ABORIGINAL CULTURAL HERITAGE ASSESSMENT

Wallerawang Battery Energy Storage System

October 2021

Project Number: 21-229

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Draft v1	23/08/2021	Jorge Fuenzalida Miralles Layne Holloway	Giles Hamm and Bronwyn Partell	Matthew Barber
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Acronyms and Abbreviations

ACHA	Aboriginal Cultural Heritage Assessment
AHD	Australian Heritage Database
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BCD	Biodiversity and Conservation Division (NSW)
BESS	Battery Energy Storage System
DECCW	Former Department of Environment, Climate Change, and Water
DP	Deposited Plan
DPIE	Department of Planning, Industry and Environment
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
Heritage NSW	(formerly OEH) part of the Department of Premier and Cabinet
IBRA	Interim Biogeographic Regionalisation for Australia
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage (former), now Heritage NSW
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party
SHR	State Heritage Register

Executive Summary

Introduction

NGH Pty Ltd (NGH) was commissioned by Arcadis on behalf of Greenspot Wallerawang Pty Ltd (Greenspot) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to inform an Environmental Impact Statement (EIS) for the State Significant Development (SSD) referred to as the *Wallerawang Battery Energy Storage System* (Wallerawang BESS). The Project Area is located 1.5 km south west of Wallerawang town centre, within the Lithgow City Local Government Area (LGA) (Parish of Lidsdale, County of Cook), and the boundary of the Bathurst Local Aboriginal Land Council (LALC).

The proposed construction and ongoing operation of the Wallerawang BESS will have the potential to impact Aboriginal heritage sites and objects that are protected under the *NSW National Parks and Wildlife Act 1974* (NPW Act). The Planning Secretary's Environmental Planning Requirements (SEARs) states that an assessment of the potential Aboriginal heritage impacts of the development must be conducted for the project, including consultation with the local Aboriginal community, for inclusion in the Environmental Impact Statement (EIS). This assessment will be conducted in line with the following requirements outlined in:

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

Aboriginal Consultation

The consultation with Aboriginal stakeholders was undertaken in accordance with clause 60 of the *National Parks and Wildlife Regulation 2019* following the consultation steps outlined in the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW NSW 2010b).

The full list of consultation steps, including those groups and individuals that were contacted and a consultation log, and the six Aboriginal parties who have registered interest for this project are provided in Appendix A.

Survey Results

The archaeological site survey was carried out during a single day on the 22 June 2021 with Sharon Riley (Mingaan Aboriginal Corporation), [redacted] Dr Giles Hamm (NGH Senior Heritage Consultant) and Layne Holloway (NGH Heritage Consultant), along with Sean Fishwick (Arcadis) and Ben Tesoriero (Greenspot) participating in the survey.

The survey strategy was to cover as much as possible of the area proposed for development that involves ground disturbing activities. Consequently, the survey strategy was to walk a series of transects across a range of landforms, to achieve maximum coverage. The project area had not been subject to previous Aboriginal heritage survey and had been previously utilised as a stock paddock, rail corridor, pine plantation, and the location of water storage associated with Lake Wallace. The survey sampled all landforms within the construction footprint, noting that vegetation growth impeded ground surface visibility while much of the project area has a low subsurface potential due to historical disturbances.

The site inspection located two new Aboriginal sites Wallerawang BESS AFT+ PAD 01 and Wallerawang BESS IF + PAD 01 within project area. Sharon Riley (Mingaan Aboriginal Corporation) identified the cultural importance of the landscape surrounding the Coxs River associated with the presence of multiple Grinding Groove sites. Further details of site inspection results are discussed in detail in Section 5 of this report. Overall, the archaeological significance of the project area is low, as site types identified are in a disturbed context and are considered typical of the local and broader archaeological record.

Impact mitigation

The archaeological investigations of the project area show that there is the potential for Aboriginal objects to occur below the ground surface in the intact elevated flat adjacent to Cox River and a small intact spur landform adjacent to an unnamed tributary to the east of the defunct rail line (refer to Figure 5-4). Remaining landforms within the project area have been significantly impacted by development, flooding and erosion, and do not contain archaeological potential. NGH, Arcadis and Greenspot have collaborated to mitigate impacts to Aboriginal heritage through alterations to the construction boundary. The protection of the ground surface at the location of Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02 will effectively mitigate any potential harm to Aboriginal objects.

Recommendations

The recommendations are based on the following information and considerations:

- Results of the current archaeological survey of the area;
- Consideration of results from other local archaeological studies;
- Results of consultation with the registered Aboriginal parties;
- The assessed significance of the sites;
- Appraisal and refinement of the proposed development, and
- Legislative context for the development proposal.

It is recommended that:

1. No ground disturbing activities are to take place within a 5 m buffer of the marked PAD boundaries of Wallerawang BESS AFT + PAD 01 (AHIMS ID# 45-1-2844) Wallerawang BESS IF + PAD 02 (AHIMS ID# 45-1-2843).
2. The boundary of Wallerawang BESS AFT + PAD 01 (AHIMS ID# 45-1-2844) and Wallerawang BESS IF+ PAD 02 (AHIMS ID# 45-1-2843) are to be demarcated as an environmentally sensitive zone during construction phases and future use of the site.
3. The proposed works as described in this report can proceed with caution, following the unexpected finds procedure outlined in Appendix C.
4. In the unlikely event that human remains are discovered during the development, all work must cease in the immediate vicinity. The discovery should be reported to Enviroline, Heritage NSW, the local police and the RAPs. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
5. Further archaeological assessment would be required if the proposal activity extends beyond the construction footprint as shown in Figure 7-1. This would include consultation with the registered Aboriginal parties and may include further assessment of impacts and mitigation measures and archaeological subsurface investigation.
6. Construction teams and operations staff are to receive cultural training to ensure they understand the cultural values of these sites and their connection to the surrounding landscape and the Local Wiradjuri Aboriginal community that continue to care for country.

1. Introduction

NGH was commissioned by Arcadis on behalf of Greenspot Wallerawang Pty Ltd (Greenspot) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) report to inform an Environmental Impact Statement (EIS) for the State Significant Development referred to as the *Wallerawang Battery Energy Storage System* (Wallerawang BESS).

The proposal would involve the construction and operation of a large-scale BESS at Wallerawang, NSW. The BESS would require a built area of approximately 26 hectares of land within the project area as shown in Figure 1-1 and Figure 1-2. The configuration of the final built form of the proposal would be confirmed as part of further design developments and detailed within the EIS. For the purpose of this ACHA, total ground disturbance is assumed within the proposed project area. The BESS will be up to 500 MW and would provide up to 1000 megawatt hours (MWh) of battery storage capacity, or up to two hours of storage duration.

1.1. Project proposal

The proposed Wallerawang BESS is located along the western side of the Castlereagh Highway, approximately 1 km north east by east of Wallerawang, NSW, and 9.2 km north west of Lithgow, NSW (refer to Figure 2-1 and Figure 2-2). The project area lies within the Lithgow City Local Government Area (LGA), the Parish of Lidsdale, County of Cook. The proposed Wallerawang BESS is located within the bounds of the Bathurst Local Aboriginal Land Council (LALC).

The project area covers the following Lot and Deposited Plan's (DPs):

- Lot 3, DP1018958
- Lot 4, DP1016725
- Lot 3, DP1181412
- Lot 3, DP1226927
- Lot 4, DP1226927
- Lot 91, DP1043967
- Lot 115, DP1204803

The Project would include the following key features:

- Subdivision of the project area, as required to delineate the project area from the remaining adjacent land.
- Operation of a large-scale BESS including battery enclosures, inverters and transformers and associated substation.
- A transmission line connection to existing infrastructure in the north west corner of the project area (above ground) between the BESS and the nearby TransGrid Wallerawang 330kV substation.
- Ancillary upgrades to the Wallerawang 330kV substation.
- A site access to the BESS from the Castlereagh Highway, with appropriate auxiliary turn treatments in accordance with AustRoad requirements.

The construction methodology is outlined in Section 7.2.

1.2. Project personnel

This ACHA report was completed by NGH Heritage Consultant Layne Holloway, and NGH Heritage Consultant Jorge Fuenzalida Miralles, including research, report preparation, and Aboriginal community consultation. Heritage Consultants Dr Giles Hamm and Layne Holloway conducted the survey fieldwork the 8th of April 2021.

NGH Senior Heritage Consultant Bronwyn Partell and Principal Heritage Consultant Matthew Barber reviewed the report for quality assurance purposes.

1.3. Report format

The ACHA Report was prepared in accordance with the following guidelines:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a); and
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents (ACHCRP*) (OEH 2010b).

The purpose of this ACHA report is therefore to provide an assessment of the Aboriginal cultural values associated with the Project area and to assess the cultural and scientific significance of any Aboriginal heritage sites identified.

The objectives of the assessment were to:

- Conduct Aboriginal consultation as specified in clause 60 of the *National Parks and Wildlife Regulation 2019*, using the consultation process outlined in the ACHCRP*;*
- Undertake a field survey of the Project area to identify and record any Aboriginal objects within the Project area;
- Undertake an assessment of the archaeological and cultural values of the Project area and any Aboriginal objects therein;
- Assess the cultural and scientific significance of any archaeological material; and
- Provide management recommendations for any Aboriginal objects found.

The approach undertaken by NGH for this assessment will be consistent with these documents and other heritage assessments undertaken in NSW.

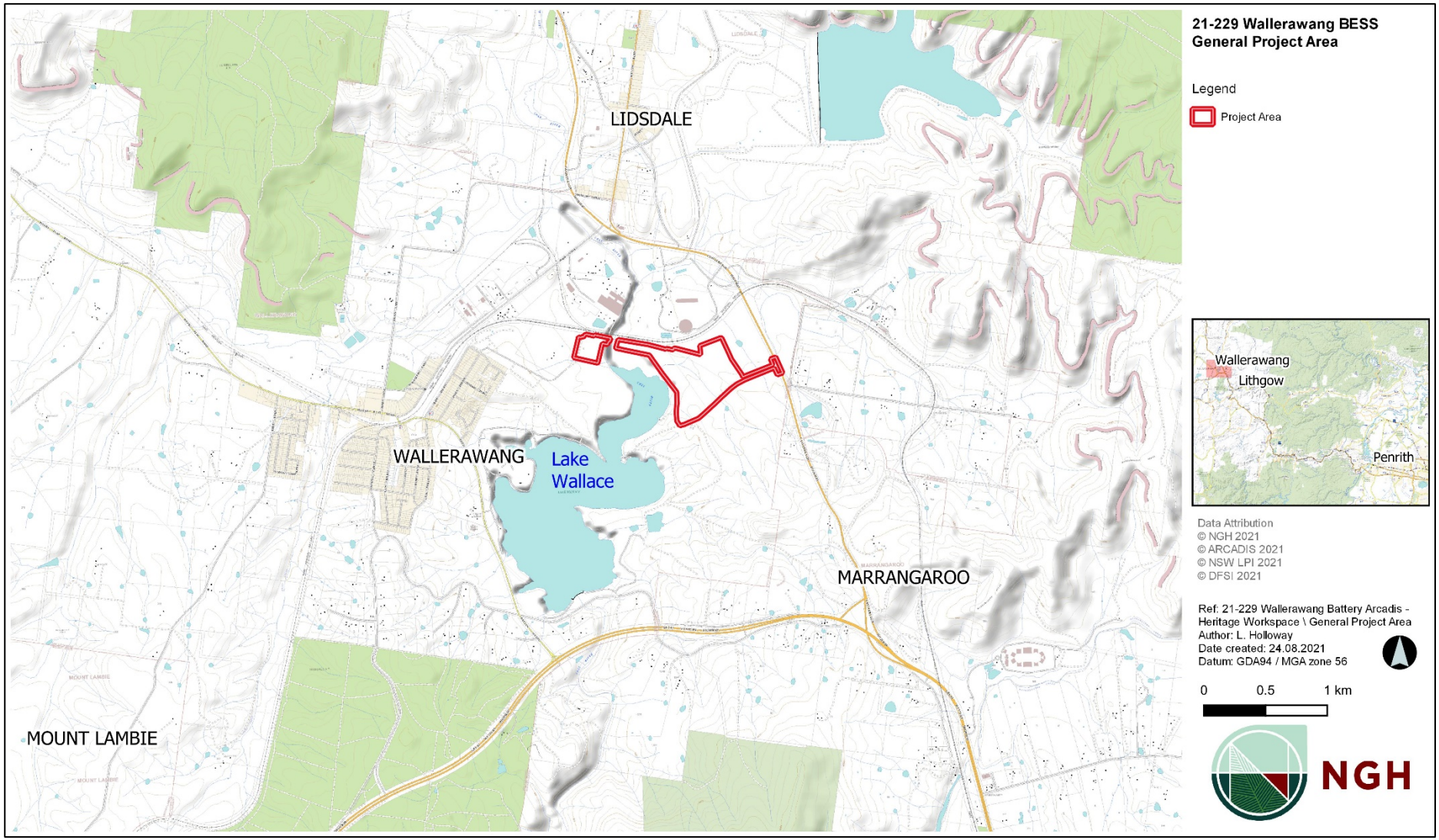

Figure 1-1 General Project Area at Wallerawang.

Figure 1-2 Project Area at Wallerawang

2. Legislative context

Aboriginal heritage is primarily protected under the NPW Act (1974) and as subsequently amended in 2010 with the introduction of the *National Parks and Wildlife Amendment (Aboriginal Objects and Places) Regulation 2010*. The aim of the NPW Act includes:

> *The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including but not limited to places, objects and features of significance to Aboriginal people.*

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 the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.*

Part 6 of the NPW Act concerns Aboriginal objects and places and various sections describe the offences, defences and requirements to harm an Aboriginal object or place. The main offences under section 86 of the NPW Act are:

- A person must not harm or desecrate an object that the person knows is an Aboriginal object.
- A person must not harm an Aboriginal object.
- For the purposes of this section, "circumstances of aggravation" are:
    - that the offence was committed in the course of carrying out a commercial activity, or
    - that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.
- A person must not harm or desecrate an Aboriginal place.

Under section 87 of the NPW Act, there are specified defences to prosecution including authorisation to harm in accordance with an Aboriginal Heritage Impact Permit (AHIP) or through exercising due diligence or compliance through the regulation.

Section 89A of the Act also requires that a person who is aware of an Aboriginal object must notify the Director-General in a prescribed manner. In effect this section requires the completion of an AHIMS site card to meet obligations of s.89A for all sites located during heritage surveys.

Section 90 of the NPW Act deal with the issuing of an AHIP, including that the permit may be subject to certain conditions.

Aboriginal heritage is primarily protected under the NSW NPW Act (1974) and the National Parks and Wildlife Regulation 2019. The NPW Act is administered by Heritage NSW, part of the NSW Department of Planning, Industry and Environment (DPIE). However, it is understood that the protection and management of Aboriginal objects is the responsibility of Heritage NSW, part of the NSW Department of Premier and Cabinet (DPC).

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is legislation for the management of development in NSW. It sets up a planning structure that requires developers (individuals or companies) to consider the environmental impacts of new projects. Under this Act, cultural heritage is considered to be a part of the environment. This Act requires that Aboriginal cultural heritage and the possible impacts to Aboriginal heritage that development may have are formally considered in land-use planning and development approval processes.

Under Section 89J of the EP&A Act, the requirement for an AHIP (under Section 90 of the NPW Act) is not applicable for Major Project (transitional) or State Significant Development. The proposed Wallerawang BESS is classified as a State Significant Development and is authorised by a development consent granted under the EP&A Act. Conditions of Consent are applicable to the authorised development.

3. Aboriginal consultation process

The consultation with Aboriginal stakeholders for this project was undertaken in accordance with Section 60 of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2019* and following the process outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRP). A total of six Aboriginal groups registered their interest in the proposal following Stage 1 of the consultation steps outlined in the ACHCRP guide. The guide outlines a four-stage process of consultation as follows:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed project.
- Stage 3 – Gathering information about cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The full list of consultation steps, including those groups and individuals who were contacted, and a consultation log is provided in Appendix A. A summary of actions carried out in following these stages follows.

Stage 1. Letters outlining the development proposal and the need to carry out an ACHA were sent to the Bathurst LALC and various statutory authorities including Heritage NSW, as identified under the ACHCRP. An advertisement was placed in the local newspaper, the Lithgow Mercury on the 28th of April 2021 seeking registrations of interest from Aboriginal people and organisations. A further series of letters was sent to other organisations as identified by Heritage NSW in correspondence with NGH. In each instance, the closing date for registration of interest was 14 days from receipt of the letter.

As a result of this process, six Aboriginal groups registered their interest in the proposal. The Aboriginal community groups who registered an interest in the project were:

[redacted]

- Didge Ngunawal Clan
- Mingaan Aboriginal Corporation
- Yurrandaali Cultural Services
- Bathurst LALC

As a courtesy to all the registered parties, we have only included brief summaries of correspondence for this project. However, detailed information and correspondence logs can be provided on request to Heritage NSW. The Consultation Log in Appendix A will be redacted in all public versions of this report.

Stage 2. On the 18th of May 2021, the proposed *Assessment Methodology* for the Wallerawang BESS was sent to the six parties of the Registered Aboriginal Parties (RAPs) listed above. The *Assessment Methodology* was sent to the Bathurst LALC on the 15th of June 2021 due to a late registration for the project. This document provided details of the background to the proposal, a summary of previous archaeological surveys, and the proposed heritage assessment methodology for the proposal. The document invited comments regarding the proposed methodology and sought any information regarding known Aboriginal cultural significance values associated with the Project area and/or any Aboriginal objects contained therein. A minimum of 28 days was allowed for a response to the document.

None of the registered parties raised any objections to the methodology and all expressed interest in participating in fieldwork. Specific comments are provided in Appendix A.

Stage 3. The *Assessment Methodology* outlined in Stage 2 included a written request to provide any information that may be relevant to the cultural heritage assessment of the study area. It was noted that sensitive information would be treated as confidential. No response regarding cultural information was received in response to the methodology.

The survey fieldwork was organised, and two of the six groups were selected for fieldwork participation by the Proponent. The fieldwork was carried out on the 22nd of June 2021 by two archaeologists from NGH, two representatives from Arcadis and Greenspot, and two local Aboriginal representatives. The Aboriginal community representative who participated in the fieldwork were:

- Sharon Riley - Mingaan Aboriginal Corporation
- [redacted] - [redacted]

Stage 4. On 7 September 2021, a draft version of this *Aboriginal Cultural Heritage Assessment Report* (this document) for the Wallerawang BESS proposal was forwarded to the RAPs inviting comment on the results, the significance assessment and the recommendations.

A minimum of 28 days was allowed for responses to the document. A reminder was sent to all RAPs prior to the end of the 28-day period of review on 01.10.2021. This report was finalised on 11.10.2021.

3.1. Aboriginal community feedback

No feedback was received on the draft report provided to the RAPs on 07.09.2021.

4. Background information

4.1. Review of landscape context

Understanding the landscape context of the project area may assist us to better understand the archaeological modelling of the area and assist to identify local resources that may have been utilised by Aboriginal people. This information can then potentially be used to predict the nature of Aboriginal occupation across the landforms present within the project area. Factors that are typically used to inform the archaeological potential of broad landscapes and specific landforms include the presence or absence of resources that would have been utilised by Aboriginal people including water, animal and plant foods, stone and other resources. The landscape context assessment for the project area is based on a number of classifications that have been made at national, regional, and local levels to better understand the archaeological modelling of the area.

4.1.1. Geology and topography

The landscape context of the project area is based on a number of classifications that include the National Interim Biogeographic Regionalisation for Australia (IBRA) system, Mitchell landscapes, NSW soil landscapes and geological maps. The combination of these differing resolutions of landform data provides a comprehensive and multi scaled understanding of the landscape within the project area and its immediate surroundings and its conceivable relationship to archaeological sensitivity.

Geological formations

The project area is located across three base geological formations, which are described in Table 4-1 below; the project area is also located within approximately 2.5 km of two different geological formations, which are described in Table 4-2 below.

Table 4-1 Geological formations present throughout the project area (Colquhoun et al. 2020).

Geological Formation	Description
Alluvium	Characterised by unconsolidated grey to brown to beige humic (±) lithic silt, fine-to-medium grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravel (as sporadic lenses); sporadic paleosol horizons. Formed within a terrestrial (fluvial) depositional environment during the Quaternary.
Bathurst Supersuite	Characterised by biotite granite, granodiorite, with lesser gabbro, diorite, aplite and pegmatite. Formed within a shallow crustal – continental I-type depositional environment during the Carboniferous.
Berro Siltstone	Characterised mid to dark grey siltstone, grades up sequence to very fine-grained sandstone, highly fossiliferous, sporadic dropped pebbles. Formed within a shallow marine (outer shelf) depositional environment during the Sakmarian Stage of the Early Permian.

Table 4-2 Geological formations found within proximity to the project area (Colquhoun et al. 2020).

Geological Formation	**Description**
Illawarra Coal Measure	Characterised by shale, quartz-lithic sandstone, conglomerate, chert, sporadically carbonaceous mudstone, coal and torbanite seams. Formed within a terrestrial (fluvial) during the Late Permian.
Lambie Group	Characterised by terrigenous to shallow marine, quartz sandstone, quartzite, siltstone, mudstone, conglomerate. Formed within a terrestrial (alluvial fan) depositional environment during the Late Devonian.

The geological formations found within and surrounding the project area suggests that raw stone material appropriate for the manufacture of stone tools was locally available, specifically quartz, chert, mudstone, and quartzite. This is supported by the frequency of artefact site types recorded on AHIMS within the wider region. It should also be noted that the presence of different geological formations does not exclude the possibility that superior raw material types were traded from other regions. Furthermore, the presence of very fine-grained sandstone within the Berro Siltstone formation suggests that there is an increased likelihood for grinding grooves to occur where sandstone shelves or outcrops are present near sources of water.

Interim biogeographic regionalisation for Australia

The national Interim IBRA system identifies the project area as being located on the eastern edge of the Sydney Basin (SB) Bioregion (NPWS 2003). The SB bioregion is bounded by the South Eastern Highlands to the west, the NSW South Western Slopes to the north-west, the NSW North Coast to the north, and the South East Corner to the south. It covers a portion of NSW from Newcastle in the north, Lithgow in the west, encompasses the Blue Mountains, and extends south past Ulladulla. The Hawkesbury-Nepean, Hunter, and Shoalhaven river systems flow across the bioregion. The region is generally temperate, with warm summers and no dry season.

The SB consists of a geological basin filled with near horizontal sandstones and shales formed in between the Permian and Triassic which overlay the Lachlan Ford Belt. Early stages of development were as a continental rift that filled with marine volcanic sediments, but deposition shifted to river and swamp environments in a cold climate in the early Permian. Later stages saw older rocks of the New England Ford Belt faulted across the basin along the Hunter-Mooki-Goondiwindi Thrust System that now marks the north eastern edge of the bioregion.

The SB bioregion contains 14 subregions: Hunter, Cerrabee, Capertee, Wollemi, Yengo, Wyong, Cumberland, Pittwater, Burragorang, Cataract, Moss Vale, Illawarra, Ettrema, and Jervis. The project area is within the Wollemi subregion, as described in Table 4-3 below.

Table 4-3 Description of the Capertee Subregion (NPWS 2003:192).

Subregion	Geology	Landforms	Soils	Vegetation
Capertee	Permian Shoalhaven Group conglomerates, sandstones, and shales with coal at the base of the Sydney Basin and exposure of underlying Devonian shale, siltstone or quartzite. Eastern margin of Narrabeen sandstone in cliffs. Small areas of hill top Tertiary basalt.	Wide valleys, low rolling hills below sandstone cliffs, isolated flat top mountains in the valleys formed as pinnacles or remnant pieces of plateau. Steep, boulder debris slope below cliffs. Shoulder slopes with stone pillars or “pagodas” above steep canyons on tributary streams falling into gorges. Low gradient swampy stream lines.	Shallow stony texture contrast profiles, usually with gritty well drained A horizons, over tough yellow or grey poorly drained clays. Bouldery debris with clay matrix below cliffs (talus). Organic sands in swamps. Red brown structured loams on basalts.	Woodlands support rough barked apple, red stringybark, red box, yellow box, Blakely’s red gum with shrubby understory and wallaby grass in open valleys. Scribbly gum, red stringybark, red box and broad-leaved ironbark on talus slopes. Black ash and Sydney peppermint on sandstone peaks. Dwarf casuarina, tea tree, and sedge on pagoda margins.

Mitchell landscapes

Further landscape modelling as part of the Mitchell landscapes system (DECC 2002) shows the project area is located in the Capertee Plateau. The Mitchell landscape description of the *SB Capertee – Capertee Plateau* is provided in Table 4-4 below.

Table 4-4 Description of the *SB Capertee – Capertee Plateau* Mitchell Landscape (DECC 2002).

Landscape Name	Description
SB Capertee - Capertee Plateau	The landscape is characterised by wide valleys, low rolling hills below sandstone cliffs on Permian conglomerates, sandstones, and shales with coal at the base of the Sydney Basin and exposure of underlying Devonian shale, siltstone or quartzite. Small areas of Tertiary basalt. General elevation 800 to 1000m, with a local relief of 100-120m. Isolated flat top mountains in the valleys formed as pinnacles or remnant pieces of plateau. Shoulder slopes with stone pillars or 'pagodas' above steep canyons on tributary streams falling into gorges. Low gradient swampy streamlines. Shallow stony texture-contrast profiles, usually with gritty well drained A-horizons, over tough yellow or grey poorly drained clays. Boulder debris with clay matrix below cliffs (talus). Organic sand in swamps. Red brown structured loams on basalt.

Soil landscapes

The project area is comprised of three soil landscapes as mapped within eSpade. While the Pipers Flat soil landscape is not mapped within the project area, both the Cullen Bullen and Lithgow landscapes mention that the Pipers Flat landscape is often found along drainage lines in these areas. All four landscapes are described in Table 4-5 below.

Table 4-5 Soil landscapes present within the project area (DPIE 2020).

Soil Profile	Description
Cullen Bullen	Characterised by shallow to moderately deep (<100 cm) Yellow Podzolic Soils and Yellow Earths on crests; moderately deep (<100 cm) Yellow Podzolic Soils, Soloths and Yellow Leached Earths on upper and mid slopes. Moderately deep to deep (50 – 150 cm) yellow Solodic Soils and Yellow Podzolic Soils on lower slopes near and along narrow (<20 m) drainage lines. Shallow (<80 cm) Yellow Earths and Lithosols associated with low scarps. Soil acidity ranges from slightly acidic to neutral (pH 6.0 – 6.5) in the topsoils to a moderately acidic to neutral (pH 5.5 – 7.0) subsoils. Local limitations include high water erosion hazards, moderate gully erosion with drainage depressions, minor sheet erosion where ground cover has been disturbed by clearing, extensive sheet erosion on isolated steeper slopes, and rock outcrops.
Lithgow	Characterised by moderately deep (<120 cm) Red Podzolic Soils and Yellow Podzolic Soils and Yellow Leached Earths on upper slopes and well-drained areas. Moderately deep to deep Soloth/yellow Solodic Soils on lower slopes and in areas of poor drainage. Soil acidity ranges from a slightly acidic (pH 6.0 -6.5) topsoil to a moderately acidic to slightly alkaline (pH 5.5 – 7.7) subsoil. Local limitations include moderate gully erosion along some drainage lines and sheet erosion in some areas. Severe sheet erosion is known to have removed all topsoil material in areas consisting of this soil profile.
Disturbed Terrain	In most areas the original soil has been either removed or greatly disturbed. These areas may be artificially topsoiled or covered by concrete and bitumen. While local limitations are highly variable and dependent on the nature of the fill material, they may include a variety of different erosion hazards.
Pipers Flat	Characterised by moderately deep to deep (>100 cm) grey-brown Alluvial Soils, Leached Loams, Soloths, and Greyed Podzolic Soils. Soil acidity ranges from a slightly acid (pH 6.0 – 6.5) topsoil to a moderately acid to neutral (pH 5.5 – 7.0) subsoil. Local limitations included high water tables, gully erosion (especially within drainage lines), and stream bank erosion.

The varying acidity of the soils suggests that there is a possibility for organic archaeological material to remain within subsurface deposits that contain a neutral or alkaline pH. Furthermore, the numerous erosion hazards

indicate that durable archaeological material, such as stone artefacts, will have likely been displaced from their original position. The presence of rock outcrops within the Cullen Bullen soil landscape suggests that material which is suitable for use as stone tools or for grinding grooves may be present in these areas.

It should also be noted that in areas where disturbed terrain is present, there is a very low possibility for Aboriginal sites to remain due to the extremely disturbed nature of this soil landscape. Where Aboriginal sites are located within disturbed terrain, it is likely that their context is also disturbed, decreasing the scientific value of the Aboriginal object.

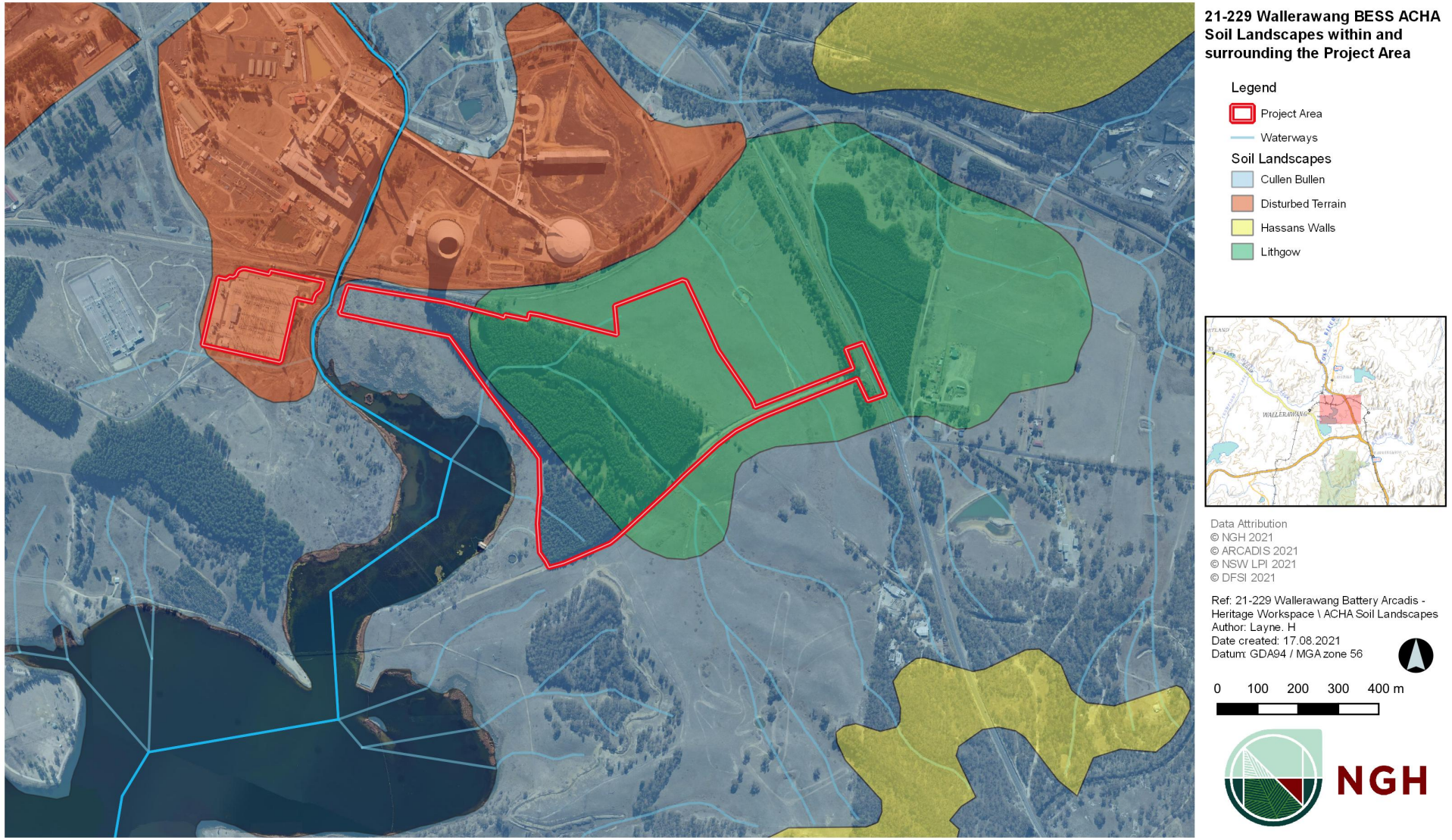

Figure 4-1 Soil Landscapes present within and surrounding the project area for the proposed Wallerawang BESS.

4.1.2. Hydrology

The project area is located adjacent to Coxs River and Lake Wallace, a man made water storage area. Several other first order and ephemeral tributary streams intersect the project area and likely flow into Lake Wallace during wet periods. The hydrology within and surrounding the project area has been significantly altered by historical land use as a result of infrastructure such as dams, roads and railways.

Such waterways and shelter would have provided ideal conditions for transitional camp sites for Aboriginal people living in the area due to the combination of shelter provided by the landforms present, and the ease of access to fresh running water. The Coxs River extends south to its headwaters at Warragamba, intersecting valley flats before skirting the Blue Mountains north west to the Megalong Valley. Ethnographic resources note that the south eastern headwaters of the Coxs River were utilised as a summer camp by the Gundungurra people (Comber 2009). The path of the Coxs River through to the central Tablelands was utilised as a travel route for Aboriginal people, then later adopted by colonisers (Comber 2009), highlighting the importance of this hydrological resource as a hub of occupation and its potential for archaeological evidence of Aboriginal occupation where intact landforms remain surrounding the River and its connecting tributaries.

4.1.3. Flora and fauna

Information provided is intended as a generalised summary of the endemic flora and fauna present within the project area for the purposes of archaeological assessment and must not be used as a substitute for detailed ecological studies. The purpose of identifying the past and present vegetation communities characterising the project area is to assist in determining the suitability of an area for occupation or resource procurement by Aboriginal people in the past.

Vegetation classification by Keith and Simpson (DPIE 2012) indicates that the project area is located within an area that has been completely cleared of its native vegetation. However, surrounding vegetation types suggest that during the Holocene period that followed the Last Glacial Maximum (LGM), the project area was likely to have been comprised of Southern Tableland Dry Sclerophyll Forests, with small patches of Eastern Riverine Forests and Subalpine Woodlands. These three vegetation types are described in Table 4-6 below.

It should be noted that modelling conducted by Mooney and Martin (2009:29) suggest that the vegetation of the Blue Mountains during the LGM was comprised of semi-arid grassland with restricted shrub and heath growth. As a result, it is likely that the vegetation within the Wallerawang region was also comprised of a semi-arid grassland.

Table 4-6 Vegetation classification as mapped out by Keith and Simpson (DPIE 2012).

Vegetation Class	Description
Southern Tableland Dry Sclerophyll Forests	Characterised by dry eucalypt forests with open, species-poor sclerophyll shrub understories with a canopy between 15 – 20 m. Common species include red stringybark, scribbly gum, mountain gum, Argyle apple, broad-leaved peppermint, narrow-leaved peppermint, and various other gums, with a variety of wattles, geebungs, hickory's, heaths, pea, and cherry forming the shrub layer. Herbs and grasses such as the blue fax lily, prickly woodruff, grass triggerplant, nodding blue lily, silvertop wallaby grass, wattle mat-rush, spiny-headed mat-rush, and snow grass comprise the ground covering species.
Eastern Riverine Forests	Usually dominated by river oak with a canopy between 10 to 40 m. Shrubs include white sally, black wattle, cheese tree, tree violet, and water gum. Herbs and grasses such as lesser joyweed, pennywort, water pepper, tussock sedge, bordered panic, spiny-headed mat-rush, and weeping grass comprise the ground covering species.

Vegetation Class	Description
Subalpine Woodland	Characterised by one or two species in a given area with a canopy between 5 – 15 m tall. Common species include various gums such as white sally, mountain gum, candlebark and black sally, within elevations above 1500 m snow gums are also common. A variety of wattles, heaths, daisy bushes, speedwells, and pea's form the shrub layer. Herbs and grasses such as prickly woodruff, native geranium, button everlasting, blue bottle-daisy, spiny-headed mat-rush, mountain violet, tall bluebell, common wheatgrass, tussock, snowgrass, and kangaroo grass comprise the ground covering species.

Such vegetation communities would have provided a variety of resources for Aboriginal communities living in the area during the Holocene period prior to European occupation. For example, eucalyptus trees provided gum and oil which was used for medicinal purposes, wood for the manufacture of bowls, shields and canoes, and bark which was used to fishing lines, nets and baskets (Stewart and Percival 1997:8). The fruits and roots of the blue flax lily could be eaten, and the nectar of flowering plants was also harvested for food (Stewart and Percival 1997:10). In addition to flora resources, the forests would have created a habitat for numerous animals which were resources for food (meat), clothing (skin) and tools (bones and teeth).

While there is no remnant native vegetation remaining, the project area is likely to have formed a small part of a larger resource-rich area in which flora and fauna resources were abundant.

4.1.4. Historic land use

By the 1820s European Settlement had begun around the Lithgow region, bringing with it pastoral and industrial practices. The discovery of coal and oil shales within the Lithgow area led to the development of a thriving industrial and power producing region of the state. Rapid development of industry and farmlands through the 19th and early 20th centuries resulted in the reduction of traditional land management practices in the region through the increasing encroachment of settlement areas and decimation of the Aboriginal population.

European occupation led to the introduction of feral animals, such as pigs and rabbits, in addition to grazing livestock, which has caused significant ground disturbance and facilitated widespread erosion. The development of pastoralism within the project area specifically would have resulted in clearance of native woodlands and forest for the establishment of grazing paddocks, as shown in the satellite imagery, the project area has been cleared of all vegetation (refer to Figure 1-2).

Further impacts have also occurred because of the later industrialisation of the project area in 20th century. The development of the Great Western Railway Line and the Marrangaroo deviation within and adjacent to the project area resulted in further disturbances to the surrounding landforms through cut and fill practices accommodating the rail routes. The damming of Coxs River in late 1970's formed the back flooded Lake Wallace, which led to the back flooding of the alluvial banks of Coxs River. This means that the current location of the alluvial banks in the Lake inundation areas of the project area are not representative of natural remnant alluvial landforms that would have presented higher potential for archaeological sensitivity. Such landforms have since been flooded and their archaeological significance remains unknown. The below timeline highlights the colonial chronology of the region.

Colonial chronology of the region

1813 – Gregory Blaxland, William Lawson, and William Charles Wentworth led the first successful crossing by Europeans through the Blue Mountains.

1814 – Bathurst established as the first inland European settlement in Australia.

1824 – James Walker is granted land in the area that would become the township of Wallerawang, becoming the first European settler to occupy the area.

1870s – The town of Lithgow is founded, along with the establishment of the Wallerawang Station and the Heritage Listed railway bridge.

1923 – The Marrangaroo deviation to the existing Great Western railway was opened. The Original Great Western railway passed through the centre of the project area.

1957 – The Wallerawang Power Station begins operating.

1975-1984 – Coxs River is dammed approximately 100 m upstream from the Great Western Highway. The back water area forms Lake Wallace. The stored water is to be used for cooling for the Wallerawang Power station. Shore areas of the Lake also become popular recreational locations for camping and fishing.

1970s – The Wallerawang Power Station undergoes overhauls which include the construction of two new and large turbines.

1990s – The last upgrades are made to the Wallerawang Power Station, extending its operational life by 15 years.

2014 – Energy Australia announce that the Wallerawang Power Station will be closed. At present the existing power plant is being decommissioned and site is to be transformed into an industrial park.

Historical imagery

Historical imagery from 1975 (see Figure 4-2) shows that the Wallerawang Power Station was in operation, along with its associated infrastructure, and that Coxs River had not yet been dammed before the Great Western Highway; it also shows that the project area does not appear to have been used for plantation forestry at that time. The 1975 historical imagery also clearly identifies a railway in operation within the project area along an elevated landform; it is likely that this landform had been built up historically to accommodate the railway. The imagery from 1975 also provides insight into how Coxs River originally ran through the project area prior to its damming.

Historical imagery from 1984 (see Figure 4-3) clearly shows that since the 1975 imagery was taken the Coxs River had been dammed, forming Lake Wallace in the process. The purpose of creating a lake was to provide the Wallerawang Power Station with a cooling source (Delta Electricity 2009). This affected some parts of the current project area that were located on the banks of Coxs River, as the creation of Lake Wallace inundated a small section of land on the bend (in the south west of the project area). The 1984 imagery also shows that an unsealed road had been formed within the southern portion of the project area. It should also be noted that a new, large cooling tower had been built within the Wallerawang Power Station just north of the railway that separates it from the current project area.

Historical imagery from 1991 (see Figure 4-4) shows that since 1984, more land from the eastern bank of Coxs River had been inundated by Lake Wallace. It should be noted that the water level of the lake is dependent on local rainfall and the water flow of Coxs River. It is also clearly visible in the 1991 imagery that, in the time since the 1984 imagery was taken, a portion of the project area closest to Coxs River began to be used for pine plantation forestry. This was accompanied by the creation of new logging trails to provide access to the plantations.

Historical imagery from 1998 (see Figure 4-5) shows that very little change has happened within the project area since 1991, except for the expansion of the area used for pine plantation forestry. It should be noted that natural forces associated with the manmade Lake Wallace have gradually created a wet marshy area in the western part of the project area over the decades.

The current (2021) satellite imagery (see Figure 4-6) shows that no major landscape changes within the project area appear to have occurred since 1998.The current state of the project area remains relatively unchanged since the 1998 imagery, however prior to the commissioning of this project, the pine plantation located in the

south western portion of the project area will be removed. The trees within the pine plantation will be cut at the stumps to accommodate this project.

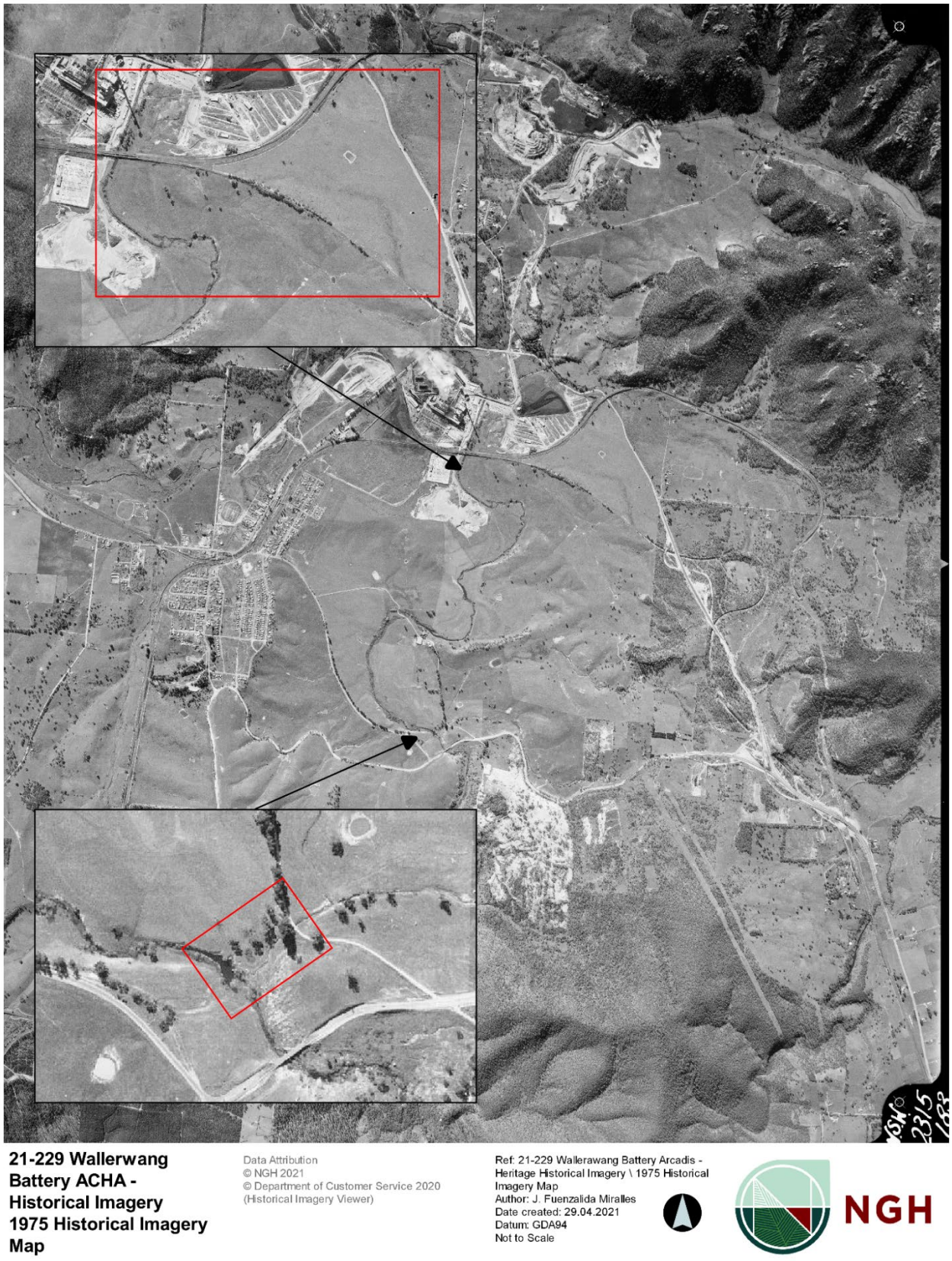

Figure 4-2 1975 Historic Imagery over the project area and Wallerawang region. Note project area has been cleared of all vegetation.

Figure 4-3 1984 Historic Imagery over the project area and Wallerawang region. Since 1975, the imagery clearly shows that Coxs River had been dammed just before the Great Western Highway, New, unsealed roads were also constructed within the project area during this period.

Figure 4-4 1991 Historic Imagery over the project area and Wallerawang region. Noting the development of the pine plantation.

Figure 4-5 1998 Historic Imagery over the project area and Wallerawang region. Since 1991, the imagery shows that the forest within the project area has grown.

Figure 4-6 Modern Imagery over the project area and Wallerawang region. No major landscape changes have occurred since 1998 within the current project area.

4.1.5. Landscape context

Most archaeological surveys are conducted in a situation where there is topographic variation, and this can lead to differences in the assessment of archaeological potential and site modelling for the location of Aboriginal archaeological sites. The region project area is located in valley area surrounded by points of outcropping and elevation at Newnes Plateau. Undulating hills (10 – 20 m relief) and sloping flats (>2 m relief) within the southern extend of the project area are intersected by drainage lines flowing northwest into Lake Wallace (Figure 4-7). There are no rock outcrops within the project area.

The project area is located within a transitional environment of a variety of resources and consequently the area as a whole would have been used by Aboriginal people during the migration between favourable camp locations of elevation and reliable water sources further southeast along Coxs River.

Consequently, the entire area is considered to be archaeologically sensitive, however, historic land use practices have resulted in significant but spatially discrete ground and site disturbances. As a result, it is considered that only undisturbed areas within the project are likely to retain intact archaeological deposits. Disturbed areas may still contain Aboriginal objects and sites though they are likely no longer *in situ*.

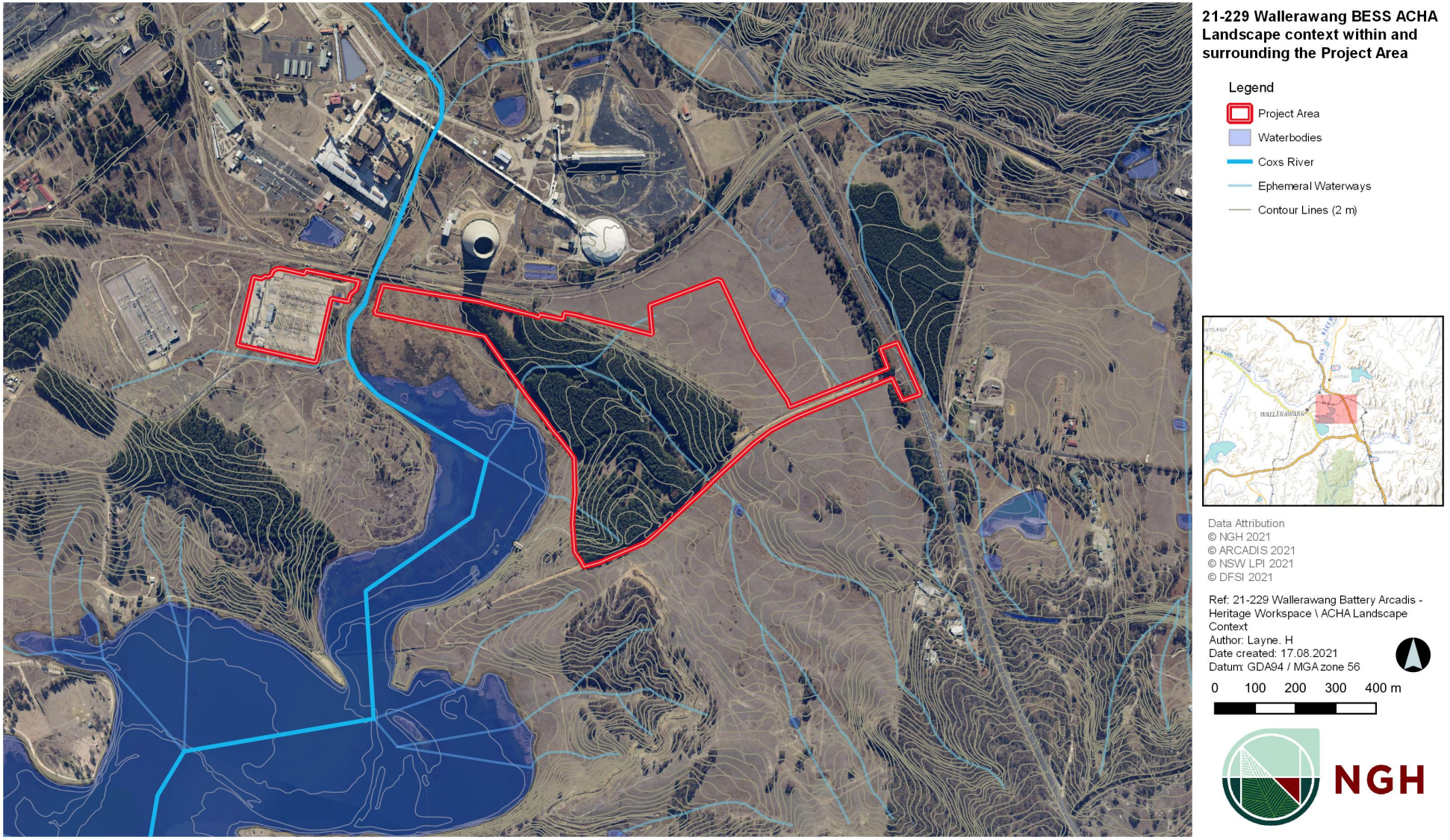

Figure 4-7: Landscape features within the Project Area

4.2. Aboriginal and Archaeological background

4.2.1. Ethnographic setting

There are several ethnographic recordings of Aboriginal life in the NSW Southern Tablelands region from the 1800s that focus on the prevalence of Aboriginal people around waterways in the region. It is however important to consider that the Aboriginal people alive at the time of such observations were survivors of the consequences of European invasion which severely impacted the health of Aboriginal communities, thereby impacting on population sizes and distribution of people within the landscape. Consequently, European records may not necessarily reflect pre-contact population distributions and traditional ways of life.

The dispossession from traditional lands and acts of violence against the Aboriginal people caused great social upheaval meaning that access to traditional resource gathering and hunting areas, religious life, marriage links and sacred ceremonial sites were disrupted or destroyed. Despite this, Aboriginal people continued to maintain their connections to sites and the landscape in a variety of ways. The Aboriginal people of the region continue to have a strong connection to their land. As of 2016, 1,208 people identifying as Aboriginal and Torres Strait Islander where living within the Lithgow LGA (ABS, 2021).

Tribal boundaries

Early mapping of tribal boundaries by Tindale (1974) identified the project area is within the Wiradjuri language group. The boundaries of Wiradjuri territory are largely, traditionally defined by rivers and landforms, as well as access to the diverse seasonal resources of the environment. This territory is understood to extend from Dubbo and Bylong in the north to Tallangatta in the south, and west from Lithgow to the Hay Plain and Ivanhoe.

It should be noted however that today not all Aboriginal groups agree with the mapped boundaries presented in Tindale and other publications. Aboriginal communities were not separated by ‘inviolable boundaries’ and that some flexibility allowed people to move into or through neighbouring territories [Bowdler 1983: 334]. Bowdler also proposes that given an assumption of a fluidity of movement, that it could be assumed that there was a degree of cultural similarity between the Gundungurra, Darug and Wiradjuri communities at or near the zone of interaction.

Material culture

Records of the material cultural of Aboriginal people in the Lithgow region prior to colonisation are limited, however some records exist which describe this. It should be noted that Aboriginal people lived in groups of varying sizes and culture differed between language groups, and furthermore that observations made by Europeans are often biased and must be considered in such light.

Open context camp sites were generally small and appear to have been widely utilised by families while moving around the landscape. These shelters may have either been within caves or constructed from large sheets of bark from native gums (Smith 2009). The recollections of Annabella Boswell published in 1890 provide some insight into the way of life of a small extended family group of Wiradjuri people who camped near the family’s property in the Bathurst district between 1835 and 1840.

…in fine weather their camps were composed of a half circle of green boughs interlaced so as to form a sheltering wall about three or four feet high. In wet or stormy weather they stripped sheets of bark from the tall gum trees or stringy bark trees, and sticking two forked posts into the earth about eight feet apart, put a ridge pole across between them. Against this rested the bark slanting… [Boswell 1890: 4]

Other resources were collected from the fauna that was available in the region, and included gliders, birds, goannas, and native bees among others. One of the most important of these resources was the Ringtail Possums, whose skins were highly sought after for cloaks (Smith 2009:130); these cloaks were usually made with bone awls and the sinews of local animals.

A variety of tools were used and were composed of the locally available stone, such as chert, quartz, and sandstone from local geological resources. In an archaeological context, few of these items would survive, particularly in an open site context. Anything made from bark and timber and animal skins would decay quickly in an open environment. However, other items, in particular those made of stone, would survive where they were made, placed or dropped. Bone material may also survive in an archaeological context. Sources of raw materials, such as the extraction of wood or bark would leave scars on the trees that are archaeologically visible, although few trees of sufficient age survive in the modern context.

Burial customs were explored by European explorers and visitors, and historical records of placement, construction and their observed rituals were noting cremation burials for children and grave burials for adults at the base of trees marked by elaborate carvings completed with great care (Comber, 2009). A more recent reference providing evidence of similar burial practices in the vicinity of Hartley comes from William Foster in 'Hartley – Gateway to the West' published in 1932. Foster noted that a burial ground was located at a site at Bowenfels south of Hassan's Walls, located approximately 14 km southeast of the project area. Carved trees once marked the location not far from a creek, while today it is possible that the only discernible landmark is the private European cemetery nearby (Foster 1932: 242). The site known as the Hassan's Walls Aboriginal Burial Place is recorded in the Lithgow Heritage Study [SHI No: 1960043].

Social structures

Wiradjuri people whose lands occupy vast areas of the central tablelands were not a single political unit, although they shared the same language. They generally lived together in separate family groups. They all shared a system of beliefs. Politics operated at a local level and was advised by respected, local, senior men and women who had a wide range of skills and extensive knowledge. Each local group remained autonomous within their 'home' territory, usually near permanent water, and over which they held rights. Elders with particular skills or expertise might exercise influence beyond their local group, with wider kinship networks. Groups were also advised by 'clever' men and women who were skilled in ritual knowledge and practices (Macdonald 2004: 22; Read 1983: 7). Such groups might come together on special occasions such as pre-ordained times for ceremonies, rituals or simply if their paths happened to cross. They may also have joined at particular times of the year and at certain places where resources were known to be abundant (Comber 2009).

Accounts of journeys of non-Aboriginal exploration show that the routes taken by some explorers relied on Aboriginal guides from the localities through which they travelled. The routes within the traditional homelands of Aboriginal people often followed annual migration routes. The route showed to Charles Throsby linked the Gundungurra people's summer camp in the Burragorang Camden area and the winter camps around the head of the Coxs River. The same routes were later adopted by settlers for travel and trade (Johnson 2007: 34, 55).

Historical recollections of Blaxland, Lawson and Wentworth's exploration of the Blue Mountains and route to the west brought them into contact with the land's traditional owners between Mt Victoria and the plains to the west. The travelling party had seen camp fires in the distance and seen a group of about thirty people moving about at a distance during their journey between Wentworth Falls and Mt Victoria. Remains of their old fires were found as well as traces where they had sharpened their spears throughout their journey.

The Aboriginal population declined due to disease such as smallpox and influenza as well as dispossession from traditional lands and acts of violence against the Aboriginal people which meant that there was great social upheaval and partial disintegration of the traditional way of life. This meant that access to traditional resource gathering and hunting areas, religious life and marriage links and access to sacred ceremonial sites were disrupted or destroyed. The Wallerawang area and wider were no exception to this, as while the advent of settler violence and land dispossession towards Aboriginal people was delayed by the perceived inaccessibility of the Central Tablelands, as the Free Selection Acts from 1861, brought thousands of settlers to Wiradjuri territory (Read 1988).

Post-colonial setting

After Gregory Blaxland, William Lawson, and William Charles Wentworth led the first recorded and successful crossing by Europeans through the Blue Mountains, the region quickly developed, and several towns appeared along the Great Western Highway. The encroachment of Europeans in this area meant that the Wiradjuri who had inhabited the majority of the landscape prior, were subjected to land-dispossessions at the hands of the Europeans.

The establishment of towns and villages had increasingly detrimental effects on the traditional lives of Aboriginal people of the region. In the 1860s some Wiradjuri men and women found employment on stations and occasionally on small holdings, but on an irregular basis (Read 1988: 26). Settlement reduced the territory and resources of Wiradjuri, offering little in return with which to sustain themselves, especially in dry seasons. As a result, Wiradjuri communities became increasingly dependent on settlers especially for food and shelter.

The establishment of the Aborigines Protection Board in 1883 imposed great changes on Wiradjuri people. By this time the social organisation of Wiradjuri communities had changed beyond comparison to their pre-contact existence. Families were living on Aboriginal Reserves (some established as early as 1861), on pastoral stations, and in camps on the fringes of towns and villages. Despite the drastic changes in their lives and their living circumstances many Wiradjuri managed to maintain some of their language and core cultural practices integral to community life.

4.2.2. AHIMS search

The purpose of the ACHA is to investigate the presence and extent of any Aboriginal sites within or adjacent to the project area and to assess their significance and any possible impacts resulting from the proposed works. As part of the desktop assessment for this project, an extensive search was undertaken of the Aboriginal Heritage Information Management System (AHIMS). The AHIMS register is maintained by Heritage NSW and provides a database of previously recorded Aboriginal heritage sites. An extensive search provides basic information about any sites previously identified within a search area. However, an AHIMS search is not conclusive evidence of the presence or absence of Aboriginal heritage sites, as it requires that an area has been inspected and details of any sites located have been provided to Heritage NSW to add to the database. As a starting point, the search will indicate whether any sites are known within or adjacent to the investigation area. A search of the AHIMS database was conducted during a map search over Wallerawang and the surrounding area. The parameters for this search were as follows:

- Client Service ID: 586160
- Date: 27/04/2021
- From: -33.4652 (Latitude), 150.0202 (Longitude)
- To: -33.3819 (Longitude), 150.1524 (Longitude)
- Buffer: 1000 metres
- Number of Aboriginal sites and Aboriginal objects found: 105
- Number of declared Aboriginal Places found: 0

Table 4-7 outlines the site types previously recorded in the region. Figure 4-7 and Figure 4-8 show the location of AHIMS sites in relation to the project area.

Table 4-7 Breakdown of previously recorded Aboriginal sites in the region.

Site Type	Number
Artefact	80
Art (pigment or engraved)	4
Artefact, Art (pigment or engraved), Grinding Groove	3

Site Type	Number
Artefact, Grinding Groove	3
Modified Tree (Carved or Scarred)	3
Potential Archaeological Deposit (PAD)	2
Artefact, Art (pigment or engraved)	2
Artefact, Modified Tree (Carved or Scarred)	2
Grinding Groove	2
Aboriginal Ceremony and Dreaming	1
Artefact, Potential Archaeological Deposit (PAD)	1
Burial	1
Burial, Modified Tree (Carved or Scarred)	1
TOTAL	**105**

None of the archaeological sites currently recorded on AHIMS are located within or directly adjacent to the project area, however, seven sites occur within 1 km. These sites are summarised in Table 4-8 below.

Table 4-8 AHIMS sites in or within 1km of the project area.

Site Number	Site Name	Site Type	Distance to Project (m)	Site Status on AHIMS
41-1-0238	Duncan Street PAD (refer to site 45-1-2583)	PAD	Approximately 960 m north of the project area.	Deleted
45-1-0211	S2;Wallerawang	Artefact	Approximately 985 m north west of the project area.	Valid
45-1-0212	GS1; Springvale Colliery	Artefact	Approximately 870 m north east by east of the project area.	Valid
45-1-0247	Wallerawang Schoolhouse	Artefact	Approximately 720 north by north west of the project area.	Valid
45-1-2545	Wallerowong Station Massacre	Burial	Approximately 765 m south west of the project area	Valid
45-1-2583	Duncan/Main Street PAD	Artefact	Approximately 960 m north of the project area.	Valid
45-1-2800	WPS-IF1	Artefact	Approximately 605 m north of the project area.	Valid

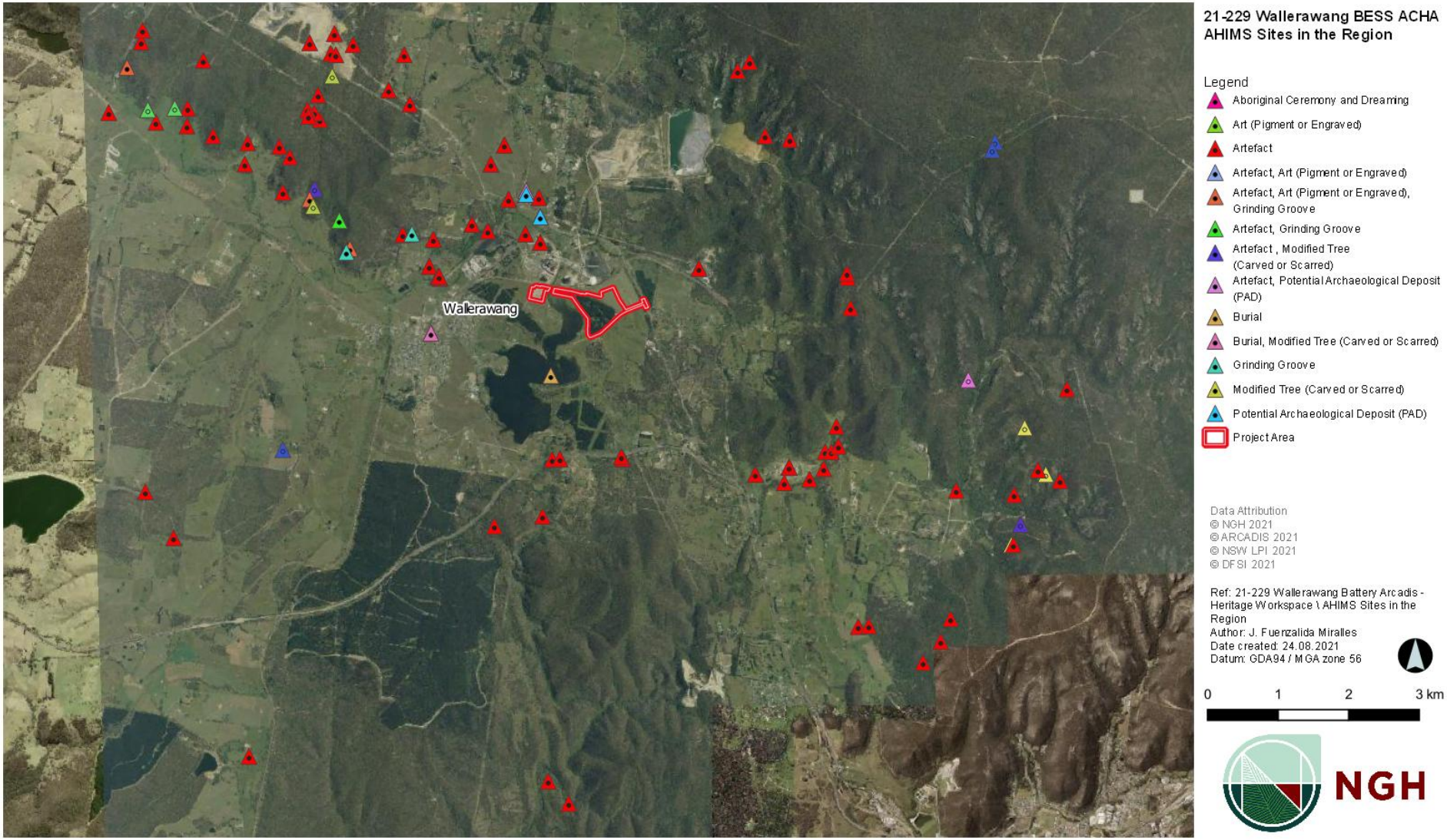

Figure 4-8 AHIMS Sites within proximity to the survey areas.

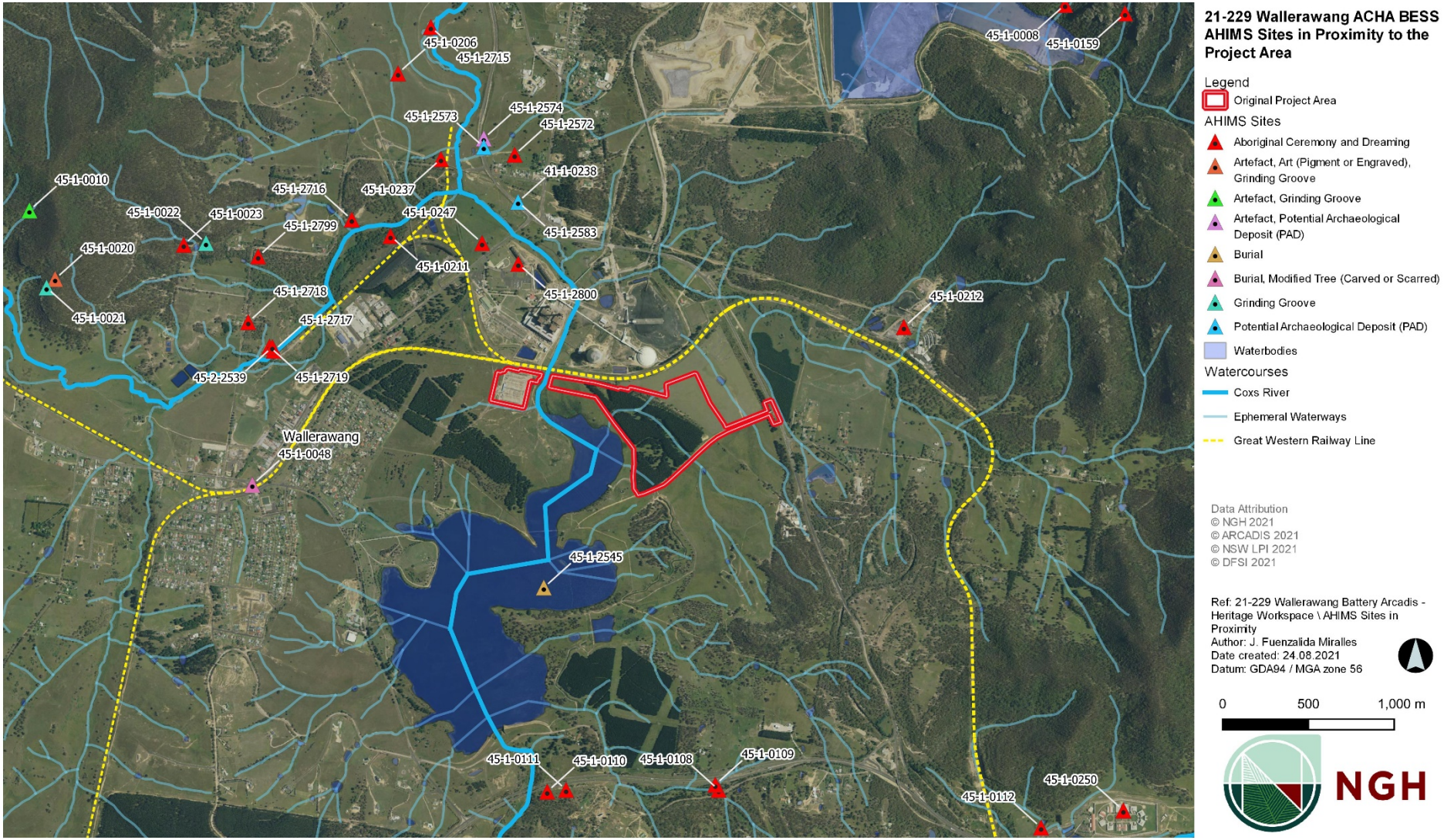

Figure 4-9 AHIMS site near the survey areas.

4.2.3. Archaeological context

A significant number of studies have been undertaken in Wallerawang and the wider region which provide a sound archaeological context for the project area. In summary, archaeological research suggests that the Blue Mountains were not routinely inhabited by people during the Last Glacial Maximum (LGM), which lasted from 31,000 – 16,000 years ago and are likely to have been a barrier to humans during this time (Barry et al. 2020; Mooney and Martin 2009). Archaeological evidence from nearby sites in the Blue Mountains suggests that the earliest evidence for people in the Blue Mountains is approximately 17,500 years ago. Furthermore, the "initiation of the Coxs River corridor at c.14,000 ago aligns well with other nearby sites within the mountains" (Barry et al. 2020:8). As a result, and according to current archaeological knowledge, it is likely that the region was sparsely occupied during the LGM due to the arid and colder conditions that are likely to have characterised the Wallerawang region (Mooney and Martin 2009:29). Aboriginal Occupation through the landscape was likely opportunistic and associated with the procurement of valuable materials (Barry et al. 2020). It is also likely to have occurred through the Coxs River corridor, which remained a vital travel route for Aboriginal communities before and after the Blue Mountains were crossed by Europeans in 1813. The Blue Mountains region and areas further west are likely to have been Increasingly occupied after the LGM during the Holocene, where climactic conditions allowed for more hospitable landscapes to emerge (Mooney and Martin 2009:29).

In 1998 Silcox was commissioned by the Department of Main Roads to conduct an archaeological survey of a proposed deviation on state highway NO. 5 near Wallerawang; approximately 1600 m south of the current project area. During the survey, four previously unrecorded artefact scatters were recorded; site W1, W2, W3, and W4. Site W1 was located on the gently sloping southern margin of an unnamed minor creek. A total of 44 artefacts were recorded along the vehicle track in this site; 42 of these artefacts were quartz, one was of chert and one was of fine grained igneous material. Of these recorded artefacts, one was a bipolar quartz core and 43 of were flakes, broken flakes, or flake pieces; two of the quartz flakes and the one chert broken flake contained retouch/usewear. Site W2 was located on the hillslope on the opposite side of the creek from W1. A total of 14 artefacts were recorded along a track which runs through the site and stayed within 15 m of the centreline of the track, beyond this point the slope transforms into a steeper slope. Archaeological services noted that more artefacts may be present further down the slope, albeit in reduced densities. All of the artefacts recorded at W2 were comprised of quartz, 11 were amorphous flaked pieces while the remaining three were recorded as cores. Site W3 was located on the uphill side of a shallow contour drain on a moderate slope leading down to Coxs River. A total of two quartz artefacts were recorded in this site. Site W4 was located approximately 100m up a moderate slope leading down to a steep slope which forms the eastern bank of Coxs River. A total of 18 artefacts were recorded at this site, eleven of these were located within a vehicle track that runs along the slope while the remaining seven were within a strip along the edge of a shallow gutter which extended upslope from the edge of the track approximately 50 m. All of the artefacts identified within the track were made from quartz, while within the gutter six were of quartz and one of quartzite. Two cores, one of quartz and one of quartzite were also recorded within the gutter area of this site. Archaeological services suggested that all sites had been disturbed by historic activities to some extent, likely causing surface displacement of artefacts in the process. The presence of small dams, vehicle tracks, constructed contour banks, and eroded gutters were seen as the main drivers of these disturbances. All sites were located within 200 m of a water source, with W4 being within 100 m of Coxs River. The results of Silcox (1998) show a clear predominance of quartz artefacts within the assemblage recorded. While other stone sources are identified, indicating their availability in the region, there is a clear dominance of quartz artefacts.

In 1992 Elizabeth Rich and Alice C Gorman Archaeological Consultants (Rich and Gorman) conducted an archaeological survey for Aboriginal sites at the proposed Springvale Colliery and Conveyor at Wallerawang; approximately 800 m northeast of the current project area. During the surveys nine artefact scatters, four shelters with PAD, and two shelters with art were identified; six other previously identified sites and two PADs were relocated as well. These sites were located throughout a variety of landforms, including elevated creek terraces, foot slopes, low spurs, other spurs, hillslopes, and cliff lines. In all of these site's quartz was the predominant raw material, the only exception to this was one site where indurated mudstone/chert was the

dominant material; it should be noted that this site was located on the Newnes Plateau. Other raw materials included quartzite and fine-grained siliceous material. While the majority of the stone assemblage comprised of whole or broken flakes, hand-held and bipolar cores were also recorded; evidence for bipolar flaking only occurred in half of the sites where artefacts were recorded. Rich and Gorman added that future assemblages in the area may provide further clarification as to why different stone materials and flaking techniques were used in the area. The results of this assessment present use of indurated mudstone/chert in as a locally dominant raw materials to supplement other known dominant siliceous raw material raw materials.

In 2003 OzArk Cultural Heritage Management (OzArk) conducted archaeological test excavations AHIMS registered PAD 1 (#45-1-2573) and PAD 2 (#45-1-2574) between approximately 1250 m and 1350 m north of the project area. The purpose of this investigation was to determine the archaeological potential of the area after a survey for the realignment of the Castlereagh Highway identified their sensitivity. PAD 1 was located on the lower section of a slightly elevated alluvial floodplain. OzArk describes the soil profiles of these pits as containing a relatively high degree of uniformity. The deposits close to the base became increasingly gravelly and were extremely hard set. PAD 2 was located on the upper slope of an elevated terrace overlooking Coxs River. The soil profiles within this PAD are described as having a fair degree uniformity except in the third stratigraphic layer, whose thickness was quite variable across pits. Furthermore, the soil deposits close to the base were not always more compact with depth, but OzArk records that the deposits ended in a sandy decayed bedrock at approximately 80 cm depth. Some of these pits with deeper soil profiles contained assemblages that suggest that some stratification is present within the PADs.

A total of 282 x 0.5 m test pits were excavated along four transects which encompassed the two PADs and related landforms. A total of 416 artefacts were recovered across all test pits, their material and artefact types can be seen in Table 3-8 and Table 3-9 below. The majority of them assemblage excavated was comprised of Quartz and Siliceous Tuff, with smaller amounts of seven other raw material types. A variety of artefact types were also found within the test pits. OzArk suggests that the hammerstones/anvils may have been used in the production of stone tools or for processing foods or other resources, however no microscopic usewear analysis was conducted. OzArk also argued that the presence of cores, debitage, and core fragments suggest that there was local manufacturing of stone tools in the area from a variety of raw materials. The range of artefact types, including backed blades and Bondi points, suggest that the site may have been used for a variety of purposes.

Table 4-9 Raw material types found within the OzArk assemblage at Wallerawang (OzArk 2003:34).

Raw Material	Total Artefacts
Quartz	182
Siliceous Tuff	165
Quartzite	39
Granular Quartz	12
Igneous	7
Unidentified	5
Fine Grained Basic	3

Raw Material	Total Artefacts
Fine Grained Siliceous	2
Sandstone	1
TOTAL	**416**

Table 4-10 Artefact types found within the OzArk assemblage at Wallerawang (OzArk 2003:36).

Artefact Type	Total Artefacts
Debitage	345
Core Fragment Debitage	19
Manuport (?)	13
Core	8
Backed Artefact	8
Non-Diagnostic	8
Hammer & Anvil	7
Tool	4
From Tool (?)	3
Bipolar Core	1
TOTAL	**416**

Overall, OzArk determined that the site is likely to have been a large open site comprised of several low to moderate density artefact scatters (less than 100 artefact/m^2). While OzArk suggested that the site has evidence for stratified occupation, the results of the test excavations did not provide further insight into this. The artefact analysis suggested that the upper spits are dominated by material dating to the Middle Bondaian, while the lower sites are likely from an Early Bondaian or even Capertian age; OzArk note that the lack of bipolar artefacts suggest that the site was not frequently occupied until the Late Bondaian. The site was assessed as containing a high Aboriginal significance and moderate to high archaeological significance due to the potential for the site to reveal information regarding the use of the region in the past by Aboriginal people.

In 2017 Biosis Pty Ltd (Biosis) prepared an ACHA report for the decommissioning of the Wallerawang Power Station (WPS) at Wallerawang; approximately 50 m north of the current project area. While the overall effectiveness of the survey for examining the ground was assessed as being low, one previously unrecorded isolated artefact and two areas of PAD were identified (see Plate 4-1 below). The isolated find, WPS IF1 (#45-1-2800) was an isolated chert artefact located to the west of a fence line in a cleared area in the southern portion of the station. Biosis reported that the site had been heavily disturbed due to landscaping and lawn disturbances. WPS PAD1 was located within an alluvial terrace on the southern side of Coxs River. While Biosis were unable to access the area as part of the ACHA survey, a visual inspection from the southern side of the fence line marking its boundary suggested that the PAD was in good condition, despite the vegetation clearance that had taken place. WPS PAD 2 was located within an alluvial terrace on the western side of Coxs River. Biosis recorded that the site contained extremely poor surface visibility due to dense grass cover. However, the PAD was determined to be in an overall good condition, despite the vegetation clearance that had taken place. The scientific significance of the isolated artefact was deemed to be low due to the level of disturbance in the area, meanwhile the scientific significance of the two PADs was unable to be determined as they were not accessible. Biosis found that none of the new and previously recorded Aboriginal sites would be impacted by the proposed decommissioning of the Wallerawang Power Station.

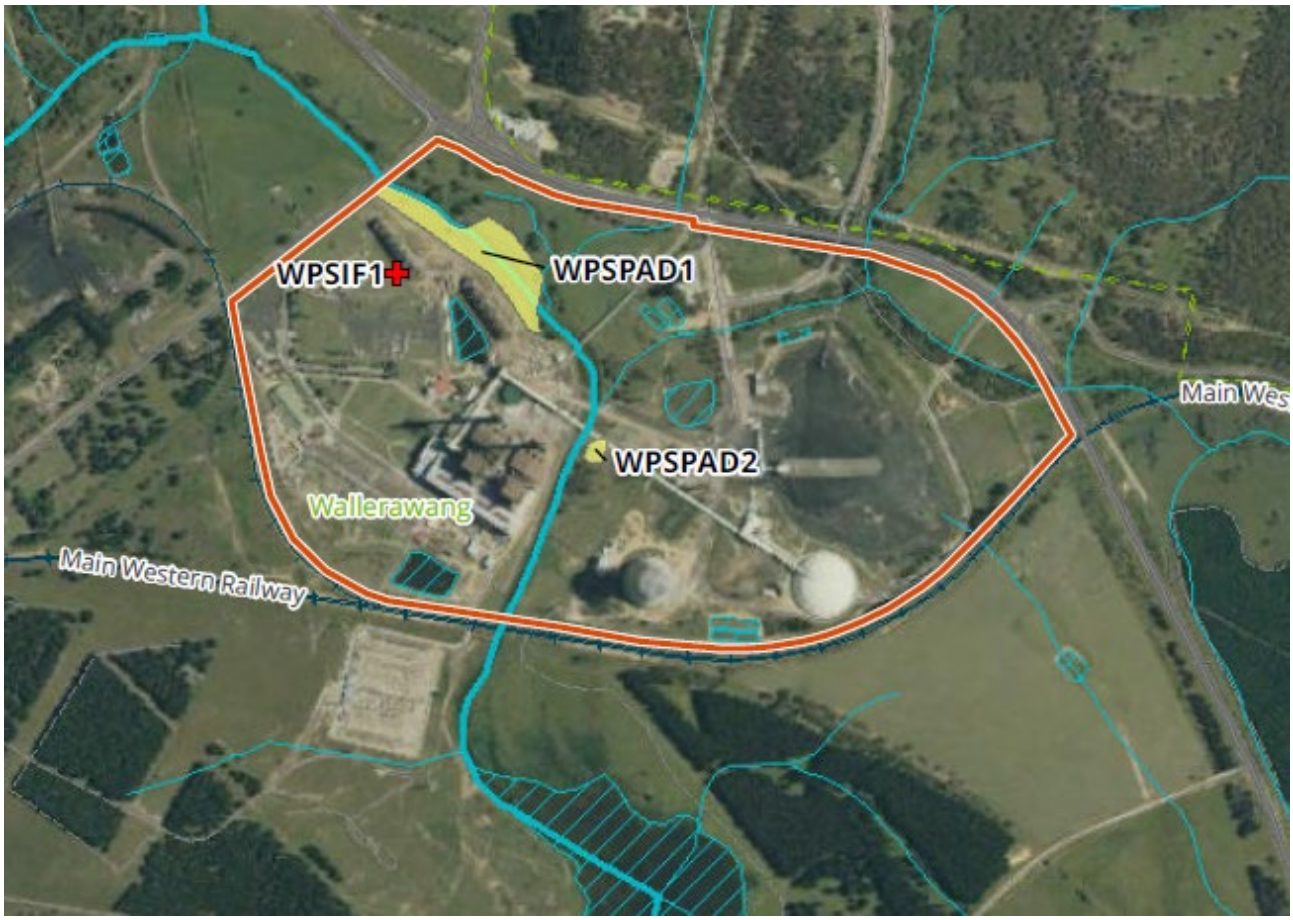

Plate 4-1 Aerial view of the location and boundaries of sites WPS IF1, WPS PAD1, and WPS PAD2 within the Wallerawang Power Station. Note that the current project area is adjacent to the south of the boundary above outlined in red (Image from Biosis 2017:25).

4.3. Aboriginal site prediction

The Aboriginal site modelling for the region to date suggests that Aboriginal sites are highly common within proximity to waterways and any associated elevated terraces or gentle slopes. These studies also suggest that the overwhelming majority of site types in the region are comprised of isolated artefacts and artefacts scatters, with some landforms also containing potential for subsurface archaeological deposits. The previously recorded AHIMS sites in the region support this conclusion. While the historical land use of the project area has caused significant surface disturbances, it is unknown to what extent this has impacted subsurface deposits.

The presence of Coxs River, associated flats, and elevated flats within the current project area significantly increases the likelihood of encountering Aboriginal heritage sites.

The likely archaeological site types for the local area, and the potential for their presence within the project area, is outlined in Table 4-11 below.

Table 4-11 Aboriginal Site Prediction Statements.

Site Type	Site Description	Potential
Stone artefact scatters and isolated artefacts	Artefact scatter sites can range from high-density concentrations over a large area to isolated finds within discrete landforms	Moderate to High potential to occur on the surface due to historical vegetation clearance, natural erosion processes, and historical land use. the archaeological context of the region highlights raw material availability of quartz and mudstone predominantly, but also other fine grained stones suitable for tool production.
Potential Archaeological Deposits (PADs)	Potential subsurface deposits of archaeological material	Moderate to High potential to occur in flat, elevated flat, or gentle slope landforms where they occur within 200 m of Coxs River or its associated tributaries
Aboriginal Art (pigment or engraved)	An engraved or painted piece of art. These are often found vertically or horizontally on sandstone outcrops or shelves	Low potential to occur due to the lack of any identified shelters or sandstone outcrops in the project area.
Modified Trees	Trees that have undergone cultural modification	Low potential to occur due to the historical vegetation clearance that took place in the project area. However, modified trees may be present were old growth native vegetation remains.

5. Archaeological investigation results

5.1. Survey strategy

The fieldwork was carried out during a single day on the 22.06.2021. Two RAP groups with Sharon Riley representing Mingaan Aboriginal Corporation and [redacted] from [redacted] attending the survey. NGH archaeologists Dr Giles Hamm and Layne Holloway along with Sean Fishwick of Arcadis and Ben Tesoriero of Greenspot also participated in the field survey to provide clarification of the proposed works and past land use.

The survey strategy covered areas of the project area that had not previously been subject to heritage assessment. This survey was targeted to these sections as per the requirements of the *Code of Practice*, noting that some areas were densely vegetated by grasslands and weeds such as blackberry, as well as pine forest plantation, in which pine needles were also on the ground surface restricting visibility. Locations of disturbance resulting from road access and infrastructure, such as the development of the original Great Western Railway in 1890, has provided improved areas of survey exposure and visibility.

The strategy therefore was to walk in transects across six survey units throughout the project area to achieve maximum coverage in areas where the level of vegetation permitted this to occur. The names of these survey units are presented below; their locations within the project area are detailed in Figure 5-1.

- Survey Unit 1 –Cleared Flat
- Survey Unit 2 – Hillslopes Pine Plantation
- Survey Unit 3 – Gully Pine Plantation
- Survey Unit 4 – Coxs River Elevated Flat
- Survey Unit 5 – Disturbed Terrain
- Survey Unit 6 – Substation

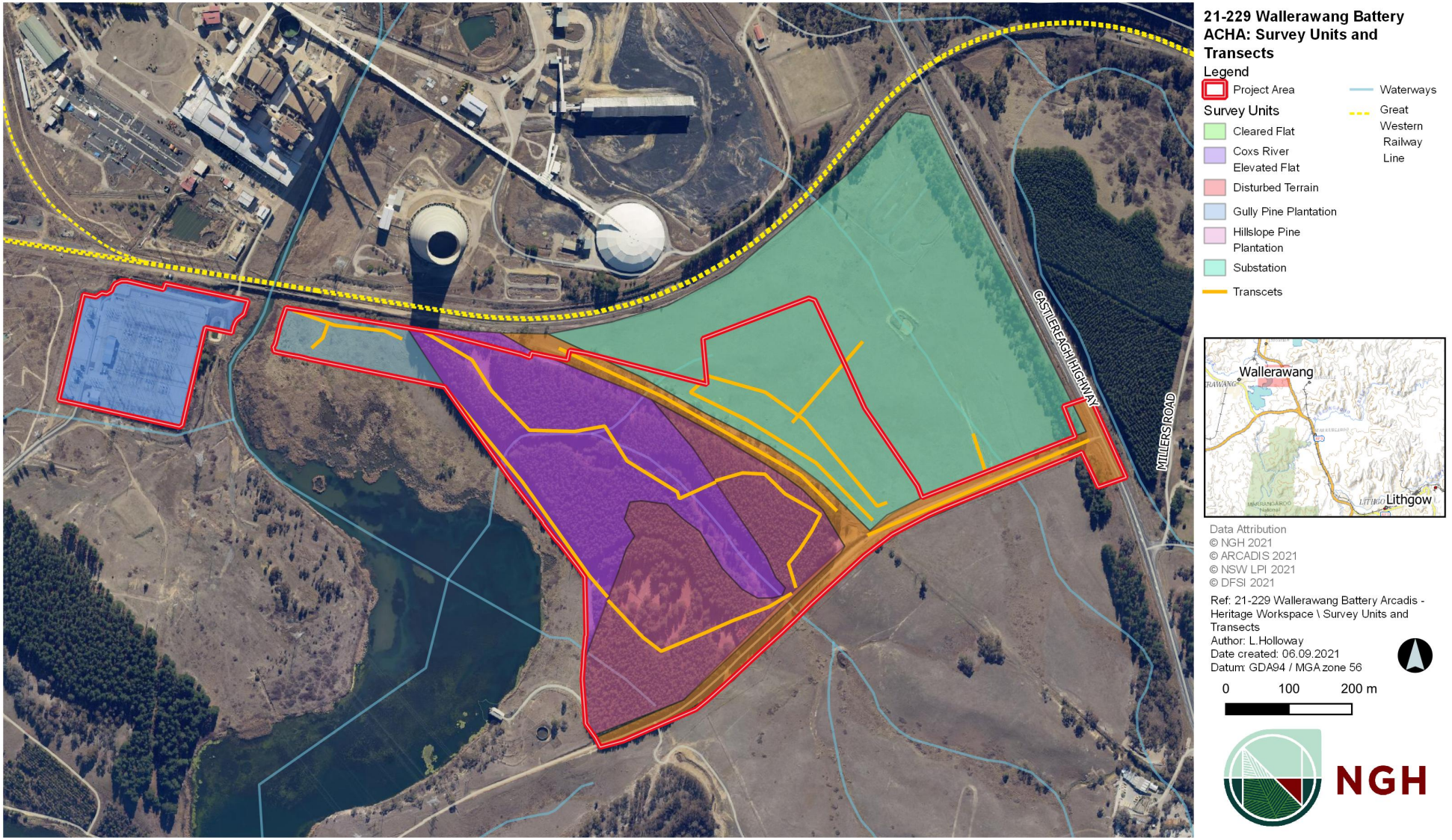

Figure 5-1 View of the survey units walked during the ACHA survey.

5.2. Survey coverage

The pedestrian survey focused on locations within the proposed construction boundary of the Wallerawang BESS development is approximately 32.47 Ha. The remaining portion of the project area excluded from construction works includes 26.78 Ha and was sparsely surveyed. Due to moderate grass and vegetation cover across the project area, ground surface visibility was generally poor with improved areas of ground surface visibility present in locations of disturbance and erosion. The average effective survey coverage was 3.66%. The survey coverage data outlined in Table 5-1. The full breakdown of each survey unit is outlined in the following Tables below:

- Table 5-2 Description of Survey Unit 1 performed during the ACHA survey.
- Table 5-3 Description of Survey Unit 2 performed during the ACHA survey.
- Table 5-4 Description of Survey Unit 3 performed during the ACHA survey.
- Table 5-5 Description of Survey Unit 4 performed during the ACHA survey.
- Table 5-6 Description of Survey Unit 5 performed during the ACHA survey.
- Table 5-7 Description of Survey Unit 6. Unable to be surveyed due to land access constrains.

Overall, it is considered that the surface survey of the Wallerawang BESS project area had sufficient and effective survey coverage. The results identified are considered a true reflection of the nature of the Aboriginal archaeological record present within the project area.

Table 5-1 Effective Survey Coverage.

Survey Unit	Number of Survey Transects	Ground Surface Exposure Type	Survey Unit Area	Surveyed Area m²	Archaeological Visibility	Effective Coverage (area x visibility) m²	Percentage of Survey Unit Effectively Surveyed	Survey Result
Survey Unit 1 – Cleared Flat	3	Locations of slashed patchy grass and a small area of rabbit warren burrows.	255087m²	29426.25	5%	1471.31	0.58 %	Wallerawang BESS IF + PAD 02 located on minor spur adjacent to ephemeral drainage line. Low visibility.
Survey Unit 2 – Hillslope Pine Plantation	2	Excavation disturbance and rock outcropping.	92187.69 m²	6586.37	15%	987.96	1.07 %	No Aboriginal objects identified. Low visibility Highly disturbed from forestry practices.
Survey Unit 3 – Gully Pine Plantation	2	Disturbance caused stream erosion.	105393.43 m²	10140.98	10%	1014.10	0.96 %	No Aboriginal objects identified. Low visibility. Highly disturbed from forestry practices.
Survey Unit 4 – Coxs River Elevated Flat	2	Disturbance caused by infrastructure	17827.59 m²	2213.31	5%	110.67	0.62 %	Wallerawang BESS AFT + PAD 01 located on an intact elevated alluvial flat adjacent to Coxs River. Low visibility.

Survey Unit	Number of Survey Transects	Ground Surface Exposure Type	Survey Unit Area	Surveyed Area m²	Archaeological Visibility	Effective Coverage (area x visibility) m²	Percentage of Survey Unit Effectively Surveyed	Survey Result
Survey Unit 5- Disturbed Terrain	2	Disturbance caused by infrastructure cutting and filling. .	50512.22 m²	1331.37	50%	665.68	1.32 %	No Aboriginal objects identified. Highly disturbed from cut and fill operations to the landscape to facilitate road and rail infrastructure.
Survey Unit 6 – Substation	0	Not surveyed	43583.22 m²	0	0%	0	0.00 %	Highly disturbed from development of Substation.
TOTAL			564591.16	49698.277	-	4249.715	0.75 %	

5.3. Survey results

The ACHA survey confirmed the presence of Aboriginal object and potential of subsurface deposits within the project area. Two new artefact sites Wallerawang BESS AFT+ PAD 01 and Wallerawang BESS IF + PAD 02 were located with Potential Archaeological Deposits (PAD). Wallerawang BESS AFT+ PAD 01 is associated with the elevated alluvial flat surrounding the location of two identified artefacts. The PAD boundary encompasses a small spur landform adjacent to an ephemeral tributary of Coxs River. Both sites are located on elevated alluvial landforms with relatively low levels of historical disturbance. An additional area of archaeological sensitivity was noted in the eastern extent cleared flat landform, associated with an ephemeral drainage line and spur, however this location is outside of the project area and will not be impacted by the proposed works. No other Aboriginal sites were recorded within the project area. Significant disturbance was observed within the majority of the project area, removing the potential for subsurface deposits. The results of the field survey are displayed in Figure 5-2. Due to the variety in landform, ground surface visibility, and exposure, the results of the survey will be discussed in regard to each Survey Unit as outlined in Figure 5-1. Plates 5-1 to 5-37 below provide images of the project area captured during fieldwork. Sections 5.3.1 to 5.3.6 below describe each survey unit.

5.3.1. Survey Unit 1 – Cleared Flat

Table 5-2 Description of Survey Unit 1 performed during the ACHA survey.

Description	**Cleared spur landform gently sloping towards the northwest at slope of a proximately 5 degrees. The landform had recently been slashed and contained an interesting ephemeral drainage depression in its northern extent.**
Approximate Area	255087 m²
Effective Survey Coverage	0.58 %
Survey Strategy	Pedestrian Survey of three transects with the survey team of four spaced out at 5 m intervals.
Surface/Exposure Visibility	• Less than 5% surface visibility • Less than 5% exposure visibility
Results	The cleared flat Survey unit presented evidence of historical vegetation clearance for its past use as a stock paddock. Stock was absent from the paddock at the time of the survey, however small dams and cattle yards were present in the north western extent of this survey unit. Slashed grass covered the western extent of the project area to demarcate the proposed construction footprint to provide improved visibility for survey. The remainder of the paddock was high grass, inhibiting ground surface visibility. Rabbit warrens were observed in the northern extend of this survey unit in a minor spur landform adjacent to an ephemeral drainage depression allowing for some exposure to the subsurface. An isolated quartz stone artefact was located within the excavated soil of one of the rabbit warrens. The location of the stone tool artefact within the rabbit warren spoil suggest that the artefact has been exposed from the subsurface. Wallerawang BESS IF + PAD 02 was therefore recorded on the minor spur landform where rabbit warrens were located.
Proposed Works	The proposed work will involve leveling of landforms and installation of subsurface utilities, including telecommunications and water and wastewater infrastructure required in addition to storm water management, fencing and lighting to facilitate the installation of a large-scale

	BESS including battery enclosures, inverters, and transformers. The location of Wallerawang BESS IF + PAD 02 will not be impacted by the proposed works, as the construction footprint has been revised to avoid the site.
Comments	The project area was noted to be altered by historical land use. It was hypothesised that the drainage depression intersecting the survey unit was remnant from the landscape's natural hydrology. Additionally, Sharon Riley suggested that the fill to form the adjacent section of the Great western Highway Railway may have been sourced from the immediate landscape, however no evidence of leveling or sediment quarrying was observed within this landform.

Plate 5-1: View of cleared undulating flat looking northeast over slashed paddock, showing point of elevation and remnant vegetation int the distance. The locations of tree line signify the project area boundary.

Plate 5-2: View of the undulating flat looking north over project area. this image was taken from the unsealed roadway located on the southern boundary of the project area. Concrete structures in the distance belong to the Wallerawang Power Plant.

Plate 5-3: View northwest over western extent of the cleared flat survey unit at the location of Wallerawang BESS IF0 + PAD 2. Rabbit warren spoil piles exposing the ground surface.

Plate 5-4: White Quartz Broken Flake of Wallerawang BESS IF+PAD 02.

5.3.2. Survey Unit 2 –Hillslopes in Pine Plantation

Table 5-3 Description of Survey Unit 2 performed during the ACHA survey.

Description	**Comprised of moderately sloping hills (10 - 15°) within pine forest planation.**
Approximate Area	92187.696 m²
Survey Strategy	Pedestrian Survey of three transects with the survey team of four spaced out at 2 m intervals.
Effective Survey Coverage	1.07 %
Surface/Exposure Visibility	• Less than 10% survey visibility • Less than 5% exposure visibility
Results	No Aboriginal sites or PADs were identified within this survey unit. The Hillslopes of the Pine Plantation had poor ground visibility (10%) due to the pine needles, grass, and stick matter moderately covering the ground surface. Areas of improved exposure were located on side slope areas where needles were sparser, exposing a grey sandy loam subsurface with minor sandstone and quartz pebbles intermixed. Occasional sandstone boulders (10-30 cm in diameter) and medium water rolled quartz pebbles (2 - 10 cm in diameter) were observed in the south eastern extent of the transect. Loose boulders were overturned and examined for grinding and pebbles were examined for distinguishable features attributed to cultural use. The Electrical Commission and water assets were identified within this area on the western extent of the sloping landform. The installation of these services has resulted in moderate subsurface disturbance within the easement areas, totalling to approximately 5% of this survey unit.
Proposed Works	The proposed work will involve leveling of landforms and installation of subsurface utilities including telecommunications, and water and wastewater infrastructure required in addition to storm water management, fencing and lighting to facilitate the installation of a large-scale BESS including battery enclosures, inverters, and transformers.
Comments	Sharon Riley noted the cultural knowledge of grinding groves located along Coxs River. No sandstone overhangs or shelves were observed during the survey.

Plate 5-5: View Crest of western hillslope landform looking west towards Coxs River. Pine needles are moderately covering the ground surface with minor exposes of a grey sandy loam subsurface visible. Note the black pipe located in the right fore-ground of the plate.

Plate 5-6 : Close up of the limited ground surface visibility due to pine needle coverage. Water rolled quartz pebbles were observed. No distinguishable features attributed to cultural use were identified.

5.3.3. Survey Unit 3 –Pine Plantation Gully

Table 5-4 Description of Survey Unit 3 performed during the ACHA survey.

Description	Comprised of a low-lying drainage depression that has become eroded and incised due to the lack of ground surface stabilisation. Pine trees becomes sparse in drainage depressions and blackberry and grasses are covering the ground surface.
Approximate Area	105393.435 m²
Survey Strategy	Pedestrian Survey of two transects with the survey team of five spaced out at 2 m intervals, prioritising locations along the creek bank.
Effective Survey Coverage	0.96 %
Surface/Exposure Visibility	Less than 5% surface visibility. Approximately 10% exposure visibility.
Results	No Aboriginal sites were identified within this survey unit. This survey area encompasses depression areas within the Pine Plantation. An unnamed stagnant creek line with incised eroded banks branches into two drainage lines within the gully area. Prior to the establishment of the Pine Plantation, the creek line was likely remnant of an ephemeral drainage line that passed through the project area from east of the rail line, draining into Coxs River, suggested by the development of the sandstone culvert under passing the remnant rail line. Two notable areas of cleared depression were observed within this survey unit. Both depressions were absent of trees, and swampy ground densely covered with grass and blackberry bush impacting ground surface visibility (<5%). The remaining areas of this survey unit surrounding incised creeks were located within the closed canopy of the Pine Plantation with pine needles covering the majority of the ground surface. Pine trees were noted to be in a furrowed alignment suggesting machinery use while planting, with the establishment and ongoing use resulting in moderate ground disturbances. Areas of improved visibility (20%) were observed at the base of tree trunks and on incised creek banks, exposing skeletal soils formed of granite and sandstone water rolled pebbles and rocks with a dark brown sandy loam soil. No rock outcrops or deposit bearing landforms were located. It was determined that the potential for Aboriginal objects to remain within the landscape is low within this survey unit.
Proposed Works	The proposed work will involve leveling of landforms and installation of subsurface utilities including telecommunications, and water and wastewater infrastructure as required in addition to storm water management, fencing and lighting to facilitate the installation of a large-scale BESS including battery enclosures, inverters, and transformers. Additionally, a transmission line connection (above ground) between the BESS and the nearby TransGrid Wallerawang 330kV substation will be developed in the eastern extent of the survey unit.
Comments	Aspects of the hydrology within the gully landform may be remnant, however the erosion of soils on creek banks has been exacerbated by the establishment of the Pine plantation, which has significantly disturbed and restructured the landscape.

Plate 5-7: Stagnant unnamed creek located within the lower elevations of the Pine Plantation. Waterflow resulted in incised banks eroding into skeletal soils with sandstone and granite pebbles / boulders exposed. Pine needles hinder ground surface visibility.

Plate 5-8 View: Swampy depression located within the Pine Planation, absent of pine trees. The ground surface is densely covered with grass and blackberry vegetation, impeding on ground surface visibility.

5.3.4. Survey Unit 4 – Coxs River Elevated Flat

Table 5-5. Description of Survey Unit 6 performed during the ACHA survey.

Description	Comprised of the elevated alluvial flat vegetated area sloping gently towards the eastern bank of the Cox's River.
Approximate Area	17827.594 m²
Survey Strategy	Pedestrian Survey of two transects with the survey team of four spaced out at 2 m intervals.
Effective Survey Coverage	0.62 %
Surface/Exposure Visibility	5% surface visibility due to gravel and grass cover, with less than 5% exposure visibility.
Results	Two Aboriginal objects were located in the eastern extent of the project area which has been recorded as Wallerawang BESS AFT + PAD 01. This landform unit offers Aboriginal objects, minimal surface disturbance, and an intact landscape and proximity to Coxs River, a known resource for Aboriginal occupation. As a result, this landform unit presents moderate potential for subsurface archaeological sensitivity. Areas of notable water inundation resulting in waterlogged ground were excluded from the PAD. The bank of Coxs River outside of the project area is excluded from the PAD boundary, as *in situ* archaeological areas have likely been impacted by bank erosion. The surface ground visibility was poor across the entire survey unit. Long dense grass, blackberry bushes and swampy ground limited walking access towards Coxs River. Disturbances from a gravel vehicle access track and installation of a boundary fence has likely impacted the ground surface of the western extent of the survey unit.
Proposed Works	No works to occur within this survey unit. Arcadis have altered their construction plan to avoid any impacts to Wallerawang BESS AFT + PAD 01.
Comments	Sharon Riley representing Mingaan Aboriginal Corporation noted that the ecology of this area could benefit from a cultural burn performed by experienced Aboriginal Elders.

Plate 5-9: Western extent of the survey within the Coxs River Elevated Flat survey unit looking towards the bank of the Coxs River. The water body is located just beyond the light brown reeds. A metal fence line marks the boundary of the project area.

Plate 5-10: View of Coxs River Elevated Flat looking west towards Coxs River. High grass covered with the majority of the project area, increasing with density towards Coxs River. Dark brown patches of blackberry bush located in sparse patches across the survey unit. A gravelled track extends along the northern extent of the survey unit to loop under the Coxs River Rail Bridge.

Plate 5-11: Wallerawang BESS AFT + PAD 01 location marked by red oval, adjacent to vehicle access track located at the eastern extent of the survey unit.

Plate 5-12: White Quartz Cores identified at Wallerawang BESS AFT + PAD 01 located within the Coxs River Elevated Flat.

Plate 5-13: White Quartz Broken Flake identified at Wallerawang BESS AFT + PAD 01 located within the Coxs River Elevated Flat.

5.3.5. Survey Unit 5 – Disturbed terrain

Table 5-6 Description of Survey Unit 6 performed during the ACHA survey.

Description	Comprised of unsealed access roads developed in the southern extent of the project area and the remnant Great Western Railway.
Approximate Area	50512.219 m²
Effective Survey Coverage	1.32 %
Survey Strategy	Pedestrian Survey of three transects with the survey team of four spaced out at 1 - 2 m intervals.
Surface/Exposure Visibility	10% surface visibility due to bitumen and grass cover with 20% exposure visibility.
Results	No Aboriginal sites or PADs were identified during the survey of this area. Landforms within this survey unit have been significantly restructured to form infrastructure corridors. Specifically, the access road that extends along the southern boundary of the project area intersects undulating landforms which have been significantly cut, filled (0.5 – 3 m approximate difference in natural elevation) and resurfaced with sandstone gravels. Visibility of the modified ground surface was excellent (70%). The natural ground surface viability was limited to the edges of access tracks and ditches, impacted by grass cover (<5%). Drainage ditches and cut elevated slopes parallel to the access road have been established and are covered in dense grass, resulting in poor exposure (<5%). The remnant railway corridor within this survey unit intersects the centre of the project extending north to south. The entrance point of the rail line in the south of the project area is the highest point of elevation within the surrounding landscape. A small quarry was located at the crest of the hill. Approximately 1 m of natural ground surface has been extracted providing excellent exposure (80%) of the grey, yellow sand subsurface. Progressing further north, the slope of the hill decreases and levels of built up fill for the rail line increases. Approximately 2-5 m of fill has been added that formed a level surface for the rail line. Mature remnant native trees were observed to be partially buried by the fill embankment that forms the rail line. Trees were absent of cultural modification. The fill embankment was structured of clay and sand sediments intermixed with sandstone pebbles and boulders, likely from a local source. Blue metal coal slag, granite and an uncommon fine grained smooth green material formed the rail ballast surface of the decommissioned track. Historical nails, discarded metals, glass, and more modern wooden and star picket fence posts were present around the remnant rail track.
Proposed Works	The proposed work will involve the leveling of landforms and installation of subsurface utilities including telecommunications, and water and wastewater infrastructure required in addition to storm water management, fencing and lighting to facilitate the installation of a large-scale BESS including battery enclosures, inverters, and transformers. Additionally, a transmission line connection (above ground) between the BESS and the nearby TransGrid Wallerawang 330kV substation will be developed in the eastern extent of the survey unit. A site access to the BESS from the Castlereagh Highway will be improved and widened to comply with appropriate auxiliary turn treatments in accordance with AustRoad requirements.
Comments	Cut and fill disturbances and past development of the Great Western Railway, access roads and fences have likely removed the integrity of natural subsurface deposits removing potential for *in situ* Aboriginal cultural heritage resulting in a nil to low potential of Aboriginal objects.

Plate 5-14: View facing east of unsealed access road from Castlereagh Highway. Note that the landform has been significantly cut in to form the access road.

Plate 5-15: View of west of the exposed profile of fill that forms the raised remnant Great Western Railway.

Plate 5-16: Location of small sediment quarry located in the southern extent of the project area, adjacent to the unsealed access road and the remnant Great Western Railway.

5.3.6. Survey Unit 6 – Substation

Table 5-7 Description of Survey Unit 6 performed during the ACHA survey.

Description	Comprised of the western extent of the Coxs River, including the pre – existing Wallerawang TransGrid Wallerawang 330kV substation.
Approximate Area	43583.220 m²
Effective Survey Coverage	0%
Survey Strategy	Desktop and visual survey from a distance.
Surface/Exposure Visibility	Could not be surveyed due to access constraints.
Results	This site could not be surveyed due access constraints as a location of high voltage exposure. The survey unit was observed from the eastern bank of the Coxs River. It was noted that this landform had been greatly disturbed from the development of the substation. The immediate banks of the Coxs River are covered in weeds and riparian vegetation. The sloping terrace between the riparian corridor and the developed substation has been cleared and restructured to form service roads to the substation.
Proposed Works	Above ground transmission line connection between the BESS and the TransGrid Wallerawang 330kV substation. A transmission line tower with for footings to be secured into the ground surface.
Comments	Low potential to impact upon any *in situ* Aboriginal cultural heritage due to disturbance related to the development of the substation.

Plate 5-17: View of the TransGrid Wallerawang 330kV substation. Significant development is evident, diminishing the potential for Aboriginal objects within the survey unit.

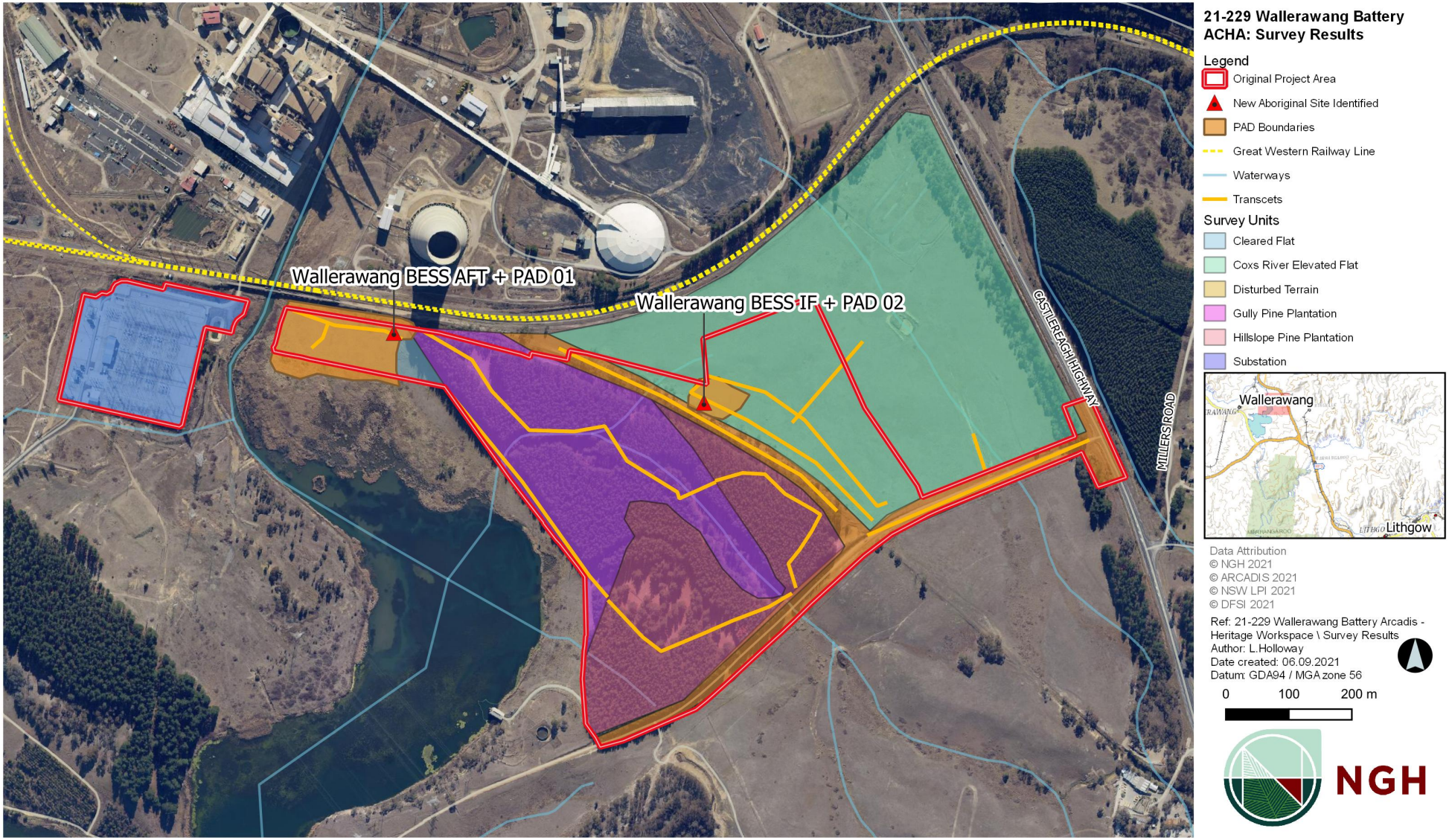

Figure 5-2: Survey Results

5.4. Discussion

The results of the field survey have provided some evidence of prehistoric Aboriginal land use practices within the region. Based on the information collected, it can be concluded that:

- Areas of PAD are more likely to remain around waterways, with the potential increasing in areas where multiple waterways intersect, and flat or gently sloping landforms are present.
- Due to previous historical land-use, there is potential for scarred trees to remain only in areas where there is remnant mature growth.
- Grinding grooves are unlikely to be present within the project area but have the potential to remain in areas where previously exposed sandstone shelves have been covered by alluvial sediments.
- Artefact scatters and isolated finds can be located across the entire landscape and are not limited to one specific landform type. However, they are less likely to occur as surface artefacts along the creek lines due to flood hazards. Instead, there is potential for them to remain in remnant landforms where the topsoil has not been removed or covered by historical cut and fill development or plantation establishment.
- Highly disturbed Aboriginal sites may still be found within the pine forest and the fill used in the earthworks along the remnant rail line, as fill sediments may have been sourced from local deposits

The survey results show that two artefact sites located in the project area are likely representative of stone tools discarded during transitional movement through the landscape or the relocation of stone artefacts from historical erosion. It should be noted that the poor surface and exposure visibilities due to grass and pine needles covering majority of the ground surface prevented a more intensive survey along parts of the alluvial flats of Coxs River and within the pine forest plantation.

One Isolated Find (Wallerawang BESS IF+ PAD 02) with associated PAD and two artefacts (Wallerawang BESS AFT+ PAD 01) with associated PAD and one Isolated artefact were recorded, suggesting that there is potential for intact subsurface deposits to remain in parts of the project area. The deposits could contain further information pertaining to the Aboriginal use of the land throughout the project area and wider region.

It is important to note that historic land use within the project area has created some extensive ground disturbances through the historical vegetation clearance of the project area, the establishment of the pine plantation, and development of access roads and rail infrastructure, resulting in the erosion of the ground surface. This disturbance has resulted in significant restructuring of the natural landforms that may have been occupied by Aboriginal people in transitional phases prior to European occupation. Historical development has significantly compromised the overall character of the archaeological record of the proposed construction area resulting a low archaeological potential. Full recommendations are provided in Section 9.2 below.

5.4.1. Wallerawang BESS AFT + PAD 01

During the field survey, two stone artefacts were (Plate 5-12, Plate 5-12) located within an area of exposure on a gently sloping section of the alluvial terrace associated with the Coxs River, within Survey Unit 4. The low-density artefact scatter was likely exposed due to surface disturbances associated with a vehicle access track that traverses along the boundary of the alluvial landform to cross under the rail bridges on the northern margin of the project area. Artefacts were located in tuffs of grass, exposed brown sandy loam soil and were intermixed with blue metal imported for track stabilisation.

The elevated alluvial landform that extends west from the location of the artefacts to the banks of the Coxs River was noted to be an archaeological remnant landform void from vehicle or inundation of water from Lake Wallace. Dense vegetation such as high grasses and thick blackberry bush resulted in ground surface visibility being extremely poor within this landform. Despite the absence of ground surface visibility, moderate potential of subsurface archaeological deposit was noted due to the intact nature of a landform known with potential for low density artefacts, clarified by the identification of Wallerawang BESS AFT+ PAD 01 and regional trends of the occurrence artefact scatters along the alluvial flats of Coxs River.

Table 5-8: Surface artefacts located at Wallerawang BESS AFT+ PAD 01

Site	Type	Raw Material	Size Class	Platform Type	Termination	Notes
Wallerawang BESS AFT + PAD 01	Flake	Quartz	<20mm	Broad	Feather	Tertiary (no cortex)
Wallerawang BESS AFT + PAD 01	Core	Quartz	<20mm	-	-	3 flake scars

5.4.2. Wallerawang BESS IF + PAD 02

One isolated artefact find was located during the survey of the cleared flat (Plate 5-4), located in the eastern extent of the project area within Survey Unit 1 (Figure 5-3). An associated PAD covers the minor spur landform gently sloping north east to an ephemeral drainage line. This drainage line may have historically formed a creek draining into Coxs River prior to alteration of the landscape. As noted in Section 5.3.1 above, the visibility of this landform was improved by recent slashing and the occurrence of rabbit warrens. Wallerawang BESS IF+ PAD 02 was located in the sandy spoil soil of a rabbit warren, suggesting the occurrence of subsurface deposit. It is noted that of the 10 rabbit warrens, only one isolated stone artefact was located suggesting a low to moderate potential deposit in the location of the rabbit warren spoil piles.

Table 5-9: Surface artefacts located at Wallerawang BESS IF+ PAD 02.

Site	Type	Raw Material	Size Class	Platform Type	Termination	Notes
Wallerawang BESS IF + PAD 02	Broken Flake	Quartz	<30mm	-	Feather	Distal flake.

5.4.3. Culturally identified sites

While no Aboriginal sites were specifically identified by RAP representatives as containing cultural importance, Aunty Sharon Riley, the representative on site from Mingaan Aboriginal Corporation, did identify the cultural significance of the landscape associated with the Coxs River. She noted the specific connection with culturally significant grinding groove sites that are known to occur in undisclosed locations within similar landforms across the regional area. While the proposed works will not impact any identified sites surrounding Coxs River, the change to the landscape is an impact to the cultural sensitivity of the area. It should be noted that the Coxs River, including the project area, is of cultural significance to the Wiradjuri People and other Aboriginal communities due to its association and importance to the lives of the communities who lived in the region, both past and present. This is a view shared by Mingaan Aboriginal Corporation and [redacted] during the field survey and [redacted], Didge Ngunawal Clan RAP groups during various stages of community consultation.

6. Cultural heritage values and statement of significance

6.1. Assessment criteria

The assessment of the significance of Aboriginal archaeological sites is currently undertaken largely with reference to criteria outlined in the International Council on Monuments and Sites (ICOMOS) Burra Charter (Marquis-Kyle and Walker 1994). Criteria used for assessment are:

- ***Social or Cultural Value***: In the context of an Aboriginal heritage assessment, this value refers to the significance placed on a site or place by the local Aboriginal community – either in a contemporary or traditional setting.
- ***Scientific Value***: Scientific value is the term employed to describe the potential of a site or place to answer research questions. In making an assessment of scientific value issues such as representativeness, rarity and integrity are addressed. All archaeological places possess a degree of scientific value in that they contribute to understanding the distribution of evidence of past activities of people in the landscape. For example, flaked stone artefact scatters, larger sites or those with more complex assemblages are more likely to be able to address questions about past economy and technology, giving them greater significance than smaller, less complex sites. Sites with stratified and potentially in situ sub-surface deposits, such as those found within rock shelters or depositional open environments, could address questions about the sequence and timing of past Aboriginal activity, and will be more significant than disturbed or deflated sites. Groups or complexes of sites that can be related to each other spatially or through time are generally of higher value than single sites.
- ***Aesthetic Value***: Aesthetic values include those related to sensory perception and are not commonly identified as a principal value contributing to management priorities for Aboriginal archaeological sites, except for art sites.
- ***Historic Value***: Historic value refers to a site or places ability to contribute information on an important historic event, phase or person.
- ***Other Values***: The Burra Charter makes allowance for the incorporation of other values into an assessment where such values are not covered by those listed above. Such values might include Educational Value.

All sites or places have some degree of value, but of course, some have more than others. In addition, where a site is deemed to be significant, it may be so on different levels or contexts ranging from local to regional to national, or in very rare cases, international. Further, sites may either be assessed individually, or where they occur in association with other sites the value of the complex should be considered.

6.2. Significance assessment

Social or cultural value

While the true cultural and social value of Aboriginal sites can only be determined by local Aboriginal people, as a general concept, all sites hold cultural value to the local Aboriginal community. An opportunity to identify cultural and social value was provided to all the registered Aboriginal stakeholders for this proposal through the draft reporting process.

It was clear from the conversations held in the field with Sharon Riley and Steven Johnson that all sites hold cultural value to the local Aboriginal community. While no specific sites of cultural significance were identified by the RAP representatives during the survey, it was noted that the landscapes surrounding the Coxs River hold high cultural value as a resource and traveling route.

Scientific (Archaeological) value

The scientific significance of the project area is considered low due to the impacts on the natural landscape from past historical disturbances. The Coxs River was identified as an important cultural landscape, therefore moderate significance may be warranted for undisturbed landforms the Cox River which are to be avoided by the development activity.

As described in this report, two archaeological sites have been identified within the project area. The two artefacts with PAD sites are of low density on the ground surface through disturbance. These sites identify the potential land use of elevated landscapes adjacent to water courses. The research potential of the associated PADs is considered to be low to moderate. It must be noted, however, that due to the nature of a PAD as an undetermined potential for archaeological deposit(s) to occur below the ground surface, it is impossible to estimate the significance of the site (or lack thereof) until further investigations in the form of subsurface archaeological testing is completed. As the proposed works have been revised to avoid impacts to these sites, subsurface excavation of PADs was not completed as part of this assessment.

While individual artefacts recorded during the assessment are interesting, the sites are considered typical of the local and broader archaeological record. Their current lack of temporal context and the absence of information about local resources makes further conclusions about land use difficult. The scientific value of the remaining locations within the project area have poor integrity and do not have the potential for intact subsurface deposits and are considered to have limited value for further research.

Archaeological best practice indicates that where a site does not need to be disturbed, it should be left *in situ*. As such, the proposed construction footprint has been refined to avoid areas of PAD to preserve and conserve landforms with *in situ* archaeological potential (Figure 5-4). The impact to the scientific values of isolated finds within the refined construction area footprint considered very low, as no artefacts were identified within the refined construction footprint and historical disturbances have restricted the subsurface soil profiles where archaeological bearing deposits would be located. Any unexpected finds that are encountered are likely to be located within highly disturbed contexts and therefore may not provide any further information about Aboriginal occupation of the area other than their existence within the landscape.

Aesthetic value

There are no aesthetic values associated with the identified with Wallerawang BESS AFT + PAD 01 or Wallerawang BESS IF + PAD 02 . However, it should be noted that the proposed development will impact the natural setting of the Coxs River, which is culturally significant to Aboriginal communities. Therefore, the aesthetic setting that exists at present should be maintained after the works have been completed.

Historic value

There are no historic values associated with the identified Aboriginal archaeological sites. The project area contains features of historical significance related to railway infrastructure. No known historical figures or events are associated with the project area, in accordance with the Statement of Heritage Impact completed for the project (NGH 2021).

Other values

There are no other known heritage values associated with the project area. The area may have some educational value (not related to archaeological research) through educational material provided to the public about the Aboriginal occupation and use of the area. The presentation of educational material about the Aboriginal occupation and use of the area could be developed in consultation with the local Aboriginal community.

Table 6-1: Identified impact risk and significance to known sites

AHIMS #	Site name	Site integrity	Social / Cultural Value	Scientific Value	Aesthetic Value	Historic Value	Other Values	Type of harm	Degree of harm	Consequence of harm	Recommendation
45-1-2844	Wallerawang BESS AFT+ PAD 01	Moderate	Low	Low to Moderate	Low	Unknown	Unknown	Will not be harmed	None	No Loss of Value	No Action- construction footprint has been revised to avoid this site.
45-1-2843	Wallerawang BESS IF + PAD 02	Moderate	Low	Low to Moderate	Low	Unknown	Unknown	Will not be harmed	None	No Loss of Value	No Action- construction footprint has been revised to avoid this site.

7. Impact assessment

7.1. History and land use

Previous use of the land prior to the current project proposal was largely transport infrastructure, forestry and pastoral based. All prior uses of the land would have resulted in impacts to the natural landscape. These previous impacts have caused significant disturbance to the ground surface across the majority of the project area, however the results of the archaeological assessment determined that the Coxs River Elevated Flat and Cleared flat (survey units 1 and 4) contain relatively undisturbed landforms containing Aboriginal objects. As a result, it is considered that the archaeological record within the project area has been compromised to different levels across the Survey Units. Survey Units 5 and 6 are likely to have had their archaeological records significantly disrupted by prior land-use activities. In comparison, Survey Units 1, 2 and 3 are likely to have had archaeological potential disrupted from a moderate to low level by prior land-use activities related to pastoral and plantation development. It is noted that the clearance of the pine plantation will be completed outside of the proposed works and is approved under an external process. The eventual removal of the pine plantation within Survey Units 2 and 3 will likely result in further modification to an already disturbed landscape.

7.2. Proposed development activity

As discussed in Section 1.1, the proposal would involve the construction and operation of a large-scale BESS at Wallerawang, NSW. The BESS would require a built area of approximately 10 hectares of land within the project area. The configuration of the final built form of the proposal would be confirmed as part of further design developments and detailed within the EIS. The BESS will be up to 500 MW and would provide up to 1000 MWh of battery storage capacity, or up to two hours of storage duration.

The proposal would include the following key built form features:

- Subdivision of the project area, as required to delineate the project area from the remaining adjacent land.
- Operation of a large-scale BESS including battery enclosures, inverters and transformers and associated substation.
- A transmission line connection to the existing line in the northwest corner of the project area (above ground) between the BESS and the nearby TransGrid Wallerawang 330kV substation.
- Ancillary upgrades to the Wallerawang 330kV substation.
- A site access to the BESS from the Castlereagh Highway, with appropriate auxiliary turn treatments in accordance with AustRoad requirements.

The proposal will involve the following key construction activities:

- Site enabling work to prepare the project area and provide protection to the public, and surrounding environment, including:
    - Construction of the access road to the project area and a car park, which would become the permanent operation access road at the completion of construction.
    - Establishment of temporary environment controls (where required).
    - Vegetation clearance.
    - Utility supply to enable construction.
    - Construction site offices and laydown area establishment.
    - Additional geotechnical and contamination investigations, and remediation, where required within the revised construction footprint.
- Earthworks, levelling, and other civil and ground preparation activities including the removal of spoil from the project area, if required.

- Delivery, installation and electrical fit-out for the proposal, including battery enclosures, invertors, transformers, and associated cabling and infrastructure.
- Connections between the BESS substation and the Wallerawang 330kV substation.
- Removal of construction equipment and rehabilitation of construction area.

The BESS is anticipated to be operational in 2023 with a design life of at least 20-25 years.

- The BESS would be operational 24 hours a day, seven days a week. It is anticipated that the project itself would require three staff members on site per day, on an as-needs basis. The operational workforce would include maintenance workers and site technicians.

7.3. Design amendments to avoid or minimise impact

Greenspot expressed flexibility in their approach to designing the project in order to avoid any unmitigated impacts to heritage, where possible. On location of Aboriginal objects and locations of archaeological sensitivity, a discussion of harm minimisation was undertaken on both sites with the project engineers. The project area was confined to avoid Aboriginal objects with an additional buffer of 5 m around their site boundaries. An additional landform of archaeological sensitivity was located at the eastern extent of Lot 4 PD 1018958, associated with an elevated spur in proximity to an ephemeral drainage line that was likely an intact remnant landform. The archaeological sensitive landform was located outside of the project area and was densely covered with long grass and was not surveyed as part of this assessment but noted for consideration for potential design changes. The confined project area depicted in Figure 5-5 and Figure 7-1 is avoided from development.

7.4. Assessment of harm

The archaeological assessment has identified one PAD within the project area. The assessment of significance has been undertaken with reference to the criteria outlined in the ICOMOS Burra Charter (Marquis-Kyle and Walker 1994).

TBC when information/feedback provided by RAPs.

The scientific values are generally assessed to be low to moderate for the Wallerawang BESS AFT+ PAD 01 or Wallerawang BESS IF +PAD 02 and nil to low for the remaining portions of the project area.

When assessing proposed harm to these sites, it should be noted that this relates to the current information available about the site including the presence of a PAD, which has not yet been subject to further archaeological investigation in order to determine the extent of nature of any archaeological deposit if present. As such, assessment of scientific significance can only be based upon current limited knowledge.

There were no specific aesthetic or historic values identified in association with the sites however the location in general has aesthetic properties as a natural place. There is also an opportunity for education of the general public regarding the use of the area by past Aboriginal people (with reference to archaeological resources) and by local Aboriginal people in the present.

An assessment of the proposed works has identified that the identified Wallerawang BESS AFT + PAD 01 or Wallerawang BESS IF + PAD 02 will not be harmed (summarised in Table 6-1). Mitigation measures outlined in Section 8.3 of this report are enforced.

7.5. Impacts to values

The values potentially impacted by the proposed works within the Proposal Area are any social and cultural values attributed to the areas by the local Aboriginal community. The extent to which the total or further partial loss of the site would impact on the community is only something the Aboriginal community can articulate.

Aboriginal community consultation has identified that RAPs share an ongoing cultural connection with Coxs River and its surrounding landscape, as did Aboriginal elders before European occupation. The landscapes surrounding the Coxs River present aspects of a cultural landscape connecting important cultural sites of ceremony and resource exploitation. The Coxs River remains as a significant natural asset to the surrounding Aboriginal community into current times. Natural locations surrounding the Coxs River have been disturbed because of industrial development and acquirement of private property, resulting in cumulative impact to the culturally significant landscape.

Considering Wallerawang BESS AFT+ PAD 01 or Wallerawang BESS IF + PAD 02, impact to tangible values will be avoided as a result of refining the construction footprint of the project area to avoid known Aboriginal sites. It can be noted that intangible values associated to cultural connection to the landscapes surrounding will be reduced as the proposed construction footprint will be confined to areas previously compromised by previous disturbance.

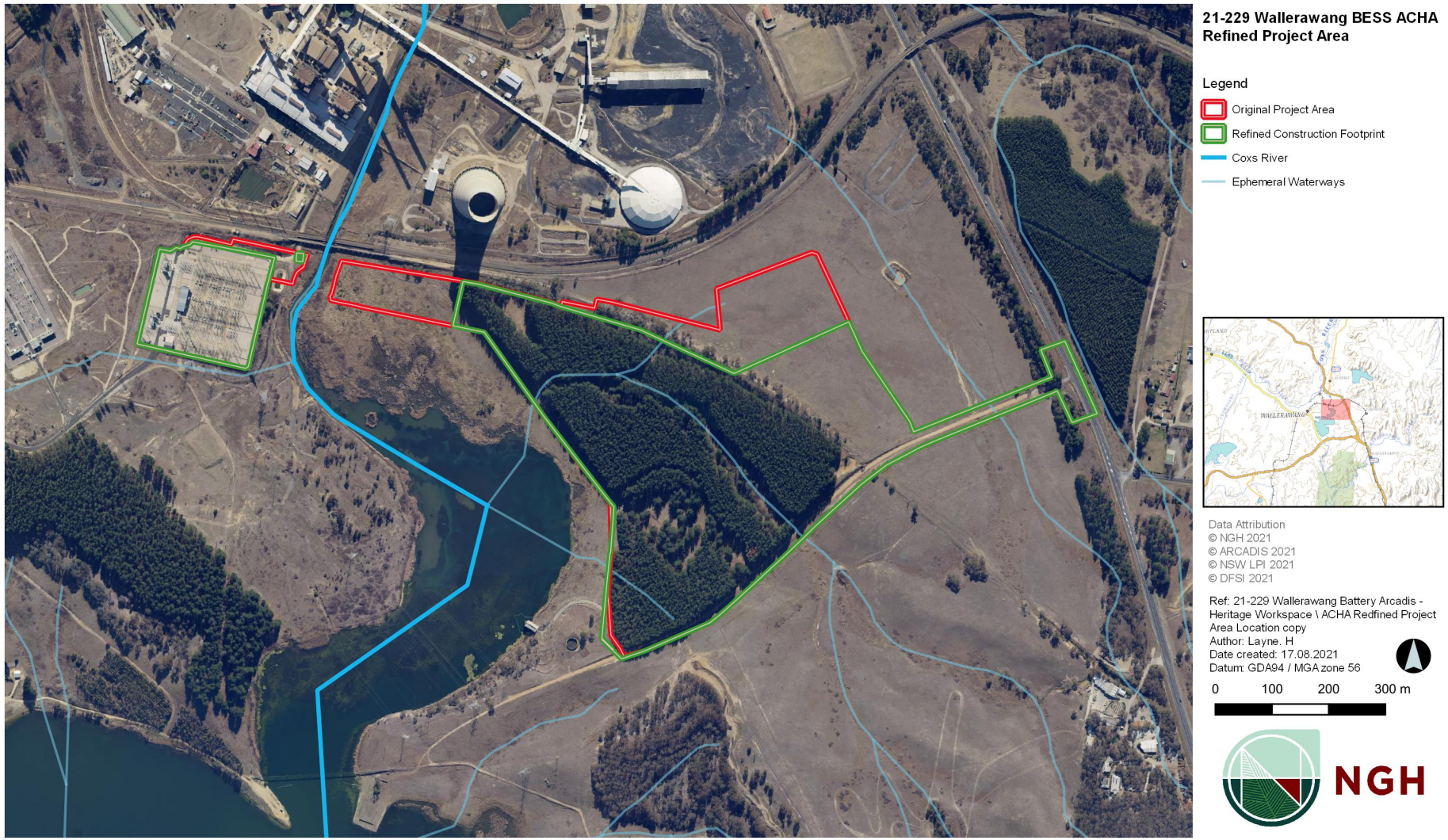

Figure 7-1: Project Area Vs Refined Construction Footprint.

8. Avoiding or mitigating harm

8.1. Consideration of ESD principles

Consideration of the principles of Ecologically Sustainable Development (ESD) and the use of the precautionary principle was undertaken when assessing harm to the sites and the potential for mitigating impacts to the sites recorded within the Wallerawang BESS project area. The main consideration was the cumulative effect of the proposed impact to sites and the wider archaeological record. The precautionary principle in relation to Aboriginal heritage implies that proposed works should be carefully evaluated to identify possible impacts and assess the risk of potential consequences.

In broad terms, the presence of sites identified within the location of the Wallerawang BESS project area is in keeping with the predictive model for the region, which identifies a potential of low density artefact scatters in proximity to waterways. Wallerawang BESS AFT + PAD 01 elevated flat which has been assessed to be a low density artefact scatter with subsurface potential, align with the findings of archaeological deposits around the Coxs River.

The results of this ACHA validate that the proposed model of site location and distribution, whereby Aboriginal sites are likely to occur in terrain favourable for transient occupation , i.e, environments with access to resources favourable for occupation, within an easily negotiable landscape . However, confirmation of the PAD sites has yet to occur and will require further investigation to characterise the nature of any archaeological deposit, if present. Given the nature of the local area, it can be reasonably expected that similar such sites are likely to be present within similar, but less disturbed landform units outside of the developed portions of neighbouring townships.

As noted above, the archaeological values of the development footprint considering the scientific, representative and rarity values were assessed to be low to moderate within the Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02. The remainder of the project area is considered low. At present it is not clear of the true nature of the PADs associated with Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02. An assessment of the extent to which the development impact the archaeological significance can only be drawn from locations within the construction footprint as locations of known archaeological potential are not to be harmed by the proposed works. Landforms within the construction footprint have been significantly modified by historical disturbances related to vegetation clearance, stock paddock and industrial used and related infrastructure. While the project area presents cultural value of low archaeological significance due to its relationship to Coxs River, the surrounding landform has been significantly modified from its once natural state whereby occupation, use of resources and traveling camps may have occurred.

Intact landscapes which have been void of significant human modification have been identified and recorded during this assessment. In order to conserve locations of scientific value of the region, the construction footprint has been revised to avoid significant adverse impacts to potential locations of significance identified during the ACHA process i.e., PADs associated with Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02 will be avoided to limit the overall cumulative impact on the wider archaeological record.

The sustainability principle of inter-generational equity as applied to the archaeological resource requires that the present generation takes measures to ensure that the health and diversity of the archaeological record is maintained or enhanced for the benefit of future generations. Subsurface archaeological material associated with Wallerawang BESS AFT +PAD 01 or Wallerawang BESS IF + PAD 02 may provide an opportunity to extrapolate information about the use Coxs River area by Aboriginal people prior to colonisation. Owing to the destruction of much of the area as a result of human industrial modifications firstly, and pastoral purposes, Aboriginal sites within the project area provide scientific potential, but do not present any particular features of representativeness or rarity and thereby are unlikely to be the best educational, scientific or cultural example

of Aboriginal heritage within the surrounding area. The implications for the ESD principles are that while the project area represents a unique location within the immediate area for accessibility and access to resources, being on a level to gently sloping natural landform adjacent to Cox River, a permanent source of water among connecting valley flat areas between the Wolgan Valley and to the foothills of the Blue Mountains, there are likely to be a number of other similar landforms that are not within a modified landscape which would be less disturbed and have similar potential for archaeological deposits.

8.2. Consideration of harm

Avoiding complete harm is technically possible through abandoning the proposal. The proposal will result in complete disturbance of the soil profile in the proposed construction footprint. Despite the significant historical disturbances impacting the refined construction footprint area, the entire project area contains low archaeological potential. The occurrence of Isolated artefact finds across the project area is possible and Aboriginal community members have identified the cultural values of the surrounding landscape, which includes the project area.

It should also be noted that the majority of the project area is modified land or land which is not considered to be archaeological sensitive. Therefore, confining all project impacts to such areas will drastically avoid the impact of harm to Aboriginal objects or cultural values.

Under the current plan, impacts to Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02 will be avoided through project redesign outlined in Section 8.3 below.

The RAPs have provided the current comments: *TBC when RAP comments received.*

Based on the current assessment of the sites, without undertaking subsurface testing, the project area is not a location of significant archaeological or cultural value and therefore development may be able to occur with suitable design avoidance considerations and mitigation methods.

8.3. Mitigation of harm

Mitigation of harm to cultural heritage sites generally involves some level of detailed recording to preserve the information contained within the site (or within the portion of the site to be impacted) or setting aside areas as representative samples of the landform to preserve a portion of the site. Mitigation can be in the form of minimising harm, through slight changes in the development plan or through direct management measures for the Aboriginal objects. Redesign to achieve avoidance was considered a viable and feasible option for this project, successfully mitigating harm to Wallerawang BESS AFT+PAD 01 and Wallerawang BESS IF+ PAD 02 site boundaries.

The primary value of this site is its scientific potential related to the determination of the nature and extent of the archaeological deposit. Through subsurface investigation there is potential to extrapolate information about the use of the Wallerawang area by Aboriginal people prior to colonisation with particular regard to the subsistence practices and use of resources in relation to Coxs River environment.

The original project area in Figure 1-2 was much larger and as a result of archaeological sensitivity it was refined so that all potential impacts can be avoided if the recommended measures are followed. Greenspot expressed flexibility in their approach to designing the project in order to avoid any unmitigated impacts to heritage, where possible. On location of Aboriginal objects and locations of archaeological sensitivity, a discussion of harm minimisation was undertaken on both sites with the project engineers. The project area was refined to avoid Aboriginal objects with an additional buffer of 5 m around their site boundaries.

To ensure ongoing avoidance of the Wallerawang BESS AFT01 and Wallerawang BESS IF02 and associated PADs during future use of the site, it is recommended that impacts could be avoided through the enforcement of the following two mitigation measures:

1. The boundary of Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF+ PAD 02 are to be demarcated as an environmentally sensitive zone during construction phases and future use of the site.
2. Construction teams and operating staff are to receive cultural training to ensure they understand the cultural values of these sites and their connection to the surrounding landscape and the Local Wiradjuri Aboriginal community that continue to care for country.

Greenspot have committed to avoiding impacts to Aboriginal objects in agreement of these recommendations. If these mitigation measures cannot be followed to ensure protection of Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02 from any potential harm, then test excavation is recommended in order to determine the true scientific significance of this site.

9. Conclusion and recommendations

9.1. Potential Impacts of the approved project

A total of two Aboriginal sites, Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02 and associated PADs were identified during the field survey. The existence of an archaeological deposit cannot be confirmed without conducting archaeological testing. Therefore, the significance of any archaeological deposit present cannot be estimated until further investigation has occurred. The refinement to the construction footprint has been used as a mitigation measure to avoid the identified site boundary areas (as outlined in Section 8.3). There are no perceived potential impacts to Wallerawang BESS AFT + PAD 01 and Wallerawang BESS IF + PAD 02 as a result of the proposed works for the Wallerawang BESS, provided the recommendations outlined in Section 9.2 below are followed.

The cultural sensitivity of the landscape was recognised by RAP representatives on site, who identified that the landscape itself was culturally significant and, while the proposal will not have any impact on archaeological sites, the changes to the landscape as a result of the proposed works will impact the cultural sensitivity of the area.

There were no other archaeological sites or areas of archaeological potential identified within the project area and therefore no further potential impacts of the approved project.

9.2. Recommendations

The recommendations are based on the following information and considerations:

- Results of the current archaeological survey of the area;
- Consideration of results from other local archaeological studies;
- Results of consultation with the registered Aboriginal parties;
- The assessed significance of the sites;
- Appraisal and refinement of the proposed development, and
- Legislative context for the development proposal.

It is recommended that:

1. No ground disturbing activities are to take place within a 5 m buffer of the marked PAD boundaries of Wallerawang BESS AFT + PAD 01 (AHIMS ID# 45-1-2844) Wallerawang BESS IF + PAD 02 (AHIMS ID# 45-1-2843).
2. The boundary of Wallerawang BESS AFT + PAD 01 (AHIMS ID# 45-1-2844) and Wallerawang BESS IF+ PAD 02 (AHIMS ID# 45-1-2843) are to be demarcated as an environmentally sensitive zone during construction phases and future use of the site.
3. The proposed works as described in this report can proceed with caution, following the unexpected finds procedure outlined in Appendix C.
4. In the unlikely event that human remains are discovered during the development, all work must cease in the immediate vicinity. The discovery should be reported to Enviroline, Heritage NSW, the local police and the RAPs. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
5. Further archaeological assessment would be required if the proposal activity extends beyond the construction footprint as shown in Figure 7-1. This would include consultation with the registered Aboriginal parties and may include further assessment of impacts and mitigation measures and archaeological subsurface investigation.

6. Construction teams and operations staff are to receive cultural training to ensure they understand the cultural values of these sites and their connection to the surrounding landscape and the Local Wiradjuri Aboriginal community that continue to care for country.

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Appendix A Consultation log

Redacted for personal privacy.

Consultation stage	Date	Method of Consultation	Recipient organisation	Recipient full name	Sender organisation	Sender full name	Summary of Consultation	Actions/ Response
1.1 Agency letter	16/04/2021	email	Bathurst LALC		NGH	Layne Holloway	Good Afternoon, NGH Pty Ltd has been engaged by Greenspot Wallerawang Pty Ltd (The Proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to inform an Environmental Impact Statement (EIS) for the Wallerawang 9 Battery Project, State Significant Development (SSD-14540514). The ACHA is a requirement of the Planning Secretary's Environmental Assessment Requirements (SEARs). NGH is conducting Aboriginal community consultation is to assist the Proponent in the preparation of the ACHA report. In order to fulfil the requirements set out in the Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), NGH is seeking any information from statutory bodies about Aboriginal people who may hold cultural knowledge regarding Aboriginal objects or places within the Project site located to the south of the former Wallerawang Power Station site, Castlereagh Highway, Wallerawang NSW 2845, within the Lithgow City Council Local Government Area (LGA). If you know of any Aboriginal parties who may hold cultural knowledge, could you please provide this information by Friday 30th April 2021. The attached consultation letter provides further project information and contact details. Kind Regards,	
1.1 Agency letter			Heritage NSW		NGH	Layne Holloway		
1.1 Agency letter			Local Land Services - Central Tableands		NGH	Layne Holloway		
1.1 Agency letter			Office of the Registrar		NGH	Layne Holloway		
1.1 Agency letter			Lithgow City LGA		NGH	Layne Holloway		
1.1 Agency letter			NTS Corp		NGH	Layne Holloway		
1.1 Agency letter			native title search		NGH	Layne Holloway		
1.1 Agency letter response	27/04/2021	email	NGH	Layne Holloway	Lithgow City Council	Mark Hitcenson	Hi Layne, As you have indicated in your letter, the subject land is within the bounds of the Bathurst Local Aboriginal Land Council. The contact address for the Land Council is: Bathurst Local Aboriginal Land Council 149 Russell Street BATHURST NSW 2795 Phone: 02 6332 6835 A further source for contact with local Aboriginal people is NTSCorp Limited. Contact details are: NTSCorp Limited PO Box 2105, Strawberry Hills NSW 2012 Phone: 02 9310 3188 Fax: 02 9310 4177 Toll Free: 1800 111 844 Email: information@ntscorp.com.au Regards, Mark	Good Afternoon Mark, Many thanks for your response. We are currently in consultation with the Bathurst LALC and NTSCorp. Kind Regards,

1.1 Agency letter response	27/04/2021	email	NGH	Layne Holloway	Heritage NSW	Paul Houston	Layne Please see attached RAP letter for the proposed Aboriginal Cultural Heritage Assessment for “the Wallerawang 9 Battery, Wallerawang, NSW”. If you have any questions please contact me. Thanxs Paul	Good Morning Paul, Many thanks for your email. Kind Regards,
1.1 Agency letter response	28/04/2021	email	Heritage NSW	Paul Houston	NGH	Layne Holloway	Hi Paul,I have noticed that there may be a double up with:North- East Wiraduri - Lyn Syme - PO Box 29, Kandos NSW 2848And North- Eastern Wiradjuri - PO Box 29, Kandos NSW 2848Am I correct to assume that this is the same group? Additionally Didge Ngunawal Clan are included on this list twice. Kind Regards,	
1.1 Agency letter response	28/04/2021	email	NGH	Layne Holloway	NNTT geospaital l search	-	Native title search – NSW Parcel – Lot 4 in DP1181412 (identified as Lot 4 in DP1226927) Your ref: Wallerawang 9 Battery21-229 - Our ref: SR21/568	
1.1 Agency letter response	3/05/2021	email	NGH	Layne Holloway	Lithgow City Council	Lauren Stevens	In addition to Council’s previous email dated 27 April 2021, the following is a list of Local Aboriginal Organisations within the Lithgow area:	
1.1 Agency letter response	5/05/2021	phone call and email	Lithgow City Council	Lauren Stevens	NGH	Layne Holloway	Thank you for passing on this list. As discussed over the phone, it is understood that the council do not have contact details for Wiray-dyuraa Ngumnbaay-dyil and Wiray-dyuraa Maying-gu. Unfortunately we have not been able to locate their contact details elsewhere. We have recently published an advert in the Lithgow Mercury to allow for unidentified Aboriginal Groups to register.	
1.2 Advert	30/04/2021						Advert in the Lithgow Merucry	

1.3 RAP Notifications	5/05/2021	email	Barraby Cultural Services Bathurst Local Aboriginal Land Council Gilay Consultants Corroboree Aboriginal Corporation Didge Ngunawal Clan Wiradjuri Council of Elders Yurrandaali Cultural		NGH	Layne Holloway	NGH Pty Ltd (NGH) has been engaged by Greenspot ("The Proponent") to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to inform an Environmental Impact Statement (EIS) for the Wallerawang 9 Battery Project, State Significant Development (SSD-14540514). The ACHA is a requirement of the Planning Secretary's Environmental Assessment Requirements (SEARs). The purpose of the consultation with Aboriginal people is to assist the Proponent in the preparation of the ACHA report. In order to fulfil the requirements, set out in the Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), NGH is seeking a registration of interest in the Project from Aboriginal people and organisation who may hold cultural knowledge regarding Aboriginal objects or places within the Project site. If you would like to register an interest in this project or know of any Aboriginal parties who may hold cultural knowledge, could you please provide this information by the 19th May 2021. Please see the Attached notification letter outlining further project details.	
1.3 RAP Notifications	5/05/2021	post	Bill AllenDhuuluu-Yala Aboriginal CorporationGundungurra Aboriginal Heritage Association incGundungurra Tribal Council Aboriginal CorporationHawkesbury-Nepean Catchment Management AuthorityMingaan Aboriginal CorporationMookaMurra Bidgee Aboriginal CorporationNorth-East WiradjuriTrevor RobinsonWarrabinga Native Title Claimants Aboriginal CorporationWiradjuri Interim Working PartyWarrabinga-Wiradjuri #7 Native title claimiants		NGH	Layne Holloway	notification letter	

1.3 RAP Notifications	5/05/2021	email	NGH	Layne Holloway	Gunjeewong	Cherie (Carroll) Turrise	Please register our corporation for full process on this project. We are aboriginal people. We live in the area. We are all Aboriginal Cultural Heritage Site Officers. We have our history & stories passed down by our Elders. We have assisted in surveys, salvage & consulting in with archaeologists over a vast number of years. We have worked in the areas as we live here. We are experienced in the field of identifying artefacts, Including our learned history and knowledge passed down by our Elders. We appreciate the opportunity to be part of protecting and preserving our Aboriginal heritage. We are very proud of our heritage passed to us by our Elders and our Ancestors. We are therefore pleased with being a part of this research and provide our experience in cultural heritage input.The potential to contain evidence of Aboriginal of actual occupation on the specific project area and provide cultural links to our past ancestors is of great value and significance. Our organisation has a current public liability insurance policy and OHS compliant and all members hold white cards and all the required safety gear. All our members are Aboriginal and very experienced in the identification of Aboriginal artefacts and we have consulted with numerous Archeologists in surveys including excavation/fieldwork. We are very passionate about land and conservation matters to which some of members are currently studying cultural heritage. We hold strong links to our our ancestors, our culture and our heritage.Please note we do not want our details forwarded to LALC, please do not release our correspondence nor any details.Please update Email:gunjeewong@yahoo.com.au and phone number Mob: 0438 428 805. Please forward a copy of project to my postal address: 15 Burton Road PORTLAND NSW 2847 and to this email. Please remove any other phone numbers and emails as per ORIC website & OEH. My details have also been updated with all the relevant requirements.	Thank you for your registration. I will be sure to update your contact details and keep them private when sending them to the LALC. Are you okay with us forwarding your details to Heritage NSW (former OEH). I will be sure to forward a physical copy of out project methodology to your postal address specified.

1.3 RAP Notifications	5/05/2021	email	NGH	Layne Holloway	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	Dear Layne, Re: 21-229 - Wallerawang Battery ArcadisPlease register Corroboree Aboriginal Corporation. My dad, grandparents, great grandparents and other family members have lived in the area and family currently reside in the areas and surrounding areas. We are registering in a full capacity. We are aboriginal people who are culturally aware. We have the necessary ability, awareness, experience, skills, insight and the knowledge to identify artefacts on field work. And as Aboriginal People we connect thru the land, thru our ancestors and our heritage. Therefore we are able participate on all levels. We have worked with many archaeologists across a broad landscape. We have consulted with your company on previous projects. We have all the relevant insurances and safety gear. We are all fit and adapt to a vast landscape.Contact is preferred via email: corroboreecorp@bigpond.com. The contact number, email and contact person is also listed in the signature. Please do not disclose any of our details to LALC nor publish our correspondence for LALC to peruse. Please only note our corporation details i.e. our name and only for registration purposes. As noted our details are not to be passed on/disclosed to LALC. We understand your need for confirmation of our corporations name on your lists for registered stakeholders, in that we have responded for inclusion, to participate on all levels. The use of our name as registered party, is fine, however non-disclosure of our actual correspondence, please. Just our name and contact details as registered stakeholders for your records and proponents. Thanks.Kind regardsMarilyn Carroll-JohnsonDirectorCorroboree Aboriginal Corporation Mob: 0415911159Ph: 0288244324E: corroboreecorp@bigpond.comAddress: PO Box 3340ROUSE HILL NSW 2155	Thank you for your registration. I will be sure to update your contact details and keep them private when sending them to the LALC. Are you okay with us forwarding your details to Heritage NSW (former OEH).
1.3 RAP Notifications	5/05/2021	email	NGH	Layne Holloway	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	DNC would like to register an interest into Wallerawang battery Arcadis Project	Many thanks for your registration. We will be in touch soon with the project methodology.
1.3 RAP Notifications	6/05/2021	email	NGH	Layne Holloway	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	Yes for OEH. Thanks.	
1.3 RAP Notifications	7/05/2021	email	NGH	Layne Holloway	Gunjeewong	Cherie (Carroll) Turrise	Morning Layne Yes. Much appreciated.	
1.3 RAP Notifications	11/05/2021	email	Migaan	Helen Riley	NGH	Layne Holloway	I hope your well. You may have already received our consultation letter for the Wallerawang Battery 9 Aboriginal Cultural Heritage Assessment via post. My colleague Jorge has recently passed on your email, so I thought I would take the opportunity to touch base with you and provide you with digital copy of the of our request for interest notification letter. We look forward to working within you again on this project.	Hi Layne, thank you for the information Mingaan would luv to be involved in the project and hope to catch up with you soon. Kind Regards Aunty Helen
1.3 RAP Notifications	13/05/2021	email	NGH	Layne Holloway	Yurrandaali Cultural	Bo Field	Yurrandaali would like to register for this project.	Many Thanks for your Registration. We will be in touch soon with the project methodology.
2-3 Methodology	18/05/2021	email	Gunjeewong	Cherie (Carroll) Turrise			Thank you for your registration of interest for the Wallerawang Battery Energy Storage System Aboriginal Cultural Heritage Assessment (ACHA). Please find our project methodology attached outlining the nature, scope, background, research methodology and key dates for this project. The aim of this consultation stage is to facilitate an opportunity for Registered Aboriginal Parties to:	

							- contribute to culturally appropriate information gathering and the research methodology. - provide information that will enable the cultural significance of Aboriginal objects and/or places on the proposed project area to be determined. - have input into the development of any cultural heritage management options. If you wish to discuss or comment on the presented information, please do not hesitate in contacting me prior to the consultation closing date of the 15th of June 2021. We are also seeking information on the experience your representatives may have in the field, and your association or knowledge of the project area, in order to put together the field team. It would be appreciated if you could provide the following information via email: - Insurance cover certificates of currency (Workers Compensation/Injury Insurance), - Fee rates for fieldwork, - Field experience and information about cultural connections to the area, and - Any other relevant information. Kind Regards,	
2-3 Methodology	18/05/2021	email	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	NGH	Layne Holloway		
2-3 Methodology	18/05/2021	email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Layne Holloway		
2-3 Methodology	18/05/2021	email	Mingaan Aboriginal Corporation	Helen Riley	NGH	Layne Holloway		
2-3 Methodology	18/05/2021	email	Yurrandaali Cultural	Bo Field	NGH	Layne Holloway		
2-3 Methodology	18/05/2021	post	Gunjeewong	Cherie (Carroll) Turrise	NGH	Layne Holloway	post tracking #51602669010	
2-3 Methodology	19/05/2021		NGH	Layne Holloway	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	DNC connection to the land Lilly Carroll grew up & went to Lithgow high school and would go out to lake Wallace camping and fishing wth her elder father Phillip Carroll who also did droving back in his day from Yass to Cowra to Lithgow to Sydney we are proud wiradjuri & ngunawal people Our Rates Half day $550 Full day $1000 GST EXC Field work experience Digging , serving , bagging, tagging Recording , testing soils , reports	Many thanks for sending through your rates and insurances, and sharing your family history of the area. If you have any further questions or comments on the project methodology prior to 15/06/2021, please do not hesitate in contacting me.
2-3 Methodology	19/05/2021	email	NGH	Layne Holloway	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	DNC agrees to all proposal of the methodology	Thank you. This will be noted in our reporting.

2-3 Methodology	21/05/2021	email	NGH	Layne Holloway	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	Re: Wallerwang Battery - field work Please refer the following information: • Field experience; We can identify aboriginal artefact's. • Cultural connections to the area: We are Aboriginal people as such connect to the land as Aboriginal people. Furthermore my parents lived in the area and surrounding areas. I lived at one stage of my life in the area, as we are all nomadic and have moved around as per history of our race. My niece and family currently live in the area. We also just completed a field survey at the Colliery in Lidsdale. We also are currently involved with the RMS in Lithgow GWT HWY project, due to our connections to the area. Furthermore, Corroboree Aboriginal Corporation representatives have the experience, the knowledge and cultural experience. All CAC representatives have on field experience. Our association have knowledge of the project area. My family actually worked in field at the that actual Wallerawang site some years back, to which their experiences and knowledge was shared. Our RAPS are all fit and adapt to a broad landscape. • Insurance cover certificates of currency (Workers Compensation/Injury Insurance) attached. • Fee rates for fieldwork $990.00 daily	Many thanks for your response. Lease feel free to contact me if you have any further correspondence in regards to the project methodology. Kind Regards,
2-3 Methodology	25/05/2021	phone call	NGH	Layne Holloway	Gunjeewong	Cherie (Carroll) Turrise	Cherie called to follow up on the project methdology and ask where the site is located. She has completed previous work in the area and has grown up in the area. She is very interested in the project and hopes to be included in the site inspection.	
2-3 Methodology	15/06/2021	email	NGH	Layne Holloway	Yurrandaali Cultural	Bo Field	Good Morning Bo, Please be reminded that today is the closing day for comments for the Wallerawang Battery Energy Storage System ACHA methodology. If you would like to provide any comments or have any questions, please do not hesitate in contacting me. Kind Regards,	
2-3 Methodology	15/06/2021	email	NGH	Layne Holloway	Mingaan Aboriginal Corporation	Helen Riley	Good Morning Aunty Helen, Please be reminded that today is the closing day for comments for the Wallerawang Battery Energy Storage System ACHA methodology. If you would like to provide any comments or have any questions, please do not hesitate in contacting me. Kind Regards,	

2-3 Methodology	15/06/2021	email	NGH	Layne Holloway	Gunjeewong	Cherie (Carroll) Turrise	Good Morning Cherie, Please be reminded that today is the closing day for comments for the Wallerawang Battery Energy Storage System ACHA methodology. If you would like to provide any comments or have any questions, please do not hesitate in contacting me. If you are still interested in attending the site inspection, can you please forward through your field work rates and insurances by COB today. Kind Regards,	
2-3 Methodology	15/06/2021	email	Bathurst LALC	CEO	NGH	Layne Holloway	Providing the Bathurst LALC with a list of the RAPs to this project (note: Bathurst LALC did not register an interest)	
3 Gathering Information/ fieldwork	15/06/2021	phone call	NGH	Layne Holloway	Mingaan Aboriginal Corporation	Helen Riley	Phone call with Austy helen who was worried that her insurances haded come through. I had ensured her that they had. The proponet are very interested in having her on site. She said confiemed her insterest and requested us to send through email correspondence of the site isnpection to her so she can check if sharon is avalible.	
3 Gathering Information/ fieldwork	15/06/2021	phone call	NGH	Layne Holloway	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	call with Marliyn who confirmed her insterest in attending the site inspection. She will send through a copy of insurances	
	27/08/2021	email	HNSW	Paul Houston	NGH	Layne Holloway	Good Morning Paul, Please see an my attached letter outlining updates to the list of Aboriginal parties registered for the Wallerawang BESS ACHA. Kind Regards,	
4 Draft report	7/09/2021	email	Gunjeewong	Cherie (Carroll) Turrise		Layne Holloway	Draft report provided to all RAPs for their review and comment	
		email	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	NGH	Layne Holloway		
		email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Layne Holloway		
		email	Mingaan Aboriginal Corporation	Helen Riley	NGH	Layne Holloway		
		email	Yurrandaali Cultural	Bo Field	NGH	Layne Holloway		
		email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Layne Holloway		
Reminder regarding the close of the 28-day review period	01.11.2021	email	Gunjeewong	Cherie (Carroll) Turrise		Jakob Ruhl		
		email	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	NGH	Jakob Ruhl		
		email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Jakob Ruhl		
		email	Mingaan Aboriginal Corporation	Helen Riley	NGH	Jakob Ruhl		

		email	Yurrandaali Cultural	Bo Field	NGH	Jakob Ruhl		
		email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Jakob Ruhl		
Report finalised	11.10.2021	email	Gunjeewong	Cherie (Carroll) Turrise		Jakob Ruhl		
		email	Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	NGH	Jakob Ruhl		
		email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Jakob Ruhl		
		email	Mingaan Aboriginal Corporation	Helen Riley	NGH	Jakob Ruhl		
		email	Yurrandaali Cultural	Bo Field	NGH	Jakob Ruhl		
		email	Didge Ngunawal Clan	Lilly Carroll and Paul Boyd	NGH	Jakob Ruhl		
		email	Bathurst LALC		NGH	Jakob Ruhl		

Appendix B AHIMS search and Site Cards

- 45-1-2843
- 45-1-2844

Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21-229

Client Service ID : 586160

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-2549	IV-OS-3	AGD	56	222790	6303230	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Mrs.Robynne Mills					Permits		
45-1-2552	IV-OS-4	AGD	56	222810	6303400	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Mrs.Robynne Mills					Permits		
45-1-2553	IV-OS-6	AGD	56	223670	6302970	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	Mrs.Robynne Mills					Permits		
45-6-2354	Lamberts Creek 7	AGD	56	225530	6303350	Open site	Destroyed	Artefact : -	Open Camp Site	
Contact		Recorders	Doctor.Jillian Comber,Ms.Laila Haglund					Permits	405	
45-6-2355	Lamberts Creek 6;	AGD	56	225480	6303070	Open site	Destroyed	Artefact : -	Open Camp Site	
Contact		Recorders	Ms.Laila Haglund,Ms.Jillian Comber					Permits	405	
45-1-0147	21 Newnes State Forest	AGD	56	231420	6302950	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
Contact		Recorders	Denise Donlon,R Sim,Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-0148	22; Newnes State Forest	AGD	56	231250	6302820	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
Contact		Recorders	Denise Donlon,R Sim,Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-0159	35_PAD 14;Newnes State Forest;	AGD	56	231990	6301850	Closed site	Valid	Artefact : -	Shelter with Deposit	339,2016
Contact		Recorders	Ms.Kerry Powell,Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-0164	Site 7;	AGD	56	223250	6296200	Open site	Valid	Artefact : -	Open Camp Site	1706
Contact		Recorders	Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-0071	Mt Piper;Lamberts Creek 1;	AGD	56	225325	6302130	Closed site	Valid	Artefact : -	Shelter with Deposit	2294
Contact		Recorders	Helen Brayshaw,Ms.Laila Haglund					Permits		
45-1-0072	Lamberts Creek2	AGD	56	225245	6302229	Open site	Valid	Artefact : -	Open Camp Site	2294
Contact		Recorders	Helen Brayshaw,Ms.Laila Haglund					Permits		
45-1-0074	Mt Piper;	AGD	56	224260	6301500	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	ASRSYS					Permits		
45-1-0075	Mt Piper;	AGD	56	223450	6302290	Closed site	Valid	Artefact : -	Shelter with Deposit	
Contact		Recorders	ASRSYS					Permits		
45-1-0076	Mt Piper;	AGD	56	223440	6302040	Open site	Valid	Artefact : -	Open Camp Site	
Contact		Recorders	ASRSYS					Permits		
45-1-0206	S9;Lidsdale;	AGD	56	227750	6301500	Open site	Valid	Artefact : -	Open Camp Site	2300
Contact		Recorders	Elizabeth Rich,Alice Gorman					Permits		
45-1-0207	S8;Blackmans Flat;	AGD	56	226520	6303050	Open site	Valid	Artefact : -	Open Camp Site	2300

Report generated by AHIMS Web Service on 27/04/2021 for Jorge Fuenzalida for the following area at Lat, Long From : -33.4652, 150.0202 - Lat, Long To : -33.3819, 150.1524 with a Buffer of 1000 meters. Additional Info : To inform an ACHA report. Number of Aboriginal sites and Aboriginal objects found is 105

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Elizabeth Rich,Alice Gorman					**Permits**		
45-1-0208	S5;Blackmans Flat;	AGD	56	225550	6303050	Open site	Valid	Artefact : -	Open Camp Site	2300
	Contact	**Recorders**	Elizabeth Rich					**Permits**	361	
45-1-0209	S4;Wallerawang;	AGD	56	226300	6302550	Open site	Valid	Artefact : -	Open Camp Site	2300
	Contact	**Recorders**	Elizabeth Rich					**Permits**		
45-1-0210	S3;Wallerawang;	AGD	56	226600	6302350	Open site	Valid	Artefact : -	Open Camp Site	2300
	Contact	**Recorders**	Elizabeth Rich					**Permits**	472	
45-1-0211	S2;Wallerawang;	GDA	56	227811	6300741	Open site	Valid	Artefact : -	Open Camp Site	2300
	Contact	**Recorders**	Mr.Neville Baker,Elizabeth Rich,Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**	467	
45-1-0212	GS1;Springvale Colliery;	AGD	56	230700	6300020	Open site	Valid	Artefact : -	Open Camp Site	2300,2608
	Contact	**Recorders**	Elizabeth Rich,Alice Gorman					**Permits**		
45-1-0213	Lamberts Ck 4;Mt Piper;	AGD	56	225149	6302270	Closed site	Valid	Artefact : -	Shelter with Deposit	2294
	Contact	**Recorders**	Helen Brayshaw,Ms.Laila Haglund					**Permits**		
45-1-0214	Lamberts Ck 3;Mt Piper;	AGD	56	225163	6302178	Closed site	Valid	Artefact : -	Shelter with Deposit	2294
	Contact	**Recorders**	Helen Brayshaw,Ms.Laila Haglund					**Permits**		
45-1-0215	Lamberts Ck 5;Mt Piper;	AGD	56	225300	6302480	Open site	Valid	Artefact : -	Open Camp Site	2294
	Contact	**Recorders**	Helen Brayshaw,Ms.Laila Haglund					**Permits**		
45-1-0117	MC 6;	AGD	56	231910	6296980	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Helen Brayshaw,Elizabeth Rich					**Permits**		
45-1-0237	Springvale Colliery;	AGD	56	228000	6301000	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	Doctor,Susan (left ahms) Mcintyre-Tamwoy					**Permits**	496	
45-1-0238	Mount Piper;	AGD	56	222590	6302870	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art,Shelter with Deposit	2907
	Contact	**Recorders**	Helen Brayshaw,Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-1-0239	Irondale Creek;	AGD	56	222330	6302230	Open site	Partially Destroyed	Artefact : -	Open Camp Site	2907
	Contact	**Recorders**	Helen Brayshaw,Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
45-1-0247	Wallerawang Schoolhouse;	AGD	56	228240	6300510	Open site	Valid	Artefact : -	Open Camp Site	3818
	Contact	**Recorders**	Ms.Elizabeth White					**Permits**		
45-1-0081	Rydal;Pipers Flat Range;	AGD	56	225180	6301000	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art,Shelter with Deposit	

Report generated by AHIMS Web Service on 27/04/2021 for Jorge Fuenzalida for the following area at Lat, Long From : -33.4652, 150.0202 - Lat, Long To : -33.3819, 150.1524 with a Buffer of 1000 meters. Additional Info : To inform an ACHA report. Number of Aboriginal sites and Aboriginal objects found is 105

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Ann Jelinek					Permits		
45-1-0087	Marangaroo Ridge 2;	AGD	56	232810	6299890	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Helen Brayshaw					Permits		
45-1-0088	Marangaroo Ridge 3;	AGD	56	232850	6299460	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Mary Dallas Consulting Archaeologists (MDCA)					Permits		
45-1-0089	Marangaroo Ridge 4;	AGD	56	232490	6297420	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	Helen Brayshaw					Permits		
45-1-0090	Marangaroo Ridge 5;	AGD	56	232580	6297420	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	ASRSYS					Permits		
45-1-0091	Marangaroo Ridge 1;	AGD	56	232800	6299950	Closed site	Valid	Artefact : -	Shelter with Deposit	679
	Contact	Recorders	ASRSYS					Permits		
45-1-0096	Elizabeth Vale 1;Wallerawang;	AGD	56	224800	6297450	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	950
	Contact	Recorders	Elizabeth Rich,Shelly Greer,Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-0107	Maroo - YLS/4	AGD	56	232960	6294940	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Bonhomme Craib & Associates					Permits		
45-1-0108	W1;	AGD	56	229620	6297320	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox					Permits		
45-1-0109	W2;	AGD	56	229600	6297350	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox					Permits		
45-1-0110	W4;	AGD	56	228620	6297310	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox					Permits		
45-1-0111	W3;	AGD	56	228730	6297320	Open site	Valid	Artefact : -	Open Camp Site	1515
	Contact	Recorders	Rex Silcox					Permits		78
45-1-0112	MC 1;	AGD	56	231500	6297100	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	Helen Brayshaw,Elizabeth Rich					Permits		
45-1-0113	MC 2;	AGD	56	232470	6297180	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	Helen Brayshaw,Elizabeth Rich					Permits		
45-1-0114	MC 3;	AGD	56	232650	6297780	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	Elizabeth Rich					Permits		
45-1-0115	MC 4;	AGD	56	232680	6297500	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	Recorders	Helen Brayshaw,Elizabeth Rich					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21-229

Client Service ID : 586160

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0116	MC 5;	AGD	56	232270	6297030	Open site	Valid	Artefact : -	Open Camp Site	1414
	Contact	**Recorders**	Helen Brayshaw,Elizabeth Rich					**Permits**		
45-1-0008	Lindsdale;Kerosene Vale;	AGD	56	231640	6301900	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	Richard Wright					**Permits**		
45-1-0010	Pipers Flat Creek;	AGD	56	225600	6300700	Closed site	Valid	Artefact : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Deposit	1515
	Contact	**Recorders**	D Miller					**Permits**		
45-1-0012	Pipers Flat Creek;	AGD	56	225250	6301150	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	
	Contact	**Recorders**	D Miller					**Permits**		
45-1-0013	Pipers Flat Creek;	AGD	56	225230	6300900	Closed site	Valid	Artefact : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Deposit	
	Contact	**Recorders**	ASRSYS					**Permits**		
45-1-0014	Pipers Flat Creek;	AGD	56	224800	6301100	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	R Miller					**Permits**		
45-1-0015	Pipers Flat Creek;	AGD	56	224300	6301800	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	ASRSYS					**Permits**		
45-1-0016	Pipers Flat Creek;	AGD	56	224900	6301600	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	**Recorders**	R Miller					**Permits**		
45-1-0203	S6; Blackmans Flat;	AGD	56	225180	6303220	Open site	Destroyed	Artefact : -	Open Camp Site	2300
	Contact	**Recorders**	S Fields,Elizabeth Rich					**Permits**		
45-1-0017	Pipers Flat Creek;Wang Trig;	AGD	56	224750	6301750	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	R Miller					**Permits**		
45-1-0018	Pipers Flat Creek;Wang Trig;	AGD	56	223810	6301900	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	**Recorders**	R Miller					**Permits**		
45-1-0019	Irondale;	AGD	56	225500	6302750	Closed site	Valid	Artefact : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Deposit	
	Contact	**Recorders**	R Miller					**Permits**		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-1-0020	Pipers Flat Creek;	AGD	56	225750	6300300	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art,Shelter with Deposit	
	Contact	Recorders	RMiller					Permits		
45-1-0021	Pipers Flat Creek;	AGD	56	225700	6300250	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	RMiller					Permits		
45-1-0022	Pipers Flat Creek;Bald Rock;	AGD	56	226630	6300510	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	RMiller					Permits		
45-1-0023	Pipers Flat Creek;Bald Rock;	AGD	56	226500	6300500	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	RMiller					Permits		
45-1-0048	Wallerawang; Lithgow;	AGD	56	226900	6299100	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	
	Contact	Recorders	David Bell,NPWS - Blackheath Office,Betty Meehan					Permits	473	
45-1-2557	M-OS-1	AGD	56	234520	6298440	Open site	Valid	Aboriginal Ceremony and Dreaming : -		97636,98115
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2569	M-S-12	AGD	56	235920	6298310	Open site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2570	M-S-10	AGD	56	235820	6297010	Closed site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2558	M-S-6	AGD	56	235260	6296390	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2559	M-S-5	AGD	56	235620	6297100	Open site	Valid	Art (Pigment or Engraved) : -		
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2560	M-S-4	AGD	56	235170	6296810	Closed site	Valid	Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2561	M-S-3	AGD	56	235170	6296810	Closed site	Valid	Artefact : -		1157
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2562	M-S-11	AGD	56	235320	6297760	Closed site	Valid	Art (Pigment or Engraved) : -		97636

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2563	M-S-1	AGD	56	234130	6294730	Closed site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2564	M-OS-4	AGD	56	233880	6294430	Open site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2565	M-OS-3	AGD	56	233110	6294950	Open site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2566	M-OS-2	AGD	56	234350	6296870	Open site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2567	M-S-9	AGD	56	235130	6296100	Closed site	Valid	Art (Pigment or Engraved) : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2568	M-S-8	AGD	56	235160	6296100	Closed site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2572	Site 1, Catlereagh Highway Realignment, Lidsdale	AGD	56	228430	6301025	Open site	Valid	Artefact : -		4549
	Contact	Recorders	Ms.Louise Gay					Permits		
45-1-2573	PAD 1, Castlereagh Highway Realignment, Lidsdale	AGD	56	228250	6301070	Open site	Destroyed	Potential Archaeological Deposit (PAD) : -		98700,102443
	Contact	Recorders	Ms.Louise Gay					Permits	1436,1666	
45-1-2574	PAD 2, Castlereagh Highway Realignment, Lidsdale	AGD	56	228250	6301120	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		98700,102443
	Contact	Recorders	Ms.Louise Gay					Permits	1436,1707	
45-1-2571	M-S-2	AGD	56	234270	6295050	Closed site	Valid	Artefact : -		97636
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd					Permits		
45-1-2545	Wallerowong Station Massacre	AGD	56	228600	6298500	Open site	Valid	Burial : -	Burial/s	
	Contact	Recorders	Ms.Adrienne Howe-Piening					Permits		
45-1-2583	Duncan/Main Street PAD	AGD	56	228450	6300750	Open site	Valid	Artefact : -		
	Contact	Recorders	Doctor Jodie Benton					Permits	1793	
41-1-0238	Duncan Street PAD(refer to site 45-1-2583)	AGD	56	228450	6300750	Open site	Deleted	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Doctor Jodie Benton					Permits		
45-1-2592	M-IF-1, Lithgow	AGD	56	235510	6297160	Open site	Valid	Artefact : 1		97636
	Contact T Russell	Recorders	Jim Kelton					Permits		
45-1-2601	SVW-OS1 with PAD	AGD	56	225796	6303196	Open site	Valid	Artefact : 6		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Bathurst LALC,Doctor.Jodie Benton,Mr.Phillip Cameron					Permits		
45-1-0250	MC7 (IF2);Marrangaroo Creek (IF2);	AGD	56	231980	6297200	Open site	Valid	Artefact : -	Isolated Find	
	Contact	Recorders	Elizabeth Rich					Permits		
45-1-0163	Site 6;	AGD	56	222850	6296850	Open site	Valid	Artefact : -	Open Camp Site	1706
	Contact	Recorders	Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-0095	Rydal Mount 1 Rydal	AGD	56	224320	6293100	Open site	Valid	Artefact : -	Open Camp Site	950
	Contact	Recorders	Elizabeth Rich,Shelly Greer,Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
45-1-2758	RPS SV ST1	GDA	56	235004	6302002	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2759	RPS SV ST2	GDA	56	234965	6301890	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact	Recorders	RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2715	SU1a - A4	GDA	56	228046	6301960	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Cheng-Yen Loo,RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2716	SU1a - A5	GDA	56	227585	6300837	Open site	Valid	Artefact : 19		
	Contact	Recorders	Ms.Cheng-Yen Loo,RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-2-2539	SU1a - A7	GDA	56	227122	6300093	Open site	Valid	Artefact : 4		
	Contact	Recorders	Ms.Cheng-Yen Loo,RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2717	SU1a - A8	GDA	56	227130	6300072	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Cheng-Yen Loo,RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2718	SU1a - A9	GDA	56	226981	6300239	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Cheng-Yen Loo,RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2719	SU1a - A6	GDA	56	227105	6300095	Open site	Valid	Artefact : 1		
	Contact	Recorders	Ms.Cheng-Yen Loo,RPS East Australia Pty Ltd - Echuca Victoria					Permits		
45-1-2785	Marrangaroo NP Cox's River	GDA	56	228960	6292622	Open site	Valid	Artefact : -		
	Contact	Recorders	Miss.Sharon Riley					Permits		
45-1-2786	Marrangaroo NP Camp Ground	GDA	56	228668	6292938	Open site	Valid	Artefact : -		
	Contact	Recorders	Miss.Sharon Riley					Permits		
19-5-0216	PF1	GDA	56	223104	6302282	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes,Onsite Cultural Herita					Permits		
19-5-0217	PF2	GDA	56	222990	6302461	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -		

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Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 21-229

Client Service ID : 586160

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes,Onsite Cultural Herita					**Permits**		
19-5-0218	PF3	GDA	56	223371	6302484	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -		
	Contact	**Recorders**	Navin Officer Heritage Consultants Pty Ltd,Mrs.Nicola Hayes,Onsite Cultural Herita					**Permits**		
45-1-2799	Brays Lane AS1	GDA	56	227039	6300622	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-1-2802	WQ1;	GDA	56	227905	6296556	Open site	Destroyed	Artefact : -		104305
	Contact	**Recorders**	OzArk Environmental and Heritage Management,OzArk Environmental and Herita					**Permits**		
45-1-2800	WPS-IF1	GDA	56	228556	6300579	Open site	Valid	Artefact : -		104157,104158
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
45-1-2826	WQ1 Reburial Location	GDA	56	228588	6296695	Open site	Valid	Artefact : -		
	Contact	**Recorders**	OzArk Environmental and Heritage Management,Miss.Taylor Foster					**Permits**		

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Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 45-1-2843 **Date recorded:** 01-09-2021

Site Location Information

Site name: Wallerawang BESS IF + PAD 02

Easting: 229419 **Northing:** 6299775 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 10

Zone: 56 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr.	Barber	Matthew

Organisation: 75

Address: Po Box 62 Fyshwick ACT 2609

Phone: 0407485018 **E-mail:** matthew.b@nghenvironmental.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Industrial

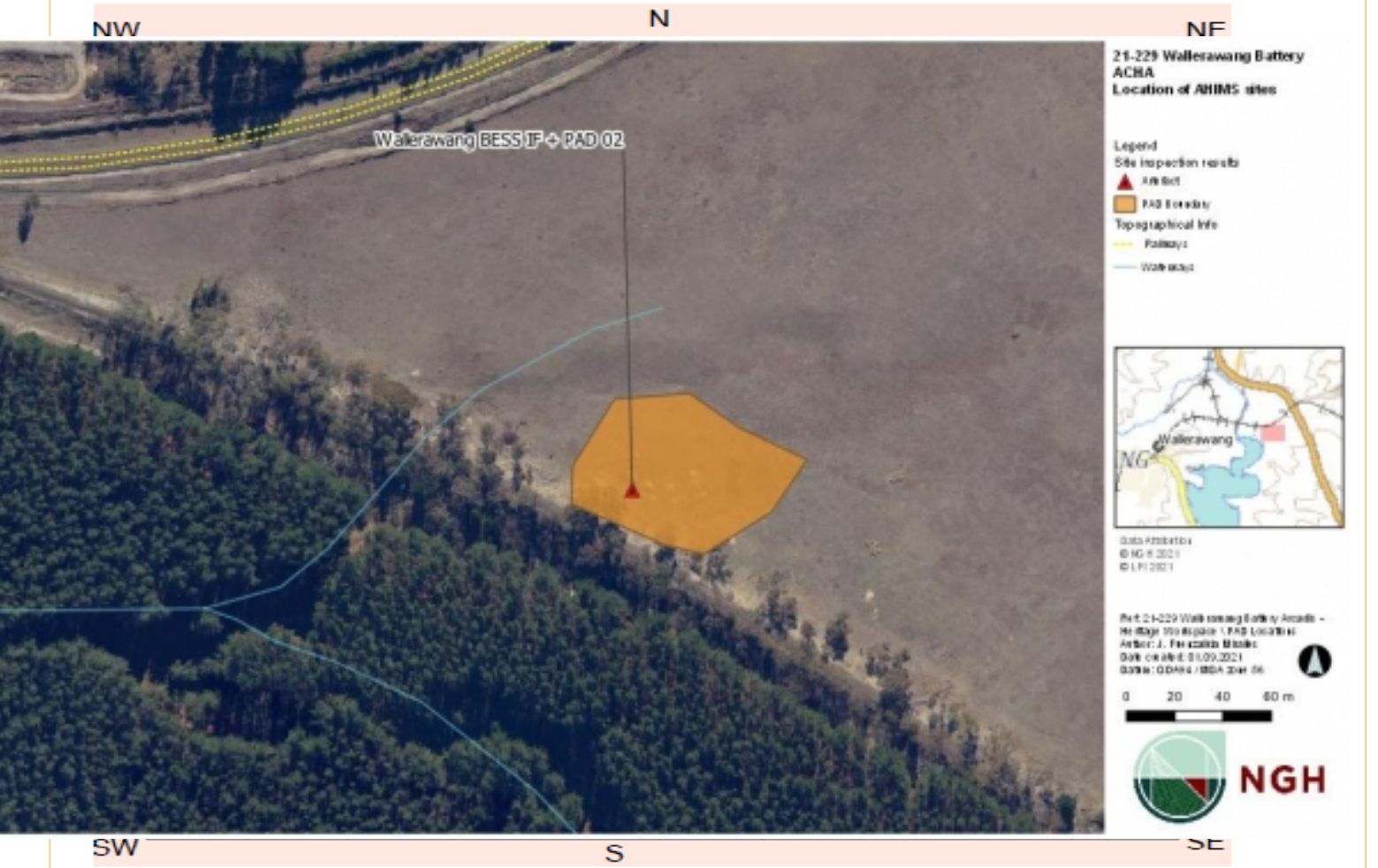
Land Form Unit: Flat **Vegetation:** Grasslands

Distance to Water (m): 375 **Primary Report:** NGH (2021) Wallerawang BESS ACHA

How to get to the site: Access lot 3 DP 1018958 via Castlereagh highway. the site is located 23 m east of the Defunct Great Western Railway and 235 m south the main western Rail line.

Other site information: Rabbit warren present within landform. The isolated artefact was located within the spoil of rabbit warren spoil pile, suggesting subsurface potential.

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
1.	Artefact	1	1	1				

Description:

Broken Flake, Quartz, <30mm, Feather Distal flake.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
2.	Potential Archaeological Deposit		75	62				

Description:

Minor spur adjacent to an ephemeral waterway associated with Coxs River.

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
3.							

Description:

Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
4.							

Description:

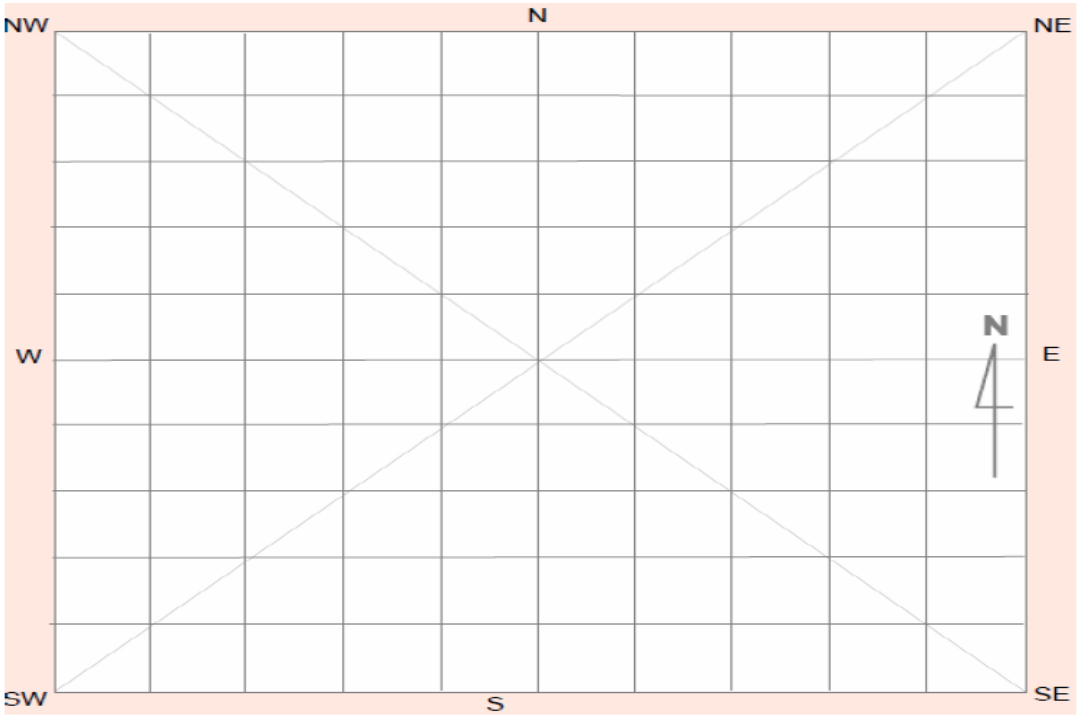
Features:

	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Scarred Trees: Regrowth (cm)	Scarred Trees: Scar shape	Scarred Trees: Tree Species
5.							

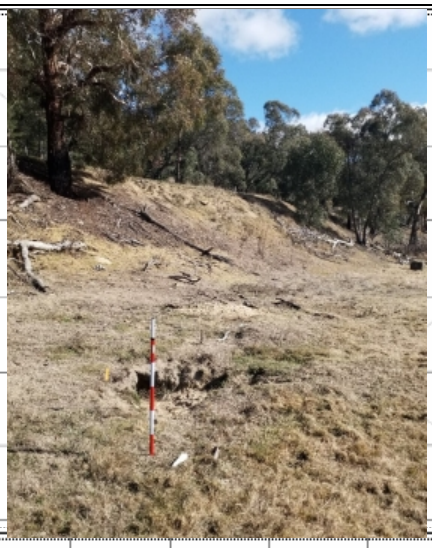
Description:

Other Site Info: Rabbit warren present within landform. The isolated artefact was located within the spoil of rabbit warren spoil pile, suggesting subsurface potential.

Site plan



Site photographs



Description: Location of the PAD looking NNW

Description: Broken Quartz Flake

Description:

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville 2220 NSW

AHIMS site ID: 45-1-2844 **Date recorded:** 01-09-2021

Site Location Information

Site name: Wallerawang BESS AFT + PAD 01

Easting: 228926 **Northing:** 6299886 **Coordinates must be in GDA (MGA)**

Horizontal Accuracy (m): 10

Zone: 56 **Location method:** Non-Differential GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title	Surname	First name
Mr.	Barber	Matthew

Organisation: 75

Address: Po Box 62 Fyshwick ACT 2609

Phone: 0407485018 **E-mail:** matthew.b@nghenvironmental.com.au

Site Context Information

Land Form Pattern: Plain **Land Use:** Farming Low Intensity

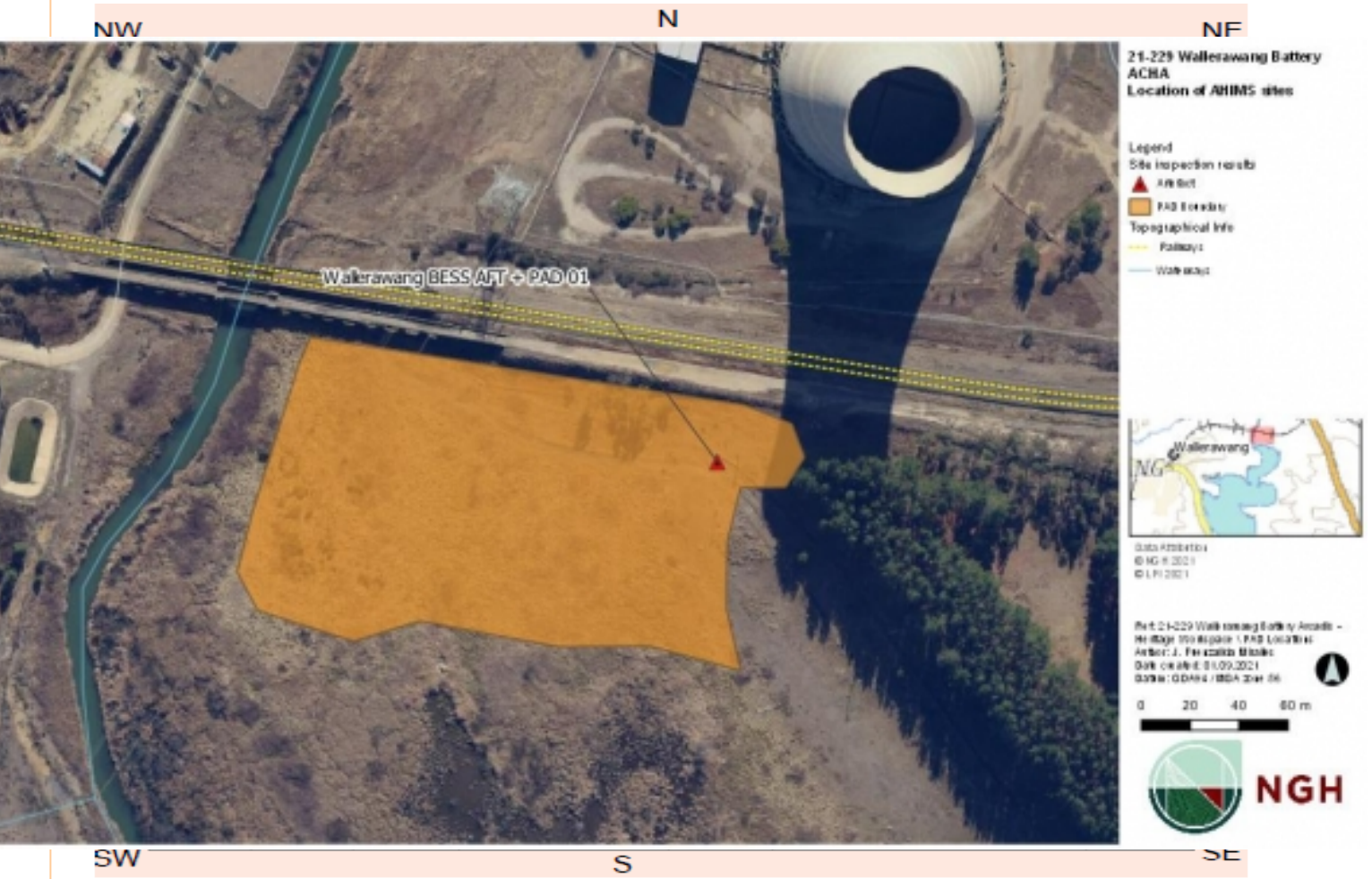
Land Form Unit: Flat **Vegetation:** Cleared

Distance to Water (m): 30 **Primary Report:** NGH (2021) Wallerawang BESS ACHA

How to get to the site: Access lot 3 DP 1181412 via Castlereagh Highway. The site is located 30 m east of Coxs River and 50m south the main western Rail line.

Other site information: PAD site located on an elevated flat on the eastern bank of Coxs River. Vehicle access track intersects site resulting in surface disturbance. Two artefacts were located at the eastern extend of the PAD, adjacent to the Vehicle access track.

Site location map



Site contents information

open/closed site: Open

Site condition: Disturbed

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1. Artefact	2	1	1				

Description:

Flake, Quartz, <20mm, tertiary (no cortex) Core, Quartz, <20mm, 3 flake scars

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2. Potential Archaeological Deposit		200	120				

Description:

PAD site located on an elevated flat on the eastern bank of Coxs River.

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.							

Description:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
4.							

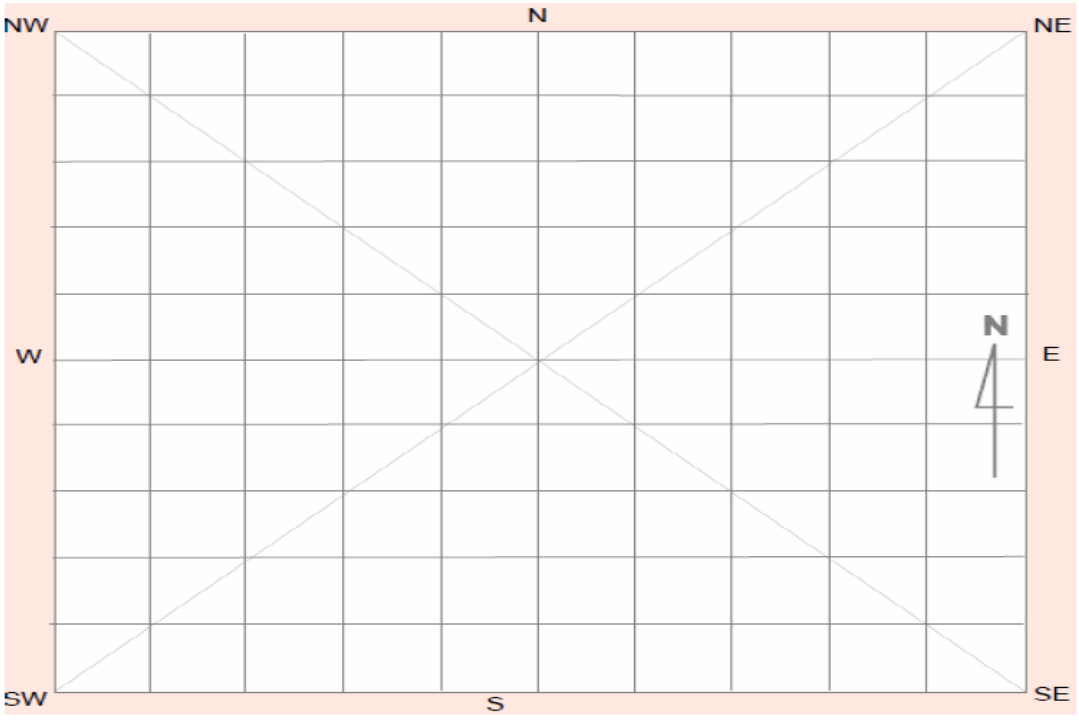
Description:

Features:	Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees: Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
5.							

Description:

Other Site Info: PAD site located on an elevated flat on the eastern bank of Coxs River. Vehicle access track intersects site resulting in surface disturbance. Two artefacts were located at the eastern extend of the PAD, adjacent to the Vehicle access track.

Site plan



Site photographs

Description: Quartz Core

Description: Quartz Flake

Description: looking west over PAD,

Description:

Site restrictions

Do you want to Restrict this site?:

Restriction type: Gender General Location

Why is this site restricted?:

Further information contact

Title **Surname** **First name**

Organisation:

Address:

Phone: **E-mail:**

Appendix C Unexpected finds protocol

C.1 Introduction

This unexpected finds protocol has been developed to provide a method for managing unexpected Aboriginal heritage items identified during the construction and maintenance of the Project. The unexpected finds protocol has been developed to ensure the successful delivery of the Project while adhering to the NSW *National Parks and Wildlife Act 1974* (NPW Act) and the NSW *Heritage Act 1977* (Heritage Act).

All Aboriginal heritage objects are protected under the NPW Act, however an AHIP may be issued under Part 6 of the Act allows for conditional harm to objects. There are, however, some circumstances where despite undertaking appropriate heritage assessment prior to the commencement of works Aboriginal cultural heritage items or places are encountered that were not anticipated which may be of scientific and/or cultural significance.

Therefore, it is possible that unexpected heritage items may be identified during construction, operation and maintenance works. If this happens, the following unexpected find protocol should be implemented to avoid breaching obligations under the NPW Act. This unexpected find protocol provides guidance as to the circumstances under which finds may occur and the actions subsequently required.

C.2 What is an unexpected find?

An unexpected heritage find is defined as any possible Aboriginal heritage object or place, that was not identified or predicted by the Project's heritage assessment and is not covered by appropriate permits or development consent conditions. Such finds have potential to be culturally significant and may need to be assessed prior to development impact.

Unexpected heritage finds may include:

- Aboriginal stone artefacts, shell middens, modified trees, mounds, hearths, stone resources and rock art;
- Human skeletal remains; and
- Remains of historic infrastructure and relics.

C.3 Aboriginal heritage places or objects

All Aboriginal objects are protected under the NPW Act.

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 the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.

All Aboriginal objects are protected, and it is an offence to harm or desecrate an Aboriginal object or place.

C.4 Unexpected finds management procedure

In the event that any unexpected Aboriginal heritage places or objects are unexpectedly discovered during the Project, the following management protocols will be implemented. **Note: this process does not apply to human or suspected human remains. Follow *Section A.6 Human Skeletal Remains* below if remains or suspected remains are encountered.**

1. Works within the immediate identified heritage location will cease. Personnel should notify their supervisor of the find, who will notify the project manager.
2. Establish whether the unexpected find is located within an area covered by an approved AHIP or whether it is outside based on Appendix C.
3. **If the find it is determined to be covered under an approved AHIP undertake the following steps.**
    a. Establish an appropriate buffer zone of at least 20 metres to allow for the assessment and management of the find. All site personnel will be informed about the buffer zone with no further works to occur within the buffer zone.
    b. A heritage specialist or the project archaeologist will be engaged to assess the Aboriginal place or object encountered and undertake appropriate salvage of the site in line with the mitigation methods and approval requirements of the AHIP.
    c. Following appropriate salvage of the unexpected find works may continue at this location.
4. **If the unexpected find is not covered under the existing approved AHIP undertake the following steps.**
    a. All works at this location must cease.
    b. An appropriate buffer zone of at least 20 metres to allow for the assessment and management of the find must be established. All site personnel will be informed about the buffer zone with no further works to occur.
    c. A heritage specialist or the project archaeologist will be engaged to assess the Aboriginal place or object encountered. Registered Aboriginal Party (RAP) representatives may also be engaged to assess the cultural significance of the place or object.
    d. The discovery of an Aboriginal place or object will be reported to the local office of the Heritage NSW and works will not recommence at the heritage place or object until advised to do so by Heritage NSW.
    e. If the unexpected find can be managed *in situ*, works at the location will not recommence until appropriate heritage management controls have been implemented, such as protective fencing.
    f. If the unexpected find cannot be managed *in situ*, works at the heritage location will not recommence until further assessment is undertaken and appropriate permits to impact Aboriginal cultural heritage are approved and issued by Heritage NSW.
5. Depending on the nature of the discovery, additional assessment may be required prior to the recommencement of work in the area. At a minimum, any find should be recorded by an archaeologist.

C.5 Human skeletal remains

If any human remains or suspected human remains are discovered during any works, all activity in the area must cease immediately. The following plan describes the actions that must be taken in instances where human remains, or suspected human remains are discovered. Any such discovery at the activity area must follow these steps.

Discovery:

- If any human remains or suspected human remains are found during any activity, works in the vicinity **must** cease and the Project Manager must be contacted immediately.
- The remains must be left in place and protected from harm or damage.
- All personnel should then leave the area immediately.
- Where there is doubt to the species of bone material encountered, a physical anthropologist may be consulted to make an assessment as to whether bone material is likely to be of human origin.

Notification:

- Where the bone material is determined to be likely of human origin, the NSW Police must be notified immediately. Details of the location and nature of the human remains must be provided to the relevant authorities.
- If there are reasonable grounds to believe that the remains are Aboriginal, the following must occur:
    a. The DPIE must be contacted as soon as practicable and provide any available details of the remains and their location. The DPIE's Environment Line can be contacted on 131 555;
    b. The relevant Aboriginal community groups must be notified immediately (at a minimum all the RAPs);
    c. The relevant project archaeologist may be contacted to facilitate communication between the police, Heritage NSW and Aboriginal community groups.

Process:

- If the remains are considered to be Aboriginal by the Police and Heritage NSW no work can recommence at the particular location unless authorised in writing by Heritage NSW.
- Recording of Aboriginal ancestral remains must be undertaken by, or be conducted under the direct supervision of, a specialist physical anthropologist or other suitably qualified person.
- Archaeological reporting of Aboriginal ancestral remains must be undertaken by, or reviewed by, a specialist physical anthropologist or other suitably qualified person, with the intent of using respectful and appropriate language and treating the ancestral remains as the remains of Aboriginal people rather than as scientific specimens.

If the remains are considered to be Aboriginal by the Police and Heritage NSW, an appropriate management and mitigation, or salvage strategy will be implemented following further consultation with the Aboriginal community and Heritage NSW.