laydown | ■ Involved Dwelling | |
| Proposed O&M Facility | ■ Involved, Unoccupied Dwelling | |
| Proposed Substation | Native vegetation (Umwelt) | |

FIGURE 1.3

Amended Project Layout

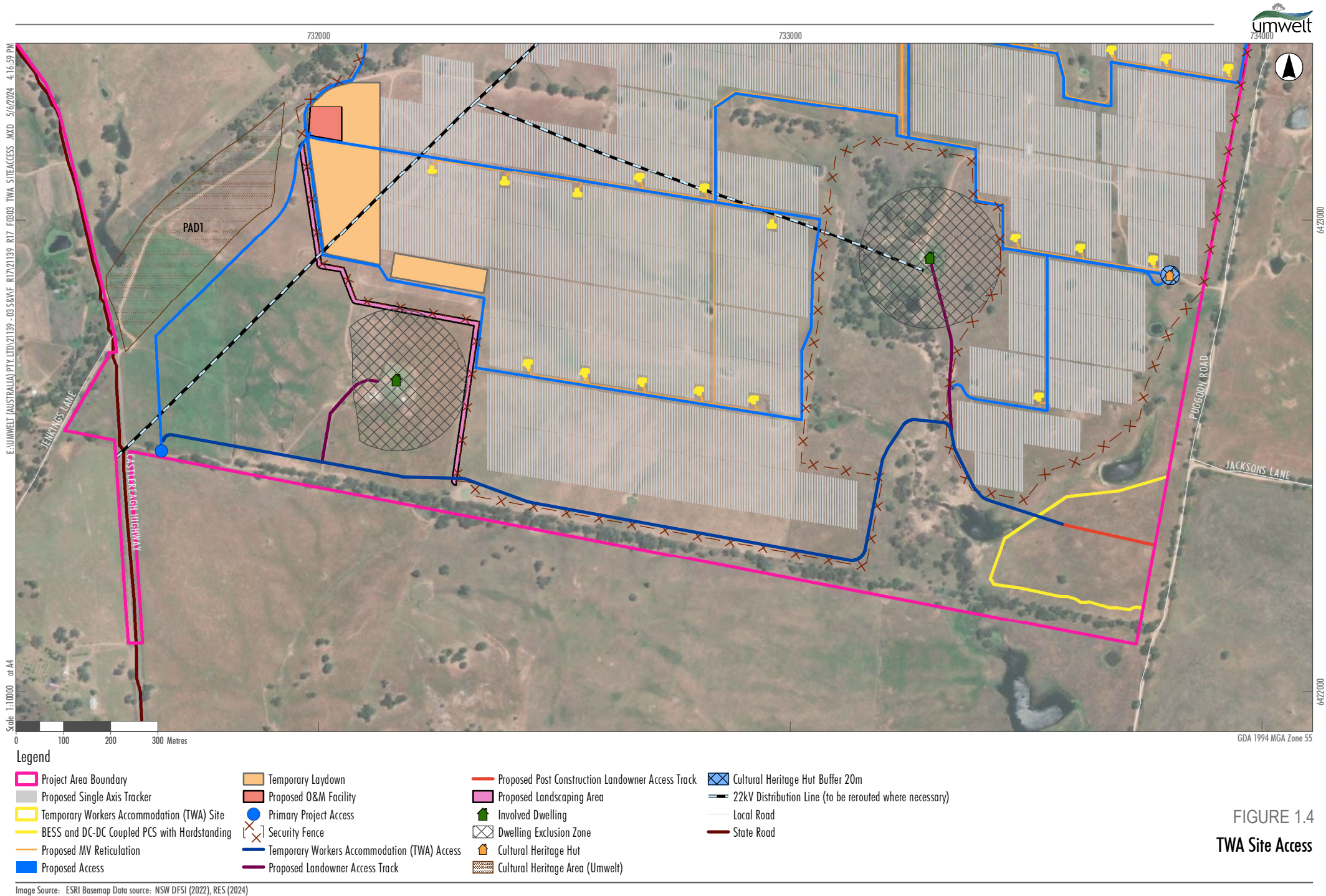


FIGURE 1.4
TWA Site Access

1.3 Definitions

- **Tallawang Solar Farm Project Area:** The project area boundary as assessed by the Umwelt 2022 ACHA.
- **Addendum Survey Area:** Road upgrade and TWA area subject to further archaeological survey as part of this Addendum ACHA (Umwelt 2024), noting that this included a portion that crossed a third order stream (south-eastern corner of Project Area) that is no longer part of the Addendum Development footprint.
- **Addendum Development footprint:** The area where ground disturbance activities are proposed as part of the Amended Project.

1.4 Authorship and Acknowledgements

This report was prepared by Umwelt Senior Archaeologist Andrew Crisp with technical review by Umwelt Principal Archaeologist Ryan Desic.

Umwelt would like to thank RAPs for their involvement in ongoing consultation, knowledge sharing and fieldwork assistance.

Umwelt would like to thank project landholders who allowed the field team to access their properties during the archaeological survey.

2.0 Aboriginal Community Consultation

2.1 Overview

Consultation with RAPs was undertaken as part of the ACHA (Umwelt, 2022) in accordance with consultation requirements prescribed by the National Parks and Wildlife Regulation 2019 (the NPW Regulation) and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a) (the consultation requirements). Section 3 of the original ACHA (Umwelt, 2022) provides detail about Aboriginal consultation up until the completion of the ACHA.

Some of the feedback from RAPs on the draft original ACHA (Umwelt 2022) requested that testing at low subsurface potential isolated finds (IF) and artefact scatters (AS) sites be undertaken. **Table 2.1** provides that feedback with Umwelt's response included. These responses have been included in the ACHAR (Umwelt 2022).

Table 2.1 RAP Comments and Responses from Original ACHA (Umwelt 2022)

RAP Comment	Response
Response from Wellington Valley Wiradjuri Aboriginal Corporation (WVWAC) – The Project proposal to partially or fully impact AS (Artefact Scatter) Sites 1-9 and surface collect artifacts only at these locations is not enough, we formally request that test pitting and potentially dependent on sub-surface deposits salvage be undertaken in conjunction with the surface artefact salvage. We request this additional work to greater understand the potential multi-generational, seasonal and anthropological information that can be gathered, as one as cultural site is impacted the ability to gain this information at a later stage is lost.	Umwelt Response – This testing is inconsistent with the Archaeological Recommendation 2c in Section 11.2, which does not require the completion of test excavation outside areas of PAD. Each of the artefact scatter sites that are not associated with areas of PAD comprise landforms that have been subject to ongoing disturbance and erosion such that the exposed artefacts represent the key components of the site and any additional artefacts (if present) will be in highly disturbed contexts with no integrity. As such, from an archaeological perspective, there is no justification for the completion of test excavations in these areas. Consequently, this mitigation strategy is not recommended from an archaeological perspective and is not proposed.
Response from Murong Gialinga – Any Aboriginal objects that are going to be impacted or partially impacted are to be collected and reburied as close to country as possible. a Rap from each Registered Stakeholder be present. Test pitting in these areas should be carried out.	Umwelt Response – Archaeological recommendation 2c includes requirements for surface collection. In relation to the comment regarding test excavation, this is inconsistent with the Archaeological Recommendation 2c in Section 11.2, which does not require the completion of test excavation outside areas of PAD. Each of the artefact scatter sites that are not associated with areas of PAD comprise landforms that have been subject to ongoing disturbance and erosion such that the exposed artefacts represent the key components of the site and any additional artefacts (if present) will be in highly disturbed contexts with no integrity. As such, from an archaeological perspective, there is no justification for the completion of test excavations in these areas. Consequently, this mitigation strategy is not recommended from an archaeological perspective.

A summary of the consultation process for this ACHA Addendum and its outcomes are provided in the sections below, and full documentation of the consultation process is provided in **Appendix C**.

2.2 Registered Aboriginal Parties

The RAPs remain unchanged from the original registration process undertaken for the ACHA (Umwelt 2022). The registration of Aboriginal stakeholders was completed in accordance with Part 5, Division 2 Clause 60 of the NPW Regulation. As a result of the Project notification and registration process, eleven (11) Aboriginal stakeholders registered an interest in ongoing consultation regarding the Project (**Table 2.2**).

Table 2.2 RAPs

Organisation	Primary Contact Name
AGA Services	Donna Sampson
AT Gomilaroi	Aaron Talbott
Bawurra	Donna Sampson
Cacatua General Services	Donna Sampson
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson
Gallangabang Aboriginal Corporation	Melissa Chown
Mudgee Local Aboriginal Land Council	Tony Lonsdale
Murong Gialinga Aboriginal & Torres Strait Islander Corp	Debbie Foley
Warrabinga Native Title Claimants Aboriginal Corporation	Jack Pennell and Kylie Manson
Wellington Valley Wiradjuri Aboriginal Corporation	Bradley Bliss
White Cockatoo	Michael Long

2.3 Aboriginal Consultation and Engagement for this Addendum ACHA

RAPs were notified about the requirements for further assessment of the new areas, including archaeological survey (Thursday 31 August 2023), and RAP representatives were invited to participate in the survey program for this Addendum ACHA (Thursday 31 August 2023).

Additional field survey, completed on 4 October 2023, was undertaken to assess the new areas introduced to the Project Area and development footprint, i.e. the proposed TWA Facility in the south eastern corner of the Project Area, and the proposed road upgrades proposed along the southern and south-western boundaries of the Project Area.), noting that this included a portion that crossed a third order stream (south-eastern corner of Project Area) that is no longer part of the Addendum Development footprint.

RAPs were invited by email on Thursday 31 August 2023 to participate in the survey. Further email contact prior to the survey program was made on Monday 11 September 2023, Thursday 28 September 2023 and Tuesday 3 October 2024 to confirm attendance and organise survey logistics. The registered Aboriginal parties who were represented in the survey are listed in **Table 2.3** below.

Table 2.3 RAP Fieldwork Representatives

Date	Organisation	Name
4/10/2023	AGA Services	Tammy Sampson
	Bawurra	Kevin Sampson
	Cacatua General Services	Ethan Corin
	Corroboree Aboriginal Corporation	Steve Johnson
	Gallangabang Aboriginal Corporation	Corey Kennedy
	Mudgee Local Aboriginal Land Council	Tammy Peterson
	Murong Gialinga Aboriginal & Torres Strait Islander Corp	Steven Flick
	Warrabinga Native Title Claimants Aboriginal Corporation	Kelsey Williams Faucett
	Wellington Valley Wiradjuri Aboriginal Corporation	Murray Clynes
	White Cockatoo	Michael Long

The Draft Addendum ACHA was provided to the RAPs for review and comment on 13 March 2024, for a 28-day review period. One resp Comment was received from Wellington Valley Wiradjuri Aboriginal Corporation on the 6th of April 2024 as shown in **Table 2.4**.

Table 2.4 RAP Comments and Responses from Draft Addendum ACHA Issued 13 March 2024

Organisation	RAP Comment	Response
Wellington Valley Wiradjuri Aboriginal Corporation	Date received: 6 April 2024 <i>"Dear Andrew,</i> <i>Wellington Valley Wiradjuri Aboriginal Corporation have conducted a meeting and discussed the Draft Addendum Tallawang Solar Farm ACHA report with Elders, Members and Knowledge Holders and agree with the Draft Assessment Report.</i> <i>Regards</i> <i>Bradley R Bliss J.P.</i> <i>WVWAC CEO & Contact Officer"</i>	None required

Subsequent to the draft Addendum ACHA being issued to the RAPs the following design change was made:

TWA access design change – The proposed TWA access track is approximately 2.25 km long, starting at the Project's primary access point on the Castlereagh Highway and traversing through the solar farm site. The access track will be an all-weather road of approximately 8 m wide and will be designed to accommodate B-triple vehicles with a minimum curve radius of 15 m.

Three waterway crossings have been identified along this alignment, requiring single or multi-barrel RCP culvert installations based on flood depth assessments. The number of culverts and their sizes will be determined during detailed design following site investigations.

The above design change required updating of the draft report and a re-issuing of the draft Addendum ACHA to the RAPs. The draft of this Addendum ACHA was provided to the RAPs for review and comment on 12 April 2024, with a 28-day review period.

It was asked that the RAPs provide information on the cultural significance of the area and of any sites located in the area, for inclusion in the final Addendum ACHA. Two responses were received, both in support of the draft Addendum ACHA, and are provided in **Table 2.5** below.

Table 2.5 RAP Comments and Responses from Draft Addendum ACHA Issued 12 April 2024

Organisation	RAP Comment	Response
Corroboree Aboriginal Corporation	Date received: April 30, 2024 <i>"We support draft.</i> <i>Kind regards</i> <i>Marilyn Carroll</i> <i>Director CAC"</i>	None required
Wellington Valley Wiradjuri Aboriginal Corporation	Date received: April 18, 2024 <i>"Dear Ryan and Andrew,</i> <i>Wellington Valley Wiradjuri Aboriginal Corporation have conducted a meeting via Video/telephone and discussed the updated Draft Addendum Tallawang Solar Farm ACHA report with Elders, Members and Knowledge Holders and agree with the Draft Assessment Report and look forward to seeing the Draft Aboriginal Cultural Heritage Management Plan.</i> <i>Regards</i> <i>Bradley R Bliss J.P.</i> <i>WVWAC CEO & Contact Officer"</i>	None required

3.0 Environmental Context

3.1 Premise

The decisions that past Aboriginal people made regarding such things as where they lived, the range of resources they used, and other aspects of daily life may be influenced by the environment in which they live. Landscape features were an important factor for the choice of camping and transitory and ceremonial areas used by Aboriginal people. The preservation and visibility of sites is also affected by environmental factors such as vegetation cover, past land-use and disturbance. A review of the environmental context of the assessment is therefore integral to considerations of site visibility, preservation and occurrence within the Project Area.

Refer to Section 4 of the Tallawang Solar Farm ACHA (Umwelt 2022) for overarching environmental context of the Tallawang Solar Farm Project Area. This environmental context remains relevant to the TWA Facility and road upgrade works (the focus of this report).

This section provides a summary of key environmental information and discusses the implications of this information for the archaeological evaluation specifically relating to the Addendum Survey Area.

3.2 Landforms and Hydrology

The Addendum Survey Area comprises lower hill slopes in a landform pattern of low rolling hills (refer **Figure 3.1** and Section 4 Umwelt 2022).

The topography of the Addendum Survey Area largely comprises low inclination slopes bordering minor drainage lines (refer to **Figure 3.1**). The slopes meet at landforms defined as ridges/crests, noting that these are of very low elevation and are not substantial. There is higher ground to the west, reaching to above 520 m AHD and lower ground to the east to around 430 m AHD.

The Addendum Survey Area is located within the Macquarie Bogan Rivers System, in the lower catchment of Tallawang Creek, with Slapdash Creek approximately 4 km to the east and Wialdra Creek approximately 3 km to the south (**Figure 3.1**). Tallawang Creek (fifth or higher order water course) is located approximately 6 km north of the Addendum Survey Area. Tallawang Creek is likely to have been the key water resource in the local area and is likely to have provided reliable water for extended periods of time. These waterways discharge to the Cudgegong River, around 8 km southwest of the Addendum Survey Area. None of these major waterways traverse through the Amended Project Area. A mapped 3rd order watercourse passes over 100 m to the west of the proposed TWA impact footprint. A portion of the proposed TWA access road crosses two first order tributaries and one second order tributaries in the southeastern corner of the Project Area.

3.3 Geology and Soils

The Addendum Survey Area is shown in **Figure 3.2** with reference to the mapped soil landscapes (from Murphy and Lawrie 1998). The majority of the Addendum Survey Area is within the Home Rule soil landscape, with the south-western portion within the Tucklan soil landscape. Each of these soil landscapes is described in **Table 3.1** with reference to its dominant geology and expected soil profile.

The portion of the Addendum Survey Area mapped as Home Rule soil landscape, being within the lower slopes landform, is likely to contain up to 40 cm of brown to dull yellowish-orange sandy loam to fine sandy loam. Outcropping geology for Aboriginal site types such as grinding grooves and raw material stone quarries have low potential to occur in this context. Note that the Home Rule soil landscape applies to most of the Project Area previously assessed in the original ACHA (Umwelt 2022).

The portion of the Addendum Survey Area mapped as Tucklan soil landscape, being within the lower slopes landform, is likely to contain friable, dark reddish-brown gravelly sandy clay loam or hard setting, reddish-brown fine sandy loam. Site types such as grinding grooves and raw material quarries have low potential to occur in this context with crest landforms more likely to contain in situ raw material outcropping.

Table 3.1 Soil and Geology by Soil Landscape

Soil landscape name	Geological units	Expected geology	Landforms	A1 horizon	A2 horizon	B horizon
Home Rule	Gulgong and Rouse Granite and Quaternary alluvium	Alluvium and colluvium derived from granites	Crests and mid to upper slopes	Up to 35 cm of brown to dark brown loamy sand		Bright brown to reddish-brown loose clayey sand
			Lower slopes	Up to 40 cm of brown to dull yellowish-orange sandy loam to fine sandy loam		Yellow-orange to yellow-brown sandy clay
Tucklan	Tucklan Beds.	Andesite, tuff, arkose, shale. In situ and colluvial materials derived from parent rock.	Mid and lower slopes	Friable, dark reddish-brown gravelly sandy clay loam		Dark reddish-brown light medium clay
			Mid and lower slopes	Hard setting, reddish-brown fine sandy loam		Reddish-brown medium clay
			Crests	Dark reddish-brown fine sandy loam	Pale fine sandy loam	Structured reddish-brown clay

3.4 Land use and Disturbance

The area within and surrounding the Addendum Survey Area was established as and continues to be a predominately agriculturally based region. The key industries remain cattle breeding, wool and lamb production, crops, and cattle grazing.

The Addendum Survey Area has been truncated historical road construction (where current access tracks are), cleared of mature native vegetation (vegetation present is considered regrowth after prior removal) and cultivated for agricultural purposes.

These land uses and disturbances have led to moderate surface erosion across the Addendum Survey Area.

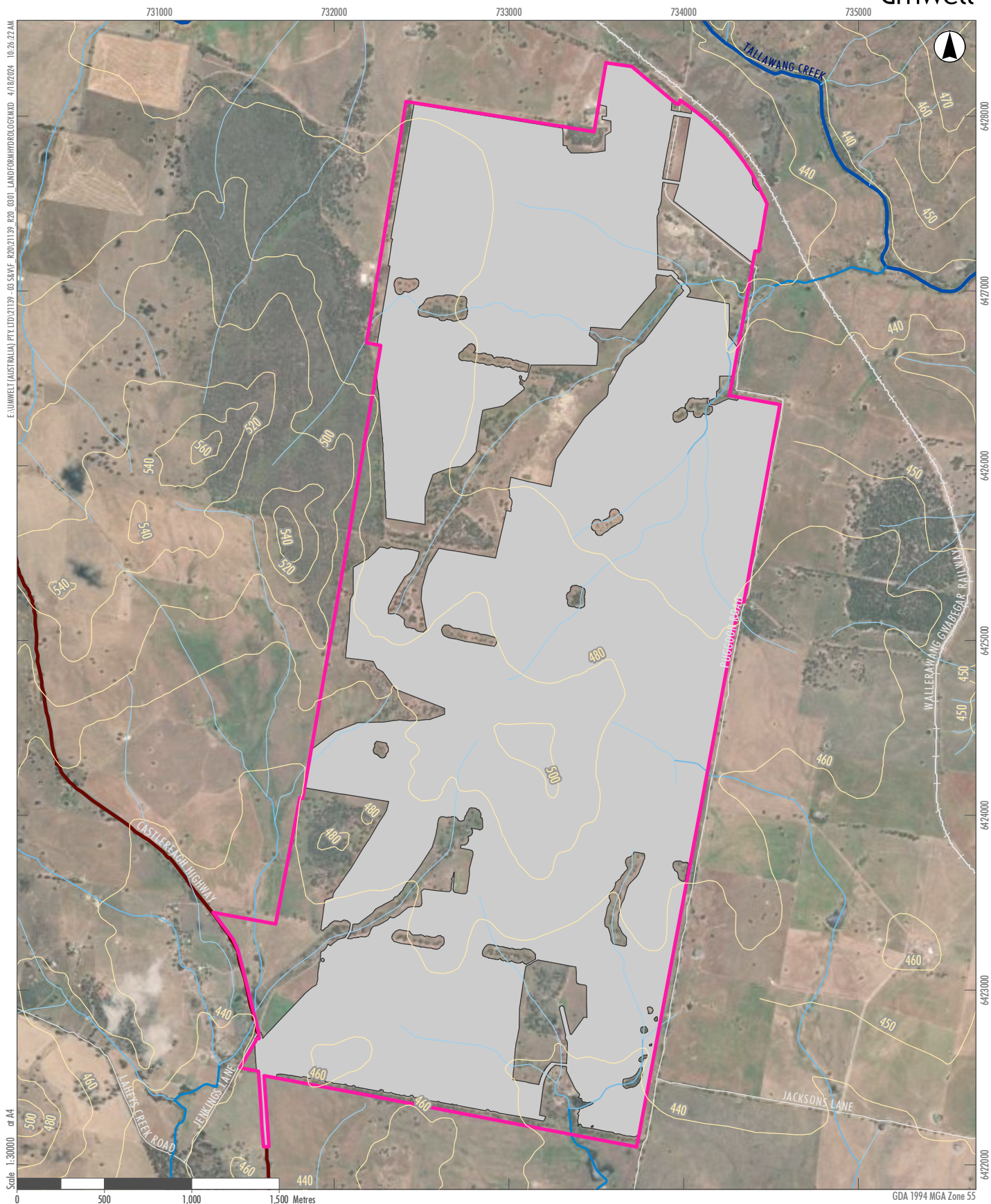
3.5 Summary

The wider Addendum Survey Area largely comprises low inclinations slopes that provided access to ephemeral water resources, with more permanent water resources available away from the Project Area associated with Wialdra and Tallawang Creek and their higher order streams (e.g. generally instances of

established 3rd order streams and above. These landforms would have provided areas suitable for occupation by Aboriginal people, however the likely duration of any occupation was probably limited based on water availability. In this way, people may have camped for intermittently following rainfall and/or moved through the area as they transitioned between the key water courses in the region.

In terms of other resources, prior to historical landscape modification, the area would have been relatively well resourced with an array of plant and animal species. However, the majority of the Addendum Survey Area, including the lower slopes bordering watercourses has been subject to modification/disturbance because of road infrastructure (western end of unsealed/gravel road and entire Castlereagh Highway Intersection), vegetation clearance, cultivation and pastoral use. The topsoil within the area (generally less than 50 cm in depth) are likely to have been subject to increased erosion as a result of vegetation clearance and grazing, thereby reducing further the depth of the soil profiles in these areas. The moderate extent to which the soil profiles within the Addendum Survey Area have been impacted or entirely removed by road construction, cultivation and pastoral activities is likely to have influenced the archaeological potential within the Addendum Survey Area.

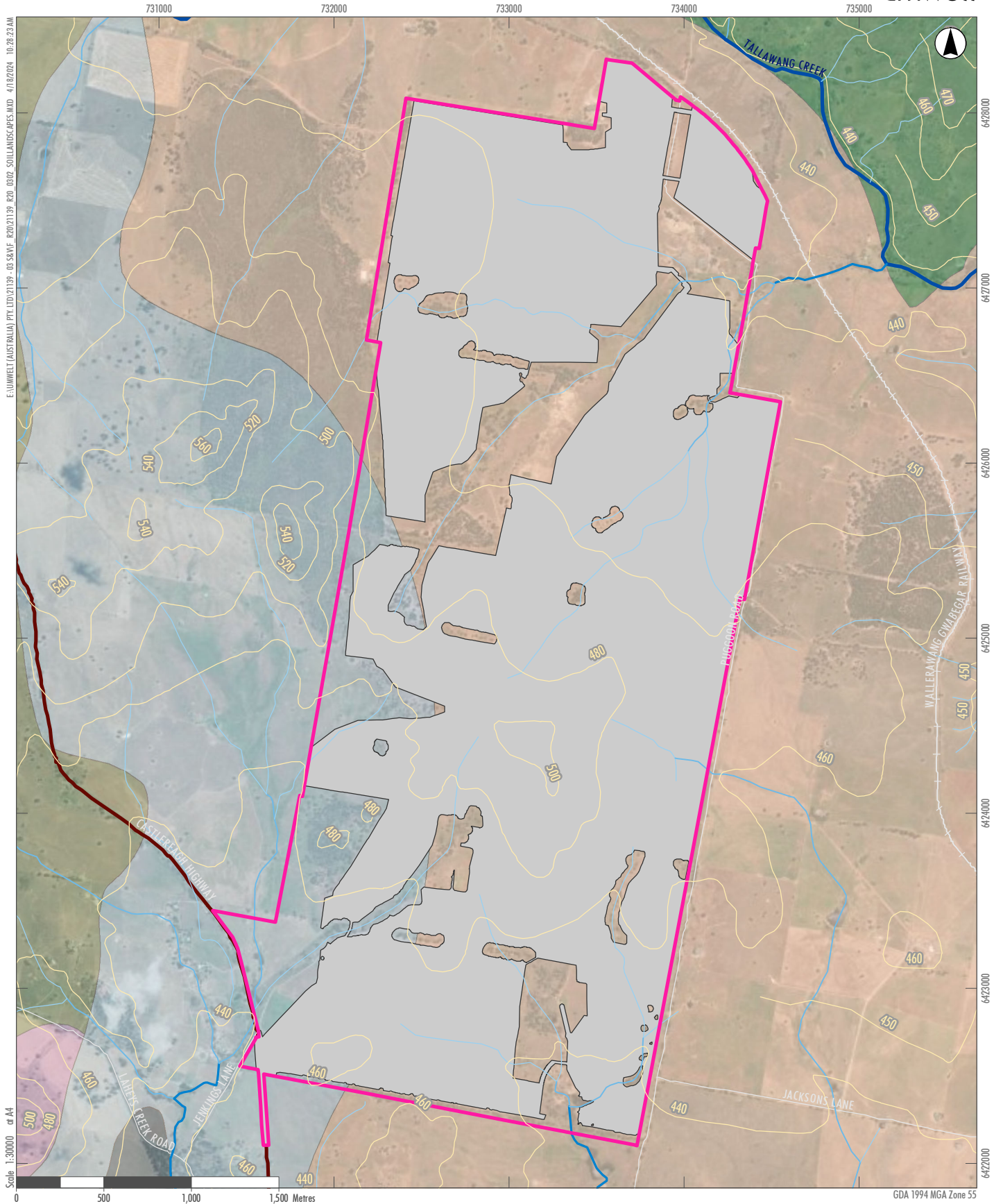
These factors are discussed further in **Section 4.0** in relation to archaeological predictions for the Addendum Survey Area.



- Legend**
- Project Area Boundary
 - Amended Development Footprint
 - State Road
 - Local Road
 - Elevation Contour
- Strahler Stream Order**
- 1st Order
 - 2nd Order
 - 3rd Order
 - 4th Order
 - 5th Order (or greater)

FIGURE 3.1

Landform and Hydrology



Legend

- | | | |
|--|--|---|
| Project Area Boundary | — Strahler Stream Order | Soil Landscapes |
| Amended Development Footprint | — 1st Order | Home Rule (SI5504hr) |
| — State Road | — 2nd Order | Lahey's Creek (SI5504lc) |
| — Local Road | — 3rd Order | Mookerawa (SI5504mk) |
| — Elevation Contour | — 4th Order | Mullion Creek (SI5504mu) |
| | — 5th Order (or greater) | Rouse (SI5504rs) |
| | | Tucklan (SI5504tk) |

FIGURE 3.2

Soil Landscapes

4.0 Aboriginal Cultural Context

4.1 Regional Context

During the 1960s, 1970s, and 1980s, the primary focus of archaeological research in Australia was on understanding the relationship between Aboriginal people and their environment and projecting the mechanisms of adaptation in what appeared to be a land with challenging conditions and limited, often seasonal, resources. The majority of archaeological research during this period was dedicated to examining these issues. Before the 1960s, archaeological research mainly aimed to define changes in the archaeological record. Due to the absence of direct dating techniques at the time, researchers relied on identifying differences in materials found in archaeological deposits. Specific artefacts found in different layers of deposits were used to define different cultural periods (e.g., McCarthy 1964).

However, with the introduction of direct dating techniques in the 1960s, research shifted away from using artefacts to define time periods. Instead, the focus turned toward explaining the nature of different artefacts and assemblages, as well as food remains, in terms of adaptation to the environment. Additionally, there was a growing emphasis on using explicit scientific methods of reasoning in archaeological practice. This influenced archaeologists to address research topics that could be answered within a scientific methodology. Site locational models, subsistence strategies, technology, and environmental adaptation became important research areas during this period.

A well-known chronological sequence of human occupation in south-eastern Australia is the Eastern Regional Sequence proposed by McCarthy (1964). This sequence, later refined by Lampert (1971), Stockton and Holland (1974), Attenbrow (2004), and McDonald (1994; 2008), spans from the Pleistocene to the late Holocene and is based on observed changes over time in stone artefact assemblages. McCarthy identified three phases: the Capertian, the Bondaian, and the Eloueran, with the Eloueran being the most recent. Subsequent researchers have generally agreed with McCarthy's sequence, although it has undergone some revision.

4.1.1 Influential Researchers

4.1.1.1 Attenbrow

Attenbrow (2004) identified four cultural phases based on changes in artefact typology and raw materials in stone artefact. These changes were compared to other studies conducted in the south-eastern region to define the phases and assign dates to them.

Attenbrow (2004: 72-75) identified the following broad sequence of change in the Upper Mangrove Creek catchment:

Phase 1 (Capertian): ca. 11,200–ca. 5,000 years BP: Assemblages consist primarily of flakes, cores and flakes pieces. Implements include amorphous flakes with retouch/usewear, dentated saws and small numbers of backed artefacts. Fine grained siliceous stone and quartz dominate assemblages.

Phase 2 (Early Bondaian): ca. 5,000–ca. 2,800 years BP: Backed artefacts become more archaeologically visible and ground-edge implements appear at ca. 4,000 years BP. Fine grained siliceous stone and quartz dominate assemblages.

Phase 3 (Middle Bondaian): ca. 2,800–ca. 1,600 years BP: Backed artefacts reach a peak in abundance. During this time quartz dominates assemblages.

Phase 4 (Late Bondaian): ca. 1,600 years BP through to just after European occupation: Backed artefacts are rare, bipolar artefacts and ground-edge implements continue to increase in abundance; quartz continues to dominate raw material categories.

4.1.1.2 Pearson

Pearson's (1981) investigation in the Upper Macquarie River region focused on Aboriginal and early European settlement patterns. He conducted excavations in three rock shelters, one of which will be discussed further, revealing evidence of Aboriginal occupation dating back 7,000 years before present (BP). Pearson also conducted surface surveys for Aboriginal sites in various locations, including the Mudgee/Cooyal areas. One key aspect of his research was examining the factors that influenced site location and distribution.

Pearson noted that accessibility to water, good drainage, level ground for sleeping, elevation above areas of winter cold air pooling, exposure to cooling summer breezes, a sunlit leeward aspect, and access to sufficient fuel were significant factors influencing the choice of campsite locations. Across all regions, these conditions played a role in determining suitable sites. In the sample survey, areas that met these criteria were found on gentle hillslopes, undulating ground, flat sections on ridges (particularly at lower elevations), as well as creek banks and river flats, which provided easy access to water but had no other discernible advantageous features.

Regarding vegetation zones, Pearson's investigation found that open woodlands were preferred for occupation by Aboriginal communities. Based on his research, Pearson characterized Aboriginal site patterning in the region according to these factors:

- Aboriginal sites were strongly related to water sources. Distance to water varied from 10 to 500 m and generally the average distance to water decreased as site size increased.
- Sites were located on hilly and undulating landforms rather than on river flats or the banks of waterways. However, the regional incidence of landform variation biased this sample.
- Site location was influenced by good drainage and views over water courses and river flats.
- Most sites were located in open woodland contexts with smaller numbers being present in grassland or forest contexts.
- Burial sites and grinding grooves were situated close to habitation areas.
- Ceremonial sites were located away from habitation areas.
- Stone arrangements were located away from campsites in isolated places; they are associated with small hills and knolls or flat land.
- Quarry sites were located where suitable sources were present and reasonably accessible.

This model has since been revised and refined as part of the many archaeological assessments that have been conducted as part of the environmental assessment and approval process for the three mines: Ulan Coal Mine, Wilpinjong Coal Mine and the MCC.

According to Pearson's (1981) examination of early historical material, he proposed that the region was inhabited by a small number of clan groups, with each group consisting of 80 to 150 individuals. These clan groups were further divided into smaller units referred to as "daily" units, comprising up to 20 people. Pearson suggested that these daily units would make short moves between camp sites, resulting in elongated site formations characterized by continuous artefact scatters along creeks.

Pearson supported his argument with ethnographic evidence indicating that camp sites were not used for longer than three nights. Therefore, he proposed that larger sites in the region likely represented accumulations of short-term visits by these daily units. This pattern of short-term occupation and movement between camp sites could explain the continuous distribution of artefacts along creeks and provide insights into the mobility and settlement patterns of the Aboriginal groups in the area.

4.1.1.3 Koettig

Koettig's (1985) Project focused on the Aboriginal occupation of the Dubbo area. The research began with a comprehensive desktop review to gather relevant information. Subsequently, a systematic survey was conducted, specifically targeting different landform units and stream orders. The primary objective was to investigate the correlation between site types, site locations, and specific environmental settings within three principal physiographic zones.

By examining various landform units and stream orders, Koettig aimed to understand how the Aboriginal sites were distributed in relation to the surrounding environment. This approach allowed for a more detailed analysis of the relationship between cultural activities and the specific geographic features present in the Dubbo area. The Project likely aimed to provide insights into the settlement patterns, resource utilization, and adaptation strategies of the Aboriginal people in that region.

According to Koettig's (1985) Project on the Aboriginal occupation of the Dubbo area, several key findings and proposals were made:

- Distribution of Aboriginal sites: Aboriginal sites were found to be distributed throughout all landscape units in the Dubbo area. This suggests that Aboriginal people utilized various types of environments for their activities and settlements.
- Common site types: The most common site types identified were open artefact scatters, scarred or carved trees, and grinding grooves. These site types likely represented different aspects of Aboriginal cultural practices and activities.
- Influences on site location and size: The location and size of Aboriginal sites were primarily determined by environmental and social influences. The proximity to water was an important factor, with larger campsites often situated close to permanent watercourses. The availability of food resources also played a role, with a wide range of foods found along major watercourses but with some seasonal foods located away from permanent water sources.
- Geological formations: Specific site types were associated with particular geological settings. Grinding grooves, for example, were located where suitable sandstone outcrops were present, indicating their connection to the availability of appropriate stone materials. Quarries, on the other hand, were found in areas with accessible stone resources. Burials were more likely to be found in sandy deposits, such as those found on alluvial flats.

Overall, Koettig's Project emphasized the importance of considering both environmental and social factors when analysing the distribution and characteristics of Aboriginal sites in the Dubbo area. By understanding these factors, it becomes possible to make predictions and models regarding site types and locations based on the environmental context.

4.1.1.4 Hamm

Hamm (2006a) conducted an archaeological survey during Stage One operations of the proposed Moolarben Coal Mine at Ulan. The survey covered an area of approximately 34.8 km² and resulted in the recording of 222 Aboriginal heritage sites. These sites consisted of 156 isolated finds and 47 artefact scatters. A total of 1,298 stone artefacts were recorded, with quartz being the dominant raw material (81.6%), followed by tuff (10.6%). Other raw materials such as silcrete, siltstone, quartzite, chert, mudstone, chalcedony, and porcellanite were represented in lower frequencies. The assemblage of stone artefact types was mainly composed of flakes, flake portions, and flaked pieces, but cores, hammerstones, and backed artefacts were also found. Additionally, 17 rock shelters with artefacts and/or rock art, one scarred tree, one grinding groove site, and 12 areas of potential archaeological deposit were recorded.

In a subsequent assessment conducted by Hamm (2008) for the 2nd Stage of the Moolarben Coal Project, a total of 258 Aboriginal sites were identified, including some previously recorded sites. Among these sites, there were 102 isolated finds and 150 artefact scatters. A total of 4,825 stone artefacts were recorded, with quartz again being the most common material (76%), followed by tuff (19%). Other raw materials such as silcrete, quartzite, chert, sandstone, and fine-grained volcanics were represented but in lower frequencies. The stone artefact types were similar to the previous survey, with flakes, flake portions, and flaked pieces being the dominant types, and the presence of cores, hammerstones, axes, anvils, grindstones, and backed artefacts. In addition to stone artefact sites, Hamm (2008) recorded five rock shelters with artefacts, one grinding groove site, and 33 areas of potential archaeological deposit.

These surveys conducted by Hamm provide valuable information about the presence of Aboriginal heritage sites in the Moolarben Coal Mine area, including the types and quantities of stone artefacts and the existence of rock shelters, scarred trees, and grinding grooves. They contribute to our understanding of the cultural significance and archaeological potential of the area.

4.1.1.5 Kuskie

In 2009, Kuskie conducted a comprehensive investigation of the Ulan Coal Mine, which involved an extensive field survey covering an area of 4,785 hectares over a period of 104 days. This assessment resulted in the recording of 709 Aboriginal sites and 296 rock shelters with Potential Archaeological Deposits (PADs). A total of 8,774 stone artefacts were analysed as part of this assessment.

Most of the stone artefacts analysed were made from quartz (70%), followed by tuff and chert as the next most common raw material types. Other materials such as acidic volcanics, basalt, bone, breccia, chalcedony, granite, ironstone, lithic sandstone, quartzite, rhyolite, sandstone, shell, silcrete, siltstone, and petrified wood were also present in smaller quantities. The artefact assemblage primarily consisted of complete and broken flakes, angular fragments, cores, and core fragments. Additionally, retouched and utilized flakes, backed artefacts, hammerstones, anvils, and axes were also identified.

The results of this assessment were utilized to refine the predictive model of occupation for the Ulan Coal Mine area. The most frequently observed Aboriginal site features within the mine area were artefact scatters, open sites, rock shelters with PADs, and isolated artefacts. Open camp sites varied in size, ranging from one stone artefact to 990 stone artefacts. Most open camp sites contained fewer than 10 artefacts, and most sites were concentrated within a 50 square meter (m²) area or smaller. On average, the density of artefacts within these sites was very low, with approximately 0.0176 artefacts per square meter.

The spatial distribution of artefacts across the landscape indicated a pattern of general background discard, occasionally intersected by areas of more focused and/or repeated activity. Overall, the assessment concluded that Aboriginal use of the area had been of low intensity, which was inferred to be a result of limited access to reliable water sources within the analysis area.

4.1.2 Pertinent Regional Studies

The Gulgong/Beryl/Mudgee/Ulan area has been subject to several archaeological investigations. Key aspects of these investigations are summarised below.

4.1.2.1 Moolarben Coal Complex – Ulan NSW

The Moolarben area and surrounding region has been the subject of intensive archaeological and cultural heritage assessment over the last 30 years, driven mostly by the development of the Ulan Coal Mine, the Moolarben Coal Complex (MCC) and Wilpinjong Coal Mine (15 km east of current Project Area). A number of archaeological models for the distribution of material evidence of Aboriginal use of the landscape have been developed for the region based on the results of these past assessments.

The purpose of archaeological models is to assist in the prediction of what Aboriginal sites may be present in the landscape and where they might be located.

Niche Environment and Heritage Pty Ltd (Niche) (2022) was commissioned by Moolarben Coal Operations Pty Ltd (MCO) to conduct an ACHA report for the proposed extension of open-cut mining operations within the MCC. The OC3 Extension Project aimed to extract additional coal within existing mining and exploration tenements within and adjacent to the approved operations at the MCC.

The Project Area encompassed approximately 1,232.3 hectares (ha) and was situated south of the approved OC3 operations. It primarily consisted of broad valleys associated with Moolarben Creek, Murdering Creek, and Spring Creek, with stony rises and surrounded by gently to steeply inclined elevated terrain. The area also included extensive sandstone ridges adjacent to the Munghorn Gap Nature Reserve.

Due to the colluvial sandy soils present in the local area, most of the lower-order streams (first and second order) associated with the Project Area were unlikely to have provided reliable standing surface water to past Aboriginal inhabitants. However, water may have been available on a seasonal basis following periods of heavy rain.

As part of the ACHA, an Aboriginal cultural heritage survey program was conducted within the Project Area.). Through this survey program, a total of 130 Aboriginal heritage sites were identified within and/or overlapping the Subject Area. This comprised 98 previously recorded Aboriginal heritage sites and 32 newly identified Aboriginal heritage sites.

Kuskie (2009; 2018), through his studies at Moolarben, has posited a model of past Wiradjuri land-use which uses the concept of “resource zones” to interpret past use of the landscape.

The model states that most evidence of occupation will date within the last 5,000 years though Wiradjuri settlement of the area may have extended 30,000–40,000 years BP. The model determines three zones of resources: primary resource zones, secondary resource zones and a third zone that encompasses the land beyond primary and secondary resource zones.

According to Kuskie’s model, much of the Project Area falls within an area that would be defined as a secondary resource zone due to its association with Moolarben Creek, Spring Creek, Murdering Creek and associated tributaries of the Goulburn River. It is hypothesised that these zones were utilised for encampments by small parties of hunters/gatherers and nuclear/extended family groups during the seasonal round (Kuskie 2009). Camping likely occurred on level ground, adjacent to reliable water sources and more abundant subsistence resources. Flats and terraces adjacent to Moolarben Creek within the Subject Area are expected to provide evidence of occupation that was regular though sporadic and typically of a short duration compared to sites associated with primary resource zones located in proximity to the Goulburn River. Here a greater range and frequency of activities were likely undertaken, and moderately higher counts and densities of artefacts would thus be expected.

Portions of the Project Area located away from Moolarben Creek, however, would be considered outside of primary and secondary zones. Use of these areas is expected to have been of a transitory nature associated with the movement of small parties between resource locations. Utilisation of landforms such as simple slopes, ridge crests, spur crests and land adjacent to lower order watercourses within the Subject Area is expected to have been less intensive than that found in primary and secondary resource zones. The evidence of this occupation would be low to very low artefact counts and densities, little range in the number of activity areas, and dates of sporadic occupation rather than continuous occupation. Artefact sites will likely be in the form of isolated find or low-density surface scatters with limited evidence for focussed activities such as artefact/tool manufacture, use and maintenance. The distribution of previously recorded Aboriginal sites in the local area appears to be consistent with the above expectations, with concentrations of sites situated along the encampments of Moolarben Creek, Spring Creek and Murdering Creek.

Activities that may have occurred in the Project Area landscape include food procurement and processing, food consumption, maintenance and production of tools, the building of shelter, children’s play and learning, ceremonial activity, spiritual activity, burials and social and political activity by Aboriginal people. The bulk of these activities would produce archaeological evidence; in particular, stone artefact assemblages and the traces of use that can be directly or indirectly inferred from the artefacts. For instance, food procurement and processing might be evident through the presence of use-wear and residues on stone tools. Ceremonial activities may be evident by the presence of art, carved trees, bora grounds and stone arrangements.

An Aboriginal cultural heritage sites database was developed for the Ulan Coal Mine as part of the environmental assessment process for the Part 3A Approval (Kuskie, 2009). Updated in 2016, the Ulan Coal Mine Aboriginal cultural heritage sites Database included 1,537 Aboriginal cultural heritage sites within the Ulan Coal Mine, including 368 rock shelters with PADs.

The ACHA prepared in 2018 by Kuskie for the Modification 4 project, represents the last major Aboriginal heritage assessment completed within the Ulan Coal Mine operations area. As a result of this assessment, a total of 14 new Aboriginal heritage sites were identified and added to the sites Database, increasing the total number of known sites within the Ulan Coal Project Approval Area to 1,551 (Kuskie, 2018a). Most sites consist of open artefact sites and rock shelters (Kuskie, 2018a). Other site types present in the area, though occurring less frequently, included grinding grooves, scarred trees, stone arrangements, waterhole/well and ochre quarry (Kuskie, 2018a).

An analysis of the spatial distribution of Aboriginal heritage sites and artefacts was completed for the archaeological resources at the Ulan Coal Mine. This involved the separation of the landscape into distinct landform and slope classes (Kuskie, 2018a). Approximately 64% of the Ulan Coal Mine consisted of simple slopes, with depression drainages and ridge crests being the next most consistent landform and slope class (Kuskie, 2018a).

It was noted that overall, artefacts occurred at a very low mean density across the analysis area at 0.004 artefacts per m² of effective survey coverage (Kuskie, 2018a). The spatial distribution and nature of evidence is largely consistent with background discard, manuport and artefactual material which is insufficient either in number or in association with other material to suggest focused activity in a particular location. Very few sites or artefacts were identified in the north-eastern corner of the analysis area, which is consistent with the occupational model of the site given the absence of higher order water sources (Kuskie, 2018a). Rock shelters were found to occur on scarps, simple slopes, spur crests and drainage depressions with sandstone rock formation. Artefact densities were found not to increase in density with proximity to water (Kuskie, 2009).

The results of numerous rock shelter excavation programs completed within the Ulan Project Area provide an insight into the nature of sub-surface archaeological deposits and the chronology of occupation within this local area. A summary of the main results of these salvage programs is provided in **Table 4.1**.

Table 4.1 Summary of Results of Excavation Programs within Ulan Coal Mine Project Area (Niche 2022, 25-26)

Site Details	Results	Reference
Salvage at shelter site ID# 116 (AHIMS ID# 36-3-0177)	- Total area excavated = 20 m² - Total artefacts = 765 - Artefact density = 139 /per metre cubed (m³) or 38.25 /m².	Haglund 1996a
Salvage at Spring Gully 5 (SG5) shelter site ID# 132	- Total area excavated = 37 m² - Total artefacts = 10,002 - Artefact density = 270.32 /m² - Chronology: 4,147 ± 60 years BP (NZA 10766) (4,840-4,446 cal BP).	Haglund 2001a, b
Test excavations at rock shelter sites ID# 104, 105 and 1420	- Total area excavated = 3 m² - Total artefacts = 2,896 - Artefact density = 965.33 /m² - Chronology: 3,200-3,500 years.	Kuskie 2012a

Site Details	Results	Reference
Test excavations at rock shelter sites ID# 163-166, 470, 472, 473, 476, 646, 651, 653 and 654	- Total area excavated = Not provided - Total artefacts = 955 - Artefact density = 172.5 /m³ or 79.6 /m² - Chronology: - Site ID# 166 dated to 4,143-3,730 cal BP (the second oldest secured date of Aboriginal occupation at Ulan) - Site ID#164 dated to 2,720-2,380 cal BP.	Kuskie 2016
Salvage excavations at rock shelter site ID# 104	- Total area excavated = 6.75 m² - Total artefacts = 9,542 - Artefact density = 1,414 /m².	Kuskie 2018a
Salvage excavations at rock shelter site ID# 105	- Total area excavated = 2 m² - Total artefacts = 1,652 - Artefact density = 826 /m².	
Test excavations at rock shelter site ID#112	- Total area excavated = 2 x 0.5 m - Total artefacts = 1,322 - Artefact density = 1,944 /m³ - Chronology: 1,030-1,180 AD and 360-450 AD.	

4.1.3 NGH Environmental, 2020. Dunedoo Solar Farm Aboriginal Cultural Heritage Assessment

In 2020 NGH Environmental (NGH) was engaged Ib vogt GmbH (ib vogt) on behalf of Sun Spot 4 Pty Ltd to conduct an Aboriginal Cultural Heritage Assessment in accordance with the project SEARs for the proposed development of a commercial scale solar farm 2 km north of the township of Dunedoo, NSW, and approximately 25 km north of the Project Area.

Previous archaeological surveys conducted in the Dunedoo region have revealed a significant and diverse pattern of human activity and movement across the surrounding landscape. This pattern is reflected in the distribution and concentration of various types of artefacts and sites within specific landforms throughout the region.

There seems to be a strong correlation between the presence of potential resources utilized by Aboriginal people and the occurrence of archaeological sites. Areas closely linked to water sources or elevated terrain appear to hold the greatest potential for identifying Aboriginal cultural materials. Drawing on knowledge of Wiradjuri cultural practices and traditional activities, as well as previous archaeological investigations in the region, it was determined that the NGH Project Area had the potential for containing archaeological sites. This is particularly significant considering the longstanding presence of Aboriginal communities in the region spanning thousands of years. It was likely that these sites would manifest as scattered quartz artefacts, isolated artefacts, and scarred trees located within remaining pockets of old-growth vegetation adjacent to the Project Area, and potentially as isolated trees within paddocks.

During the survey of the area, a total of 23 artefact scatter sites and three areas of archaeological sensitivity were documented. The artefact counts within these sites ranged from single artefacts to a maximum of 36 artefacts, with only four sites containing more than 10 artefacts.

Subsurface testing was conducted to investigate the presence and extent of archaeological materials within these areas. Out of the 75 test pits excavated in the archaeologically sensitive zones, only 13 yielded stone artefacts, resulting in a total of 85 recorded artefacts from the subsurface testing program. The density of artefacts varied across the excavated areas, with the highest density recorded in one 50 cm by 50 cm test pit, containing 18 artefacts. The surface and subsurface artefacts comprised a mix of flakes, broken flakes, flaked pieces, edge ground axes, hammerstones, and cores, predominantly made from quartz, but also including silcrete, fine-grained siliceous material, basalt, and glass. The artefacts recovered from the test pits were identified as the subsurface component of four surface sites identified during the survey.

NGH interpreted these sites as evidence of "*opportunistic use and movement of small to medium groups of Aboriginal people throughout the landscape*" likely associated with their utilization of the nearby Talbragar River (located approximately 600 m from the Project Area). The moderate densities of artefacts, including cores, suggest that artefact production may have taken place on-site using materials brought in from the surrounding area.

Based on their findings, NGH recommended that the sites within the development footprint of the Dunedoo Solar Farm undergo surface collection prior to any construction impact. Additionally, they advised conducting further salvage excavation at one site (Dunedoo AFT24) due to the higher densities of subsurface artefacts observed.

4.1.4 New South Wales Archaeology, 2019. Uungula Wind Farm Aboriginal Cultural Heritage Assessment

New South Wales Archaeology Pty Ltd was commissioned by CWP Renewables Pty Ltd, representing Uungula Wind Farm Pty Ltd, to conduct an assessment of Aboriginal cultural and archaeological heritage for the proposed Uungula Wind Farm. The assessment was initiated in 2012, and an original report was produced in 2013 to document the initial assessment. The Uungula Wind Farm is approximately 45 km south-west of the Project Area.

Since 2013, modifications have been made to the layout of the proposed Uungula Wind Farm. The entire eastern area of the original proposal has been excluded from the Project. Some minor adjustments have also been made to the Development Footprint in the western area. This revised report provides an updated project description and presents the assessment of the Project, including the current Development Footprint.

The Uungula Wind Farm is planned to be situated in the central western ranges, approximately 14 km east of Wellington, NSW. The Project aims to incorporate up to 125 wind turbines along with associated infrastructure, with a total generating capacity of around 400 MW.

Most of the assessment work focused on ridge crests, which are the proposed locations for wind turbine generators and related infrastructure such as access tracks and electrical connections. These ridge crests are highly eroded landforms that have been found to have very low cultural and archaeological sensitivity and significance.

Although few site recordings were made, stone artefact sites were identified on ridge or spur crests and upper valley slopes. These sites consist of isolated finds or low-density occurrences of highly disturbed stone artefacts. However, all the crest landforms have undergone significant erosion, resulting in no subsurface archaeological potential.

Impacts from tracks and electrical connections, on the other hand, would affect landforms with more gentle slopes and flats in lower order stream valleys. These landforms have also been subjected to erosion and significant disturbance due to prior agricultural activities, road construction, and other human interventions. They were generally assessed as having low cultural and archaeological significance.

New South Wales Archaeology concluded that landforms situated in valley contexts often retain some subsurface archaeological potential, albeit frequently disturbed, due to their geomorphological condition of sediment accumulation.

4.1.5 OzArk, 2016. Predictive model for Aboriginal site locations: the Central West Local Land Services area

In 2016, OzArk developed a predictive model to identify potential Aboriginal site locations within the Travelling Stock Reserves of the Central West Local Land Services area. They divided the landscape into different types, including Channel and Floodplains, Alluvial Plains, Slopes, Uplands, and Downs. Based on their analysis of recorded site types and their distribution within these landforms, OzArk made the following observations:

- Slope landscapes had a high number of recorded sites, which could be attributed to the presence of Dubbo in this particular landscape type. Dubbo and its surrounding areas had the highest number of recorded sites in the region.
- The highest concentration of sites was found in Channel and Floodplain landscapes.
- Alluvial Plains landscapes ranked third in terms of site concentration.
- Uplands landscapes had relatively few recorded sites.
- Downs landscapes showed a moderate number of recorded sites.

Furthermore, OzArk divided the investigated area into two stream orders, major and minor waters, and identified them as sensitive areas. They applied a buffer zone of 200 m on each side of major waterways and a buffer zone of 100 m on each side of minor waterways. The predictive model was tested through field investigations conducted in 32 Travelling Stock Reserve areas within the region. During these investigations, a total of 59 sites were recorded, including 26 modified trees, 22 artefact scatters, and 11 isolated finds. The majority of recorded sites were located in Channel and Floodplain landscapes, with fewer sites found in Slopes, Alluvial Plains, and Downs landscapes. OzArk concluded that Channels and Floodplain landscapes were the most archaeologically sensitive areas in the Central West Local Land Services region. Additionally, they noted that 63% of the recorded sites were situated within the buffer zones of major and minor waterways.

4.2 Local Context

This section provides a summary of key previous studies undertaken within approximately 15 km of the Project Area.

4.2.1 Ozark Environment & Heritage, 2020. Aboriginal Cultural Heritage Assessment Report: Stubbo Solar Farm

In 2020, Ozark Environment & Heritage (Ozark) was contracted by UPC\AC Renewables Australia (UPC) to conduct an ACHA and Historic Heritage Assessment Report for the proposed Stubbo Solar Farm. The solar farm is planned to be located north of Gulgong, NSW, and is situated less than 10 km east of the Project Area for this assessment.

During the survey, a total of 23 Aboriginal sites were recorded, including two sites previously identified from the Aboriginal Heritage Information Management System (AHIMS) database. These 25 sites comprised various types, such as isolated finds, isolated finds with potential archaeological deposits (PADs), artefact scatters, artefact scatters with PADs, a PAD, and a modified tree. Among the recorded sites, the largest artefact scatter contained 98 artefacts, while two artefact scatters contained 30-60 artefacts. Additionally, three sites had 10-30 artefacts, and the remaining sites had fewer than 10 artefacts. In total, 309 artefacts were documented, primarily consisting of flakes. Other artefact classes present included cores, blades, backed artefacts, scrapers, and two ground edge axes. The raw materials used for these artefacts varied, with quartz being the most common, followed by mudstone, volcanics, silcrete, petrified wood, greywacke, and chalcedony, although the latter materials were less represented.

All the recorded sites were associated with landforms adjacent to Stubbo Creek and its tributaries. The larger and more dense sites were located at the confluence of Stubbo Creek and two tributaries. Ozark determined that the presence of artefacts in the eroded areas bordering these watercourses indicated the potential for additional subsurface deposits in the adjoining, less eroded areas. These less eroded areas were identified as PAD areas.

Appropriate buffer zones were established for each recorded site, and it was determined that impacts could be avoided within these buffer areas, except for one isolated artefact site (Rosevale IF-01).

It was recommended that prior to any impact, Rosevale IF-01 undergo surface collection to recover any artefacts present.

4.2.2 NGH Environmental, 2017. Beryl Solar Farm Aboriginal Cultural Heritage Assessment

In 2017, NGH Environmental (NGH) was hired by First Solar Pty Ltd (First Solar) to conduct an ACHA for the proposed Beryl Solar Farm. The solar farm was planned to be located approximately 6 km west of the township of Gulgong, NSW, and around 10 km southwest of the current Project Area.

The assessment included a review of Aboriginal site models for the region, which indicated a pattern of site distribution related to the presence of potential resources for Aboriginal use. The most archaeologically sensitive areas were found to occur within 100-400 meters of water. However, considering the long history of Aboriginal occupation in the region, the potential for archaeological evidence was identified to exist more widely. This evidence would likely be in the form of stone artefacts and scarred trees.

The survey of the area was conducted in February of 2017. The assessed area consisted of a cleared undulating plain primarily used for grazing livestock, with exotic dominated pasture. Transects were spaced evenly, and the survey team spread apart at 20-meter intervals. Two large basalt outcrops were identified but did not show signs of being used for quarrying.

The recorded sites included an artefact scatter with two artefacts and four isolated finds (Beryl Solar Farm IF 1, Beryl Solar Farm IF 2, Beryl Solar Farm IF 3, Beryl Solar Farm IF 4, and Beryl Solar Farm AS 1). The artefacts discovered at these sites included a bifacially flaked axe, a ground edge axe, two cores, a flake, and a broken flake. The raw materials used for artefact production were quartz (3 artefacts), tuff (2 artefacts), and an unspecified volcanic material. All the sites were located within 450 meters of a watercourse, with the artefact scatter and one isolated artefact specifically associated with Wialdra Creek. NGH interpreted this as evidence of past Aboriginal use of the creek and the surrounding landforms.

Upon reviewing the archaeological potential of the area, NGH concluded that while additional stone artefacts may be present, the impacts of former land use and the results of the survey indicated negligible potential for the presence of intact subsurface deposits with high densities of objects or cultural material.

NGH recommended that if complete avoidance of the five recorded sites within the proposal area was not possible, the artefacts should be salvaged before any ground disturbance takes place. The recommendation was to relocate the artefacts to a safe area within the property where they would not be affected by the proposed work.

4.2.3 EMGA Mitchell McLennan. 2012. Aboriginal Cultural Heritage Assessment, Cobbora Coal Project

The EMGA Mitchell McLennan (EMGA) assessment was conducted for a proposed coal mine, covering a large area that across the current Project Area. Within this assessed area, a total of 229 Aboriginal archaeological sites were recorded. These sites consisted of 164 sites containing stone artefacts, 25 scarred trees, 18 grinding grooves, 15 hearths, and seven rock shelters.

Test excavations were carried out at three sites, resulting in the recovery of artefacts. The artefact assemblage was primarily composed of locally available quartz, and it included various artefact classes such as backed artefacts, partial grindstones, axes, flakes, flaked pieces, and cores.

The recorded sites were concentrated along the major watercourses of Sandy Creek and Laheys Creek. First-order watercourses were generally not associated with sites unless they exhibited a chain of ponds formation. Based on this observation, it was inferred that artefacts had a relatively continuous distribution within 200 m of major watercourses and 30 m of minor watercourses. These areas of landforms were identified as having archaeological sensitivity for surface and subsurface archaeological material.

EMGA provided recommendations for mitigating impacts on sites based on their significance and the proposed project impacts. These recommendations included avoidance of sites, surface collection of artefacts, and salvage excavation if necessary. However, based on the information available, the project did not proceed, and the recorded sites remain preserved.

4.2.4 OzArk, 2022. Aboriginal Cultural Heritage Assessment Report: Birriwa Solar and Battery Project, Mid-Western Regional Local Government Area

OzArk Environment & Heritage (OzArk) was commissioned by ACEN Australia Pty Ltd, operating as ACEN Australia (ACEN), to conduct an ACHA for the proposed Birriwa Solar and Battery Project, located within 10 km of the current Project Area to the north of Barney's Reef.

The assessment involved fieldwork conducted with the assistance of representatives from four Registered Aboriginal Parties (RAPs). The fieldwork was carried out over multiple periods: 8-10 November 2021 (3 days), 17-18 January 2022 (2 days), 14-15 March 2022 (2 days), and 22 March 2022 (1 day).

As a result of the survey, eight Aboriginal sites were recorded within the Project Area. These sites include White Creek OS-1, Mangarlowe OS-1 and OS-2, Mangarlowe IF-1 and IF-2, Roxanna OS-1, Winora OS-1, and Barney's Reef Road ST-1. The site types comprise one scarred tree, two isolated finds, four artefact scatters, and one artefact scatter with a potential archaeological deposit (PAD).

Considering the nature of the undifferentiated landforms in the survey area and the widespread disturbances, no landforms were deemed to have the potential for subsurface archaeological deposits of significant conservation value, except for the area associated with the PAD at White Creek OS-1. This area of PAD was not to be impacted by the Project, and therefore, test excavation was not deemed necessary.

The impact assessment concluded that all known sites, except for Mangarlowe IF-2 (36-2-0518), would not be harmed by the project. The specific measures to mitigate the impact on this site were not mentioned in the provided information.

At the time of reporting, Umwelt understands that Heritage NSW requested further explication on PADs within the area and justification as to why test excavations should not occur. This has been provided in **Appendix B**.

4.3 Umwelt 2022 – Tallawang Solar Farm Project

The original assessment undertaken by Umwelt for the Tallawang Solar Farm Project (Umwelt 2022) concluded that the majority of the Tallawang Solar Farm Project Area was assessed as having low archaeological potential as it comprises landforms that do not provide direct access to water resources, have a slope inclination that is not conducive to camping/occupation activities, have limited depth of topsoil (within which subsurface deposits may be located) and/or have been substantially disturbed.

The exceptions to this within the Tallawang Solar Farm Project Area are three areas of Potential Archaeological Deposit (PAD) along first and second order tributaries (Tallawang PAD 1 with AS, Tallawang PAD 2 with AS, Tallawang PAD 3 with AS). In these areas, the assessed level of archaeological potential is low to moderate or moderate. The nature and location of these areas of potential is consistent with the archaeological predictions for the local area.

Based on the final design (as included in the Tallawang Solar Farm ACHA (Umwelt, 2022), the physical impacts to recorded sites and areas of PAD within the Tallawang Solar Farm Project Area were as follows:

Solar Farm footprint:

- Impacts within the Tallawang Solar Farm Project Area to all areas of PAD (1-3) can be fully avoided with no ground disturbance works occurring within the mapped extent of these areas of PAD.
- In relation to PAD2 AS, within the solar farm footprint, this area is spanned by the proposed transmission line corridor to be designed and constructed by EnergyCo however no ground disturbance will be required within the mapped area of PAD.
- IFs (1-9) have currently been designed around with buffers of approximately 20 m and as such would not be directly impacted by the current design.
- Sites IF1-IF9, AS6 and AS12 would be subject to impact because of ongoing agricultural use of the Project Area that will occur concurrently with the Project. These sites are currently located in disturbed areas (being access roads, dam walls and cleared, cultivated or heavily grazed paddocks) where ongoing disturbance is required as part of land management and farming activities. As such the mitigation strategy for these sites is for collection prior to any future project development.
- The solar farm design has been refined to no longer include proposed buffers around Sites IF1-IF9, AS6 and AS12 as these sites are going to be collected (either partially or completely) as part of the mitigation strategy for the Project Area.

The scientific significance of the identified sites was assessed as documented in **Table 4.2** below. In relation to the assessment of significance for the areas of archaeological potential, this was inherently difficult as any such assessment can only be based on the nature of the evidence that the area may contain. For this reason, the assessment of significance of areas of archaeological potential remains a provisional assessment of potential significance only and is linked almost entirely to the research potential of the site. That is, areas of low-moderate archaeological potential have a provisional assessment of low-moderate archaeological significance and areas of moderate archaeological potential have a provisional assessment of moderate archaeological significance (Umwelt 2022).

Table 4.2 Archaeological Significance of Sites Identified Within the Tallawang Solar Farm Project Area

Site Name	Scientific Significance
Tallawang PAD 1 with AS	Moderate (provisional only)
Tallawang PAD 2 with AS	Moderate (provisional only)
Tallawang PAD 3 with AS	Low to moderate (provisional only)
Tallawang AS 1	Low
Tallawang AS 2	Low to moderate
Tallawang AS 3	Low to moderate
Tallawang AS 4	Low
Tallawang AS 5	Low
Tallawang AS 6	Low
Tallawang AS 7	Low
Tallawang AS 8	Low

Site Name	Scientific Significance
Tallawang AS 9	Low
Tallawang AS 10	Low
Tallawang AS 12	Low
Tallawang IF1	Low
Tallawang IF2	Low
Tallawang IF3	Low
Tallawang IF4	Low
Tallawang IF5	Low
Tallawang IF6	Low
Tallawang IF7	Low
Tallawang IF8	Low
Tallawang IF9	Low

4.4 NSW Aboriginal Heritage Information Management System (AHIMS)

A search of the NSW Aboriginal Heritage Information Management System (AHIMS) database was conducted on 6 January 2024 (Client Service ID 861727) for the Addendum Survey Area (refer to **Figure 4.1**). Refer to **Appendix D** for the AHIMS results. This search confirmed that no AHIMS sites are in the Addendum Survey Area, and that three of the AHIMS sites in the Extensive Search Area are classified as destroyed and as such have been excluded from this analysis. Notwithstanding, it is noted that Tallawang IF2 (AHIMS #36-2-0632) and Tallawang IF3 (AHIMS #36-2-0633) are directly north of the Addendum Survey Area. These sites are further addressed in **Section 5.3.2** of this report.

The distribution of the remaining 101 Aboriginal sites recorded in the vicinity of the Addendum Survey Area are consistent with those recorded through the 2022 Umwelt assessment, localised around perennial watercourses and are comprised of predominantly a-typical site types for the region (Open Artefact Sites).

Table 4.3 Relative Frequency of Site Types in the Search Area

Site Type	Frequency	Percentage
Resource and Gathering Site with PAD	1	1
Modified Tree	2	1.9
Modified Tree with PAD	1	1
Modified Tree with Open Artefact Site and PAD	1	1
Potential Archaeological Deposit (PAD)	6	5.9
PAD with Open Artefact Site	21	20.8
Open Artefact Site	69	68.3
Total	101	

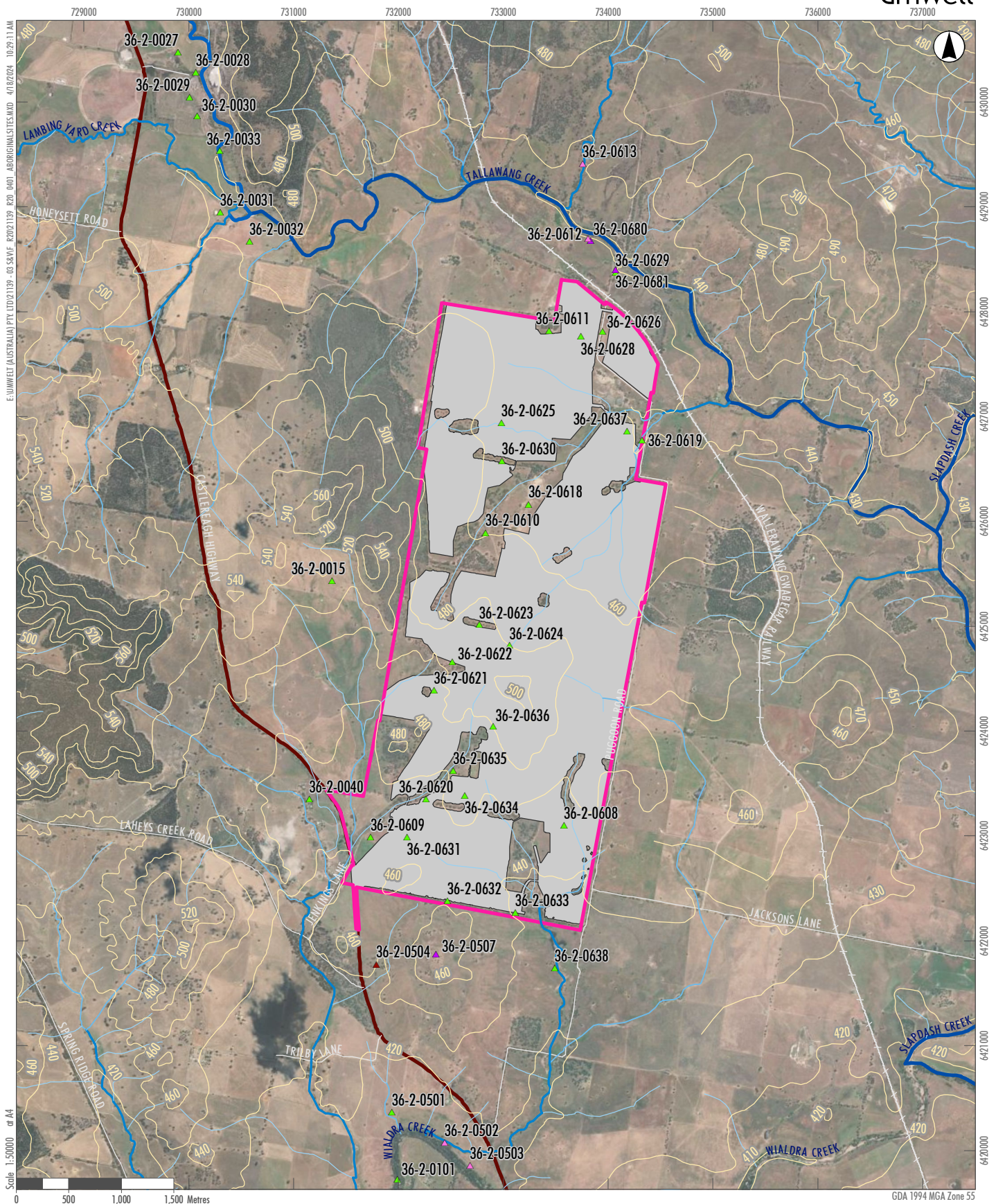


FIGURE 4.1
Aboriginal Sites

4.5 Predictive Model

Trees were scarred by bark removal for huts, toe-holds for tree climbing and marking for ceremonies. Mature trees of suitable age exhibiting carving or scarring (also known as modified trees) are unlikely to occur in the Addendum Survey Area as most of the woodland and forest areas have been cleared over the past century.

Most of the Addendum Survey Area has been cleared of its native vegetation and subjected to ploughing/cultivation. These activities are likely to have displaced Aboriginal stone artefacts more than natural disturbances such as bioturbation, but without totally diminishing their cultural and archaeological value. The stratigraphic integrity of artefacts within the topsoil is unlikely to have been preserved, and the artefacts are likely to have moved both horizontally and vertically in the soil matrix, but generally within the landforms in which they were originally deposited. Overall, the extent of displacement depends on the types of ground disturbance, gradient of slope and degree of erosion, such as sheet wash on hill slopes and gullying and scouring adjacent to streams.

A predictive model may be used to estimate the nature and distribution of evidence of Aboriginal land use in a defined area. A predictive model should consider variables that may influence the location, distribution and density of sites, features, or artefacts within a subject area. Variables typically relate to the environment and topography, such as soils, landscape features, slope, landform, and cultural resources.

The general process archaeologists employ to determine the likelihood of any specific site type (artefact scatter, shelter, midden etc) occurring within a given subject area requires the synthesis of information for general distribution of archaeological sites within the wider area including:

- Detailed analysis of previous archaeological investigations within the same region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to permanent water.
- Analysis of the geology and soil landscape within the Project Area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

Based on the information presented in this report and the Tallawang Solar Farm ACHA (2022), archaeological predictions for the Addendum Survey Area are provided in **Table 4.4** below.

Table 4.4 Predicted archaeological potential by site type

Site Type	Assessment	Potential for occurrence
Art	The topography of the Addendum Survey Area does not contain outcrops or rock overhangs. Nor does it contain sandstone baring soil landscapes that contain potential for rock art.	Low
Artefact Scatters/ Isolated artefacts	Additional stone artefact scatters/isolated artefacts may be present but will likely be relatively dispersed and contain low densities of artefacts, representing transitory use of the area.	Low
Bora / Ceremonial	Such sites are especially susceptible to ground disturbance. Ground disturbance across the Addendum Survey Area is likely to have significantly reduced the potential for bora / ceremonial sites to be retained.	Low
Burial	Burial cairns (36-6-0036 “Puggoon; Nagundie”) have been identified and registered in the southern foothills of Barneys Reef (approx. 25km north). The landforms rugged foothills and proximity to Barneys Reef, a focal point in the region, are vastly different to the gentle undulating lower slopes of the Addendum Survey Area.	Low
Contact site	The Addendum Survey Area is on the boundaries of early European settlement within the area. There are no key features (such as historical homesteads) within the Addendum Survey Area where it would be expected that contact between Aboriginal and non-Aboriginal people may have occurred.	Low
Grinding Grooves	The Addendum Survey Area does not contain the sandstone geology and outcropping that would typically be conducive for grinding grooves.	Low
Midden	The absence of middens mentioned in background literature and AHIMS data indicates this site type has low potential to be in the Addendum Survey Area.	Low
Modified Trees	The impacts of land clearance and ongoing agricultural activities dictate that scarred trees are most likely within road reserves and on elevated areas not subject to extensive clearance. The vegetation within the Addendum Survey area is considered to be regrowth woodland.	Low
PADs	Subsurface potential will vary depending on past land use, levels of existing native vegetation, levels of disturbance and past major flood events. Landforms directly associated with reliable water courses may contain subsurface artefact assemblages a result of more prolonged and/or frequent occupation.	Low
Shelters	The topography of the Addendum Survey Area does not contain outcrops or rock overhangs. Nor does it contain sandstone baring soil landscapes that contain potential for rock shelters.	Low
Quarries (stone or ochre)	The geology of the Addendum Survey Area does not contain outcrops that have potential for quarries.	Low

5.0 Archaeological Survey

5.1 Overview

Umwelt conducted an archaeological field survey of the Addendum Survey Area with the assistance of RAP site officers. The survey was undertaken on 4 October 2023.

The survey track completed for the survey is shown on **Figure 5.1**.

5.2 Methods

5.2.1 Information Recording During Survey

The survey unit was defined and named with reference to Requirement 5c of the Code of Practice, including recording start and finish points and/or boundaries for all survey units using a hand-held GPS receiver and topographic mapping (where relevant), and track log was recorded for the transect.

Site recording (if required) was to be completed in accordance with the Code (DECCW 2010b). Site locations and their details would be recorded with digital tablets using site recording forms created by Umwelt on the Survey123 application for ArcGIS (Esri© software).

The survey transect was recorded on a Survey123 form created by Umwelt. The Survey123 form allowed for survey transect starting point, details and representative photographs to be recorded. The course of survey transect was recorded as tracks on hand-held non-differential GPS units which were linked to the Survey123 form.

5.2.2 Recording Survey Coverage

In accordance with the Code of Practice, the survey coverage description includes landform unit, the total area surveyed within the landform unit and the quantification of the level of ground surface visibility and exposure.

Ground surface visibility is defined as *“the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials”* (DECCW 2010b:13). Exposure is defined as *“the percentage of land for which erosion and exposure was sufficient to reveal archaeological material on the surface of the ground”* (DECCW 2010b:13). As such, exposure refers to the potential for an area to reveal subsurface artefacts or deposits rather than the mere observation of the amount of bare ground.

The calculation of effective survey coverage is undertaken to designate the proportion of the assessment area in which it is possible to accurately assess the presence or absence of archaeological material. Survey coverage is calculated by multiplying the survey unit area by the percentage of ground surface visibility and exposure within the survey unit. The survey coverage is then expressed as a percentage for the whole survey unit.

5.3 Survey Results

5.3.1 Addendum Survey Area

Archaeological surveys are inherently limited by ground surface visibility conditions and therefore any survey, despite the intensity of survey effort and spacing of survey transects, is considered to only sample the archaeological landscape. The archaeological survey aimed to be comprehensive and cover the geographic extent of the Addendum Survey Area. The effective coverage percentage came to 4% due to the low surface visibility. A survey of the Addendum Survey Area took place on 4 October 2023 by Umwelt Senior Archaeologist Andrew Crisp and ten (10) RAP field representatives (refer to **Table 2.3**).

The survey was conducted as a single transect (Survey Unit 1) equating to approximately 6 km in length, due to the relatively small size of the Addendum Survey Area. Survey participants were spaced between five to ten metres apart. The survey transect was walked on foot and recorded using Global Positioning System (GPS) tracking. The length of the survey transect is shown on **Figure 5.1**. Survey coverage included the width of the Addendum Survey Area. Any mature trees within the Addendum Survey Area were visually inspected for evidence of cultural modification.

Photos of the survey are shown in **Photo 5.1–Photo 5.6**. Survey coverage data is presented in **Table 5.1** below, per Requirement 10 of the Code of Practice.

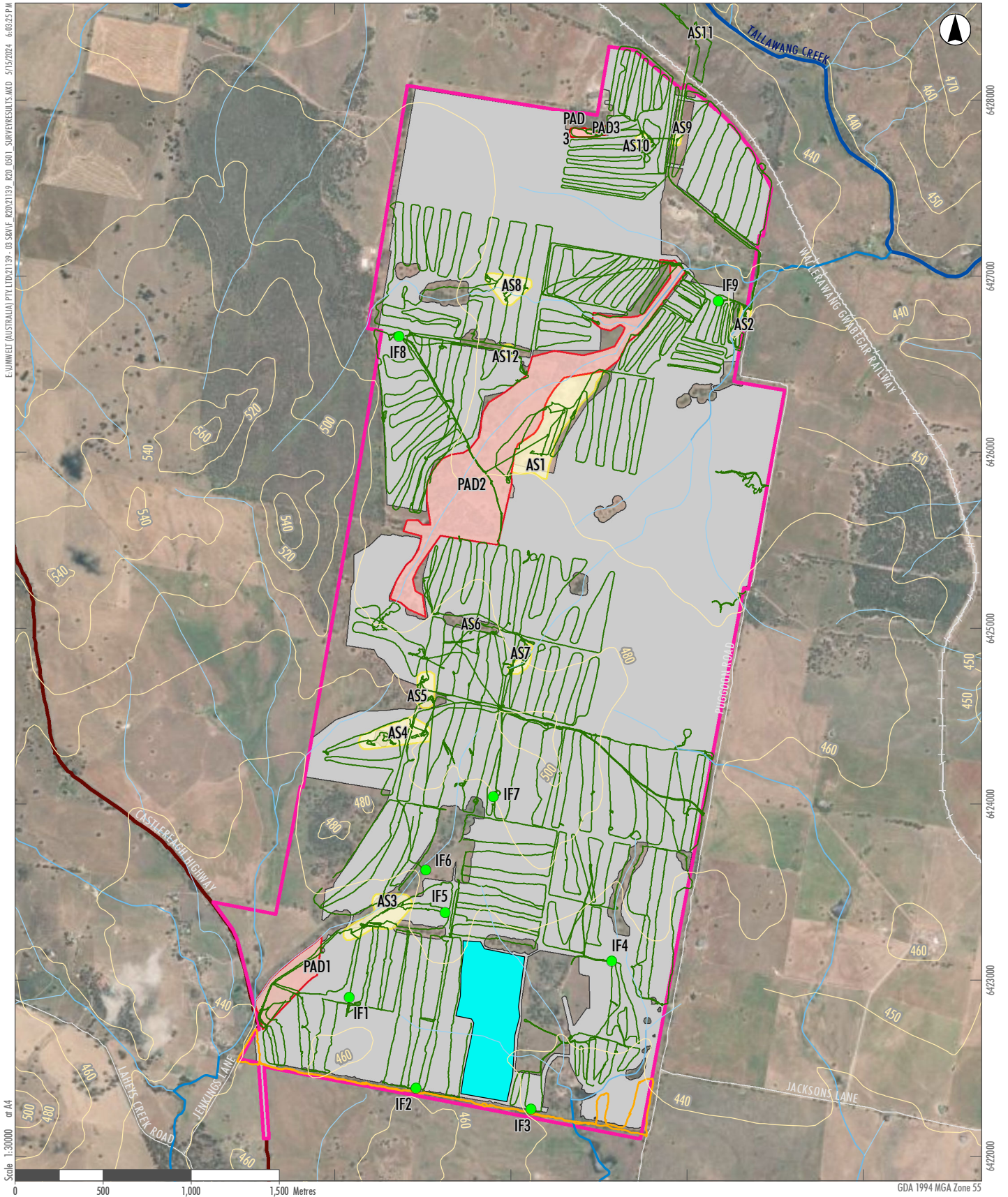
Survey Unit 1 was undulating with localised truncation/excavation into the bedrock in the form of a road cutting at the western end of the unnamed roadway (approximately 200–300 m east of Castlereagh Highway) running along the southern boundary of the Tallawang Solar Farm. Ground surface visibility was generally low as a result of recent rains resulting in moderate grass and understorey coverage. The triangular field at the western end of the Addendum Survey Area, between Jenkins Lane and the Castlereagh Highway, had low visibility but inspection showed the landform undulated greatly with small exposures showing exposed basal clay, suggesting extensive machine/cultivation impacts.

The portion of the Addendum Survey Area that contains the proposed TWA is located on a gentle undulating low slope over 100 m east of a creek confluence of two second order streams and a small portion of third order tributary of Wialdra Creek. This portion is the very initiation of the third order stream (i.e. represents where two second order streams have just joined) and still reflects an ephemeral water source. Notwithstanding, acknowledging this increased stream order, it would be pertinent to acknowledge that increased archaeological sensitivity for subsurface objects is likely to apply for up to 50 m either side of this third order tributary where it coincides with the Project Area. This inference generally agrees with the findings of local studies for more ephemeral stream examples mentioned in the archaeological context of this report. As such, the TWA area boundary is set back at least 50 m from this area and avoids this component of archaeological sensitivity. Furthermore, the actual TWA layout has been set back to over 150 m from the third order stream to further avoid this inferred sensitivity (refer **Figure 5.3**).

Overall, the Addendum Survey Area is consistent with lower slopes abutting lower order streamlines, it has been subject to a century of pastoral and cultivation activities with the majority of native vegetation having been cleared. The surveyed area that crosses the third order stream may have archaeological potential, but that area has since been removed from the Addendum Development footprint and the impact assessment and management measures have been made based on that change. No scarring or other cultural modification of trees was observed in the Addendum Survey Area. No Aboriginal sites and/or areas of PAD were identified during the survey.

Table 5.1 Description of Survey Results

Unit	Landforms	Survey Unit Length (m)	Survey unit area (approx.) (m2)	Survey unit area (approx.) (ha)	Visibility (%)	Exposure (%)	Effective Coverage Area (m2)	Effective Coverage Area (%)	Sites	Archaeological Potential Rating	Disturbance factors
1	Undulating Plain	6186	28,734	28.7	20	20	1,149	4	None	Low – moderately modified	Heavy cultivation, land truncation for road construction, pastoral activity, land clearing



- Scale 1:30000 at A4
- Legend**
- Project Area Boundary
 - Amended Development Footprint
 - State Road
 - Local Road
 - Elevation Contour
 - Survey Tracklogs Oct 2023
 - Survey Tracks Nov2021-Jan 2022
 - Portion Surveyed Nov 2021-Jan 2022: GPS Out of Battery
 - Previously Discovered Sites**
 - PAD with Artefact Scatter
 - Artefact Scatter
 - Isolated Find
 - Strahler Stream Order**
 - 1st Order
 - 2nd Order
 - 3rd Order
 - 4th Order
 - 5th Order (or greater)

FIGURE 5.1

Survey Results



Photo 5.1 Indicative condition of TWA portion of Addendum Survey Area. Aspect west.



Photo 5.2 Indicative condition of TWA portion of Addendum Survey Area. Aspect west.



Photo 5.3 View of roadway running along southern boundary of the Tallawang Solar Farm Project Area where it crosses the mapped third order streamline. Aspect west.



Photo 5.4 Indicative view of heavily impacted triangular field between the Castlereagh Highway and Jenkins Lane. Aspect north.



Photo 5.5 Indicative view of heavily impacted triangular field between the Castlereagh Highway and Jenkins Lane. Aspect north-west.



Photo 5.6 Indicative view of Jenkins Lane. Aspect north.

5.3.2 TWA Access Design Change Portion Previously Surveyed

Subsequent to the survey of the Addendum Survey Area the following TWA access design change was made:

TWA access – the amended proposed TWA access track is approximately 2.25 km long, starting at the Project’s primary access point on the Castlereagh Highway and traversing through the solar farm site. The access track will be an all-weather road of approximately 8 m wide and will be designed to accommodate heavy vehicles with a minimum curve radius of 15 m. The construction disturbance footprint encompasses a 16 m wide corridor (8 m on each side of the track centreline).

Three waterway crossings have been identified along this alignment, requiring single or multi-barrel RCP culvert installations based on flood depth assessments. The number of culverts and their sizes will be determined during detailed design following site investigations.

The portion of the TWA access track that deviates north from the Addendum Survey Area was previously surveyed during the Tallawang Solar Farm survey program (**Figure 5.2**). The survey of this portion of the Tallawang Solar Farm Project Area was conducted by two archaeologists and registered Aboriginal party representatives on 1 to the 5 of November 2021.

The Survey Units that relate to the portion of the TWA access track that deviates north from the Addendum Survey Area are Survey Unit 1 (SU1) (**Photo 5.7 - Photo 5.12**) and Survey Unit 2 (SU2) (**Photo 5.13 - Photo 5.18**). In general terms, SU 1 and SU2 were comparable in their landform. Landforms observed within these survey units included a high representation of low inclination slopes, undulating plains and low order drainage lines. The specific vegetation communities were variable across the survey units however within all survey units, the presence of heavy crop and grass growth impeded visibility outside of tracks and exposures.

The survey identified two isolated finds within SU1 and SU2, these were Tallawang IF2 (36-2-0632) (**Photo 5.19 and Photo 5.20**) and Tallawang IF3 (AHIMS #36-2-0633) (**Photo 5.21 and Photo 5.22**). Details of each Aboriginal site is provided below in **Table 5.2** and the scientific significance of each provided in **Table 5.3**.

The impact assessment for the Tallawang Solar Farm ACHA (Umwelt 2022) concluded that:

- Sites IF1-IF9, AS6 and AS12 would be subject to impact because of ongoing agricultural use of the Project Area that will occur concurrently with the Project. These sites are currently located in disturbed areas (being access roads, dam walls and cleared, cultivated or heavily grazed paddocks) where ongoing disturbance is required as part of land management and farming activities. As such the mitigation strategy for these sites is for collection prior to any future project development.
- The solar farm design has been refined to no longer include proposed buffers around Sites IF1-IF9, AS6 and AS12 as these sites are going to be collected (either partially or completely) as part of the mitigation strategy for the Project Area. Overall, the original ACHA addressed impacts and management for Tallawang IF2 (36-2-0632) and Tallawang IF3 (AHIMS #36-2-0633) which occur in the vicinity of the TWA Access Design Change.

There were no areas of PAD identified within the proposed TWA access track portions of SU 1 and SU 2.

Table 5.2 Isolated Finds in SU 1 and SU 2

AHIMS #	Site name	Artefact attributes and context	Landform	Coordinates	Photograph
36-2-0632	Tallawang IF2	Quartz flake in small exposure adjacent to east-west paddock fence line.	Slope	732467 East 6422381 North	Photo 7.43-7.44
36-2-0633	Tallawang IF3	Quartz flake in small exposure adjacent to east-west paddock fence line.	Slope	733116 East 6422268 North	Photo 7.45-7.46

Table 5.3 Archaeological Significance of Sites Identified in SU 1 and SU 2

Site Name	Scientific Significance
Tallawang IF1	Low
Tallawang IF2	Low



Photo 5.7 Vehicle track (PAD1 AS) in western corner of SU1. Aspect north-east



Photo 5.8 Vehicle track (PAD1 AS) in western corner of SU1. Aspect south-west



Photo 5.9 Indicative grazing impact within SU1



Photo 5.10 Indicative unsealed tracks between cropped paddocks in SU1



Photo 5.11 Gently undulating slopes bordered by low order drainage lines in SU1



Photo 5.12 Early 1900's homestead compound on small rise in northern portion of SU1



Photo 5.13 View SW from NE corner of SU2



Photo 5.14 View NE from SW corner of SU2



Photo 5.15 Indicative condition of lower order creeks in SU2



Photo 5.16 Indicative track condition/exposure within SU2



Photo 5.17 View SE from NW corner of SU2



Photo 5.18 Indicative low level of surface visibility across SU2 paddocks



Photo 5.19 IF2, quartz flake



Photo 5.20 Context of IF2



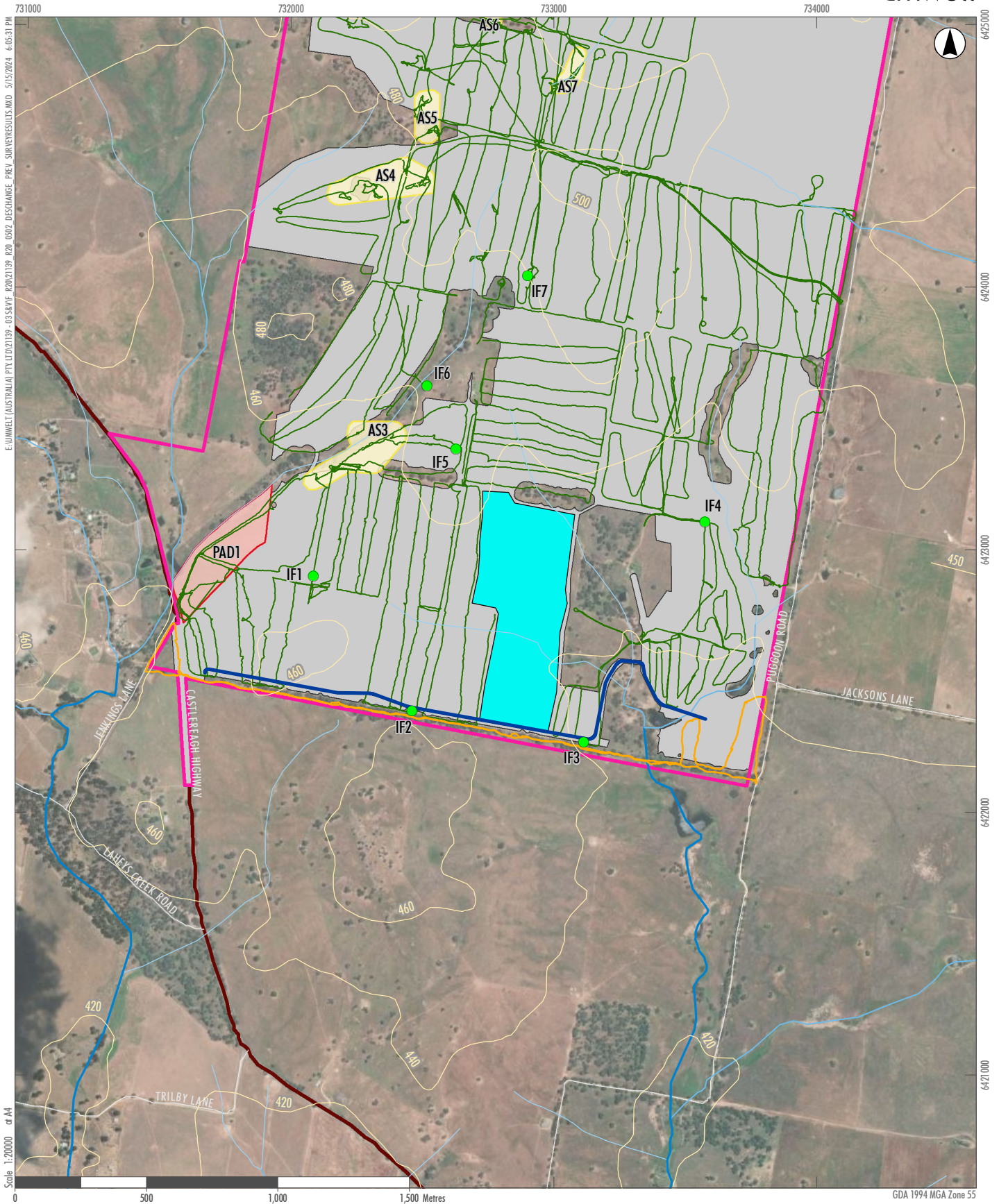
Photo 5.21 IF3, quartz flake



Photo 5.22 Context of IF3

Table 5.4 Survey Unit Descriptions

Unit	Survey unit area (hectares)	Visibility %*	Exposure %*	Effective Coverage (%)*	Sites	General description	Archaeological potential rating	Disturbance factors
1	237.9 ha	10%	10%	23797.8 m ² 1%	PAD 1 with AS IF1 IF2 IF5 IF6 AS3 (majority)	Low inclination slopes and low order drainage lines. Heavy crop and grass growth impeded visibility outside of tracks and exposures.	Low across majority of SU, except for PAD 1	Track construction, gully erosion, slope wash, agriculture and pastoralism. Dwellings on southern and northern rises.
2	367.6 ha	10%	10%	36766.8 m ² 1%	IF3 IF4	Low inclination slopes and low order drainage lines. Heavy crop and grass growth impeded visibility outside of tracks and exposures.	Low	Track construction, gully erosion, slope wash, agriculture and pastoralism.



Legend

- Project Area Boundary
- Amended Development Footprint
- Temporary Workers Accommodation (TWA) Access
- State Road
- Local Road
- Elevation Contour
- Survey Tracklogs Oct 2023
- Survey Tracks Nov2021-Jan 2022
- Portion Surveyed Nov 2021-Jan 2022: GPS Out of Battery
- Previously Discovered Sites
- PAD with Artefact Scatter
- Artefact Scatter
- Isolated Find
- Strahler Stream Order
- 1st Order
- 2nd Order
- 3rd Order
- 4th Order
- 5th Order (or greater)

FIGURE 5.2

TWA Access Design Change Portion
Previously Surveyed

5.4 Impact Assessment

Overall, the Addendum Survey Area is consistent with lower slopes abutting lower order streamlines, it has been subject to a century of pastoral and cultivation activities with the majority of native vegetation having been cleared. The surveyed area that crosses the third order stream may have archaeological potential, but that area has since been removed from the Addendum Development footprint and the impact assessment and management measures have been made based on that change. No scarring or other cultural modification of trees was observed in the Addendum Survey Area. No Aboriginal sites and/or areas of PAD were identified during the survey.

The assessment was undertaken with reference to factors including the archaeological context of the local area, the evaluation of the soil profile (based on soil landscape mapping and exposed soil profiles identified during the survey), and the predictive model presented in **Section 4.3**.

When considered with reference to the archaeological pattern identified within the local area and the criteria for differing levels of archaeological potential described in Section 6.5 (Umwelt 2022), the Addendum Development footprint is assessed as having low archaeological potential. Of particular note, the TWA portion of the survey area is a minimum of 50 m away from the nearby third order stream to the west. Additionally, the conceptual layout of the TWA has been further setback to being over 150 m from this third order stream. These measures have further reduced the potential for the Addendum Development footprint to impact unknown Aboriginal objects, which theoretically would be more likely to occur within 50 m of stream corridor.



- Legend**
- █ Project Area Boundary
 - █ Temporary Workers Accommodation (TWA) Site
 - TWA Conceptual Layout
 - Temporary Workers Accommodation (TWA) Access
 - Local Road

FIGURE 5.3
TWA Facility Layout

6.0 Management

The scope of additional disturbance areas posed by the construction of the TWA Facility, environmental and cultural context of the wider Tallawang Solar Farm Project Area, and the archaeological survey results have been used to identify potential impacts to Aboriginal cultural heritage values within the Addendum Development footprint. The impact assessment can be summarised as follows:

- No further Aboriginal cultural heritage objects or sites were identified as part of the survey and there is low potential for unknown sites to be present within the Addendum Development footprint.

Considering the above, the Amended Project will not result in additional impacts to known Aboriginal objects. It is also unlikely that additional impacts will occur to any unknown Aboriginal objects as the Addendum Development footprint is considered to have low archaeological potential.

The management measures presented in the Tallawang Solar Farm ACHA (Umwelt 2022) remain relevant for the Addendum Survey Area including the Addendum Development footprint.

Accordingly, any future preparation of an Aboriginal Cultural Heritage Management Plan (ACHMP) for the Project should be developed based on the measures set out in Section 11.0 of the Tallawang Solar Farm ACHA (Umwelt 2022) and include those management measures.

7.0 References

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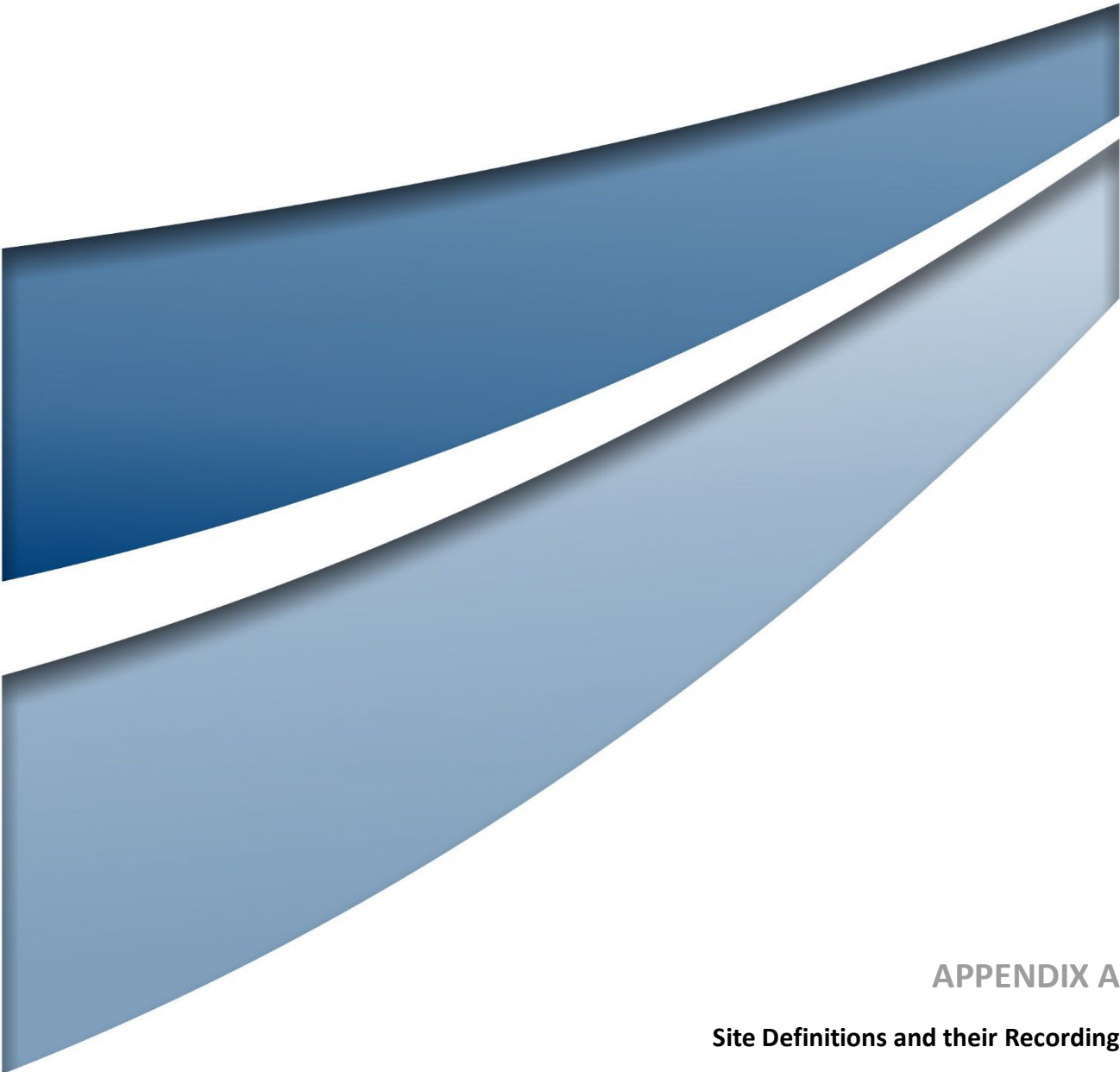
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APPENDIX A

Site Definitions and their Recording

Site Definitions and Recording Methods Used For This Assessment

A description of terms used to describe different site features that occur throughout NSW is provided in **Table A1** and use definitions guided by Heritage NSW and those adopted by Umwelt in the field to maintain consistency in recording standards.

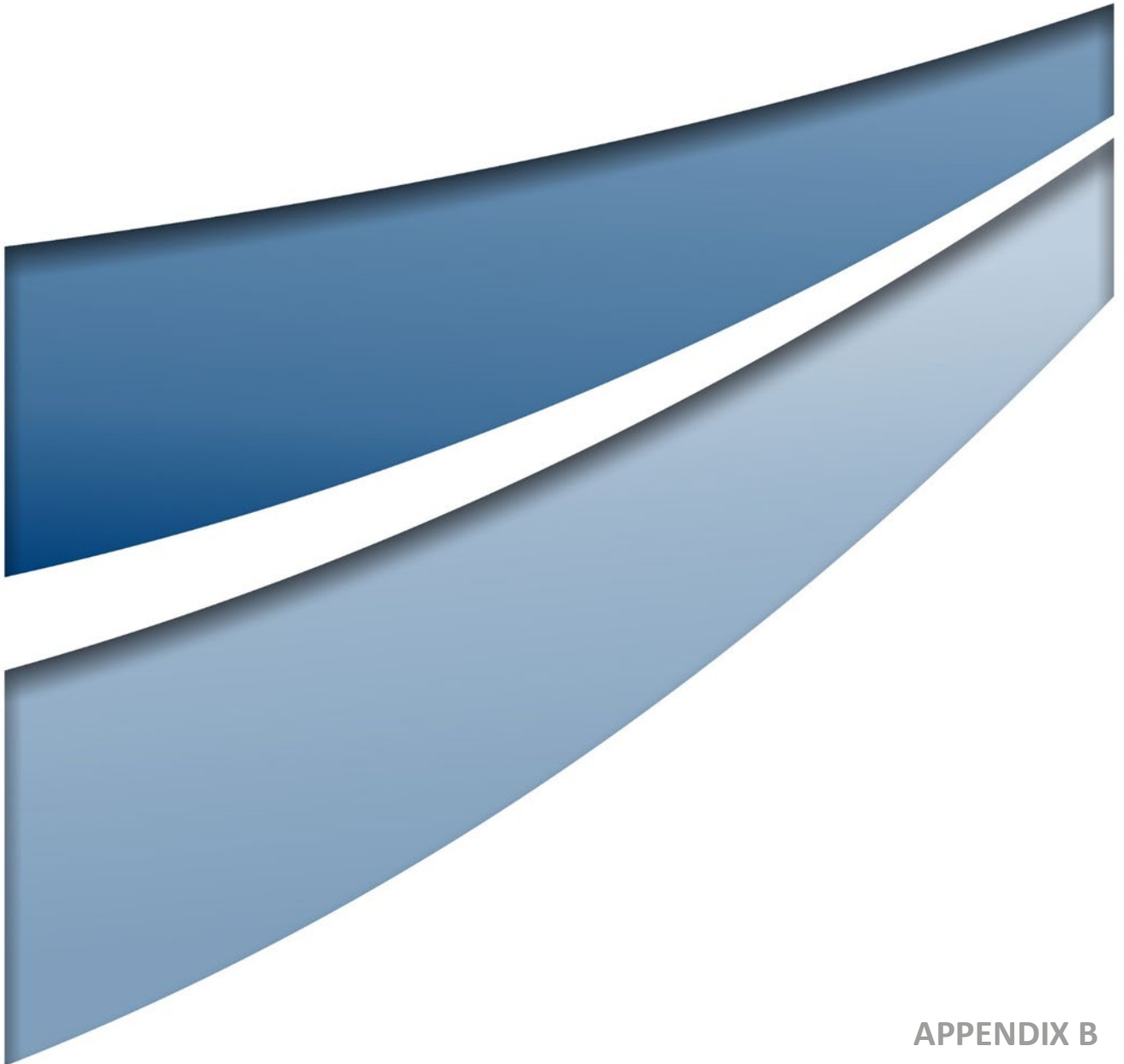
Table A.1 Site Definitions and Recording

Site Feature	Definition and Recording Methods
Aboriginal ceremony and Dreaming	Previously referred to as mythological sites these are spiritual/story places where no physical evidence of previous use of the place may occur; e.g., natural unmodified landscape features, ceremonial or spiritual areas, men's/women's sites, dreaming (creation) tracks, marriage places etc.
Artefact site (open stone artefact site)	Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people. Open stone artefact sites were defined by the presence of one (isolated find) or more (artefact scatter) stone artefacts visible on the ground surface. The boundaries of a site are limited to the spatial extent of the visible stone artefacts. The mapped site points and/or 'site areas' do not represent the areas of potential archaeological deposit (PAD) that also apply to some sites (refer to the term 'PAD' below). Open stone artefact sites were recorded by marking each artefact location or each cluster of artefacts within a 5 m radius as a separate waypoint in the GPS. Site boundaries were allocated by drawing a line around the cluster waypoints for each site using ArcGIS software. Stone artefacts more than 50 m apart were recorded as separate sites. Umwelt acknowledges that the 50 m rule applied here is an arbitrary distinction for site boundaries and is used mainly for efficiencies in site management and to establish consistency in site recording methods
Burials	A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked; e.g., in caves, marked by stone cairns, in sand areas, along creek banks etc.
Fish trap	A modified area on watercourses where fish were trapped for short-term storage and gathering.
Grinding grooves	Grinding grooves were defined as an area of outcropping bedrock containing evidence of one or more grinding grooves where ground-stone hatchets (axes) or other grinding practices (i.e. seed grinding) were implemented.
Habitation structure	Structures constructed by Aboriginal people for short- or long-term shelter. More temporary structures are commonly preserved away from the NSW coastline, may include historic camps of contemporary significance. Smaller structures may make use of natural materials such as branches, logs and bark sheets or manufactured materials such as corrugated iron to form shelters. Archaeological remains of a former structure such as chimney/fireplace, raised earth building platform, excavated pits, rubble mounds etc.
Modified tree (carved or scarred)	Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc., or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers.

Site Feature	Definition and Recording Methods
	Modified trees (either carved or scarred) can be difficult to identify. Scars commonly occur on trees through natural processes such as branch tears, insect damage, storm and fire damage and faunal damage. Scars can also occur from mechanical damage from vehicles or farming equipment. The attributes of potential scarred trees were discussed during the survey amongst archaeologists and RAPs before it was decided if a scar would be recorded or not. A precautionary approach was adopted, whereby some of the more ambiguous examples were recorded anyway. The assessment of scar trees was made from the experience of the survey team and the guideline <i>Aboriginal scarred trees in New South Wales: a field manual</i> (DEC 2005). In some of the more ambiguous examples, it cannot be verified whether some scars recorded during the survey are of natural or Aboriginal origin. In such instances, an expert evaluation by a scar tree expert (arborist or other) would be required to determine the status of certain trees.
Potential archaeological deposit (PAD) and Assessment of Subsurface Archaeological Potential	<u>Approach To Defining PADs</u> Umwelt has defined PADs as the predicted extent of concentrated subsurface Aboriginal objects in a particular area. PADs are not technically Aboriginal sites until, and if, subsurface Aboriginal objects are identified, which is typically established through archaeological test excavation. PAD areas have been assigned to landforms that are distinguishable from the surrounding landscape (e.g. elevated areas with good outlook overlooking watercourses) as being likely to retain higher artefact densities than the assumed 'background scatter' of archaeological material in the broader landscape. The identification of PADs associated with Aboriginal open camp sites was partly based on observations in the field and discussions with RAPs, but also related to the predictive model. Although PAD was attributed to areas for a variety of reasons, the main qualifiers were:
	• The presence of surface artefacts or other Aboriginal objects. Ground surface. • visibility as part of the archaeological survey effort was typically considered high enough in each PAD area to identify at least one or more surface artefacts thereby indicating likelihood of subsurface potential. Notwithstanding, finding no visible surface artefacts in an area would not disqualify an area from being attributed with PAD. • Level to gently inclined ground (<10%) indicating suitable camping or activity areas. • Contours that distinguish the landforms with PAD from the surrounding landscape (e.g. rise, foot slope, terrace, spur crest, hill crest or knoll). Landform boundaries were also interpreted through observations in the field.
	• Proximity to water: typically up to 100 m from 1st and 2nd order streams and up to 200 m from 3rd order streams and above. Elevated landforms at the confluence of higher order streams were also more likely to be attributed with PAD. • Umwelt acknowledges that all PAD areas have been historically cleared of native vegetation and some have been subject to pasture improvements such as ploughing. As such, the term PAD does not necessarily assume high upper subsurface integrity; instead it is a prediction of potential subsurface artefact concentrations.

Site Feature	Definition and Recording Methods
	<u>Assessment of Subsurface Archaeological Potential</u> The approach to defining PADs is also underpinned by an assessment of archaeological potential with reference to factors including the archaeological context of the local area, the evaluation of the soil profile (based on soil landscape mapping, exposed soil profiles identified during the survey and geomorphic understandings of the area) and the predictive model. The terms described below are used to classify archaeological potential at specific locations. For an area to be considered 'PAD', it must reach a prediction of moderate or high archaeological potential: • No archaeological potential: areas where the natural soil profile has been removed through geomorphic processes or human action, thereby removing any archaeological resource of the location. Examples of this category would include a landslide or industrial quarry sites. • Low archaeological potential: landscape areas that may have been utilised by Aboriginal people in the past, but at low intensity compared to other areas within the region. The density of artefacts deposited within these areas would therefore be low. This category also includes landscape areas of low terrain integrity, where geomorphic processes or human action may have redistributed artefacts from their deposited locations, resulting in site disturbance or destruction. • Moderate archaeological potential: landscape areas that are predicted to have been utilised by Aboriginal people in the past, but not intensively or repeatedly. There is therefore potential for artefactual deposition, but at a lower frequency and density than expected at other areas within the region. Terrain integrity in these areas may be variable, but most open camp sites are expected to be of low-moderate integrity only, with geomorphic processes not acting to bury deposits <i>in situ</i>. • High archaeological potential: landscape areas predicted to have been intensively or repeatedly utilised by Aboriginal people in the past and would have been a key location for occupation or other regular use likely to result in the deposition of archaeological material. Terrain integrity in these areas may be variable, but these landforms may include areas of high terrain integrity, where geomorphic processes may have acted to bury deposits <i>in situ</i>. Sites may therefore be of very high archaeological potential.
Restricted	Site information contained in the Aboriginal Heritage Information Management System is available only to certain authorised groups of people, as requested by the Aboriginal community. Detailed information may not be available in search reports.
Shell	An accumulation or deposit of shellfish from beach, estuarine, lacustrine or riverine species resulting from Aboriginal gathering or consumption. Usually found in deposits previously referred to as shell middens. Must be found in association with other objects like stone tools, fish bones, charcoal, fireplaces/hearths, and burials. Will vary greatly in size and composition.

Site Feature	Definition and Recording Methods
Stone quarry	Usually a source of good quality stone which is quarried and used for the production of stone tools. Stone quarries represent where Aboriginal people gathered raw stone materials for stone tools and/or manufactured stone tools from the adjacent source material. Quarry sites are found at rock outcrops where the material was of suitable quality to have been used to manufacture stone tools. Stone quarries were defined by the presence of outcropping stone material with nearby evidence of the same material type used in the stone tool manufacture process. This was most commonly indicated by large stone cores or stone flakes distributed amongst the same naturally outcropping material. Umwelt acknowledges that the 'open stone artefact' site type shares some of the same characteristics as 'stone quarries', such as the presence of stone artefacts. However, they have been distinguished from each other because quarries can not only represent open camping activities, but also a fixed location where Aboriginal people needed to visit to extract a resource. In contrast, the location of typical open camp sites were not fixed, but chosen by Aboriginal people for their favourable conditions.



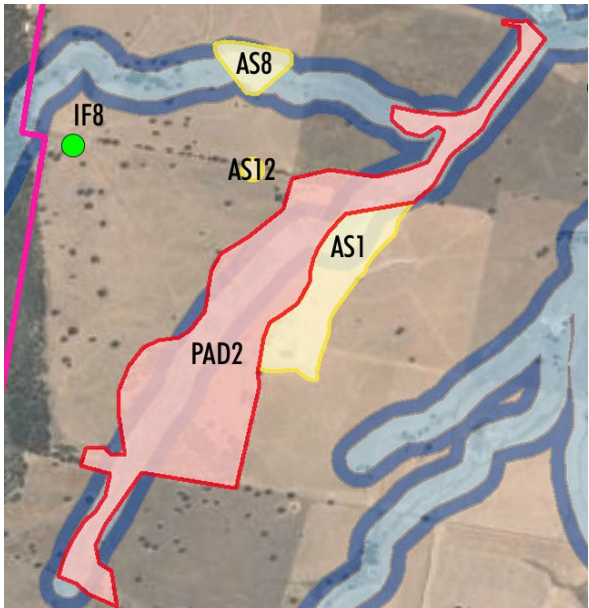
APPENDIX B

Response to Heritage NSW Submission

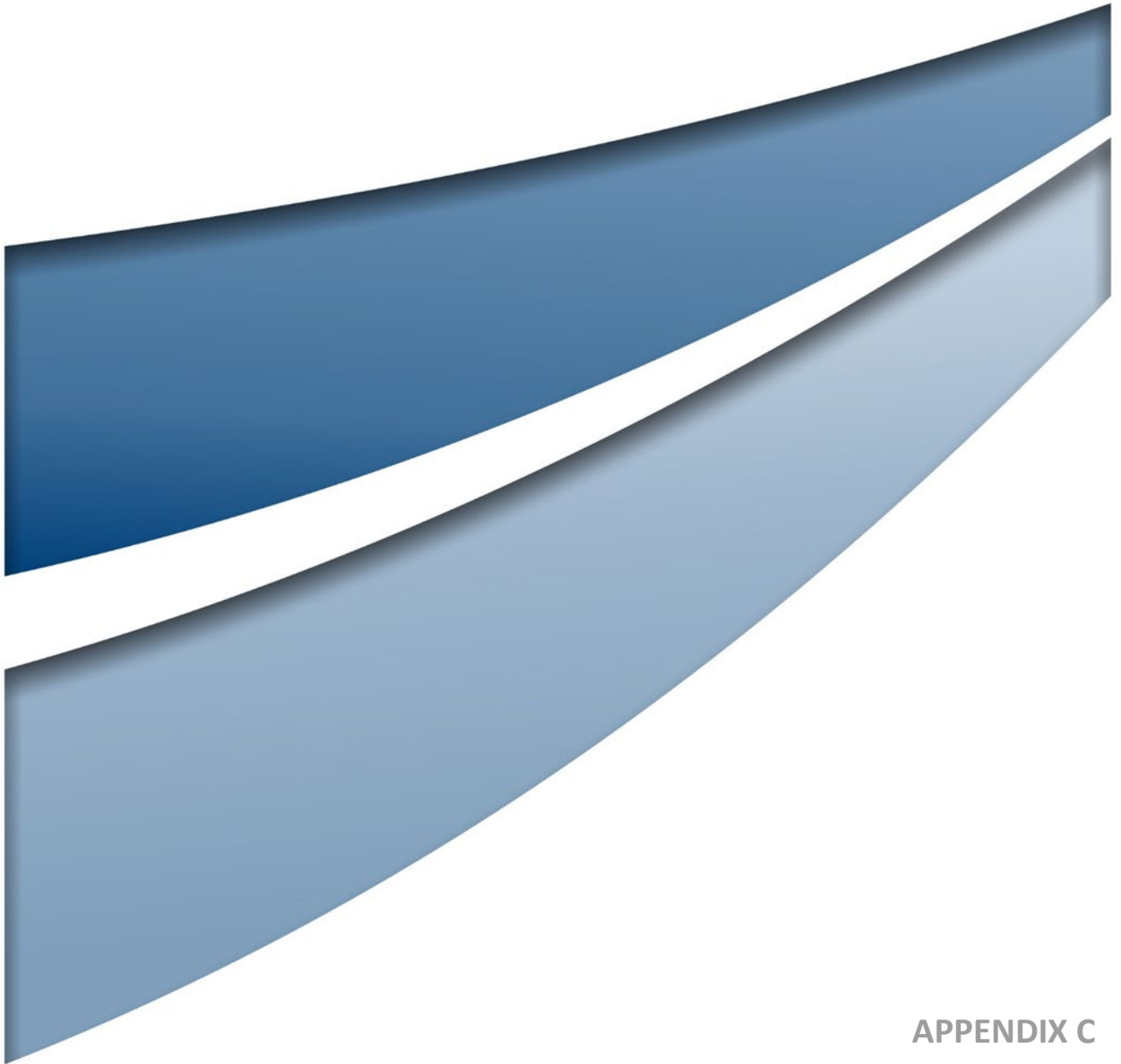
Appendix B – Heritage NSW Submission

Table B.1 – Response to Heritage NSW Submission

HNSW Response	Umwelt Response
Consultation	
Please ensure that all requests for redaction made by the Registered Aboriginal Parties (RAPs) is properly managed. Details of one RAP who wished to not have their details made public has been included in Appendix 1.	Personal details from RAPs have been redacted in the original and the Addendum Aboriginal Cultural Heritage Assessment Report (ACHAR).
Aboriginal Cultural Heritage Assessment Report (ACHAR)	
Section 5 of the ACHAR has not used any recent archaeological data from the Mudgee and Ulan areas, which have been subject to extensive archaeological investigations. In accordance with Requirement 1a of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (2010) please provide a more detailed and up to date synthesis of the archaeological and ethnohistory of the region and describe and evaluate the existing predictive models for the region. Following this updated assessment, the predictive model may require updating. Alternatively, please provide justification on why such region contextualisation was not included.	This has been addressed in Section 4 of the Addendum ACHAR. Specifically: - Section 4.1 and Section 4.2 provide a more detailed and up to date synthesis of the archaeological and ethnohistory of the region - Section 4.5 provides a description and evaluation of the existing predictive models for the region.
Heritage NSW notes that the Aboriginal Heritage Information Management System (AHIMS) search is greater than 12 months old at the time of submission. Heritage NSW requires, as per Requirement 1b of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010), that AHIMS searches be less than 12 months old.	An updated AHIMS search was completed in January 2024 as part of the preparation of the Addendum ACHAR and are presented in Section 4.4 of this report.
Please provide survey track logs, as per Requirement 5 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (2010), to enable Heritage NSW to assess the efficacy of the survey coverage.	Refer to Figure 5.1 of the Addendum ACHAR for the survey track logs. It is noted that only the archaeologists participating in the survey were carrying GPS devices and the areas were surveyed, with the Registered Aboriginal parties spaced at appropriate intervals (as described in detail in the updated ACHAR) to ensure adequate coverage.
Areas of Potential Archaeological Deposit and Archaeological Investigation	
As per Section 89A of the National Parks and Wildlife Act 1974, please ensure that all sites, including untested areas of Potential Archaeological Deposit (PAD), have been registered with AHIMS.	Umwelt's archaeologist has prepared and submitted site cards for all sites, including untested areas of Potential Archaeological Deposit (PAD), to be registered with AHIMS. All sites have therefore been registered.

HNSW Response	Umwelt Response
Please provide explication on the boundary of PAD 2 and how its boundary relates to the agricultural uses of the surrounding paddocks.	Impacts of extensive cultivation (delineated by fence lines) and machine clearing have determined the majority of the eastern boundary of PAD2. The northern, western and southern boundaries have been determined predominantly by landform, distance from creek line and to a lesser extent disturbance levels. For example, AS1 has not been included in PAD2 due to definite and extensive machine clearing impacts across this area. Machining had removed the majority of the topsoil in this area and dispersed low density artefact scatter across the disturbed landform. 
Please provide further context of the regional significance of the axes (and portions).	Section 4 in Addendum ACHA addresses this.
Please provide information on how site boundaries were determined as several sites have low artefacts counts (<5) but stretch over hundreds of metres.	Where a number of 'isolated artefacts' were situated on the same landform (e.g. erosion scour on a mid-hillslope), these disparate artefacts were considered likely to be associated with each other and therefore were grouped together as a low density scatter.
Aboriginal Cultural Heritage Management Plan (ACHMP)	
The ACHAR recommends that an ACHMP be developed and implemented for the project. Heritage NSW recommends the ACHMP should be included in the Conditions of Approval and that an ACHMP be created and approved by Department of Planning and Environment, prior to any development activities occurring within the project area. Recommended conditions for an ACHMP have been included in Attachment B.	Comment from Heritage NSW is noted. RES is committed to develop and implement an ACHMP in consultation with the RAPs. The ACHMP will detail provisions for the protection of PAD as well as for monitoring inspections to ensure avoidance and protection is maintained. However, secondary impacts to PAD areas are not proposed as part of the Project.

HNSW Response	Umwelt Response
The ACHAR and ACHMP must take into consideration secondary impacts (e.g. road grading, road widening, public road upgrades, compaction, erosion) and long-term conservation options to areas of PAD and artefact sites within and adjacent to the project area. Avoidance of ACH does not denote its long-term conservation and protection. Provisions should include regular (e.g., annual, bi-annual) monitoring of the sites and if secondary impacts are present (e.g., erosion) then PADs should be subject to test excavations so that areas of conservation value and moderate to high significance are adequately avoided and protected.	All PAD areas are designated for avoidance in relation to the current development footprint and design. As such, provisions for test excavation of PAD areas are not proposed. If, however future modifications to the project design and/or layout propose disturbance of PADs, then the requirement for test excavation would be considered. As such, Umwelt recommend that provisions for test excavation are not included in the ACHMP, but that if any future impacts are proposed (e.g. from a modification), that the ACHMP would require an update to include the provision for test excavation.
Within the ACHAR, the RAPs requested that they and an archaeologist be present during the demarcation and fencing of site boundaries. Heritage NSW recommends that such a provision be included in the ACHMP.	
If there is potential for the PADs to be impacted and/or extend further into the construction impact area, then Heritage NSW recommends test excavations to identify the nature, extent, and significance of any subsurface deposit. This will ensure that further impacts can be avoided, and the sites adequately conserved.	
Additional Information	
Please clarify the significance statement of site AS2, which states that “based on the level of disturbance within the site and the fact that it is located on privately owned land, [it] has low value for research potential, integrity and education potential”. It is unclear from this statement why its location of privately owned land would influence its research, integrity, and educational potential.	Discussion of the type of land ownership will be removed. It was included as further justification for understanding the high level of continued impact from pastoral and cultivation on this private property (in comparison to an area not subject to these forms of continued impact). It is noted that privately owned land does not affect significance and the original statement was an error in expression.



APPENDIX C

Aboriginal Consultation Documentation

From: Ryan Desic <rdesic@umwelt.com.au>

Sent: Friday, April 12, 2024 4:40 PM

To:

Cc:

Subject: Re: UPDATED VERSION 21139 - Draft Addendum Tallawang Solar Farm ACHA - RAP Review

Good afternoon registered parties for the Tallawang Solar Farm,

Thank you again for your ongoing involvement in the Tallawang Solar Farm Project and I appreciate the responses received to date. Andrew Crisp has been managing this project but is now on paternity leave for a month after just having a healthy baby boy.

On behalf of RES, I would like to provide an updated version of the Addendum Tallawang Solar Farm ACHA that was recently issued on 20 March 2024. The version linked in this email now supersedes the one provided on 20 March. Overall, it is a minor update that reflects a changes in access track approach along the southern boundary of the Project Area.

Please follow the link below to the Addendum Tallawang Solar Farm ACHA for your review and comment. Let me know if you have any access issues.

 [Draft Addendum ACHA Updated 12 April 2024](#)

It would be greatly appreciated if any comments be supplied in writing to this email by COB Friday 10th May 2024. Importantly, please direct any feedback to Andrew Crisp, and he will address them on his return from leave in a month's time.

Thank you for your time,

Ryan Desic

Principal Archaeologist - NSW/ACT Team Leader



www.umwelt.com.au

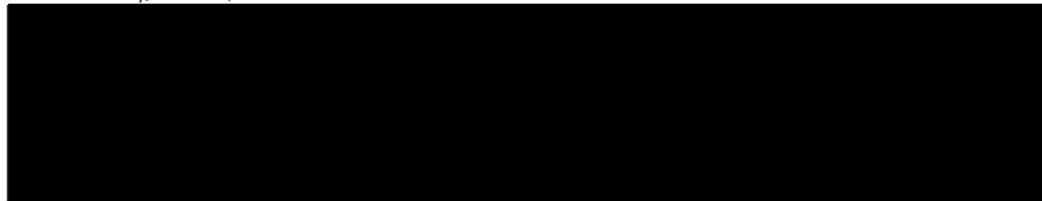


Making a difference for our clients,
our people and the world around us.

*Umwelt acknowledges the
Traditional Owners of Country
throughout Australia and their
continuing values, culture and
connection to the land, waters and
sky. We pay our respects to Elders
past, present and emerging.*

From: Andrew Crisp <ACrisp@umwelt.com.au>

Sent: Wednesday, March 20, 2024 3:28 PM



Subject: 21139 - Draft Addendum Tallawang Solar Farm ACHA - RAP Review

Good afternoon everyone,

Thank you again for your ongoing involvement in the Tallawang Solar Farm Project and I appreciate the responses received to date.

This email is a follow up from the link provided on the 13 March 2024.

Please follow the link below to the Addendum Tallawang Solar Farm ACHA for your review and comment. Let me know if you have any access issues.

 [Draft Addendum ACHA March 2024](#)

It would be greatly appreciated if any comments be supplied in writing to this email by COB Wednesday 10th April 2024.

Kind regards,

Andrew Crisp

Senior Archaeologist

From: [REDACTED]
Sent: Tuesday, April 30, 2024 1:37 PM
To: Ryan Desic <rdesic@umwelt.com.au>
Subject: Re: UPDATED VERSION 21139 - Draft Addendum Tallawang Solar Farm ACHA - RAP Review

*This message originated from outside of Umwelt - **BE CAUTIOUS** opening any link or attachment.*
Hi Ryan

We support draft.

Kind regards

[REDACTED]

We respectfully acknowledge the Traditional Owners of the lands upon which we work and pay our deep respect to Elders past, present and emerging

From: [REDACTED]
Sent: Thursday, April 18, 2024 9:26 AM
To: Ryan Desic <rdesic@umwelt.com.au>
Subject: RE: UPDATED VERSION 21139 - Draft Addendum Tallawang Solar Farm ACHA - RAP Review

You don't often get email from [REDACTED] [Learn why this is important](#)

*This message originated from outside of Umwelt - **BE CAUTIOUS** opening any link or attachment.*
Dear Ryan,

Dear Andrew,

[REDACTED] have conducted a meeting via Video/telephone and discussed the updated Draft Addendum Tallawang Solar Farm ACHA report with Elders, Members and Knowledge Holders and agree with the Draft Assessment Report and look forward to seeing the Draft Aboriginal Cultural Heritage Management Plan.

Regards

[REDACTED]

RE: 21139 - Draft Addendum Tallawang Solar Farm ACHA - RAP Review

[REDACTED]

  Reply  Reply All  Forward  

Sat 6/04/2024 3:04 PM

 Follow up. Start by Monday, 8 April 2024. Due by Monday, 8 April 2024.

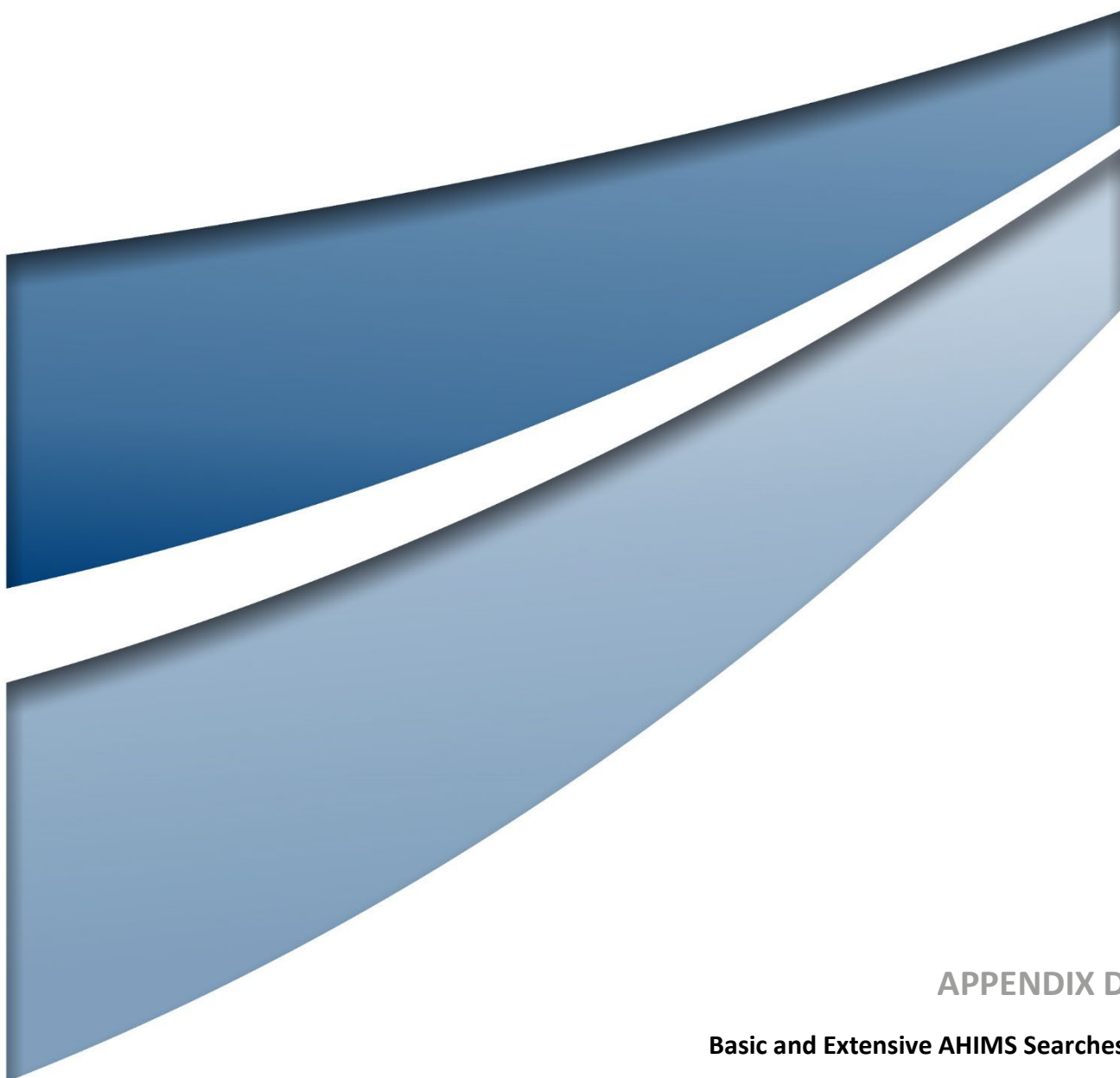
*This message originated from outside of Umwelt - **BE CAUTIOUS** opening any link or attachment.*

Dear Andrew,

[REDACTED] have conducted a meeting and discussed the Draft Addendum Tallawang Solar Farm ACHA report with Elders, Members and Knowledge Holders and agree with the Draft Assessment Report.

Regards

[REDACTED]



APPENDIX D

Basic and Extensive AHIMS Searches

Umwelt (Australia) Pty Limited - Individual users

Date: 06 February 2024

75 York Street

Teralba New South Wales 2284

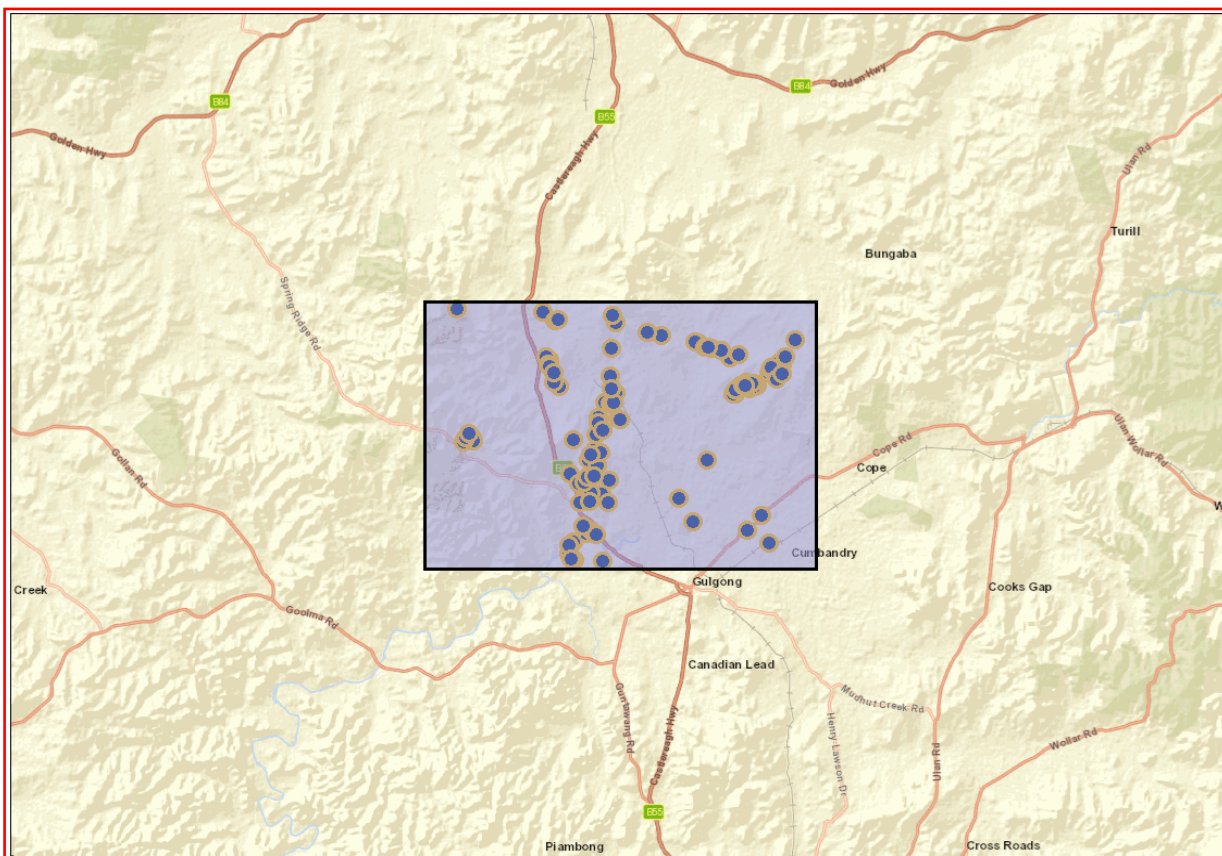
Attention: Andrew Crisp

Email: acrisp@umwelt.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -32.3523, 149.3639 - Lat, Long To : -32.2072, 149.6111, conducted by Andrew Crisp on 06 February 2024.

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



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

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

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0250	TRE 01	GDA	55	724759	6433662	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Tim Owen							
36-2-0419	CBR - IF - 06B	GDA	55	729844	6433371	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Mr.Neville Baker							
36-2-0205	SAC 02	GDA	55	730545	6432832	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Tim Owen							
36-2-0032	Tallawang Ck 6 Gulgong;Nungarrin "Nungarrin".	AGD	55	730580	6428670	Open site	Valid	Artefact : -	Open Camp Site	851
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich,Laura-Jane Smith							
36-2-0471	Beryl Solar Farm IF 3	GDA	55	731385	6418330	Open site	Destroyed	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	OzArk Environmental and Heritage Management - Dubbo,Mr.Matthew Barber,NGH							
36-2-0681	SNI-FA01	GDA	55	734072	6428403	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch							
36-2-0614	Tallawang PAD 6	GDA	55	734183	6432604	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-3-1420	IF 20	GDA	55	739464	6431029	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Tim Owen							
36-3-2509	SAC 53	GDA	55	739835	6430951	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Tim Owen							
36-3-3675	Stubbo Creek OS-01	GDA	55	741155	6428155	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	<u>Contact</u>	<u>Recorders</u>	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron							
36-3-3677	Stubbo Creek OS-03	GDA	55	741465	6428505	Open site	Valid	Artefact : -		104780
	<u>Contact</u>	<u>Recorders</u>	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron							
36-2-0623	Tallawang AS 6	GDA	55	732772	6425015	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0028	Tallawang Ck 2 Gulgong	AGD	55	730070	6430280	Open site	Valid	Artefact : -	Open Camp Site	851,1173
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich,Laura-Jane Smith							

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0505	Bellambi ST 1 with PAD	GDA	55	731086	6418740	Open site	Valid	Potential Archaeological Deposit (PAD) : 1, Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Morgan (emm consulting) Wilc Permits							
36-2-0506	Bellambi OS 1 with PAD	GDA	55	731340	6419416	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Morgan (emm consulting) Wilc Permits							
36-3-3689	Stubbo Creek IF-05	GDA	55	741075	6428138	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron Permits							
36-3-3680	Stubbo Creek OS-06	GDA	55	742046	6428478	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron Permits							
36-3-3686	Stubbo Creek IF-02	GDA	55	742281	6428791	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron Permits							
36-2-0625	Tallawang AS 8	GDA	55	732986	6426938	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp Permits							
36-2-0633	Tallawang IF3	GDA	55	733116	6422268	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp Permits							
36-2-0608	Tallawang IF4	GDA	55	733581	6423101	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp Permits							
36-3-3685	Stubbo Creek IF-01	GDA	55	742486	6428610	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron Permits							
36-3-1423	IF 23	GDA	55	743912	6429809	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen Permits							
36-3-2515	TRE 21	GDA	55	743986	6429861	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Doctor.Tim Owen Permits							
36-3-1430	SAC 50	GDA	55	739075	6431304	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen Permits							
36-3-1429	SAC 49	GDA	55	736874	6431800	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen Permits							
36-2-0027	Tallawang Ck 1 Gunning	AGD	55	729897	6430477	Open site	Valid	Artefact : -	Open Camp Site	851,102800
	Contact	Recorders	Elizabeth Rich,Laura-Jane Smith Permits							

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0040	DM/OC1 - "Pugoon"	AGD	55	731150	6423350	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Permits							
36-2-0015	Pugoon;	AGD	55	731367	6425435	Open site	Valid	Artefact : -	Open Camp Site	1299
	Contact	Recorders	Permits							
36-2-0609	Tallawang PAD 1 with AS	GDA	55	731734	6422984	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
36-2-0632	Tallawang IF2	GDA	55	732467	6422381	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
36-3-3678	Stubbo Creek OS-04	GDA	55	741519	6428681	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	Permits							
36-3-3690	Stubbo Creek IF-06	GDA	55	741761	6428690	Open site	Valid	Artefact : -		104780
	Contact	Recorders	Permits							
36-3-3681	Stubbo Creek OS-07	GDA	55	742308	6428581	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	Permits							
36-2-0610	Tallawang PAD 2 with AS	GDA	55	732833	6425892	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
36-2-0016	Beryl;	AGD	55	732922	6418057	Open site	Valid	Artefact : -	Open Camp Site	1299
	Contact	Recorders	Permits							
36-2-0611	Tallawang PAD 3 with AS	GDA	55	733438	6427818	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
36-2-0627	Tallawang IF10	GDA	55	733900	6431069	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
36-3-3671	The Pinnacle IF-02	GDA	55	743207	6429405	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	Permits							
36-3-3684	The Pinnacle OS-02	GDA	55	743331	6429599	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	Permits							
36-3-3670	The Pinnacle IF-01	GDA	55	743861	6430006	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	Permits							
36-3-1419	IF 19	GDA	55	738889	6431346	Open site	Valid	Artefact : 1		

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21139 Addendum ACHA

Client Service ID : 861727

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Doctor.Tim Owen					Permits		
36-2-0504	Bellambi Height ST 1 with PAD	GDA	55	731792	6421773	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : 1, Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	AHIMS APP Users,EMM Consulting - St Leonards - Individual users,EMM Consulting					Permits		
36-2-0635	Tallawang IF6	GDA	55	732521	6423624	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp					Permits		
36-3-1427	IF 27	GDA	55	736030	6432000	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen					Permits		
36-2-0630	Tallawang AS 12	GDA	55	732990	6426576	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp					Permits		
36-3-3674	The Pinnacle IF-05	GDA	55	743383	6429701	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
36-3-3683	The Pinnacle OS-01	GDA	55	744221	6430351	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
36-2-0116	BBS; Dubbo LALC; property 1	AGD	55	725331	6425711	Open site	Valid	Artefact : 20		99169
	Contact	Recorders	Phil Purcell,Dubbo LALC					Permits		
36-2-0101	Wialdra Creek 1. WC1	AGD	55	731990	6419720	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.David Maynard					Permits		
36-2-0507	Bellambi Heights PAD 1	GDA	55	732359	6421870	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,EMM Consulting - St Leonards - In					Permits		
36-3-2511	SAC 55	GDA	55	740929	6430339	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Doctor.Tim Owen					Permits		
36-3-3676	Stubbo Creek OS-02	GDA	55	741192	6428382	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		
36-3-1422	IF 22	GDA	55	741443	6430554	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen					Permits		
36-3-3682	Stubbo Creek OS-08	GDA	55	741870	6428836	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron					Permits		

Report generated by AHIMS Web Service on 06/02/2024 for Andrew Crisp for the following area at Lat, Long From : -32.3523, 149.3639 - Lat, Long To : -32.2072, 149.6111. Number of Aboriginal sites and Aboriginal objects found is 104

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
36-2-0637	Tallawang IF9	GDA	55	734184	6426857	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							Permits
36-3-3687	Stubbo Creek IF-03	GDA	55	742156	6428746	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Doctor.Alyce Cameron							Permits
36-2-0638	Bellambi Heights AS 2	GDA	55	733492	6421742	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Miss.Phillipa O'Brien-Pounde							Permits
36-2-0628	Tallawang AS 10	GDA	55	733743	6427763	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							Permits
36-2-0612	Tallawang PAD 4	GDA	55	733809	6428699	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							Permits
36-3-0235	CC1 COOYAL CREEK	AGD	55	742860	6418890	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.David Maynard							Permits
36-2-0119	BBS; Dubbo LALC; "Makuba Shukran"	AGD	55	725433	6425487	Open site	Valid	Artefact : 30		99169
	Contact	Recorders	Phil Purcell,Dubbo LALC							Permits
36-2-0031	Tallawang Ck 5 Gulgong "Nungarrin".	AGD	55	730300	6428950	Open site	Valid	Artefact : -	Open Camp Site	851,1173
	Contact	Recorders	Elizabeth Rich,Laura-Jane Smith							Permits 192
36-2-0140	WC IF 1	AGD	55	730960	6419061	Open site	Valid	Artefact : 1		
	Contact	Recorders	Mr.David Maynard,Murong Gialinga Aboriginal and Torres Strait Islander Corporat							Permits
36-2-0621	Tallawang AS 4	GDA	55	732339	6424389	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							Permits
36-2-0502	Bellambi PAD 1	GDA	55	732443	6420072	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Morgan (emm consulting) Wik							Permits
36-2-0629	Tallawang AS 11	GDA	55	734071	6428378	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							Permits
36-3-0047	Stubbo Creek 3;	AGD	55	739276	6424042	Open site	Valid	Artefact : -	Open Camp Site	234
	Contact	Recorders	L Cubis							Permits
36-3-2510	SAC 54	GDA	55	740431	6430830	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Doctor.Tim Owen							Permits
36-2-0631	Tallawang IF1	GDA	55	732084	6422990	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							Permits

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0204	SAC 01	GDA	55	730739	6432890	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Doctor.Tim Owen							
36-2-0636	Tallawang IF7	GDA	55	732905	6424041	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0624	Tallawang AS 7	GDA	55	733062	6424816	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0618	Tallawang AS 1	GDA	55	733242	6426164	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0615	Tallawang PAD 7 with IF	GDA	55	734011	6433075	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0112	BBS; Dubbo LALC; property	AGD	55	724850	6425437	Open site	Valid	Artefact : 30		99169
	Contact	Recorders	Leila McAdam,Dubbo LALC							
36-2-0469	Beryl Solar Farm AS1	GDA	55	731174	6418420	Open site	Destroyed	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Matthew Barber,NGH							
36-2-0470	Beryl Solar Farm IF 4	GDA	55	731214	6418411	Open site	Destroyed	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Matthew Barber,NGH							
36-2-0620	Tallawang AS 3	GDA	55	732266	6423350	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0626	Tallawang AS 9	GDA	55	733948	6427808	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-3-0155	JOS DAVIS BRIDGE;	AGD	55	741590	6419720	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1333
	Contact	Recorders	Warren Bluff							
36-2-0503	Bellambi PAD 2	GDA	55	732682	6419854	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Ms.Morgan (emm consulting) Wik							
36-2-0613	Tallawang PAD 5	GDA	55	733757	6429415	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp							
36-2-0680	SNI-FA02	GDA	55	733836	6428678	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch							

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-3-3673	The Pinnacle IF-04	GDA	55	743635	6429017	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo, Doctor. Alyce Cameron							
36-3-3672	The Pinnacle IF-03	GDA	55	743989	6429318	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo, Doctor. Alyce Cameron							
36-3-3691	Rosevale IF-01	GDA	55	744841	6431333	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo, Doctor. Alyce Cameron							
36-2-0013	Spring Ridge;	AGD	55	724971	6425674	Open site	Valid	Artefact : -	Open Camp Site	1299
	Contact	Recorders	R Hawkins, Hawkins							
36-2-0111	BBS; Dubbo LALC; " Makuba Shuka"	AGD	55	725180	6425960	Open site	Valid	Artefact : 22		99169
	Contact	Recorders	Phil Purcell, Dubbo LALC							
36-2-0029	Tallawang Ck 3 Gulgong	AGD	55	730010	6430050	Open site	Valid	Artefact : -	Open Camp Site	851,1173
	Contact	Recorders	Elizabeth Rich, Laura-Jane Smith							
36-2-0030	Tallawang Ck 4 Gulgong	AGD	55	730082	6429871	Open site	Valid	Artefact : -	Open Camp Site	851,102800
	Contact	Recorders	Elizabeth Rich, Laura-Jane Smith							
36-2-0033	Tallawang Ck 7 Gulgong Nungarrin "Nungarrin".	AGD	55	730296	6429535	Open site	Valid	Artefact : -	Open Camp Site	851,1173,102800
	Contact	Recorders	Elizabeth Rich, Laura-Jane Smith							
36-2-0501	Bellambi IF 1	GDA	55	731941	6420363	Open site	Valid	Artefact : 1		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users, Ms. Morgan (emm consulting) Wilk							
36-2-0622	Tallawang AS 5	GDA	55	732513	6424657	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users, Mr. Andrew Crisp							
36-3-0048	Slapdash Creek 1;	AGD	55	737542	6421727	Open site	Valid	Artefact : -	Open Camp Site	234
	Contact	Recorders	L Cubis							
36-3-3091	Old Barney's AFT 1	GDA	55	738486	6420460	Open site	Valid	Artefact : -		
	Contact	Recorders	Niche Environment and Heritage, Ms. Clare Anderson							
36-3-1431	SAC 51	GDA	55	739436	6431056	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor. Tim Owen							
36-3-2508	SAC 52	GDA	55	739649	6431018	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Doctor. Tim Owen							
36-3-1421	IF 21	GDA	55	741443	6430523	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor. Tim Owen							
36-3-3688	Stubbo Creek IF-04	GDA	55	741644	6428683	Open site	Valid	Artefact : -		104780
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo, Doctor. Alyce Cameron							

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21139 Addendum ACHA

Client Service ID : 861727

<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>
36-3-3679	Stubbo Creek OS-05	GDA	55	741763	6428651	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		104780
	<u>Contact</u>	<u>Recorders</u>	OzArk Environmental and Heritage Management - Dubbo, Doctor. Alyce Cameron							
36-2-0619	Tallawang AS 2	GDA	55	734324	6426771	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Umwelt (Australia) Pty Limited - Individual users, Mr. Andrew Crisp							
36-2-0634	Tallawang IF5	GDA	55	732632	6423384	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Umwelt (Australia) Pty Limited - Individual users, Mr. Andrew Crisp							
36-3-3009	Cope Road Wialdra Creek	GDA	55	742547	6420769	Open site	Valid	Aboriginal Resource and Gathering : -, Potential Archaeological Deposit (PAD) : -		103152
	<u>Contact</u>	<u>Recorders</u>	Miss. Christine Maynard							

** Site Status

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 06/02/2024 for Andrew Crisp for the following area at Lat, Long From : -32.3523, 149.3639 - Lat, Long To : -32.2072, 149.6111. Number of Aboriginal sites and Aboriginal objects found is 104

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.