Greenstead Valley, 1551 Joadja Road, Joadja

Archaeological Survey Report

LGA: Wingecaribee Shire

Report to Breathe

April 2024

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EXECUTIVE SUMMARY

In 2021, Artefact Heritage was engaged by Fresh Hope Venues to complete an Aboriginal Heritage Due Diligence Report for land located at 1551 Joadja Road ahead of the concept development for an eco-tourist facility. The Aboriginal Heritage Due Diligence Report resulted in the identification of four artefact scatters, two isolated finds and two areas of PAD. Seven of the eight newly identified sites were located along the river margins. Areas of PAD, Artefact Scatters and Isolated Finds were identified on gently sloping areas adjacent to the Wingecarribee River and Schotts Creek. In addition, one Artefact Scatter was identified on a gentle to moderate slope at the interface between the gentle slopes adjacent to the waterways and the escarpment. The Aboriginal Heritage Due Diligence Report identified that the project area has potential to contain additional Aboriginal objects and recommended further investigation in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b).

Fresh Hope Venues has since finalised a masterplan for Stage 1 of the proposed eco-tourist facility. The proposal includes a variety of Community Villages, for both short term stay and day trips. This includes:

- Arrival village consisting of parking areas and arrival building
- Community 1 consisting of a refurbished homestead building and cabins
- Community 2 consisting of amenities building and glamping

Artefact Heritage has been engaged to prepare this Archaeological Survey Report (ASR) to address the recommendations of the Aboriginal Heritage Due Diligence Report. The preparation of this report involved the following tasks:

- Review of existing knowledge: Review of previous archaeological works and Aboriginal Heritage Information Management System (AHIMS) search results.
- Review of the landscape context: Desktop assessment of the archaeological implications of the landscape features (soil landscapes, historic land use, geomorphic character, and natural resources) relevant to the study area.
- Summary and discussion of the local and regional archaeological character of Aboriginal land use and its material traces based on the findings of the previous two steps
- Development of a predictive model for the nature and distribution of archaeological evidence of Aboriginal land use based on the previous three steps.
- Completion of an archaeological survey to test the predictions developed in the previous step.
- Discussion of the results of the archaeological survey and re-evaluation of the regional and local archaeological character.

The following recommendations regarding Aboriginal heritage are based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974* as amended
- *The Code of Practice for the Investigation of Aboriginal Objects in New South Wales* 2010
- The results of the background research and visual inspection
- The likely impacts of the proposed works

It was found that:

- One artefact scatter, Joadja AS 05 (AHIMS ID pending) was identified during survey
- Two areas of PAD, Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518) were identified during survey
- Potential for indirect harm to Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518) can be eliminated through the implementation of the management measures presented in Section 11.2
- Sites which have been recorded within 1551 Joadja Road, Joadja (Lot 202 DP 861816) but outside of the present study area have been excluded from this assessment. As such, any direct or indirect impacts to these sites which may occur during Stage 1 or subsequent stages of development have not been assessed. **Harm to these sites must not occur prior to additional archaeological investigation taking place.** These sites include:
    - Joadja PAD 01 (AHIMS ID 52-2-0414)
    - Joadja PAD 02 (AHIMS ID 52-1-0406)
    - Joadja PAD 04 (AHIMS ID 52-1-0518)
    - Joadja AS 01 (AHIMS ID 52-1-0408)
    - Joadja AS 02 (AHIMS ID 52-1-0409)
    - Joadja AS 03 (AHIMSID 52-1-0411)
    - Joadja AS 04 (AHIMS ID 52-1-04100
    - Joadja ISO 01 (AHIMS ID 52-1-0412)
    - Joadja ISO 02 (AHIMS ID 52-1-0413)

The following recommendations are therefore made:

- All works undertaken must be managed under a UFP. An example of a UFP is presented in Section 11.2.2.
- Exclusion zones must be established around Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518). Suggested protocols for the establishment of exclusion zones are presented in Section 11.2.1. The implementation of this management measure must involve:
    - The provision of an induction to all employees
    - Clear demarcation of Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518)
    - The provision of maps showing the location of Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518)
- If changes to the scope of works or the location of the study area change, further archaeological assessment must take place. If the management measures presented in Section 11.2 cannot be implemented, appropriate mitigation measures must be developed prior to works commencing.
- Harm must not occur to the following sites:

- Joadja PAD 01 (AHIMS ID 52-2-0414)
- Joadja PAD 02 (AHIMS ID 52-1-0406)
- Joadja PAD 04 (AHIMS ID 52-1-0518)
- Joadja AS 01 (AHIMS ID 52-1-0408)
- Joadja AS 02 (AHIMS ID 52-1-0409)
- Joadja AS 03 (AHIMSID 52-1-0411)
- Joadja AS 04 (AHIMS ID 52-1-04100
- Joadja ISO 01 (AHIMS ID 52-1-0412)
- Joadja ISO 02 (AHIMS ID 52-1-0413)

- **If harm to the above sites is proposed, additional archaeological assessment must take place prior to any impacts occurring to these sites**.

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1.0 INTRODUCTION

1.1 Project brief

In 2021, Artefact Heritage was engaged by Fresh Hope Venues to complete an Aboriginal Heritage Due Diligence Report for land located at 1551 Joadja Road ahead of the concept development for an eco-tourist facility. The Aboriginal Heritage Due Diligence Report resulted in the identification of four artefact scatters, two isolated finds and two areas of PAD. Seven of the eight newly identified sites were located along the river margins. Areas of PAD, Artefact Scatters and Isolated Finds were identified on gently sloping areas adjacent to the Wingecarribee River and Schotts Creek. In addition, one Artefact Scatter was identified on a gentle to moderate slope at the interface between the gentle slopes adjacent to the waterways and the escarpment. The Aboriginal Heritage Due Diligence Report identified that the project area has potential to contain additional Aboriginal objects and recommended further investigation in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b; hereafter the Code of Practice).

Fresh Hope Venues has since finalised a masterplan for Stage 1 of the proposed eco-tourist facility. The proposal includes a variety of Community Villages, for both short term stay and day trips. This includes:

- Arrival village consisting of parking areas and arrival building
- Community 1 consisting of a refurbished homestead building and cabins
- Community 2 consisting of amenities building and glamping

Artefact Heritage has been engaged to prepare this Archaeological Survey Report (ASR) to address the recommendations of the Aboriginal Heritage Due Diligence Report.

1.2 Description of study area

The study area consists of parts of Lot 202 DP861816, known as 1551 Joadja Road (Figure 1). The Lot is bound along its western margin by the Wingecarribee River, and to the north, east and south by bushland in the adjoining rural Lots. It is located in the New South Wales Southern Highlands, within the County of Camden and the Parish of Joadja. It is located within the boundaries of the Illawarra Local Aboriginal Land Council (LALC) and the Wingecarribee Shire Local Government Area (LGA). These areas are shown in Figure 1 and Figure 2.

1.3 Aims and objectives

Artefact Heritage has been engaged to compete and Archaeological Survey Report (ASR) to assess whether the proposed works will have impacts on Aboriginal objects and heritage values. The ASR will form part of the Development Application (DA) submission to Wingecarribee Council.

1.4 Authors and contributors

This following people contributed to this report:

Name	Role	Qualifications	Experience
Emma Jones	Heritage Consultant, Artefact Heritage	Bachelor of Arts, Archaeology, University of Sydney	2 years
Michael Lever	Heritage Consultant, Artefact Heritage	PhD Candidate, University of Sydney Bachelor of Arts (First Class Honours), La Trobe University Bachelor of Arts, University of Sydney and McGill University	+10 years
Ryan Taddeucci	Aboriginal Heritage Team Leader, Artefact Heritage	Graduate Certificate, Maritime Archaeology, Flinders University Master of Museum Studies, University of Queensland Bachelor of Arts (Honours), Archaeology, University of Queensland	+10 years
Josh Symons	Technical Director, Artefact Heritage	Bachelor of Arts (First Class Honours), Historic and Prehistoric Archaeology, University of Sydney	+10 years
Mike Douglas	GIS Specialist, Artefact Heritage	Master's Certificate in GIS Science, Oregon State University MSc Geology, Archaeological geology, University of Georgia Bachelor or Arts, North American Archaeology, University of Georgia	+10 years

1.5 Limitations

The report is limited to an Aboriginal archaeological assessment of the study area, which consists of land to be developed during Stage 1 of the project (Figure 1). Land outside of the study area boundaries has not been assessed in this report. Non-Aboriginal (Historical) heritage has not been assessed as part of this study.

The Due Diligence report by Artefact (Artefact Heritage, 2021) identified Aboriginal sites within and adjacent to the internal roads at 1551 Joadja Road, Joadja leading to the study area. The locations of those sites are shown in Figure 3 and Figure 4. This report does not include an assessment of those sites, as there is no proposed harm to those locations.

The following sites within 1551 Joadja Road, Joadja (Lot 202 DP 861816) are located outside of the study area boundaries and as such have been excluded from this assessment:

- Joadja PAD 01 (AHIMS ID 52-2-0414)
- Joadja PAD 02 (AHIMS ID 52-1-0406)

- Joadja PAD 04 (AHIMS ID 52-1-0518)
- Joadja AS 01 (AHIMS ID 52-1-0408)
- Joadja AS 02 (AHIMS ID 52-1-0409)
- Joadja AS 03 (AHIMSID 52-1-0411)
- Joadja AS 04 (AHIMS ID 52-1-0410)
- Joadja ISO 01 (AHIMS ID 52-1-0412)
- Joadja ISO 02 (AHIMS ID 52-1-0413)

Further assessment must be undertaken if works during Stage 1 or subsequent stages of development will harm known Aboriginal objects or areas where Aboriginal objects are likely to be present. **Harm to these sites must not occur prior to additional archaeological investigation taking place.**

Figure 1: Map showing the study area (Artefact Heritage, March 2024)

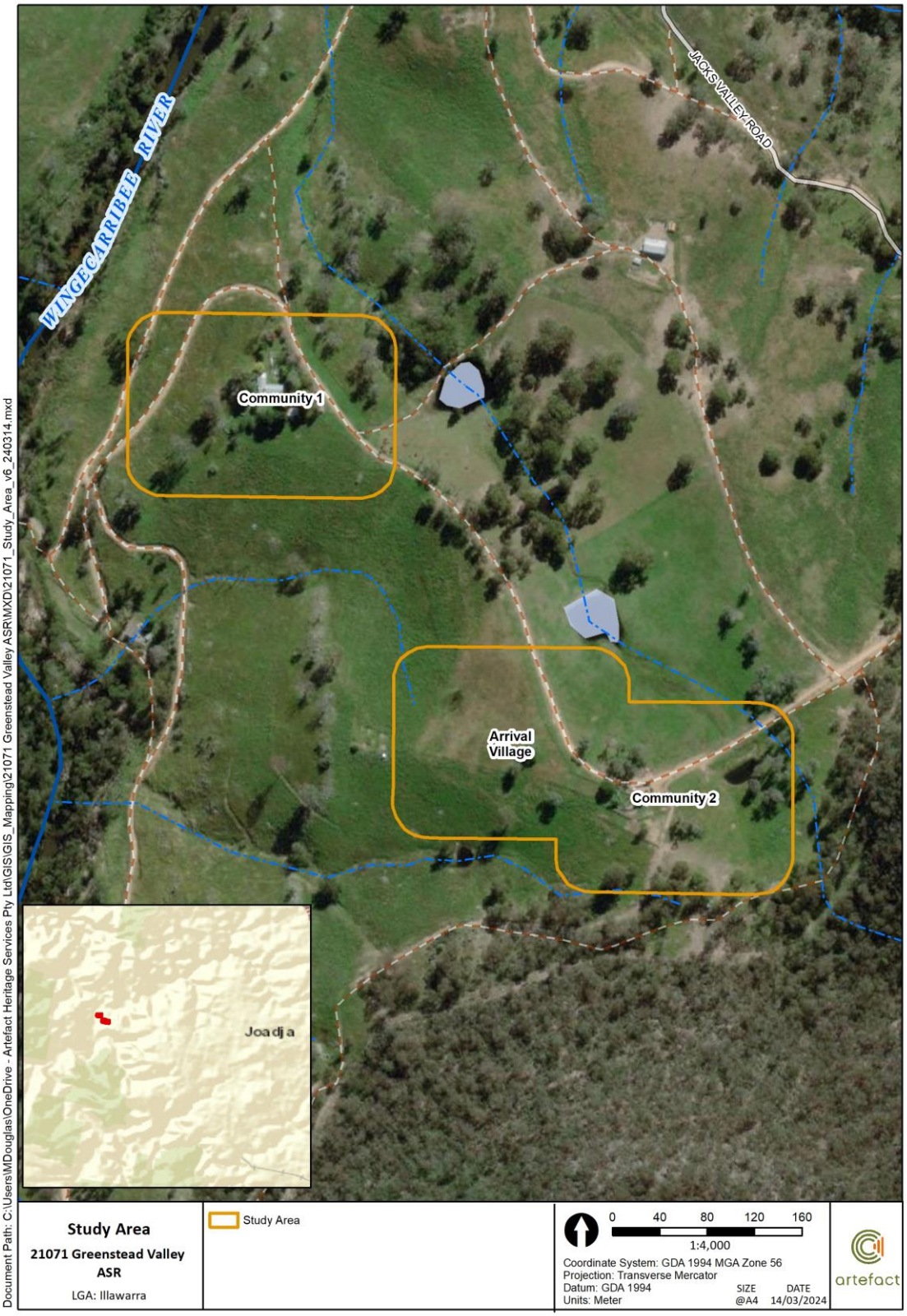


Figure 2: Masterplan of the proposed eco-tourist facility. Note that Stage 2, which includes the development of Communities 3 and 4 have been excluded from this assessment. (Breathe Architecture 13 March 2024).

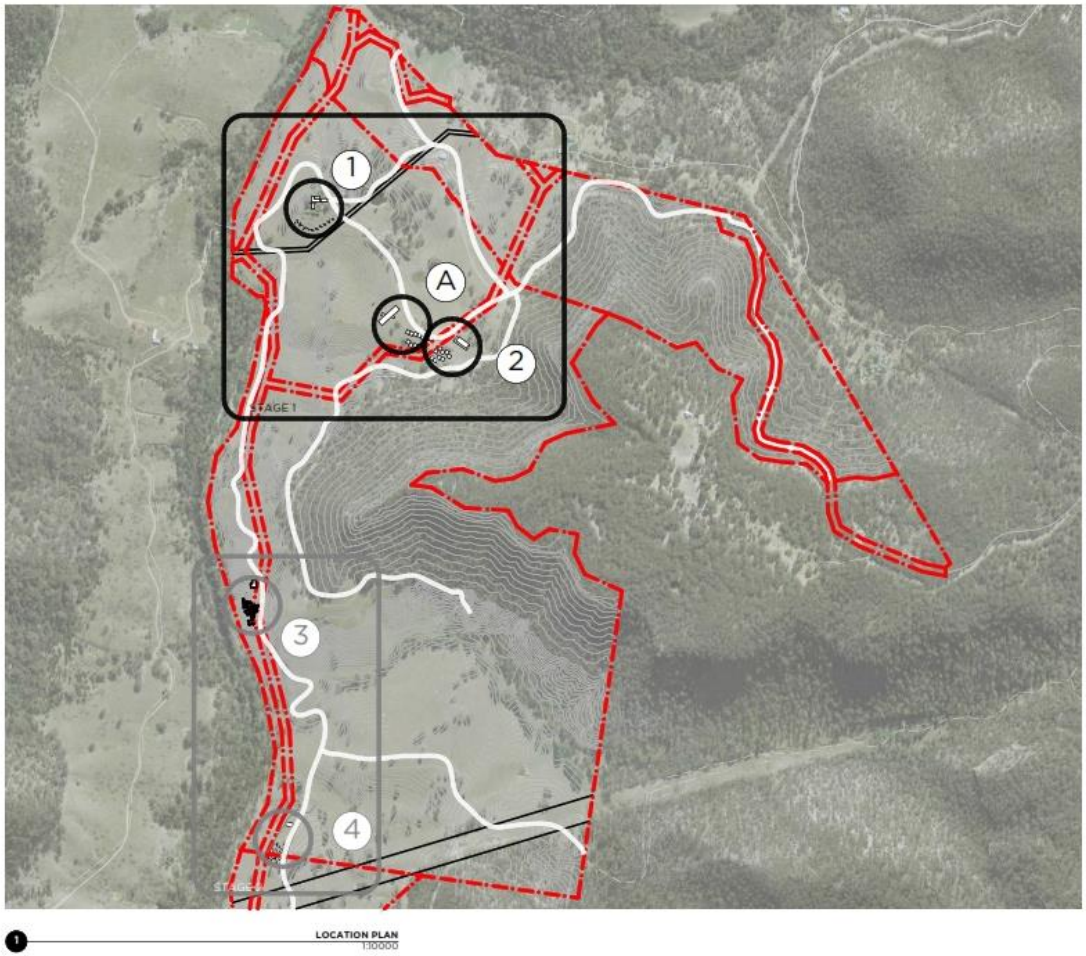


Figure 3: Map 1 of 2 showing the location of sites identified by Artefact Heritage in 2021 in. The sites identified in 2021 represent the findings of a Due Diligence report not a comprehensive archaeological survey (Artefact, Arch 2024)

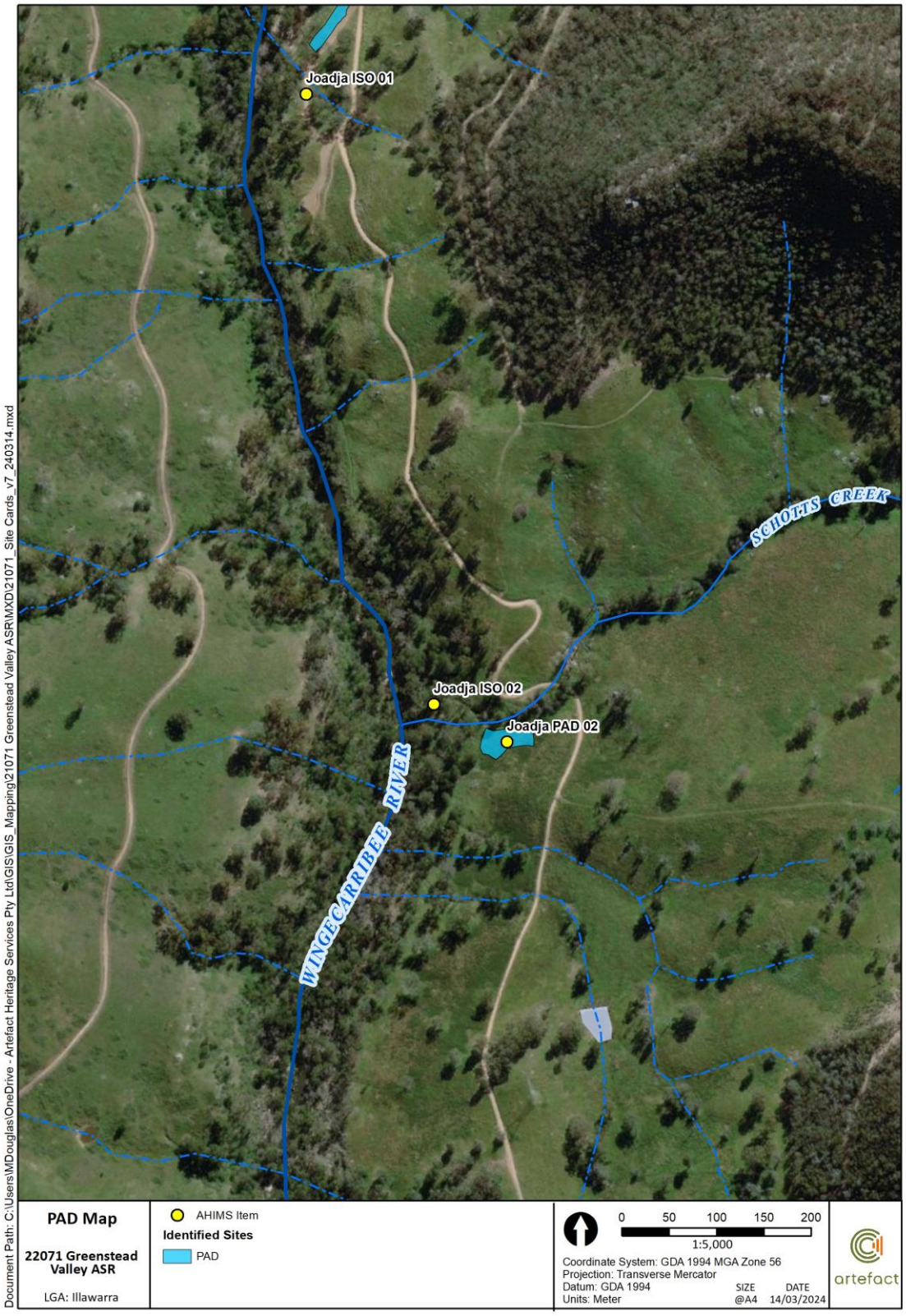
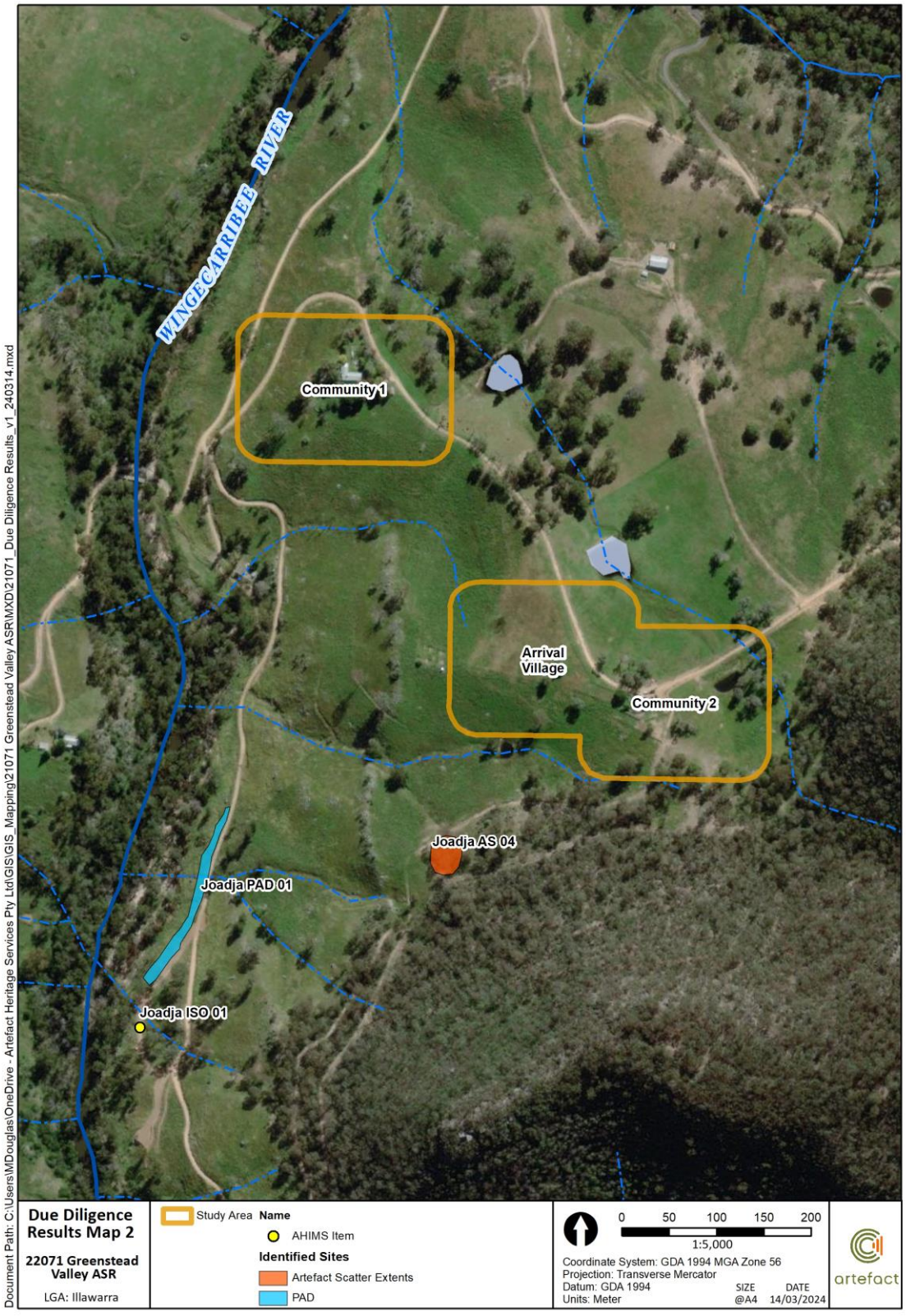


Figure 4: Map 2 of 2 showing the location of sites identified by Artefact Heritage in. The sites identified in 2021 represent the findings of a Due Diligence report not a comprehensive archaeological survey (Artefact, Arch 2024)



2.0 LEGISLATIVE CONTEXT

This assessment has been undertaken in the context of several pieces of legislation that relate to Aboriginal heritage and its protection in New South Wales. This chapter provides a summary of this legislation and requirements in relation to the proposal.

2.1 National Parks and Wildlife Act 1974

The National Parks and Wildlife Act 1974 (the NPW Act) provides statutory protection for all Aboriginal objects and places. Under Section 86 of the NPW Act, Aboriginal objects and places are protected. An Aboriginal object is defined as:

> *'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.*

An Aboriginal place is declared by the Minister, under Section 84 of the NPW Act in recognition of its special significance with respect to Aboriginal culture. Areas are only gazetted as Aboriginal Places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. Aboriginal objects and places are afforded automatic statutory protection in NSW whereby it is an offence to knowingly or unknowingly harm or desecrate and Aboriginal object or Aboriginal place under Section 86 of the NPW Act.

If it is assessed that Aboriginal objects and/or places exist or are likely to exist within the study area, and may be impacted by the proposed works, further archaeological investigations may be required.

All Aboriginal objects, whether recorded or not, are protected under the NPW Act. From 1 July 2020, Heritage NSW began managing Aboriginal cultural heritage regulatory functions under the NPW Act.

2.1.1 National Parks and Wildlife Regulation 2019

Under the authority of the NPW Act, the National Parks and Wildlife Regulation 2019 provides regulations for Aboriginal heritage assessment and consultation with registered Aboriginal parties. Part 5 (Division 2) of the National Parks and Wildlife Regulation sets out the requirements of a due diligence assessment process and provides requirements for more detailed assessment and consultation with registered Aboriginal parties for activities that may result in harm to Aboriginal objects. This includes:

- Clause 60 – consultation process to be carried out before application for Aboriginal Heritage Impact Permit (AHIP)
- Clause 61 – application for AHIP to be accompanied by cultural heritage assessment report.

In order to comply with Clause 60 and 61 of the National Parks and Wildlife Regulation 2019, preparation of an ACHAR and consultation with RAPs must be in accordance with the following guidelines:

- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* 2010 (DECCW 2010a)
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011)
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010b).

2.2 Environmental Planning and Assessment Act 1979

The EP&A Act provides planning controls and requirements for environmental assessment in the development approval process. The EP&A Act consists of three main parts of direct relevance to Aboriginal cultural heritage: Part 3 which governs the preparation of planning instruments; Part 4 which relates to development requiring consent; and Part 5 which relates to activity that does not require consent.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs). LEPs commonly identify, and have provisions for the protection of, local heritage items and heritage conservation areas. The LEP relevant to this project is the *Wingecarribee* LEP (2010), which includes a list of items and areas of heritage significance within the Wingecarribee LGA.

A review of the *Wingecarribee LEP* (2010) undertaken on 23 May 2023 determined that there are no listed items within the study area.

2.3 NSW Aboriginal Land Rights Act 1983

The Aboriginal Land Rights Act 1983 (ALR Act) established Aboriginal Land Councils (at State and Local levels). These bodies have a statutory obligation under the ALR Act to:

> *(a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and*
>
> *(b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.*

The study area is within the boundary of the Illawarra LALC.

2.4 Native Title Act 1994

The Native Title Act was introduced to work in conjunction with the Commonwealth Native Title Act 1993. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act.

The Study area is subject to the Gundungarra Indigenous Land Use Agreement (ILUA), granted on 20 June 2014. This agreement grants the Gundungarra People right for input into management of lands and waters within the agreement area, that are;

- National Park Lands
- SCA Lands
- The Forestry Corporation of New South Wales Lands or

- BMCC Lands.

While the study area is within the wider land use agreement area, and therefore subject to the ILUA, it does not fall within the above land use categories.

A search of the National Native Title Tribunal (NNTT) database carried out on 9 December 2022 determined that there is an active Native Title Claim for the South Coast People. It encompasses an area of approximately 16808 square kilometres and covers the Wingecarribee Shire Council LGA. The details of the South Coast People's Native Title Claim are shown in Table 1.

Table 1: Native Title Applications within the study area

Application Name	NNTT file number	Federal Court file number	Date filed	Application status
South Coast People	NC2017/003	NSD1331/2017	03/08/2017	Active

2.5 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Environment and Heritage Legislation Amendment Act (No. 1) 2003 amends the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) to include 'national heritage' as a matter of National Environmental Significance and protects listed places to the fullest extent under the Constitution. It also establishes the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The Australian Heritage Council Act 2003 (AHC Act) establishes a new heritage advisory body – the Australian Heritage Council (AHC) – to the Minister for the Environment and Energy and retains the Register of the National Estate (RNE).

The Australian Heritage Council (Consequential and Transitional Provisions) Act 2003 repeals the Australian Heritage Commission Act 1975, amends various Acts as a consequence of this repeal and allows the transition to the current heritage system.

Together the above three Acts provide protection for Australia's natural, Indigenous and non-Indigenous heritage. The new framework includes:

- A new National Heritage List of places of national heritage significance
- A Commonwealth Heritage List of heritage places owned or managed by the Commonwealth
- The creation of the Australian Heritage Council, an independent expert body to advise the Minster on the listing and protection of heritage places
- Continued management of the Register of the National Estate.

2.5.1 National Heritage List

The NHL is a list of places with outstanding heritage value to our nation, including places overseas. So important are the heritage values of these places that they are protected under the EPBC Act. This means that a person cannot take an action that has will have, or is likely to have, a significant impact on the national heritage values of a national heritage place without the approval of the Australian Government Minister for the Environment.

A search of the NHL undertaken on 23 May 2023 determined there are no listed items within the study area for this assessment.

2.5.2 Commonwealth Heritage List

The CHL is a list of places managed or owned by the Australian Government.

A search of the CHL undertaken on 23 May 2023 determined there are no listed located within the study area for this assessment.

2.5.3 Register of the National Estate

The RNE is an evolving record of Australia's natural, cultural and Aboriginal heritage places that are worth keeping for the future. The AHC compiles and maintains the RNE under the Australian Heritage Council Act 2003. Places on the RNE that are in Commonwealth areas, or subject to actions by the Australian Government, are protected under the EPBC Act by the same provisions that protect Commonwealth heritage places (see above). Following amendments to the Australian Heritage Council Act 2003, the RNE was frozen on 19 February 2007, meaning no new places can be added, or removed. From 2012 all references to the RNE were removed from the EPBC Act and the AHC Act. The RNE is now maintained on a non-statutory basis as a publicly available archive.

A search of the RNE undertaken on 23 May 2023 determined there are no listed items on located within the study area for this assessment.

3.0 ARCHAEOLOGICAL BACKGROUND

The findings of previous archaeological investigations in and around the study area assist in understanding the archaeological character of the region and in identifying observable patterns of past Aboriginal inhabitation of a landscape. They are utilised when forming predictive models and in interpreting the results of archaeological assessments in a broader regional context.

3.1 Previous investigations in the region

The Joadja region has been less intensively studied than more populous regions of New South Wales, such as the Cumberland Plain in Western Sydney. Nonetheless, a number of studies have been carried out in the broader region, some of which are summarised below.

3.1.1 Bangadilly National Park, Plan of Management, NSW National Parks and Wildlife Service, 2009

Located south of the study area, a management plan was prepared for the Bangadilly National Park. The management plan identified two Aboriginal sites within the park and determined that it was probable that other sites exist within the area with the most likely being rock shelters with art or occupation along cliff lines, camp sites on the river and artefact scatters on ridgelines.

3.1.2 Chesley Park Masonry Plant, Berrima Aboriginal Heritage Assessment, Artefact Heritage, 2018

Artefact Heritage was engaged by Brickworks Ltd to prepare an Aboriginal Heritage Assessment ahead of the development of a masonry plant and associated infrastructure at 416 Berrima Road, New Berrima, located approximately 16 kilometres south west of the study area. The area assessed was situated in a semi-rural area, in a comparable environmental context to that at 1551 Joadja Road.

Two previously registered sites were situated within the study area. AHIMS ID 52-4-01977 and AHIMS ID 52-4-0175 consists of a series of 26 grinding grooves situated on sandstone outcrop alongside a creek, an artefact scatter and an associated area of archaeological sensitivity. Four artefacts were recorded in the scatter, three of which are made of quartz and one of silcrete. AHIMS ID 52-4-0196 is a sandstone floater measuring approximately 2.3 by 1.5 metres located within a creek course. It consists of three axe grinding grooves and a number of circular dimensions. In addition, the assessment undertaken by Artefact identified two new sites which were a broken grinding stone and a proximal flake of yellow silcrete displaying evidence of heat treatment. The grinding grooves are of high cultural and archaeological significance and the area was found to be of likely cultural significance to the Aboriginal community, with consultation recommended in order to determine levels of significance and particular cultural values present within the study area.

3.1.3 Warragamba Dam Raising: Aboriginal Cultural Values Assessment Report, Waters Consultancy, 2021

In 2021, Waters Consultancy released Aboriginal Cultural Values Assessment Report ahead of the proposed raising of Warragamba Dam. Registered Aboriginal Parties (RAPs) were unwilling to formally engage in the assessment, though it was expressed that the project area is located in a cultural landscape that holds very high levels of cultural value and significance. Rather, their unwillingness to engage in the process reflects the ongoing legacy of dispossession in the area, as well as contemporary distrust of the proponent and the broader consultation, assessment and planning process. As such, the report did not incorporate information from this process.

The report identified six strands of distinct, but interrelated cultural values within the broader associative cultural landscape. These are:

- Gurrangatch-Mirrigan Dreaming Track
- Buru (Kangaroo) Dreaming Story Places
- Living Places (history of occupation and use)
- Cultural Places (ritual life)
- Archaeological sites (tangible record of traditional occupation and use)
- Waterways (the Wollondilly, Nattai, Warragamba, and Coxs Rivers and their tributaries)

This associated cultural landscape represents a web of kinship and relations between the Gudungurra, Darug, Dharawal, Darkinjung, Ngunnawal and Wiradjuri people. The Wingecarribee River is a tributary of the Wollondilly River, and therefore comprises part of the associative cultural landscape. Gurrangatch-Mirrigan Dreaming Track Places are located along the Wollondilly River, from its junction with the Wingecarribee River. The junction of the Wollondilly and Wingecarribee river is one of Gurrangatch's camping places, in a large deep waterhole. The assessment concluded that waterways in the project area and the Gurrangatch-Mirrigan Dreaming Track are of very high cultural significance and central to the values of Country. A number of recommendations were set out to address impacts to Aboriginal Cultural Heritage, archaeological sites, Dreaming Story Places, Living Places and Cultural Places.

3.1.4 Wingecarribee to Goulburn Pipeline Project, Navin Officer 2010

In response to the severe drought experienced in Goulburn between 2002 and 2007, the construction of an emergency pipeline from Wingecarribee Reservoir to Goulburn was identified as the best means to overcome the water supply emergency and secure Goulburn's water supply in the future. Navin Officer completed an ACHAR for the proposed impact area.

The Goulburn area is located near the tribal boundary between the Gandangara to the north and the Ngunnawal to the south. It is delineated as falling within the tribal area of the Wodi Wodi according to Tindale. The desktop assessment concluded that 77 Aboriginal sites were situated within the study area, including stone artefacts, scarred and carved trees, areas of PAD, grinding grooves, a stone quarry and burial. A further 25 Aboriginal sites were identified during the survey undertaken. The report recommended that comprehensive archaeological survey was undertaken prior to works commencing. Where it was possible to avoid impacts to Aboriginal sites, it was recommended that they were fenced off and avoided while works are undertaken. Further archaeological investigation, such as salvage excavation, was recommended in areas where Aboriginal sites were to be impacted by the pipeline.

3.1.5 Summary

The review of available studies around Joadja have identified that there is potential for archaeological deposits to be situated in areas that have been subject to low levels of historic disturbance. Quartz appears to be the dominant material used for knapping, though there are no other comparable assemblages identified nearby for comparison. A number of landform features are likely to contain archaeological material. These features include rock shelters, ridgelines and land adjacent to rivers and creeks. There is potential for Art, Rockshelters with Art and or Engravings and stone Artefacts to be located in these areas.

3.2 Aboriginal material culture

Prior to the appropriation of their land by Europeans, Aboriginal people lived in small family or clan groups that were associated with territories or places. It seems that territorial boundaries were fluid, although details are not known. There is debate about the nature, territory, and range of pre-contact language groups of the Sydney region due to the serious impacts European settlement had on Aboriginal culture. More recent research indicates that Aboriginal people in the current Sydney seaboard identified as part of a large coastal population with frequent exchange and travel often over large distances (Irish 2017) and (Curby 2020).

The study area lies within the territory of the Gundungurra People whose traditional land extends from Goulburn to Lithgow, the Wingecarribee River (Figure 2) as a permanent water source, is likely to have been important to the people who lived in the area as a source of resources and a travel route (NSW National Parks and Wildlife Service 2009).

The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4,000 years before present (BP) in the Sydney region (Attenbrow 2010). It has been argued that these changes in material culture were an indication of changes in social organisation and behaviour.

The Eastern Regional Sequence was first developed by McCarthy in 1948 to explain the typological differences he was seeing in stone tool technology in different stratigraphic levels during excavations such as Lapstone Creek near the foot of the Blue Mountains (McCarthy 1948). The sequence had three phases that corresponded to different technologies and tool types (the Capertian, Bondaian and Eloueran). The categories have been refined through the interpretation of further excavation data and radiocarbon dates (Hiscock and Attenbrow 2005). It is now thought that prior to 8,500 BP tool technology remained fairly static with a preference for silicified tuff, quartz and some unheated silcrete. Bipolar flaking was rare with unifacial flaking predominant. No backed artefacts have been found of this antiquity. After 8,500 BP silcrete was more dominant as a raw material, and bifacial flaking became the most common technique for tool manufacture. From about 4,000 BP to 1,000 BP backed artefacts appear more frequently. Tool manufacture techniques become more complex and bipolar flaking increases. It has been argued that from 1,400 to 1,000 years before contact there is evidence of a decline in tool manufacture. This reduction may be the result of decreased tool making, an increase in the use of organic materials, changes in the way tools were made, or changes in what types of tools were preferred (Attenbrow 2010). The reduction in evidence coincides with the reduction in frequency of backed blades as a percentage of the assemblage.

Historical sources record that a wide range of other materials were utilised by Aboriginal people, shell was used for skinning animals (Miller 1886) and fish hooks, bark for canoes and string and nets, as well as a variety of woods for spear shafts, shields clubs and digging sticks, among many others (Brayshaw 1987).

3.3 Registered Aboriginal sites within the study area- AHIMS search results

NOTE: The locations and details of Aboriginal sites are considered culturally sensitive information. It is recommended that this information and associated maps are removed from the report if it is to be made publicly available.

An extensive search of the Aboriginal Heritage Information System (AHIMS) was undertaken on 12 December 2022 (Client Service ID 739938) to determine the location of Aboriginal sites in relation to the current study area. AHIMS search results are valid for a period of up to twelve months. A second AHIMS search was undertaken on 14 March 2024 validify the results of the AHIMS search, using the same search parameters as the original search.

The search covered an area approximately 13.67 km by 13.88 km, centred upon the study area. The parameters of the search were as follows:

GDA 1994 MGA 56	235030 - 248700 6179905 - 6193780
Buffer	0 km
Number of sites	72

The search determined that there are72 registered Aboriginal sites within the search area. There are six previously registered sites within 1000 metres of the study area. The updated search results indicate there is one previously registered site within the study area, Joadja PAD 03 (AHIMS ID 52-1-0407). Joadja PAD 03 was identified during archaeological survey for the Project and has been registered on AHIMS prior to this report being finalised. Details of Joadja PAD 03 are presented in the survey results in Section 7.0. The AHIMS database records sites using a list of twenty standard site types, of which ten were found within the extensive search (OEH 2012):

- Aboriginal Ceremony or Dreaming: Spiritual/ story places, including locations where no physical evidence of previous use
- Artefacts: Objects such as stone tools, modified glass or shell showing evidence of use by Aboriginal people
- Art (Pigment or Engraved): Found in shelters, overhangs and on rock formations, techniques include painting, drawing and engraving. Art can also involve the use of natural pigments and paints
- Grinding Groove: Grooves in a rock surface resulting from the manufacturing of stone tools or rounded depressions resulting from grinding seeds or grain
- Hearth: The remains of a hearth sometimes marked by hearth stones, usually also contains charcoal and heat treated stone fragments
- Modified Tree (Carved or Scarred): Trees which show evidence of modification as a result of cutting bark or carving heartwood.
- Non-Human Bone and Organic Material: Objects which can be found within cultural deposits of an Aboriginal site such as fish or mammal bones, ochres, cached objects which may otherwise have broken down such as resin, twine, dilly bags, nets, etc.
- Potential Archaeological Deposit (PAD): An area where Aboriginal objects may occur below the ground surface.
- Shell: An accumulation or deposit of shellfish from beach, estuarine or riverine species resulting from Aboriginal gathering and 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 components.

- Stone Arrangement: Human produced arrangements of stone usually associated with ceremonial activities or used as markers for territorial limits or to mark/ protect burials.

The results of the search are summarised in Table 2 and a copy of the extensive search is provided in Appendix A. The distribution of recorded sites within the AHIMS extensive search results are shown in Table 2.

Table 2: Frequency of site features in AHIMS search results

Site Feature	Frequency	Percentage
Aboriginal Ceremony and Dreaming	2	2.8
Aboriginal Ceremony and Dreaming, Artefact	1	1.4
Aboriginal Ceremony and Dreaming, Artefact, Stone Arrangement	1	1.4
Art (Pigment or Engraved)	7	9.8
Art (Pigment or Engraved), Artefact Grinding Groove	2	2.8
Art (Pigment or Engraved), Artefact, Hearth	1	1.4
Art (Pigment or Engraved), Artefact, Potential Archaeological Deposit (PAD)	1	1.4
Art (Pigment or Engraved), Artefact, Shell	2	2.8
Art (Pigment or Engraved), Artefact, Grinding Groove, Hearth	1	1.4
Art (Pigment or Engraved), Grinding Groove, Hearth, Non-Human Bone and Organic Material, PAD	1	1.4
Artefact	36	50.4
Artefact, Grinding Groove	1	1.4
Artefact, Hearth	6	8.4
Grinding Groove	6	8.4
Modified Tree (Carved or Scarred)	1	1.4
Potential Archaeological Deposit (PAD)	3	4.2
Total	**72**	**100%**

Figure 5: Map showing the location of registered AHIMS within the search area. The study area is outlined in orange and indicated with an orange arrow (Artefact, March 2024).

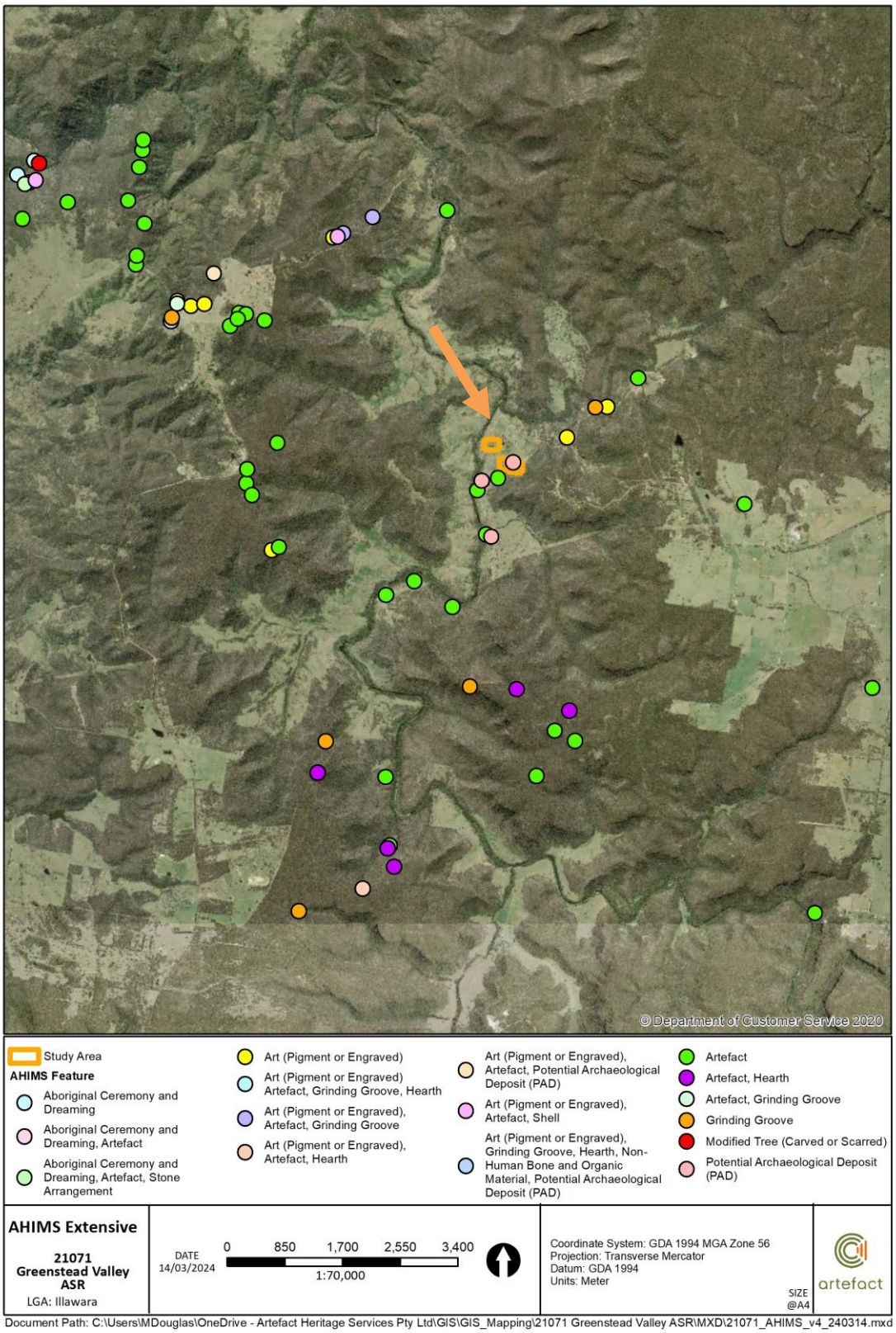
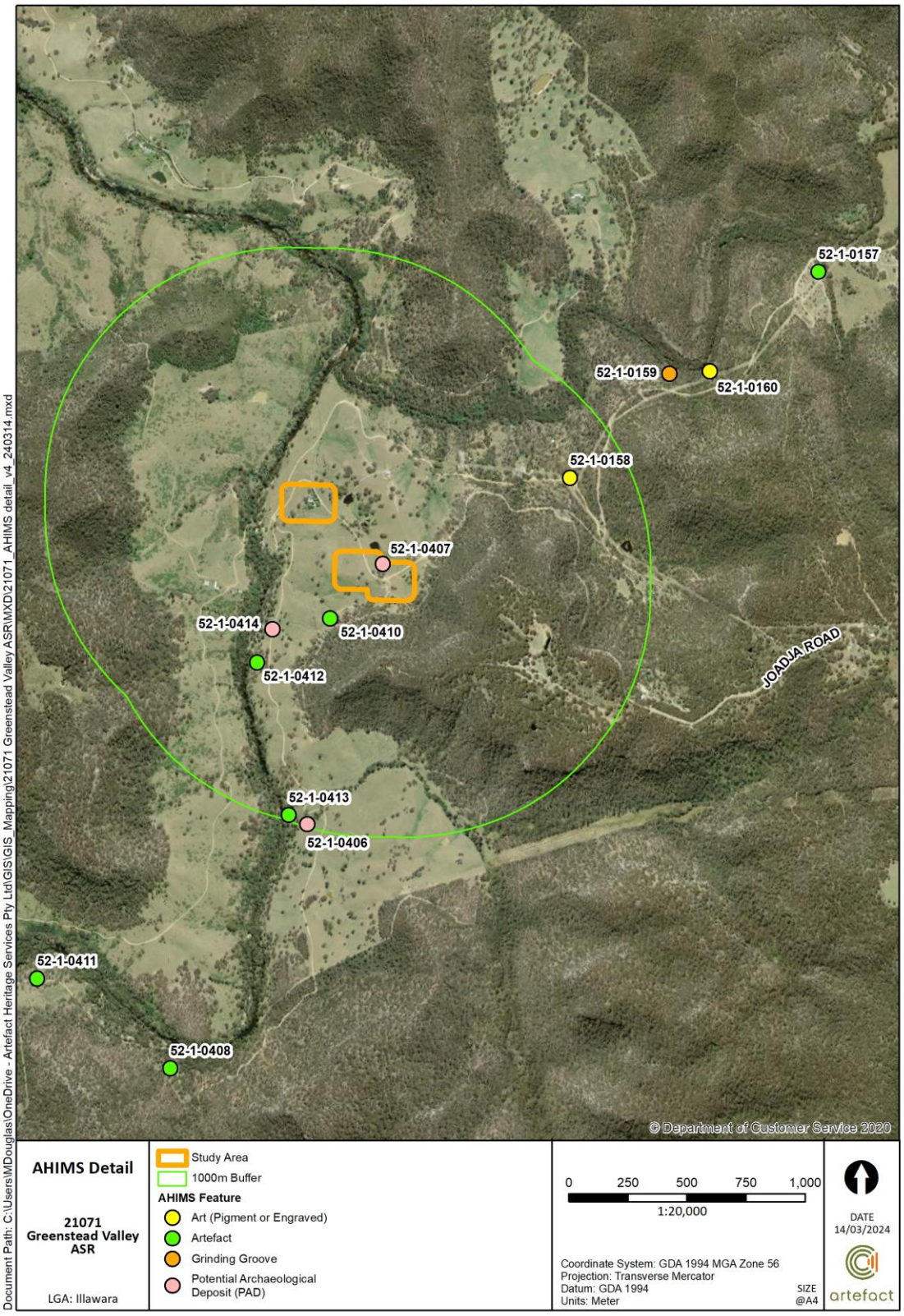


Figure 6: Map showing the location of registered AHIMS sites within 1000 metres of the study area (Artefact, March 2024).



Artefacts are the most common feature within the search area, at 51 sites (70%). Artefacts were sometimes identified in association with other features (n=14, 20%), but were more commonly identified as the only recorded feature at a site (n= 37, 50%). Other common site features include Art (Pigment or Engraved) (n= 15) and Grinding Groove (n=10).

Sites are commonly located in proximity to the Wingecarribee River and its tributaries. Site features spatially associated with waterways include artefacts, hearths, art and grinding grooves. In addition, one Aboriginal Ceremony and Dreaming site, the Gurangatch Mythological Site, is located along the Wollondilly River, approximately 8 kilometres north west of the study area. This underlines the spiritual and cultural significance of waterways in the area (Section 3.1.3).

Other factors influence the nature and distribution of sites. These include levels of historical ground disturbance and the location of previous archaeological investigations which may have been undertaken in the search area. Aboriginal sites are generally recorded in areas where lower levels of historical ground disturbance have taken place. The original AHIMS search completed in 2023 identified 33 recorded Aboriginal sites in the search area. When the search was undertaken again in 2024 using the same parameters, 72 sites were identified in the search area. The increase in the number of sites is due to archaeological assessments being undertaken in the search area.

3.3.1 Registered sites within 1000 metres of the study area

Six sites have been registered within 1000 metres of the study area. They are described below:

3.3.1.1 Joadja PAD 02 (AHIMS ID 52-1-0406)

Joadja PAD_02 forms a gently northward and westward sloping footslope onto a relict riverbank terrace east of the Wingecarribee. It is partially truncated by the westward flowing Schotts Creek that borders the PAD to the north. The Wingecarribee River is sited approximately 70 metres to the west and is separated by extensive bars of fluvial/alluvial sand. Joadja PAD_02 is sited between 480 and 490 metres in elevation, approximately 5-8 metres above the present level of the riverbed. PAD_02 measures approximately 60 metres from east to west and 40 metres from north to south. Joadja PAD 02 appears to comprise both colluvial footslope sands and relict alluvial sands denoting an earlier riverbank. Flood debris piled against trees growing along the alluvial sand bars indicate that high energy flows occur to heights of several metres above the current water level. Vegetation on this eastern bank of the river and lining Schotts Creek is dominated by Casuarinas, some of which have reached considerable size. Exposures at the PAD/terrace edge, exacerbated by wombat activity, indicate well-developed and iron-rich (aged) sands extend to more than 1 metre depth across the PAD. The landform is considered stable, with moderate potential for subsurface archaeological material.

3.3.1.2 Joadja AS_04 (AHIMS ID 52-1-0410)

Joadja AS_04 forms a small scatter on a gently to moderately sloping footslope extending west from the scree slope below the ‘monument’ escarpment that stands at the peak of Sams Mountain. The Wingecarribee River is located 230 metres to the west and 40m lower in elevation than Joadja AS 04 (AHIMS ID 52-1-0410). Joadja AS_04 appears thinly-soiled, with a greater degree of sediment accumulation generally observed along the more level terrain closer to the riverbanks. It is likely that the artefacts derived from further uphill.

3.3.1.3 Joadja ISO 01 (AHIMS ID 52-1-0412)

Joadja ISO 01 is a single grey quartzite flake with possible retouch. It was located in a graded roadway leading to a small temporary structure. The surrounds have been predominantly cleared of mature timber, or contain regrowth eucalypts and introduced grasses. Joadja ISO 01 is located approximately 40 metres from the Wingecarribee River.

3.3.1.4 Joadja ISO 02 (AHIMS IS 52-1-0413)

Joadja ISO 02 is a single black flake, potentially of petrified wood, snapped at the distal end. Joadja ISO 02 was located in disturbed alluvial sands near a wombat burrow, within 20 metres of the Wingecarribee River, and 50 metres north of the confluence of Schotts Creek and the Wingecarribee River. The surrounds are almost wholly dominated by Casuarina species and introduced weeds. It seems likely that the location is a short-lived or relatively young sandbank within the broader course of the Wingecarribee River. It is almost certain that Joadja ISO 02 has been subject to fluvial transportation.

3.3.1.5 Joadja PAD 01 (AHIMS ID 52-1-0414)

PAD 01 forms a gently sloping, relict riverbank terrace that measures approximately 240 metres from north to south and and 20 metres from east to west. Joadja PAD 01 extends along the east margin of the Wingecarribee which lies 40m to the west. Joadja PAD_01 is sited at approximately 480 metres elevation and 5-6 metres elevation above the present level of the riverbed. Exposures in the road cutting suggest the coarse, silty sand deposit extends to more than 60 centimetres in depth. It is apparent that the PAD forms an interface between upslope colluvial material and finer alluvium deposited at the limit of the floodzone. The PAD has been bisected and impacted by works associated with the access road and site of a small temporary structure, including two concrete piped culverts that drain beneath the adjacent access road, through the PAD and into the river. Vegetation is limited to scattered Eucalypts and Casuarinas within the riverbed and margins. Joadja PAD 01 is considered a stable, though disturbed landform, with moderate potential for subsurface archaeological material.

3.3.1.6 AHIMS ID 52-1-0158 Joadja Creek 2

While described as a shelter art site, no description of art is provided on the site card. Rather the site is described as comprising 16 artefacts scattered along an unsealed road, in an area which measures approximately 4 metres by 40 metres. The artefacts assemblage comprises a mix of chert, silcrete, quartz and quartzite, with the majority being identified as flakes with a single silcrete core. It was determined that due to the disturbed nature of the surrounding landscape, there was low potential for undisturbed deposits. This site demonstrated the potential for Aboriginal artefacts to survive even within disturbed contexts.

3.4 Summary of the local and regional character of Aboriginal land use and material traces

A variety of site features have been identified in the surrounding area. Stone artefacts are the most common site feature. This may be due to the fact that stone artefacts survive more often than other site features such as engravings, pigmented art or culturally modified trees. In addition, Hearths, Grinding Grooves and Art have been recorded within the local context, though they are less common than stone artefacts. Gently sloping and flat landforms contain stone artefacts more often than moderately to steeply inclined areas. This could represent the true site distribution pattern of the region, but it may also reflect a sampling bias. For instance, the due diligence report carried out within the property (Artefact Heritage, 2021) targeted flat land adjacent to the Wingecaribee River as opposed to moderately to steeply inclined land further upslope.

4.0 LANDSCAPE CONTEXT

The environmental context of the study area is to assist in the prediction of:

- The potential of the landscape over time to have accumulated and preserved Aboriginal objects
- The ways Aboriginal people have used the landscape in the past with reference to the presence of resource areas, surfaces for art, other focal points for activities and settlement
- The likely distribution of the material traces of Aboriginal land use based on the above.

4.1 Environmental context

The study area is located within the Sydney Basin bio-region, at the juncture between the Moss Vale and Burragorang sub-bioregoins (NSW National Parks and Wildlife Service, 2003). The topography of the study area consists of plateau country along the Wingecarribee River Valley which ascend steeply into escarpments east of the river (Figure 7). The study area is bound to the west by the Wingecaribee River, a major watercourse within the Hawkesbury-Nepean catchment that has a point of confluence with the Wollondilly River in the Guula Ngurra National Park, north west of the study area. In addition, the study area is traversed by first and second order tributaries of the Wingecaribee River. These include Schotts Creek, Joadja Creek and numerous unnamed streams.

The underlying geology of the Moss Vale sub-bioregions consists of Triassc Wianamatta Group shales, tertiary basalts and tractyte inclusions and large quaternary peat swamp. The underlying geology of the Burragorang sub-bioregion consists of Triassic Hawkesbury Sandstone with thin ridge cappings of Ashfield Shaleand areas of rocky outcrops (Figure 8). Limited basalt caps are present in this area. The due diligence inspection undertaken identified outcropping weathered sandstone along the Wingecarribee River, suggesting that the underlying geology of the study area is that of the Burragorang sub-bioregion (NSW National Parks and Wildlife Service, 2003).

Soils within the Moss Vale sub-bio region consist of structured red and red-brown clay loams and loams, and loamy alluvium with high fertility. At the margins of this region, where sandstone occurs, soils are thin, waterlogged and sandy. Soils within the Burragorang sub-bioregion consist of texture contrast soils and uniform sands overlying sandstone. Bouldery debris with sandy clay matrix is situated below cliffs. Loams within this region are rich in alluvium (NSW National Parks and Wildlife Service, 2003).

Vegetation within the study area consists of heath, shrubland and woodland with black ash, hard-leaved scribbly gum, Sydney peppermint and red bloodwood where sandstone occurs. Deane's gum, turpentine and blue-leaved stringybark are present immediately below escarpments, giving onto grey gum, narrow-leaved ironbark and thin-leaved stringybark on boulder slopes. River oak is present along main streams and below plateaus (NSW National Parks and Wildlife Service, 2003).

Figure 7: Map showing topography and hydrology surrounding the study area

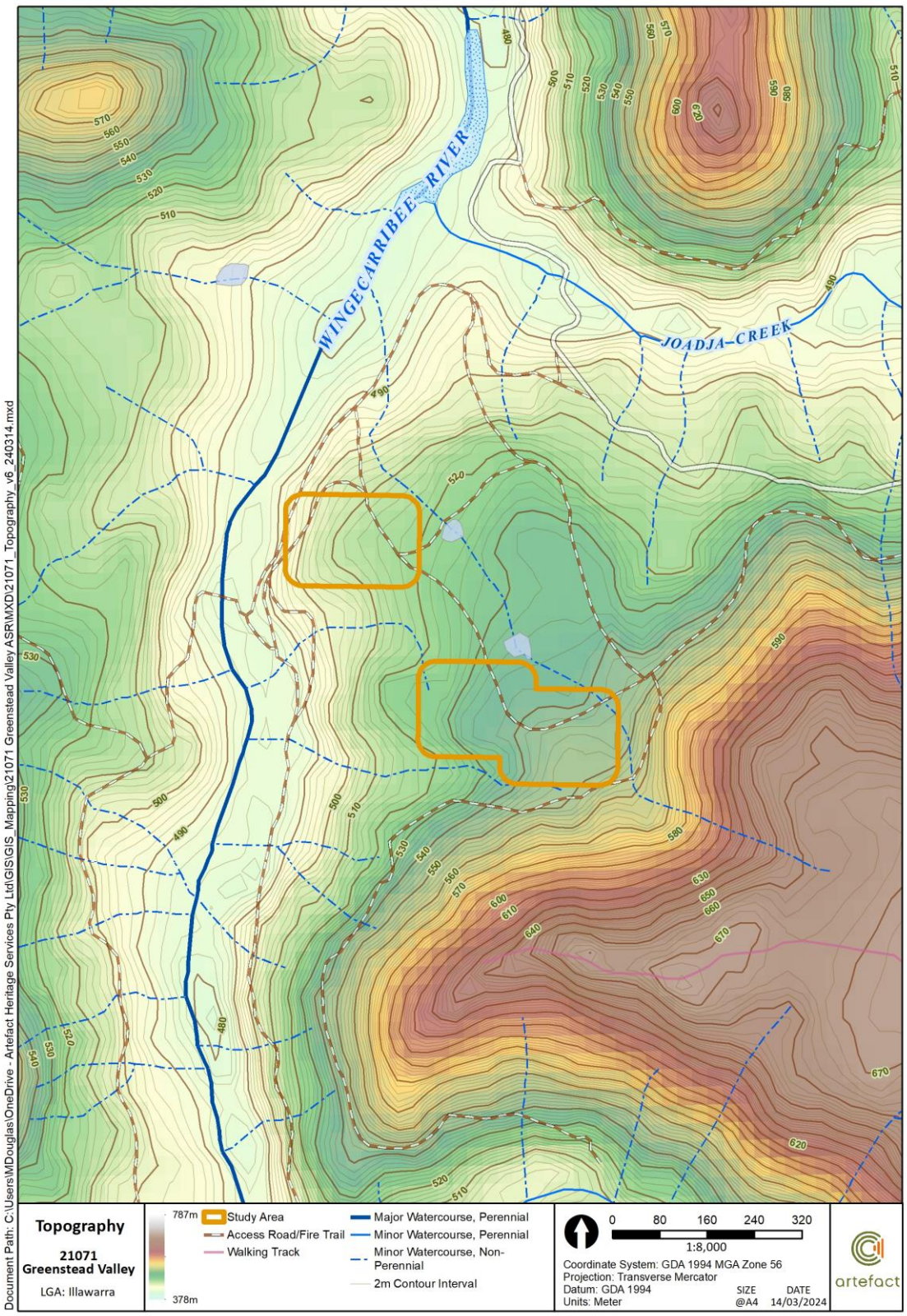


Figure 8: Map showing the underlying geology surrounding the study area

4.2 Historic land disturbance

The first European party known to be in the area was led by John Wilson an ex-convict who was sent on two exploratory trips by Governor Hunter in 1798 and followed the Joadja Creek to its junction with the Wingecarribee River at the north end of the study area (‘Joadja’ 2004).By 1840, Benjamin Carter was grazing cattle in the valley, when his son discovered oil shales leading to the founding of The Australian Kerosene Oil and Mineral Company in 1877. The town on Joadja was founded at this time as a company town to facilitate exploitation of the shale deposits. After 1893 the reserves of shale in the valley dwindled and the population decreased, by 1903 operations ceased and a fire destroyed the town. Unsuccessful attempts were made to re-establish operations in the 1920s and 1930s (‘Joadja’ 2004).

The earliest available aerial imagery of the study area is from 1963. The study area had been subject to varying levels of disturbance, with some areas relatively untouched, where observable disturbance was limited to vegetation clearance. Localised areas of more substantial disturbance had taken place around the location of the homestead and the cattle yard and along the unsealed roads within and leading into the property. Between 1963 and 1982, additional re-vegetation took place in and around the study area, with no other changes to the study area discernible on the photographs in this period. By 1990, an isolated structure, possibly a dwelling, had been constructed and associated sheds and smaller structures had been built nearby. No change between 1990 and 1993 is discernible on the aerial images. In recent years, Joadja road has been sealed. The internal roads remain unsealed.

Figure 9: Aerial image of the study area in 1963. The approximate location of the study area is indicated by the red arrow (NSW Spatial Services)

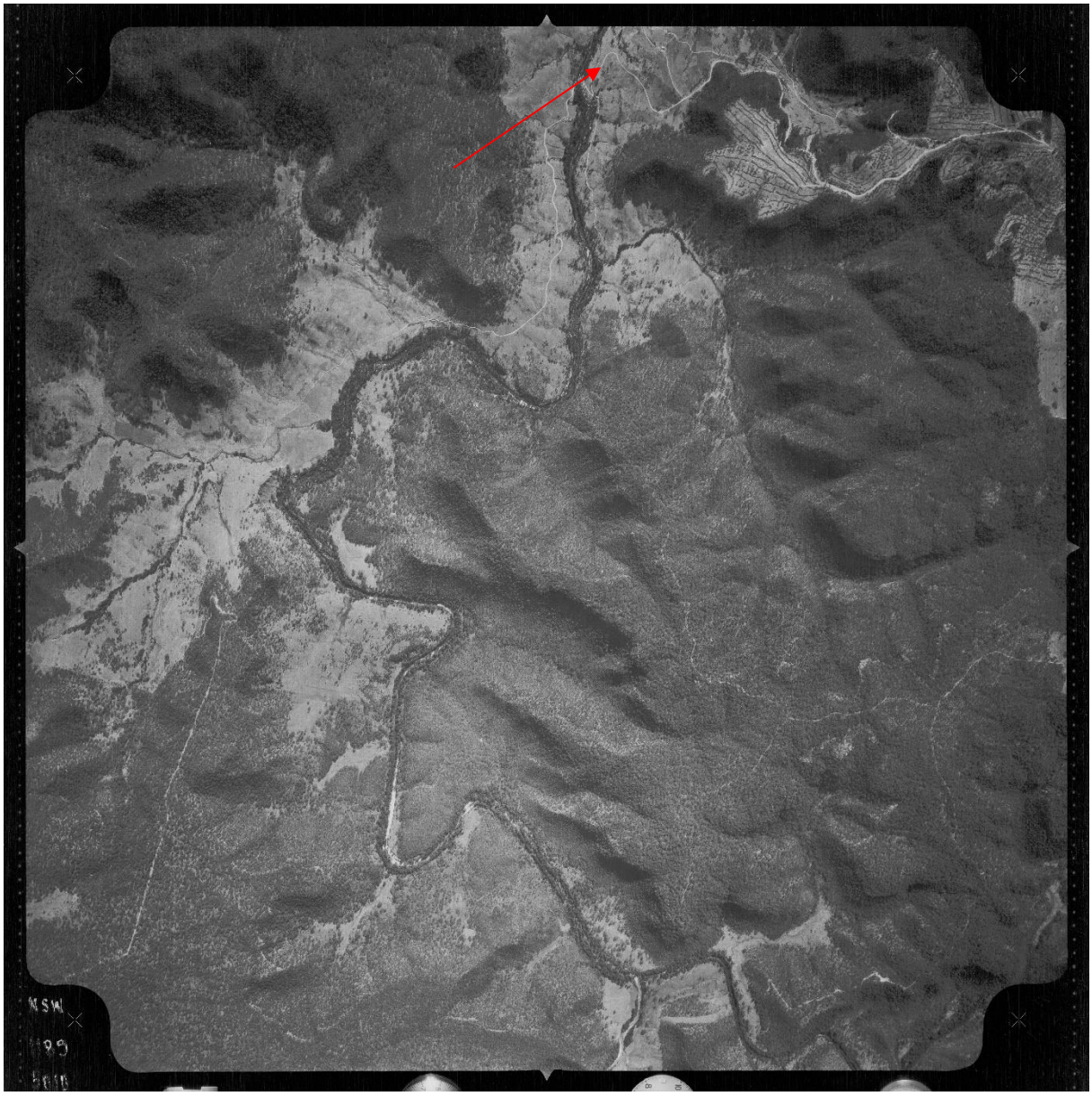


Figure 10: Aerial image of the study area from 1987. The approximate location of the study area is indicated by the red arrow (NSW Spatial Services)

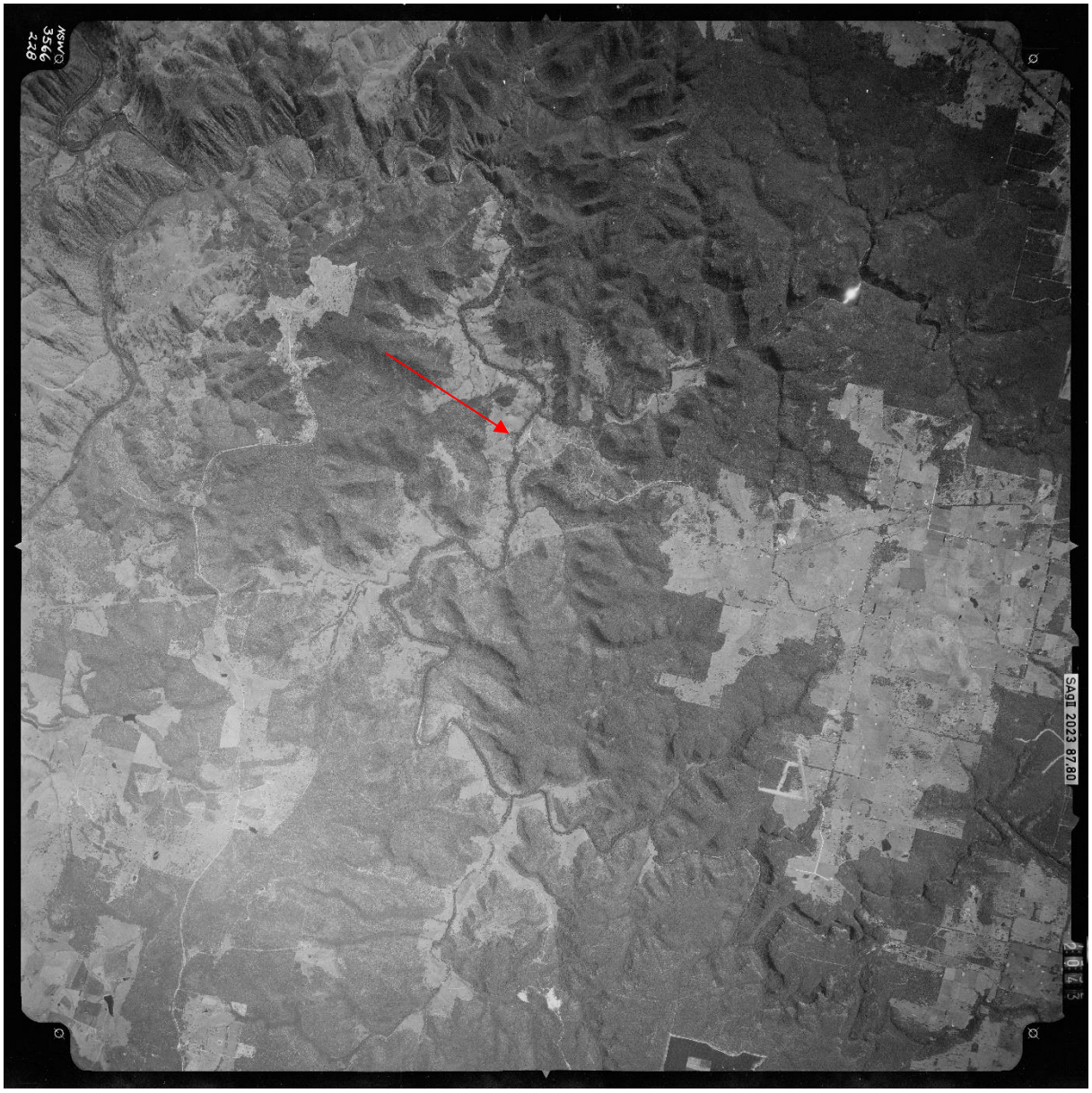
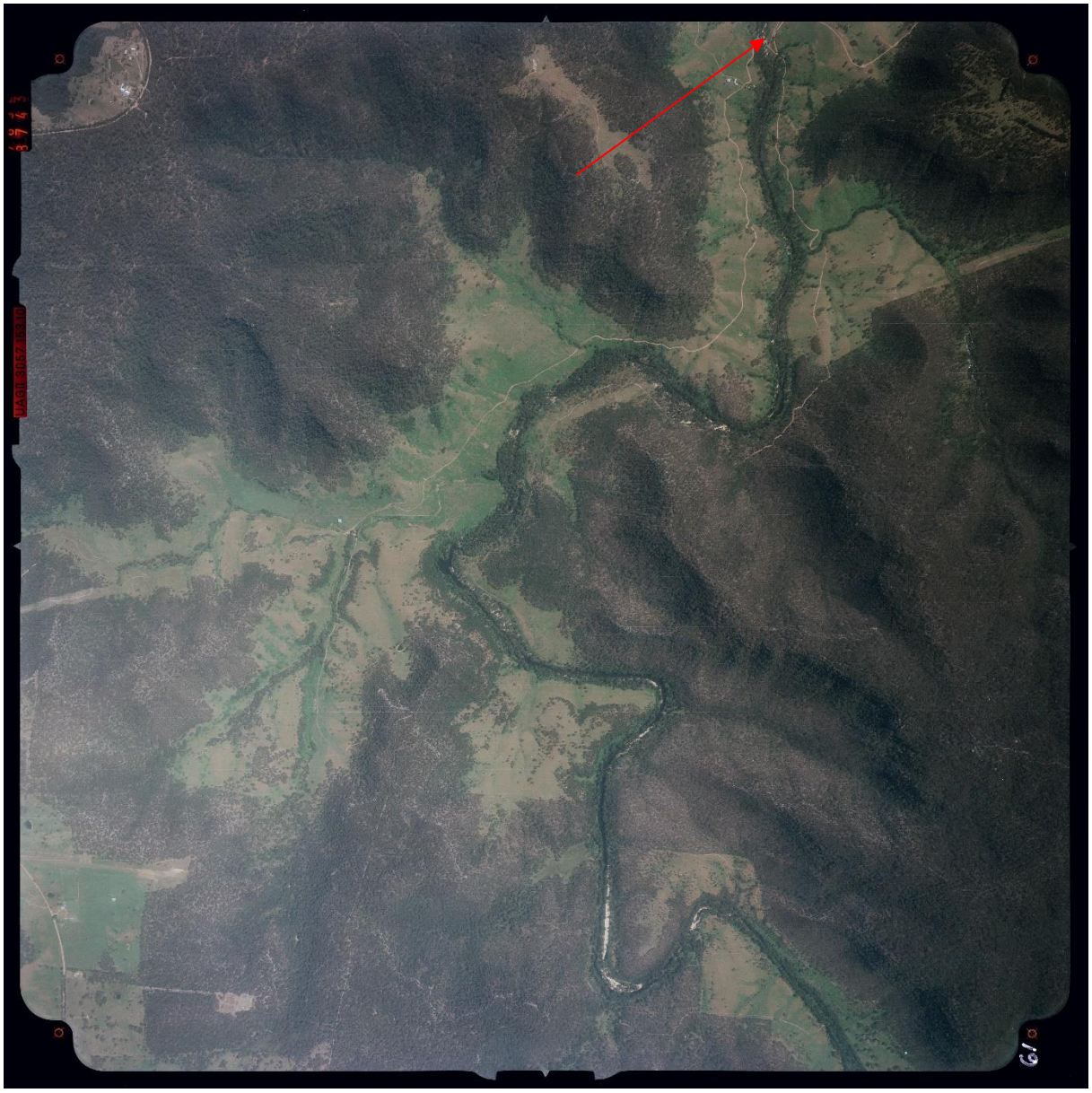


Figure 11: Aerial imagery from 1990. The approximate location of the study area is indicated by the red arrow (NSW spatial services)



5.0 SUMMARY AND PREDICTIONS

5.1 Archaeological modelling of the region

The results of the AHIMS search and previous investigations undertaken in the region indicate that certain site features and distribution patterns can be anticipated in the Joadja area. Sites are often located adjacent to waterways, along ridgelines and within rockshelters. These site features include, but are not limited to, hearths, stone artefacts, grinding grooves and art. Where outcropping rock present, grinding grooves and art may be present, and rockshelters may contain evidence of previous inhabitation of the area. Quartz is the dominant material in the lithic assemblages recovered from the Joadja and Berrima area. Additionally, the area is significant due to its association with the Gurrangatch-Mirrigan Dreaming Track. The Wingecarribee River is part of the broader associative cultural landscape of this story.

5.2 Predictive model

The predictive model comprises a series of statements about the nature and distribution of archaeological evidence of Aboriginal land use within the study area. These statements are based on the background information gathered regarding the proximity of the study area to landscape features that likely indicate the existence of Aboriginal objects, previous studies undertaken in and around the study area and a desktop assessment of historic land use and ground disturbance in the study area.

Other factors are also considered when assessing archaeological potential, such as whether artefacts were located on the surface, and whether the study area is situated within a sensitive landform unit according to the findings of previous archaeological investigations around the study area.

Additionally, archaeological assessments of Aboriginal sites in south east New South Wales more broadly have resulted in the development of several predictive trends. Key findings of these studies include:

- Archaeological evidence of Aboriginal inhabitation can be spatially correlated with landform features such as proximity to water, flat terraces and ridge formations.
- Flooding can reduce the potential for intact archaeological material in these areas.
- Areas subject to past and continuing ground disturbance can result evidence of Aboriginal land use being destroyed

Based on the analysis of historical aerial imagery, desktop assessment and consideration of previous archaeological assessments carried out around the study area, the following predictions have been made:

- Low levels of disturbance have taken place across the study area. Areas where lower levels of historic disturbance have taken place are likely to be of greater archaeological potential than areas which have been extensively disturbed.
    - Where low levels of disturbance have taken place, archaeological deposits may be present though their integrity may have been reduced
    - Aboriginal objects are not likely to be situated where extensive disturbance has taken place, such as in areas where landform modification or works that necessitate excavation such as the construction of sealed roads have taken place

- A number of archaeologically sensitive landform features are present within the study area. These include land in proximity to the Wingecarribee River and its tributaries, ridge tops and ridge lines. Where low levels of disturbance have taken place, these landforms are likely to contain Aboriginal objects
- Aboriginal objects such as artefacts or grinding grooves may be located in close proximity to water.
- Land adjacent to the Wingecarribee River is of high archaeological potential. Stone artefacts and areas of PAD have been identified in this area.
- Previous archaeological investigations have indicated that artefacts are more likely to be present in areas where the topography is flat to gently inclined than in moderately or steeply inclined areas.
- Surface artefacts are likely to be observed in areas where ground visibility is high
- Any artefacts encountered are most likely to be made of quartz as this was the predominant raw material identified in the Due Diligence Report carried out within the study area. Other, less frequent materials include quartzite, chert, silcrete and tuff.
- The Due Diligence report identified outcropping sandstone. Therefore sites associated with sandstone such as Rockshelters, Art and Grinding Grooves may be situated in the study area
- Hearths may be present in areas where low levels of disturbance have taken place
- Culturally modified trees are unlikely to be situated within the study area due to vegetation clearance but may be present in areas where mature natural vegetation is present
- The Due Diligence report identified stone artefacts along the unsealed roads within the property. There is potential for stone artefacts to be situated along the unsealed dirt roads within the study area
    - These artefacts may have been imported into the site

6.0 METHODOLOGY

6.1 Aims and objectives

The aims of archaeological survey are to:

- Test the predictive model by ground truthing the findings of the desktop assessment
- Record the landform, general soil information, surface conditions and vegetation conditions encountered during the survey and how these impact on the visibility of objects
- Identify and record all Aboriginal objects visible within the study area
- Identify and define areas of PAD (as defined by the predictive model)
- Gather enough information to assess scientific values of identified Aboriginal objects

6.2 Constraints and limitations

The survey undertaken assessed Aboriginal archaeology. Intangible cultural values have not been assessed in this report. Non-Aboriginal (historical) archaeology has not been assessed in this report. Only land within the study area was surveyed and included within this report. Land outside of the survey area was not surveyed for Aboriginal artefacts or areas of archaeological potential.

6.3 Survey personnel

The survey was undertaken on 30 January 2023. In attendance were Michael Lever (Heritage Consultant, Artefact Heritage) and Emma Jones (Heritage Consultant, Artefact Heritage). A representative from Illawarra LALC was invited to participate on this day but was unable to attend. Further survey took place on 24 May 2023. In attendance were Jonathan Bennett (Heritage Consultant, Artefact Heritage), Emma Jones (Heritage Consultant), Richard Dutton, (Illawarra LALC) and Nathan Brown (Gundungurra Tribal Council Aboriginal Corporation).

6.4 Sample strategy

A full coverage survey of the study area was achieved. Survey units were determined by the landform features present within the boundaries of the study area:

- Survey unit 1 consists of the disturbed land around the existing homestead.
- Survey unit 2 consists of the moderately inclined slopes adjacent to survey unit 1.
- Survey unit 3 consists of moderately inclined slopes adjacent to survey units 4 and 5.
- Survey unit 4 consists of disturbed terrain where a cattle yard and other rural infrastructure has been constructed
- Survey unit 5 consists of gently inclined lower slopes adjacent to an unnamed watercourse
- Survey unit 6 consists of rolling upper and mid slopes

A map showing the location of survey units 1-6 is shown below in Figure 12.

Figure 12: Map showing the location of survey units 1-6 (Artefact, March 2024)

6.5 Survey procedure

Archaeological survey was undertaken in accordance with the *Code of Practice*. A handheld GPS was used to track the path of the survey team and record coordinates of any identified Aboriginal sites or areas of interest. The coordinate system projection used for all recording was GDA94 MGA 56. A photographic record was kept during the site inspection and scales were used for photographs where appropriate.

6.6 Site recording procedure

An Aboriginal site is generally defined as an Aboriginal object or place. An Aboriginal object refers to any deposit, object or material evidence (not being a handicraft) relating to Aboriginal habitation of the area that comprises New South Wales (DECCW 2010). Aboriginal objects may include stone artefacts, scarred trees or rock art. Aboriginal places are defined by the *National Parks and Wildlife Act* 1974 as “areas of cultural significance to the Aboriginal community”. These values can be intangible and although they might not be visible, these places have cultural significance to Aboriginal people.

The Code of Practice states, in regard to the definition of a site and its boundary, that one or more of the following criteria must be used when recording material traces of Aboriginal land use:

- The spatial extent of any visible Aboriginal objects, or direct evidence of their location
- Obvious physical boundaries where present, for example mound site and middens (if visibility is good), a ceremonial ground
- Identification by the Aboriginal community on the basis of cultural information

7.0 SURVEY RESULTS

7.1 Description of survey units

7.1.1 Survey unit 1

Survey unit 1 covers the existing homestead, associated landscaped area and part of the adjacent internal road Across survey unit 1, visibility was low (20%) and exposure was very low (10%) due to grass cover and imported fill being present within the survey unit.

Around the homestead, extensive landform modification due to disturbance associated with levelling, terracing, pool construction and subterranean service installation was observed (Figure 13, Figure 14). Areas of visibility were primarily located along the driveway adjacent to the homestead, where imported fill with crushed gravel was identified (Figure 15). No surface artefacts were identified in this area. Small patches of ground visibility were identified where the grass cover was thinner. In this area, imported fill was observed which in some areas had been eroded down to the natural deposit comprised of coarse-grained orange sand (Figure 16). Extensive disturbance surrounding the homestead is likely to have significantly disturbed intact archaeological deposits in this area.

One low-density surface artefact scatter, Joadja AS 05 was identified adjacent to the homestead (Figure 18). A total of four artefacts were identified on the surface of, and immediately adjacent to the unsealed internal road. The scatter measures approximately 30 metres from north to south and 6 metres from east to west. One basalt flake measuring 35 x 28 x 17 mm (L x W x Th) was identified along the road The flake displayed evidence of weathering, where the grey colour of the stone had turned a red-orange colour (Figure 19 and Figure 20). One light grey basalt flake was identified (Figure 21 and Figure 22). Two quartz flakes were identified, with one displaying evidence of possible retouch. Given the presence of river-rounded cobbles and construction debris throughout the scatter, the fill is considered to have been imported into site. The artefacts in the scatter are likely to have been imported into the study area in the fill used for the construction of the road.

Figure 13: Disturbance associated with the construction of the homestead and pool

Figure 14: Extensive landform modification due to levelling and terracing

Figure 15: Ground visibility surrounding the homestead

Figure 16: Area of ground exposure in the east of survey unit 1

Figure 17: Joadja AS 05, Looking north across the site

Figure 18: Ventral surface of dark grey basalt flake

Figure 19: Dorsal surface of dark grey basalt flake

Figure 20: Ventral flake of pale grey basalt flake

Figure 21: dorsal surface of pale grey basalt flake

7.1.2 Survey unit 2

Survey unit 2 comprises the slopes surrounding the homestead within the Community 1 impact area. The landforms within this survey unit consist of moderately inclined mid and upper slopes overlooking the Wingecarribee River valley (Figure 22, , Figure 23). Levels of disturbance in this area are generally low, limited to vegetation clearance. Visibility and exposure on these slopes were nil due to grass cover though it appears that the natural landforms are intact.

Despite the natural landform being intact in this survey unit, previous archaeological investigations have found that steep slope landforms are unlikely to contain archaeological material in comparison to flat and gently inclined slopes. Fluvial and colluvial movement is likely to have moved archaeological material further downslope towards the Wingecarribee River. No sites or areas of PAD were identified in survey unit 2.

Figure 22: Moderately inclined slopes in the south of survey unit 1, looking south

Figure 23: Moderately inclined slopes in the west of survey unit 1, looking west

7.1.3 Survey unit 3

Survey unit 3 is situated within a sloping landform context, adjacent to the main access road that runs through the property and within the impact area of community 2. The landforms within this survey unit consist of a steeply incised valley that is traversed by an ephemeral tributary of the Wingecarribee River (Figure 24). In this area, disturbance is largely limited to vegetation clearance. One old growth tree is present and was inspected for evidence of cultural modification- none was identified (Figure 25). Outcropping sandstone is also present within this valley. The surface was inspected for traces of engravings or pigmented art, and none was identified (Figure 26).

The stream valley is steeply inclined and previous investigations have identified that steep slope gradients are less commonly spatially associated with in archaeological deposits. Fluvial movement is likely to have removed any background scatter in this area downslope towards the Wingecaribee River. No sites or areas of PAD were identified in survey unit 3.

Figure 24: Looking west across the valley. The watercourse has been dammed and is visible in the background

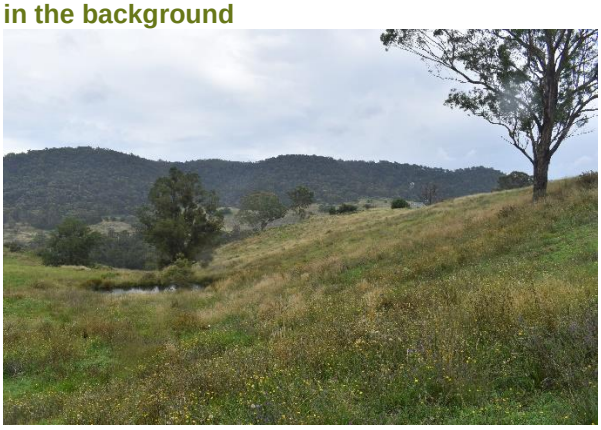


Figure 25: Looking north from within the valley

Figure 26: Old growth tree inspected for cultural modification. None identified.

Figure 27: Outcropping sandstone

7.1.4 Survey unit 4

Survey unit 4 consists of disturbed terrain within the proposed impact areas of community 2 and the arrivals village. Disturbance associated with the construction of rural infrastructure, such as water tanks, a cattle yard and other previous structures are likely to have removed topsoils and any Aboriginal objects that may have been previously located in this area (Figure 28, Figure 29, Figure 30). A road is located in the south of the survey unit. Ground visibility was high along the road, imported fill was identified in this area. Imported material such as crushed gravel is present (Figure 31). No surface artefacts were identified within the road or other areas of visibility. Within survey unit 3, no sites or areas of PAD were identified.

Figure 28: Tanks within survey unit 4

Figure 29: Disturbance within the stock yard associated with the construction of fences and enclosures

Figure 30: Disturbance within the stock yard associated with prior construction

Figure 31: Evidence of disturbance associated with road construction. Bedrock is visible with evidence of machine scraping

7.1.5 Survey unit 5

Survey unit 5 lies to the north and east of the access road where it passes through the arrivals village impact area. It is situated on a gently undulating slope formation adjacent to a first order stream.

In this survey unit, low levels of disturbance largely confined to vegetation clearance have taken place and the natural landforms in this area appear to be intact. The slope gently descends to the north east, towards the first order tributary of the Wingecaribee River that runs through the survey unit. Although ground visibility and exposure were generally low in this area, an exposed section north of the road indicates that a natural deposit is present in this area. A flat terrace overlooks the watercourse within this slope. Within the terrace, ground visibility was nil, though the natural landform appears to be intact with observed disturbance limited to vegetation clearance. Given the low levels of disturbance observed within the terrace and adjacent slopes and the sensitivity of these landform features, this area is considered a PAD (Joadja PAD 03).

Joadja PAD 03 is considered to contain high archaeological potential due to the low levels of disturbance identified within an archaeologically sensitive landform feature. The PAD comprises the terrace and the adjacent gently inclined slopes. Richard Dutton (Illawarra LALC) noted that Joadja PAD 03 would have been a good spot to camp as it is protected from the winds that would have come from the Wingecarribee River.

Figure 32: Exposed section north of the internal road

Figure 33: Looking north towards Joadja PAD 03. Gently inclined slopes are visible in the foreground and the terrace is visible in front of the watercourse

Figure 34: Within Joadja PAD 03, looking north east. Nil to low visibility within the terrace.

7.2 Survey unit 6

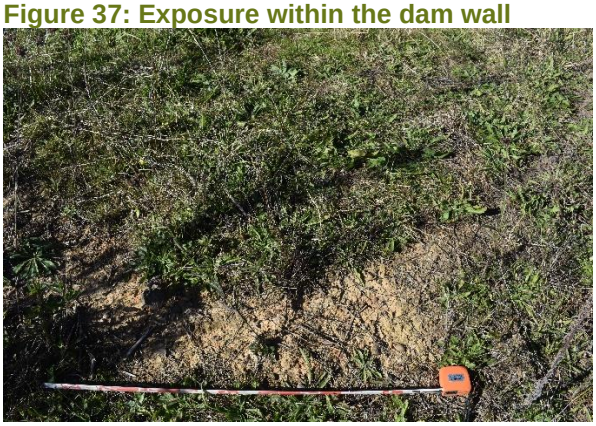
Survey unit 6 is located adjacent to survey units 3, 4 and 5. The survey unit is situated within rolling hills, and spans moderately to steeply inclined mid and upper slopes (Figure 35 and Figure 36). Across survey unit 6, low levels of disturbance were observed, limited to vegetation clearance and the installation of paddock fences and the construction of a dam. Ground visibility and exposure were nil across most of the survey unit, with a small area of exposed ground surface visible in a dam wall. This area of ground exposure was observed for artefacts; none were identified (Figure 37).

Landform features present within survey unit 6 consist of moderately to steeply inclined mid-to upper slopes. These areas are unlikely to contain Aboriginal objects as fluvial processes are likely to have washed any artefact-bearing deposits further downslope, towards the Wingecarribee River valley. No sites or areas of PAD were identified in survey unit 6.

Figure 35: Steeply inclined stream valley. Photo taken facing south east, looking towards a tributary of the Wingecarribee River

Figure 36: Moderately inclined upper slopes, facing east. Dam visible in the mid-ground.

Figure 37: Exposure within the dam wall



7.3 Analysis of survey coverage and effectiveness

Effective survey coverage is outlined in Table 3 and landform coverage is outlined in Table 3.

Table 3: Effective survey coverage

Survey Landform Unit		Survey unit area (m^2)	Visibility (%)	Exposure (%)	Effective Survey Coverage (m^2)	Effective Coverage (%)
1	Disturbed terrain	20,650	20	10	413	2
2	Slope (Moderately inclined)	13,567	0	0	0	0
3	Slope (Moderately inclined)	4,304	0	0	0	0
4	Disturbed terrain	17,528	10	10	1,753	1
5	Slope (Gently inclined)	15,216	10	10	1,522	1
6	Slope (moderately inclined)	19,049	0	0	0	0

Table 4: Landform survey coverage

Landform	Landform area (m^2)	Area effectively surveyed (m^2)	% of landform surveyed	Number of sites
Disturbed terrain	38,178	2,166	6	1
Slope (moderately inclined)	36,920	0	0	0
Slope (gently inclined)		1,522	1	1

7.4 Aboriginal sites

Three sites were identified during archaeological survey. These were Joadja AS 05, Joadja PAD 03 and Joadja PAD 04. A summary of the identified sites is provided in Table 5 and Figure 42 below.

Table 5: Archaeological survey results

Site name	AHIMS ID	Feature(s)	Survey unit	Landform
Joadja AS 05	Pending	Artefact (4)	1	Disturbed terrain
Joadja PAD 03	AHIMS ID 52-1-0407	Potential Archaeological Deposit (PAD)	5	Slope (gently inclined)
Joadja PAD 04	AHIMS ID 52-1-0518	Potential Archaeological Deposit (PAD)	N/A	Crest

Figure 38: Map showing the location of sites identified during survey (Artefact, March 2024)

7.4.1 Joadja AS 05

A summary of Joadja AS 05 is present below in Table 6and Figure 39 to Figure 41.

Table 6: Joadja AS 05

Site name	Joadja AS 05
AHIMS ID	Pending
Site type	Artefact Scatter
Length	30 metres
Width	6 metres
Zone	56
Easting	242235
Northing	6188202
Horizontal accuracy	3 metres
Location method	Non-differential GPS
Landform pattern	Rolling hills
Landform unit	Slope
Land use	Road
Vegetation	Cleared
Distance to water	80 metres
Directions to site	Joadja AS 05 is located within private property known as 1551 Joadja Road, Joadja. Enter the property and follow the internal road for approximately 1.2 kilometres. The artefact scatter is situated along the internal road, adjacent to the homestead.
Description of features	Joadja AS 05 Is a low-density artefact scatter located on a dirt road. Four artefacts were identified including two basalt flakes and two quartz flakes, one of which displayed evidence of possible retouch. The scatter measures approximately 30 metres from north to south and 6 metres from east to west.
Site interpretation	Given the presence of river-rounded cobbles and construction debris throughout the scatter, the fill is considered to have been imported into site. The artefacts identified are therefore likely to have been imported into the study area for the construction of the road.
Site condition	Disturbed
Open/closed site	Open
Restrictions	None

Figure 39: Basalt flake within Joadja AS 05

Figure 40: Basalt flake within Joadja AS 05

Figure 41: Joadja AS 05

7.4.2 Joadja PAD 03

A summary of Joadja PAD 03 is presented below in Table 7 and Figure 42 to Figure 44.

Table 7: Joadja PAD 03

Site name	Joadja PAD 03
AHIMS ID	52-1-0407
Site type	PAD
Length	50 metres
Width	110 metres
Zone	56
Easting	242512
Northing	6187906
Horizontal accuracy	3 metres
Location method	Non-differential GPS
Landform pattern	Rolling hills
Landform unit	Terrace
Land use	Rural
Vegetation	Cleared
Distance to water	20 metres
Directions to site	Joadja PAD 03 is located within private property known as 1551 Joadja Road, Joadja. Enter the property and follow the internal road for approximately 800 metres to the stockyard. The PAD is located opposite the stockyard, on the northern side of the internal road.
Description of features	Joadja PAD 03 spans a gently inclined slope and an adjacent flat terrace which overlooks a first order tributary of the Wingecaribee River. This area has been designated as an area of PAD.
Site interpretation	Gently inclined slopes and terraces adjacent to watercourses are often spatially associated with archaeological deposits. Although visibility in this area was nil due to grass cover, a nearby exposed section indicated that natural deposits are present within the vicinity of Joadja PAD 03. In addition, low levels of disturbance were identified, limited to vegetation clearance. The combination of these factors suggests that Aboriginal objects may be present in this area.
Site condition	Good
Open/closed site	Open
Restrictions	None

Figure 42: Looking towards Joadja PAD 03, facing north

Figure 43: Looking north east within Joadja PAD 03, on the terrace

Figure 44: Within Joadja PAD 03, nil to low visibility due to grass cover

7.5 Sites identified outside of the study area

The nature and extent of the proposed development have changed since the Project's inception. Presently, the study area consists of land to be impacted by the development of the arrival village, Community 1 and Community 2 (Figure 1). Prior to the issuing of the finalised designs on 12 March 2024, the study area boundaries were revised and some land formerly within the study area was excluded.

One area of PAD, Joadja PAD 04, was identified within the boundaries of the former study area. Following updates to the proposed works and study area, Joadja PAD 04 now falls outside the study area boundaries. While land outside of the study area boundaries are excluded from the scope of this report (Section 1.5), information of Joadja PAD 04 is presented below for consistency with internal records to and assist with further planning for Stage 2 of the Project.

7.5.1 Joadja PAD 04

Joadja PAD 04 spans a level crest formation in between the north western and south eastern parts of the study area (Figure 45). It is bisected by the internal road which leads to the homestead. PAD 04 overlooks a tributary of the Wingecaribee River, which is located approximately 30 metres east of the PAD (Figure 46). To the west, there are views across the Wingecaribee River valley. Low levels of disturbance were identified outside the road, with observed disturbance largely limited to vegetation clearance and re-vegetation with young native trees. Grass cover throughout the PAD cause ground visibility and exposure to be very low. Nonetheless, natural undulations in the topography indicate that

natural deposits are likely to be present and relatively intact. Some outcropping sandstone was identified within this PAD which was inspected for evidence of grinding grooves and engravings (Figure 47). None was identified.

A summary of Joadja PAD 04 is presented below in Table 8 and Figure 45 to Figure 47.

Table 8: Joadja PAD 04

Site name	Joadja PAD 04
AHIMS ID	52-1-0518
Site type	PAD
Length	120 metres
Width	50 metres
Zone	56
Easting	242384
Northing	6188059
Horizontal accuracy	3 metres
Location method	Non-differential GPS
Landform pattern	Rolling hills
Landform unit	Crest
Land use	Rural
Vegetation	Cleared
Distance to water	30 metres
Directions to site	Joadja PAD 04 is located within private property known as 1551 Joadja Road, Joadja. Enter the property and follow the internal road for approximately 1 kilometre. The PAD is located on a localised crest formation. It spans the internal roadway and adjacent land to the east and west.
Description of features	Joadja PAD 04 spans a level crest formation. PAD 04 overlooks a tributary of the Wingecaribee River, which is located approximately 30 metres east of the PAD. To the west, there are views across the Wingecaribee River valley. The PAD is traversed along its north-south axis by an unsealed dirt road. Low levels of disturbance were identified on either side of the road. Some outcropping sandstone was identified within this PAD which was inspected for evidence of grinding grooves and engravings. None were identified.
Site interpretation	The crest is considered to be a PAD because of the presence of an archaeologically sensitive landform feature, a level crest, in close proximity to water. In addition, low levels of disturbance were observed outside of the road. The combination of these factors indicates that Aboriginal objects may be present in this area.
Site condition	Good
Open/closed site	Open
Restrictions	None

Figure 45: Looking north across Joadja PAD 04

Figure 46: Looking east from Joadja PAD 04. Unnamed and dammed tributary of the Wingecarribee River visible in the background

Figure 47: Outcropping sandstone within Joadja PAD 04

8.0 DISCUSSION AND ANALYSIS

The survey results identified patterns that are, broadly speaking, in keeping with the findings of the predictions outlined in Section 5.2 and the findings of archaeological investigations carried out within and nearby the study area. The survey undertaken assessed the proposed locations of Community 1, Community 2 and the Arrival Village. These locations spanned a variety of landform features. Varying levels of disturbance were observed too, ranging between low and extensive.

While the AHIMS search undertaken indicated that stone artefacts are the most common site feature in the region, the most common site feature identified during survey was PAD. The findings of previous archaeological investigations around the study area have identified that landform features such as lower slopes and alluvial terraces are often associated with archaeological deposits. Desktop assessment and the survey undertaken confirmed that these landform features are present within the study area, and such locations have been designated as areas of PAD likely to contain Aboriginal objects. Therefore, the findings of the survey are likely to be consistent with the regional archaeological trends. Further archaeological investigation would be required to confirm the presence of Aboriginal objects within designated areas of PAD.

Desktop assessment indicated that certain landform features are more likely to contain Aboriginal objects, particularly where low levels of disturbance have taken place. These landforms include crests, ridges, lower slopes, terraces and land in proximity to the Wingecarribee River and its tributaries. Joadja PAD 03 and 04 are located in close proximity to water, on a crest formation and elevated alluvial terrace, respectively. Many archaeological investigations have identified that archaeological deposits are less frequently located on steeper slopes in comparison to gently inclined slopes, lower slopes or flat areas as fluvial and colluvial processes are likely to have washed Aboriginal objects downslope. The survey undertaken did not identify any sites or areas of PAD on upper and mid slopes, or on moderately to steeply inclined slopes.

Generally, sites are often identified in areas where lower levels of historical ground disturbance have taken place. Of the three sites identified, Joadja AS 05 was identified within a disturbed context and Joadja PAD 04 was situated in a partially disturbed context. Joadja PAD 03 was the only site identified in a context where relatively low levels of disturbance were observed. Although the survey results do not reflect this trend, the results do not deviate from it either. Joadja PAD 04 is located in a sensitive landform feature, a localised and level crest, that has been subject to disturbance through road construction activities. Road construction activities may have disturbed or removed artefacts within the road. It is likely that artefact bearing deposit(s) within the PAD would be more intact outside of the road. Test excavation would be required to confirm this. Nonetheless, an area of PAD has been identified that spans both disturbed and undisturbed terrain. The artefacts identified at Joadja AS 05 are likely to have been imported into the site with the fill found across the internal road. In this instance, disturbance has ‘created’ a site. Joadja PAD 03 is located across an elevated alluvial terrace, with observed disturbance limited to vegetation clearance. This area is likely to contain a subsurface deposit, given its location and level of intactness. Richard (Illawarra LALC) and Nathan (GTCAC) stated that this area is more likely to contain Aboriginal objects than Joadja PAD 04 or Joadja AS 05. While the survey undertaken identified sites located in disturbed contexts, the highest potential for intact archaeological deposits was identified where lower levels of disturbance have taken place.

9.0 SIGNIFICANCE ASSESSMENT

9.1 Significance assessment criteria

In accordance with the Code of Practice, an assessment of the scientific value of an Aboriginal object is required in order to form the basis of its management. The Guide provides the following criteria for the assessment of scientific value:

- Research potential - does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- Representativeness - how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity - is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential - does the subject area contain teaching sites or sites that might have teaching potential?

It is important to note that heritage significance is a dynamic value.

9.2 Statement of scientific value

Joadja PAD 03 and Joadja PAD 04 are identified areas archaeological potential, rather than a sites with known Aboriginal objects. The research, representativeness, rarity and education potential of the site cannot be assessed unless further archaeological investigation takes place.

Joajda AS 05 is a site of low scientific value. This is because the artefacts were likely imported into the study area with fill that was used for road construction. Therefore, it affords little opportunity to teach people about the Aboriginal inhabitation of the study area and little research potential. Stone artefacts are the most common site feature in the regional context, and as such rarity and representativeness is considered to be low. Moreover, since the artefacts are likely located outside of their original context, there is no connectivity between Joadja AS 05 and other sites nearby.

A summary of the archaeological significance of sites identified is presented in Table 9.

Table 9: Significance assessment

Site name (AHIMS ID)	Research potential	Representativeness	Rarity	Education potential	Overall significance assessment
Joadja AS 05 (AHIMS ID pending)	Low	Low	Low	Low	Low
Joadja PAD 03 (52-1-0407)	Unknown	Unknown	Unknown	Unknown	Unknown

Site name (AHIMS ID)	Research potential	Representativeness	Rarity	Education potential	Overall significance assessment
Joadja PAD 04 (AHIMS ID 52-1-0518	Unknown	Unknown	Unknown	Unknown	Unknown

10.0 IMPACT ASSESSMENT

10.1 Description of likely impacts

Fresh Hope Venues proposes to develop an eco-tourist facility at 1551 Joadja Road, Joadja. The proposal includes a variety of Community Villages, for both short term stay and day trips. This includes:

- Arrival village consisting of parking areas and arrival building
- Community 1 consisting of a refurbished homestead building and cabins
- Community 2 consisting of amenities building and glamping

The arrival village will consist of the establishment of an arrival building, parking facilities for 30 cars and 3 buses, an associated turning circle, 12 glamping accommodations and wastewater treatment. Detailed design of the arrival village is shown in Figure 48. Development in Community 1 will consist of the refurbishment of the existing homestead, the construction of 10 cabins and the construction of a turning circle. Detailed design of Community 1 is shown in Figure 49. Development in Community 2 consists of the construction of a community building, 10 glamping accommodations and a turning circle. Detailed design of Community 2 is shown in Figure 50. The proposed works would involve ground disturbance for the construction of the arrival village building, the Community 2 amenities building, glamping accommodation, cabins, wastewater treatment and associated infrastructure such as turning circles and parking facilities.

Figure 48: Detailed design of the arrival village (Breathe, 12 March 2024)

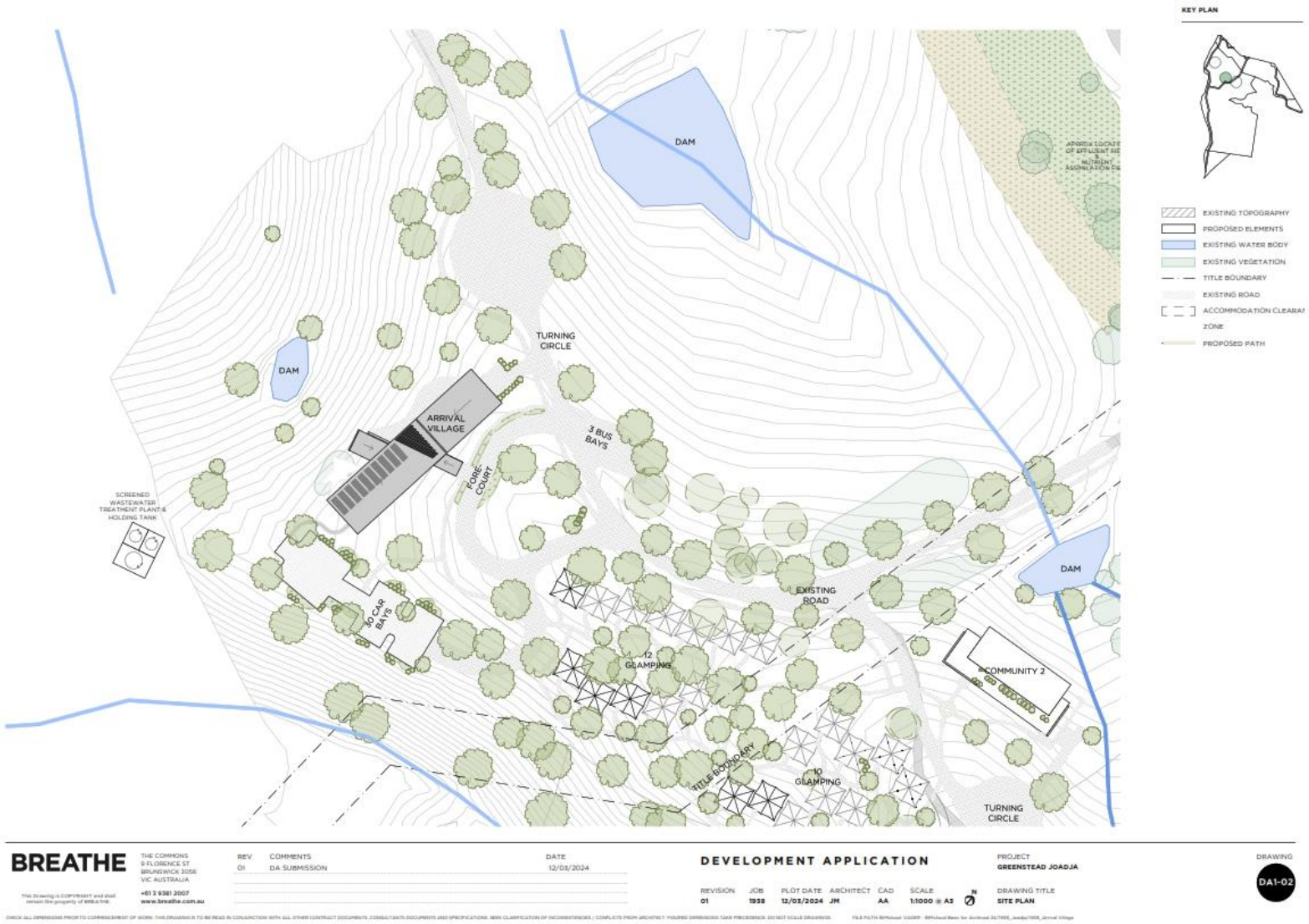


Figure 49: Detailed design of Community 1 (Breathe, 17 April 2024)

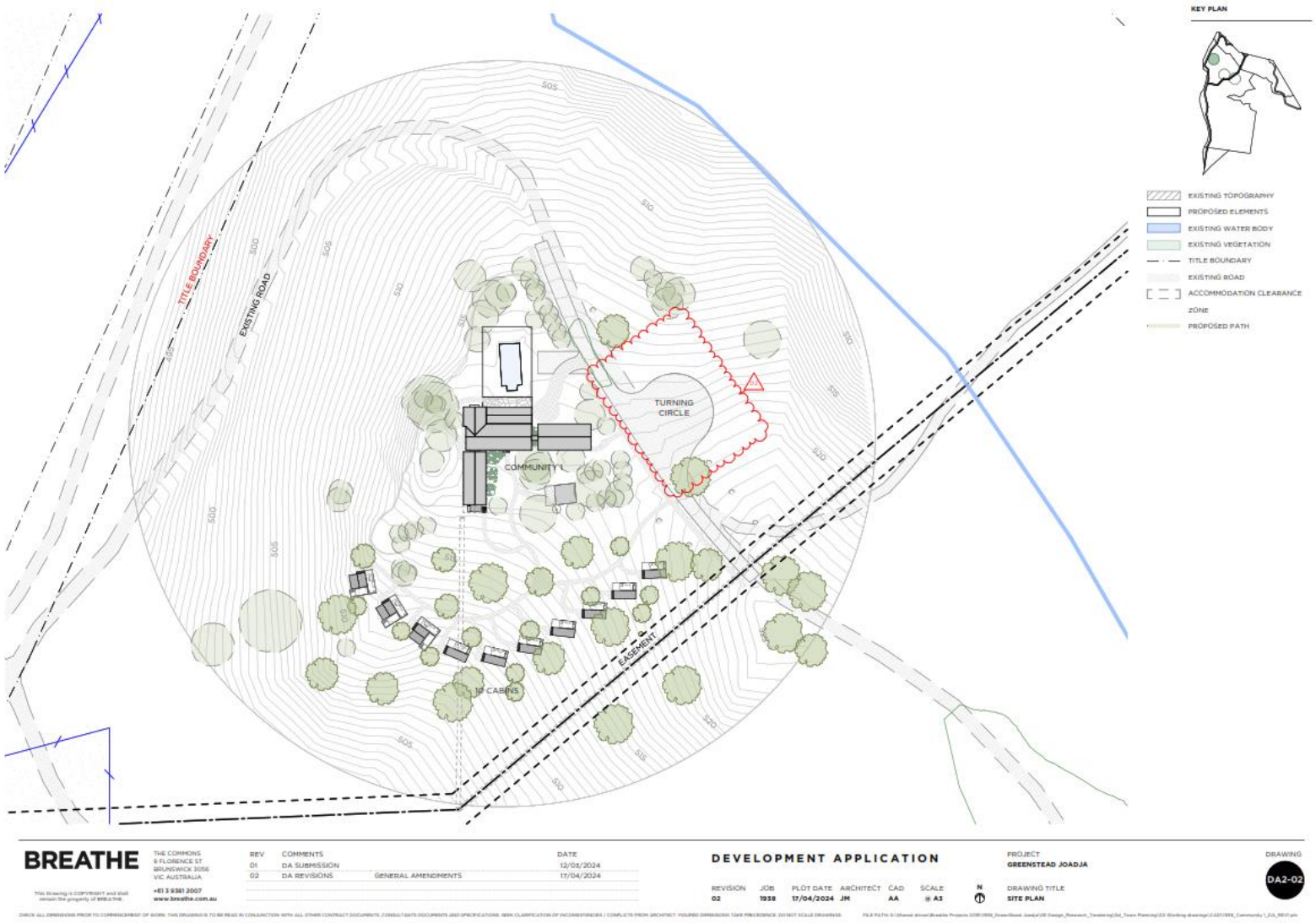
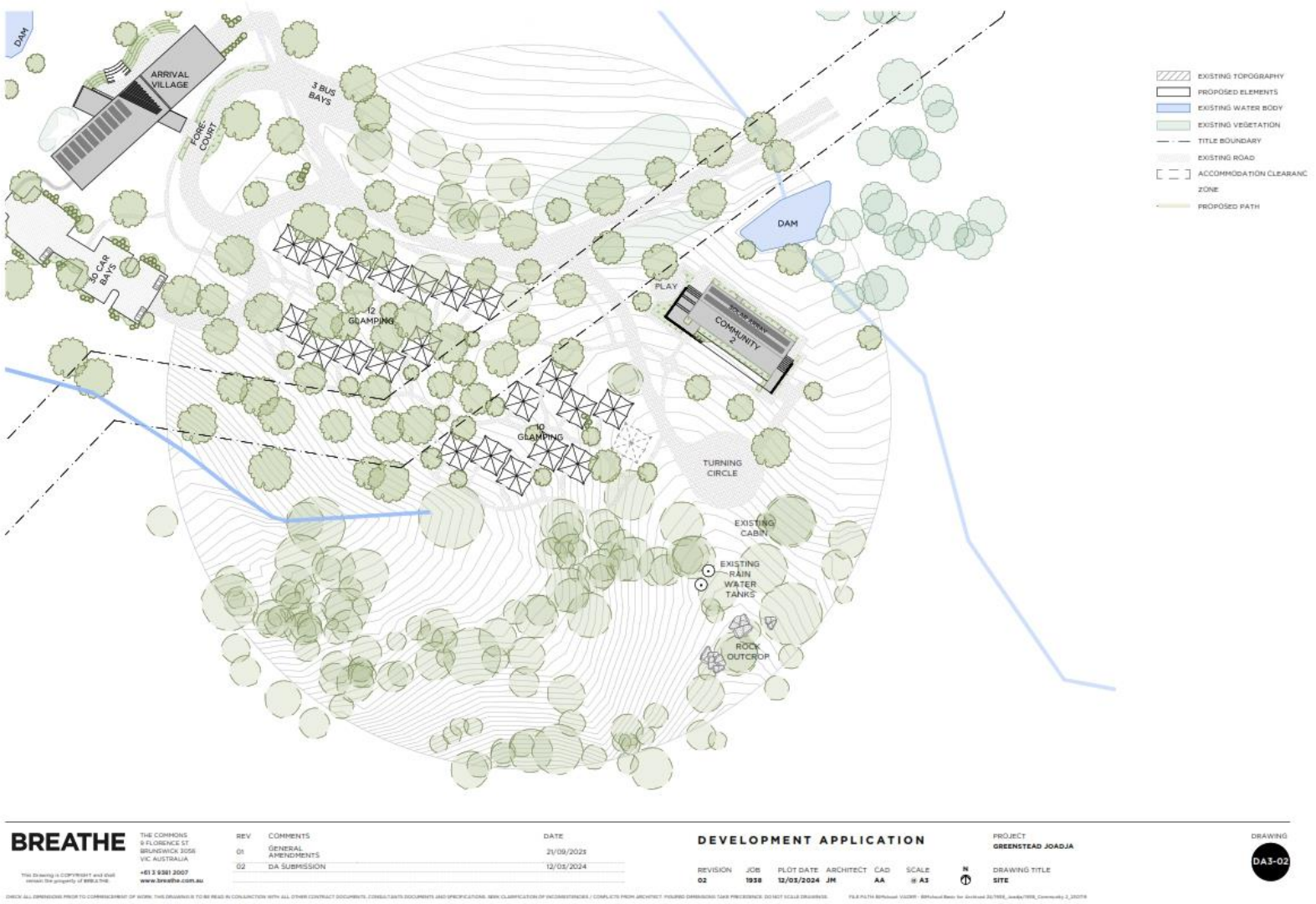


Figure 50: Detailed design of Community 2 (Breathe, 12 March 2024)



10.2 Potential harm to Aboriginal heritage

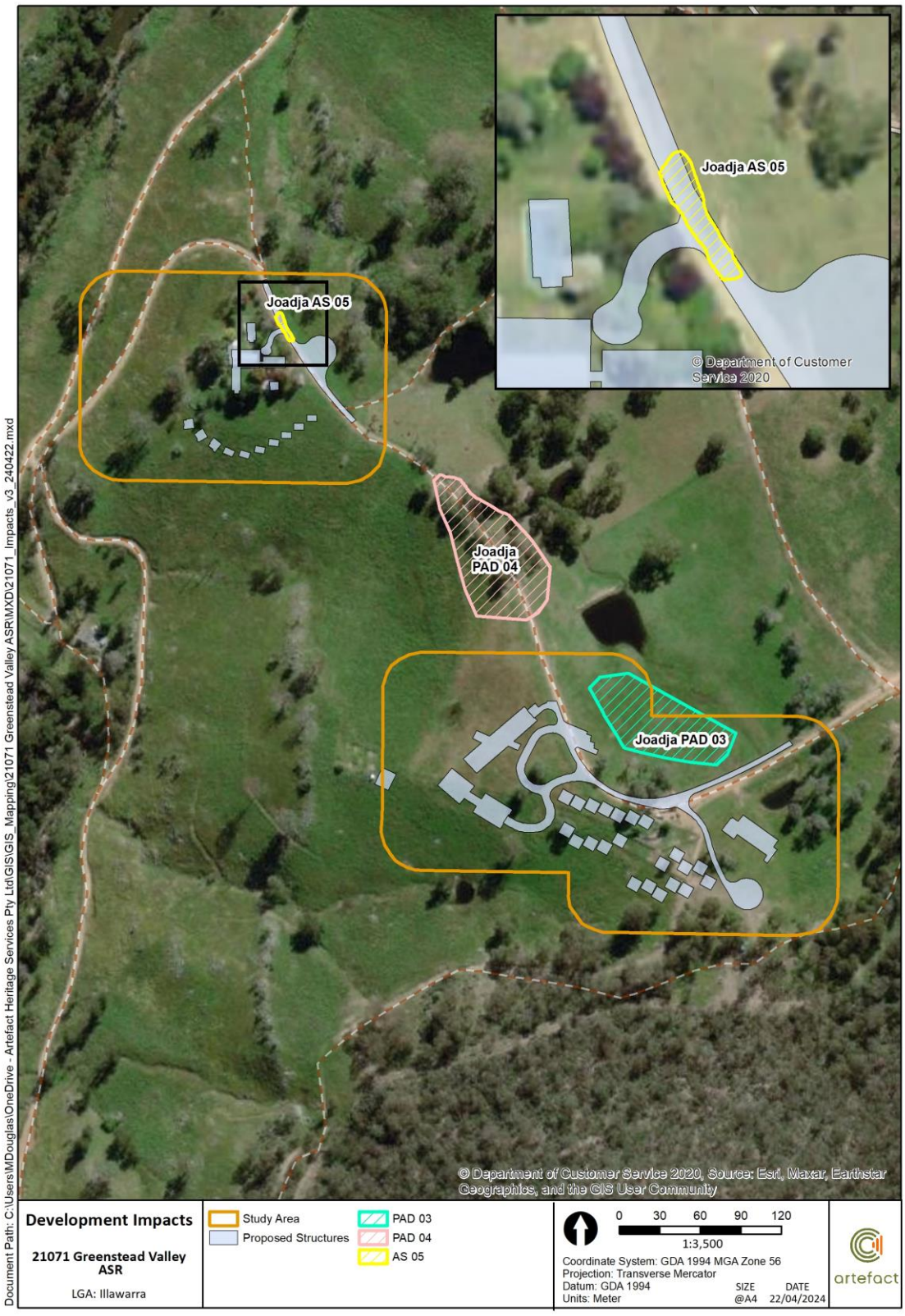
The proposed development will necessitate ground disturbance across the study area. The locations of Joadja PAD 03 and Joadja PAD 04 have been identified as “no build zones” in the detailed design for the Project. Joadja PAD 03 and Joadja PAD 04 are not located within the development footprint and will not be directly impacted by the proposed works. Joadja AS 05 is located outside the development footprint of the proposed turning circle to be constructed adjacent to Community 1. Consequently, Joadja AS 05 will not be directly impacted by the proposed works.

A summary of the impacts is presented below in Table 10 and Figure 51.

Table 10: Impact assessment

Site name (AHIMS ID)	Type of harm	Degree of harm	Consequence of harm
Joadja AS 05	None	None	None
Joadja PAD 03	None	None	None
Joadja PAD 04	None	None	None

Figure 51: Map showing the location of the proposed works in relation to Joadja AS 05, Joadja PAD 03 and Joadja PAD 04 (Artefact, April 2024)



11.0 MANAGEMENT AND MITIGATION MEASURES

11.1 Guiding principles

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved.

Where unavoidable impacts occur then measures to mitigate and manage impacts are proposed. Mitigation measures primarily concern preserving the heritage values of sites beyond the physical existence of the site. The most common methods involve detailed recording of Aboriginal objects, archaeological test and salvage excavations, artefact analysis and, where appropriate, reburial of Aboriginal objects in a location determined by the RAPs.

Mitigation measures vary depending on the assessment of archaeological significance of a particular Aboriginal site and are based on its research potential, rarity, representatives and educational value. In general, the significance of a site would influence the choice of preferred conservation outcomes and appropriate mitigation measures, usually on the following basis:

- Low archaeological significance – conservation where possible. An AHIP would be required to impact the site before work can commence.
- Moderate archaeological significance – conservation where possible. If conservation was not practicable, further archaeological investigation would be required such as salvage excavations or surface collection in accordance with the AHIP Conditions of Approval.
- High archaeological significance – conservation as a priority. Where all other practical alternatives have been discounted mitigation measures such as comprehensive salvage excavations in accordance with the AHIP Conditions of Approval would be required.

Sites of unknown scientific value should be conserved where possible. Where conservation is not practical further investigation under the Code of Practice will be required to confirm the presence of Aboriginal objects and gather enough information to assess significance. Test excavation is not a mitigation measure, it is an investigatory action required to gather enough information to inform the development of appropriate mitigation measures.

11.2 Management measures

11.2.1 Exclusion zones

It is recommended that exclusion zones are established around Joadja AS 05, Joadja PAD 03 and Joadja PAD 04 to ensure that indirect harm does not occur in these areas. These areas are not to be used for activities such as stockpiling or storage. In addition, metal tracked machinery or tools which may disturb the ground surface are not to be used in these areas. It is recommended that a surveyor is engaged to identify the boundaries of these areas, and that they are demarcated using flagging or similar signage. An induction must be provided to all employees outlining the location of Joadja PAD 03 and Joadja PAD 04. Maps must be provided to all workers clearly showing the location of the PADs.

11.2.2 Unexpected Finds Procedure

It is recommended that the proposed works are managed under an Unexpected Finds Procedure (UFP). An example of a UFP is presented below:

- Staff involved with ground disturbing works must be made aware of the potential for archaeological remains to be present. Clear lines of communication must be established for the reporting of any such finds and for procedures to be rapidly implemented. The UFP must be made clear to all staff
- In the event that skeletal remains are encountered which may be human remains, the following steps must be followed:
    - New South Wales Police must be informed immediately
    - Ulladulla LALC and a qualified Heritage Consultant must be engaged to assist in assessment of the find
    - Works must cease immediately and may not resume until written permission is granted by Heritage NSW
- In the event that suspected Aboriginal archaeological material is identified, the following steps must be followed:
    - All works in the area must cease
    - The find(s) must not be moved and must be appropriately protected from potential damage
    - A qualified heritage consultant must be engaged to assist in assessment of the find to assist in assessment of the find and provide management recommendations, which may include the need for further assessment and archaeological testing
    - If the find is determined to be an Aboriginal object, an AHIP must be obtained prior to works recommencing
    - Work may not resume until written permission is granted by Heritage NSW.

11.3 Changes to the project area

Advice provided within this report is based upon the most recent information provided by the proponent at the time of writing. Any changes made to the project should be assessed by an archaeologist in consultation with the RAPs. Any changes that may impact on Aboriginal sites not assessed as part of the project may warrant further investigation and result in changes to the recommended management and mitigation measures.

This report has identified that there are a number of known Aboriginal sites and areas of PAD within 1551 Joadja Road, Joadja (Lot 202 DP 861816), but outside of the study area boundaries. These sites include:

- Joadja PAD 01 (AHIMS ID 52-2-0414)
- Joadja PAD 02 (AHIMS ID 52-1-0406)
- Joadja PAD 04 (AHIMS ID 52-1-0518)
- Joadja AS 01 (AHIMS ID 52-1-0408)
- Joadja AS 02 (AHIMS ID 52-1-0409)

- Joadja AS 03 (AHIMSID 52-1-0411)
- Joadja AS 04 (AHIMS ID 52-1-0410)
- Joadja ISO 01 (AHIMS ID 52-1-0412)
- Joadja ISO 02 (AHIMS ID 52-1-0413)

These sites have not been assessed in this report. As such, any direct or indirect impacts to these sites which may occur during Stage 1 or subsequent stages of development have not been assessed. **Harm to these sites must not occur prior to additional archaeological investigation taking place.**

12.0 CONCLUSIONS AND RECOMMENDATIONS

The following recommendations regarding Aboriginal heritage are based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974* as amended
- *The Code of Practice for the Investigation of Aboriginal Objects in New South Wales* 2010
- The results of the background research and visual inspection
- The likely impacts of the proposed works

It was found that:

- One artefact scatter, Joadja AS 05 (AHIMS ID pending) was identified during survey
- Two areas of PAD, Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518) were identified during survey
- Potential for indirect harm to Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518) can be eliminated through the implementation of the management measures presented in Section 11.2
- Sites which have been recorded within 1551 Joadja Road, Joadja (Lot 202 DP 861816) but outside of the present study area have been excluded from this assessment. As such, any direct or indirect impacts to these sites which may occur during Stage 1 or subsequent stages of development have not been assessed. **Harm to these sites must not occur prior to additional archaeological investigation taking place.** These sites include:
    - Joadja PAD 01 (AHIMS ID 52-2-0414)
    - Joadja PAD 02 (AHIMS ID 52-1-0406)
    - Joadja PAD 04 (AHIMS ID 52-1-0518)
    - Joadja AS 01 (AHIMS ID 52-1-0408)
    - Joadja AS 02 (AHIMS ID 52-1-0409)
    - Joadja AS 03 (AHIMSID 52-1-0411)
    - Joadja AS 04 (AHIMS ID 52-1-04100
    - Joadja ISO 01 (AHIMS ID 52-1-0412)
    - Joadja ISO 02 (AHIMS ID 52-1-0413)

The following recommendations are therefore made:

- All works undertaken must be managed under a UFP. An example of a UFP is presented in Section 11.2.2.
- Exclusion zones must be established around Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518). Suggested protocols for the establishment of exclusion zones are presented in Section 11.2.1. The implementation of this management measure must involve:
    - The provision of an induction to all employees

  - Clear demarcation of Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518)
  - The provision of maps showing the location of Joadja AS 05 (AHIMS ID pending), Joadja PAD 03 (AHIMS ID 52-1-0407) and Joadja PAD 04 (AHIMS ID 52-1-0518)
- If changes to the scope of works or the location of the study area change, further archaeological assessment must take place. If the management measures presented in Section 11.2 cannot be implemented, appropriate mitigation measures must be developed prior to works commencing.
- Harm must not occur to the following sites:
  - Joadja PAD 01 (AHIMS ID 52-2-0414)
  - Joadja PAD 02 (AHIMS ID 52-1-0406)
  - Joadja PAD 04 (AHIMS ID 52-1-0518)
  - Joadja AS 01 (AHIMS ID 52-1-0408)
  - Joadja AS 02 (AHIMS ID 52-1-0409)
  - Joadja AS 03 (AHIMSID 52-1-0411)
  - Joadja AS 04 (AHIMS ID 52-1-04100
  - Joadja ISO 01 (AHIMS ID 52-1-0412)
  - Joadja ISO 02 (AHIMS ID 52-1-0413)
- **If harm to the above sites is proposed, additional archaeological assessment must take place prior to any impacts occurring to these sites**.

13.0 REFERENCES

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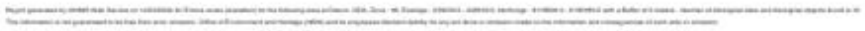
14.0 APPENDICES

14.1 Appendix 1: AHIMS search results

AHIMS Web Services (AWS)

Note: This Excel report shows the sites found in AHIMS on the 14/03/2024. If this date is not the same as the original date of the Search Results letter obtained during the Basic Search, then the search results might be different. The PDF version of this report will always coincide with the Basic Search Results letter.

Site ID	Site name	Datum	Zone	Easting	Northing	Context	Site status	Primary contact	Site features	Site types	Recorders	Reports	Permits	Longitude GDA94	Latitude GDA94
52-1-0371	Bangadilly National Par	GDA	56	239630	6160334	Open site	Valid		Artefact : -, Hearth : -		Mr Michael Jackson			150.17	-34.46
52-1-0434	Tugalong Station 06 (G	GDA	56	239859	6161215	Closed sit	Valid		Art (Pigment or Engraved) : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.17	-34.39
52-1-0462	Marrsurai 01B	GDA	56	235315	6162000	Open site	Valid		Aboriginal Ceremony and Dreaming : -, Artefact		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.12	-34.38
52-1-0437	Tugalong Station 04 (G	GDA	56	240009	6161274	Closed sit	Valid		Art (Pigment or Engraved) : -, Artefact : -, Grind		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.17	-34.39
52-1-0455	Tugalong Station 07 (G	GDA	56	237583	6160236	Open site	Valid		Artefact : -, Grinding Groove : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.40
52-1-0450	Tugalong Station 13 (G	GDA	56	238851	6160968	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.16	-34.40
52-1-0452	Tugalong Station 12A (	GDA	56	239478	6160103	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.16	-34.40
52-1-0323	Bangadilly NP07 Joadj	GDA	56	241679	6164606	Open site	Valid		Grinding Groove : 1		Mr Michael Jackson			150.19	-34.45
52-1-0412	Joadja ISO 01	GDA	56	241090	6167490	Open site	Valid		Artefact : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.19	-34.42
52-1-0370	Bangadilly National Par	GDA	56	239747	6163797	Open site	Valid		Grinding Groove : -		Mr Michael Jackson			150.17	-34.45
52-1-0366	Bangadilly National Par	GDA	56	240294	6161533	Open site	Valid		Art (Pigment or Engraved) : -, Artefact : -, Heart		Mr Michael Jackson			150.17	-34.47
52-1-0367	Bangadilly National Par	GDA	56	240294	6161533	Open site	Valid		Art (Pigment or Engraved) : -, Artefact : -, Grind		Mr Michael Jackson			150.17	-34.47
52-1-0411	Joadja AS 03	GDA	56	241050	6166154	Open site	Valid		Artefact : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.18	-34.43
52-1-0456	Tugalong Station 09 (G	GDA	56	237765	6160206	Closed sit	Valid		Art (Pigment or Engraved) : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.40
52-1-0322	Bangadilly NP09	GDA	56	243040	6164252	Open site	Valid		Artefact : 1, Hearth : 1		Mrs Judy Jackson			150.21	-34.45
52-1-0445	Tugalong Station 19 (G	GDA	56	237083	6162244	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.38
52-1-0409	Joadja AS 02	GDA	56	240636	6165951	Open site	Valid		Artefact : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.18	-34.44
52-1-0408	Joadja AS 01	GDA	56	241014	6165776	Open site	Valid		Artefact : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.19	-34.44
52-1-0414	Joadja PAD 01	GDA	56	242045	6167526	Open site	Valid		Potential Archaeological Deposit (PAD) : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.19	-34.42
52-1-0406	Joadja PAD 02	GDA	56	242162	6166906	Open site	Valid		Potential Archaeological Deposit (PAD) : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.19	-34.43
52-1-0160	Joadja Creek 4	AGD	56	243780	6166536	Closed sit	Valid		Art (Pigment or Engrave Shelter with Art		Kerry Navin,Doctor Susan (left ahmo) Mcintyre-Tamwoy			150.21	-34.41
52-1-0316	Bangadilly NP03 Geog	GDA	56	238582	6167594	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.16	-34.42
52-1-0157	Joadja Creek 1	AGD	56	244250	6168953	Open site	Valid		Artefact : -	Open Camp Site	Kerry Navin,Doctor Susan (left ahmo) Mcintyre-Tamwoy			150.22	-34.41
52-1-0373	Bangadilly National Par	GDA	56	240754	6161952	Open site	Valid		Artefact : -, Hearth : -		Mr Michael Jackson			150.18	-34.47
52-1-0447	Tugalong Station 16 (G	GDA	56	239101	6160664	Closed sit	Valid		Art (Pigment or Engraved) : -, Artefact : -, Poten		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.39
52-1-0315	Bangadilly NP02	GDA	56	239041	6168189	Open site	Valid	Ms.Sharyn Hails	Artefact : 1		Mr Michael Jackson			150.16	-34.41
52-1-0033	Medway 1	AGD	56	240852	6161078	Open site	Valid		Artefact : -	Open Camp Site	Mr R Taylin			150.24	-34.46
52-1-0413	Joadja ISO 02	GDA	56	242110	6166946	Open site	Valid		Artefact : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.19	-34.43
52-1-0007	Joadja, Gate Cave	AGD	56	245819	6167096	Closed sit	Valid		Artefact : -	Shelter with Deposit	Mr.R Taylin			150.24	-34.42
52-1-0439	Tugalong Station 08 (G	GDA	56	237564	6160265	Closed sit	Valid		Art (Pigment or Engraved) : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.40
52-1-0454	Tugalong Station 11 (G	GDA	56	238237	6159914	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.40
52-1-0314	Bangadilly NP01-Tugal	GDA	56	239585	6167901	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.16	-34.42
52-1-0389	Bangadilly National Par	GDA	56	240684	6162223	Open site	Valid		Artefact : -, Hearth : -		Mr Michael Jackson			150.18	-34.47
52-1-0463	Marrsurai 01A	GDA	56	235391	6162030	Open site	Valid		Aboriginal Ceremony and Dreaming : -, Artefact		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.12	-34.38
52-1-0124	Guringalich Mythologic	AGD	56	235350	6162158	Open site	Valid		Aboriginal Ceremony an Natural Mythological (R		Elizabeth Rich	1428		150.12	-34.38
52-1-0250	River Island - MT1	AGD	56	235421	6162114	Open site	Valid	T Russell	Modified Tree (Carved or Scarred) : -		Mr Mark Simon			150.12	-34.38
52-1-0461	Tugalong Station 02 (G	GDA	56	241538	6159014	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.19	-34.38
52-1-0407	Joadja PAD 03	GDA	56	242512	6167906	Open site	Valid		Potential Archaeological Deposit (PAD) : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.20	-34.42
52-1-0433	Tugalong Station 15 (G	GDA	56	237959	6160235	Closed sit	Valid		Art (Pigment or Engraved) : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.40
52-1-0327	Bangadilly Np11	GDA	56	242653	6163290	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.20	-34.46
52-1-0443	Tugalong Station 20 (G	GDA	56	239838	6161758	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.36
52-1-0442	Tugalong Station 21 (G	GDA	56	237676	6161418	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.39
52-1-0321	Bangadilly NP08	GDA	56	243425	6163805	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.21	-34.46
52-1-0159	Joadja Creek 3	AGD	56	243620	6168529	Open site	Valid		Grinding Groove : -	Axe Grinding Groove	Kerry Navin,Doctor Susan (left ahmo) Mcintyre-Tamwoy			150.21	-34.41
52-1-0459	Tugalong Station 25 (G	GDA	56	235265	6162133	Open site	Valid		Aboriginal Ceremony and Dreaming : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.12	-34.38
52-1-0457	Tugalong Station 23 (G	GDA	56	235945	6161730	Closed sit	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.13	-34.39
52-1-0449	Tugalong Station 14 (G	GDA	56	237467	6159980	Closed sit	Valid		Art (Pigment or Engraved) : -, Grinding Groove		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.40
52-1-0448	Tugalong Station 15 (G	GDA	56	237479	6160039	Closed sit	Valid		Grinding Groove : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.40
52-1-0451	Tugalong Station 12B (	GDA	56	238577	6160085	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.16	-34.40
52-1-0320	Bangadilly NP07 Joadj	GDA	56	241679	6164606	Open site	Valid		Grinding Groove : 1		Mrs Judy Jackson			150.19	-34.45
52-1-0410	Joadja AS 04	GDA	56	242289	6167676	Open site	Valid		Artefact : -		Artefact Heritage and Environment - Pyrmont,Miss.Emma Jones (arteh			150.20	-34.42
52-1-0328	Bangadilly NP12	GDA	56	242582	6164564	Open site	Valid		Artefact : 1, Hearth : 1		Mr Michael Jackson			150.20	-34.45
52-1-0318	Bangadilly NP05 Mt Pe	GDA	56	239060	6166655	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.16	-34.43
52-1-0388	Bangadilly National Par	GDA	56	240889	6162264	Open site	Valid		Artefact : -		Mr Michael Jackson			150.18	-34.47
52-1-0438	Tugalong Station 03 (G	GDA	56	240442	6161513	Closed sit	Valid		Art (Pigment or Engraved) : -, Artefact : -, Grind		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.18	-34.39
52-1-0324	Bangadilly NP09-1	GDA	56	243425	6163805	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.21	-34.46
52-1-0158	Joadja Creek 2	AGD	56	243200	6168080	Closed sit	Valid		Art (Pigment or Engrave Shelter with Art		Kerry Navin,Doctor Susan (left ahmo) Mcintyre-1587			150.21	-34.42
52-1-0319	Bangadilly NP06	GDA	56	238667	6167425	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.16	-34.42
52-1-0326	Bangadilly NP10	GDA	56	243123	6163955	Open site	Valid		Artefact : 1		Mr Michael Jackson			150.20	-34.45
52-1-0325	Bangadilly NP09-1	GDA	56	243340	6164252	Open site	Valid		Artefact : 1, Hearth : 1		Mr Michael Jackson			150.21	-34.45
52-1-0440	Tugalong Station 22A (	GDA	56	239553	6165915	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.39
52-1-0444	Tugalong Station 18 (G	GDA	56	237048	6162494	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.39
52-1-0032	Mandemar Range	AGD	56	247702	6164389	Open site	Valid		Artefact : -	Open Camp Site	Mr R Taylin			150.25	-34.45
52-1-0438	Tugalong Station 05 (G	GDA	56	239028	6161229	Closed sit	Valid		Art (Pigment or Engraved) : -, Artefact : -, Shell		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.17	-34.39
52-1-0372	Bangadilly National Par	GDA	56	240631	6163272	Open site	Valid		Artefact : -		Mr Michael Jackson			150.18	-34.46
52-1-0458	Tugalong Station 26 (G	GDA	56	235285	6161498	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.12	-34.38
52-1-0460	Tugalong Station 24 (G	GDA	56	235480	6162057	Closed sit	Valid		Art (Pigment or Engraved) : -, Artefact : -, Shell		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.12	-34.39
52-1-0317	Bangadilly NP04	GDA	56	239655	6166613	Open site	Valid		Art (Pigment or Engraved) : 1		Mr Michael Jackson			150.16	-34.43
52-1-0453	Tugalong Station 11B (	GDA	56	239449	6160011	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.15	-34.40
52-1-0441	Tugalong Station 22B (	GDA	56	239963	6160945	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.39
52-1-0446	Tugalong Station 17 (G	GDA	56	237051	6162050	Open site	Valid		Artefact : -		Mr Michael Jackson,Jackson Ward Archaeology Pty Ltd			150.14	-34.37
52-1-0570	Mandemar Range	AGD	56	239250	6161110	Open site	Valid		Grinding Groove : -	Axe Grinding Groove	B.B Slater			150.16	-34.46



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