

Historic image of one of Bloomfield Colliery's early coal trucks.

## **REVISED ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT**

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### **BLOOMFIELD COLLIERY CONTINUATION PROJECT**

CESSNOCK LOCAL GOVERNMENT AREA, NSW

JULY 2025

Report prepared by  
OzArk Environment & Heritage  
for Bloomfield Collieries Pty Limited

The OzArk logo features the word "OzArk" in a white, sans-serif font. The letter "O" is a white circle with a green leaf inside. The letter "A" is a white triangle with a yellow and orange flame-like shape inside. The background is a dark blue gradient.

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## ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

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### **Acknowledgement**

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

## ABBREVIATIONS AND GLOSSARY

ACHAR	Aboriginal Cultural Heritage Assessment Report. As set out in the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> , all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> . Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
ACHMP	Aboriginal Cultural Heritage Management Plan.
AHIMS	Aboriginal Heritage Information Management System. Administered by the DCCEEW, AHIMS is the central register of all Aboriginal sites within NSW.
AHIP	Aboriginal Heritage Impact Permit. Issued by Heritage NSW to allow harm to Aboriginal objects.
Assemblage	All artefacts recorded at a location. In this report, assemblage refers to stone artefacts as this was the only artefact class recorded.
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> under Part 6 NPW Act. Issued by DECCW in 2010, the Code of Practice is a set of guidelines that allows limited test excavation without the need to apply for an AHIP.
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water. DCCEEW contains the Environment and Heritage Group including Heritage NSW.
DPE	Former NSW Department of Planning and Environment. Since January 2024, the functions of DPE are carried out by DCCEEW and DPHI.
DPHI	NSW Department of Planning, Housing and Infrastructure. DPHI contains the Planning agency.
ESD	Ecologically sustainable development.
GSE	Ground surface exposure. A measure of factors that may reveal surface artefacts such as erosion scalds.
GSV	Ground surface visibility. A measure of factors that may obscure the detection of surface artefacts such as leaf litter.

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Heritage NSW	Government department tasked with ensuring compliance with the NPW Act. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC).
Holocene	Geological epoch which lasted from around 12,000 years ago (10,000 BCE) to the present. This period is generally warmer and wetter than the preceding Pleistocene period.
LALC	Local Aboriginal Land Council
NPW Act	<i>National Parks and Wildlife Act 1974</i> . Primary legislation governing Aboriginal cultural heritage within NSW.
PAD	Potential archaeological deposit. Indicates that a particular location has potential to contain subsurface archaeological deposits, although no Aboriginal objects are visible.
Pleistocene	Geological epoch which lasted from about 2.5 million years ago to 10,000 BCE. This period spans the world's recent period of repeated glaciations. Aboriginal occupation of Australia occurs during the upper Pleistocene.
RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the project.
The Guide	<i>The Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW.</i>

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## EXECUTIVE SUMMARY

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OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd on behalf of Bloomfield Collieries Pty Limited (the proponent) to complete an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) for the proposed Modification 5 Bloomfield Colliery Continuation Project (the proposed modification).

The Bloomfield Colliery (the Colliery) is an existing open cut mining operation located approximately 20 kilometres (km) northeast of Newcastle, centrally located between the suburbs of Kurri Kurri, East Maitland, and Beresfield. The Colliery is situated north of John Renshaw Drive, Buttai and east of Buchanan Road, Buchanan. The proposed modification is within the Cessnock Local Government Area (LGA).

The proposed modification is to occur within the proposed Additional Project Areas for Mining, (**Figure 1-2**), consisting of two individual areas known as, the Creek Cut area and the Workshop area, located immediately to the north of the existing approved Project Area. The Additional Project Areas for Mining cover approximately 38.5 hectares (ha).

The field survey was completed by OzArk Archaeologist Harrison Rochford on 27 February 2024, with the assistance of representatives from Awabakal Descendants Traditional Owners Aboriginal Corporation, Kauwal Pty Ltd, and Mindaribba Local Aboriginal Land Council. No Aboriginal objects were identified, and no landforms within the Additional Project Areas for Mining were assessed as having potential to contain subsurface archaeological deposits due to the topography (sloping landforms), erodibility of the soils, and the previous disturbances within the landforms present. Further, no Aboriginal cultural heritage values have been identified through consultation with the Aboriginal community.

Recommendations concerning Aboriginal cultural values within the Additional Project Areas for Mining are as follows:

1. Following approval of the proposed modification, the management measures, including the unanticipated finds protocol, outlined in the existing Bloomfield Mining Operations ACHMP (as amended) must be followed.
2. All land disturbing activities associated with the proposed modification must be confined within the Additional Project Areas for Mining. Should the parameters of the proposed modification extend beyond this area then further archaeological assessment may be required.

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# 1 INTRODUCTION

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## 1.1 PREAMBLE

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd on behalf of Bloomfield Collieries Pty Limited (the proponent) to complete an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) for the proposed modification to the current project approval for Bloomfield Colliery (PA 07\_0087). The proposed modification will continue mining operations towards the north of the existing approved project at Bloomfield Colliery (the Colliery).

The Colliery is an existing open cut mining operation located approximately 20 kilometres (km) northwest (**Figure 1-1**). The proposed modification is within the Cessnock Local Government Area (LGA).

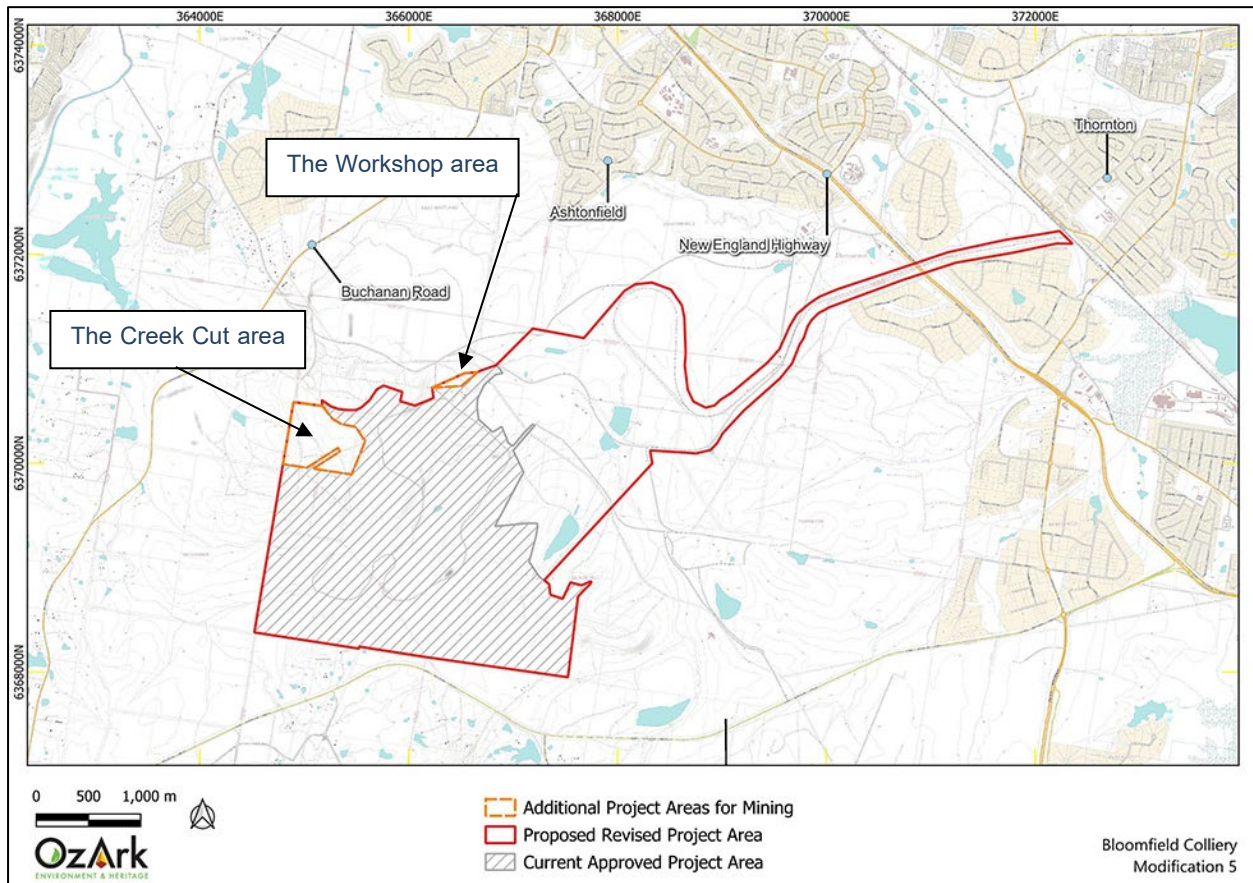
## 1.2 PROPOSED MODIFICATION OVERVIEW

The proposed modification will extend the life of the Colliery until 31 December 2035. The approval to use the Coal Handling and Preparation Plant (CHPP), train load out, rail loop, and water management structures are covered under the Abel Project Approval (PA 05\_0136) to December 2030. To maintain use of these facilities after 2030, it is proposed that these facilities be included in the proposed modification to PA 07\_0087 so that these facilities may continue to be used and aligned with the proposed duration of mining activities.

**Figure 1-1** provides an overview of the proposed modification in relation to the existing approved Project Area. The areas that would be disturbed by the proposed modification are referred to as the Additional Project Areas for Mining and consist of:

- The Creek Cut area
- The Workshop area.

Existing mining methods would continue to be employed to extract up to a maximum of 0.9 million tonnes per annum of run of mine coal. The mining process at the Colliery generally comprises vegetation stripping and topsoil removal, drilling and blasting of overburden, removal and stockpiling of overburden, and extraction of coal.

**Figure 1-1: Map showing the location of the proposed modification.**

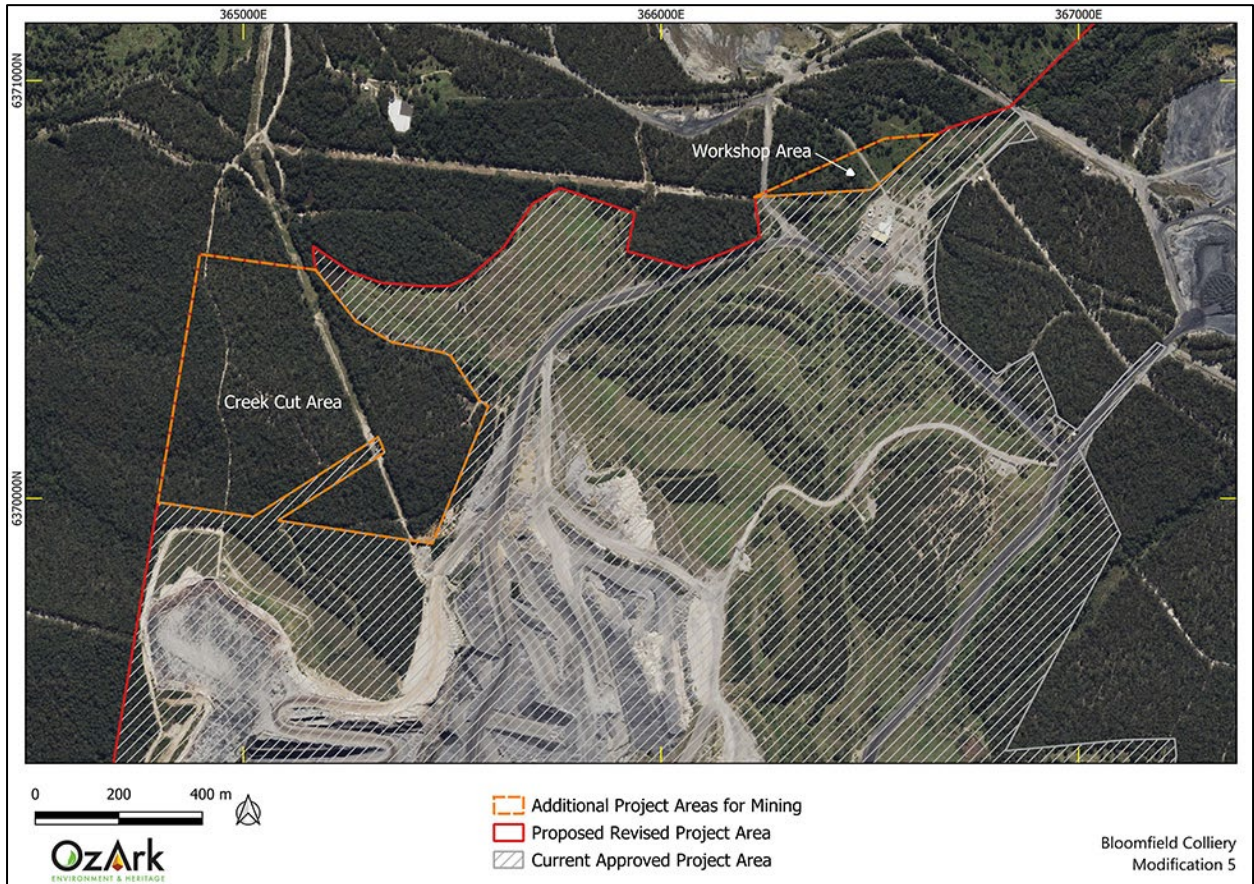
### 1.3 ADDITIONAL PROJECT AREAS FOR MINING

The proposed Additional Project Areas for Mining, consisting of two individual areas known as, the Creek Cut area and the Workshop area, located to the north of the current approved Project Area (**Figure 1-2**). The Additional Project Areas for Mining cover approximately 38.5 hectares (ha).

The Creek Cut area is located across moderately steep slopes and narrow crests with some moderately inclined slopes at the north of the area. The Creek Cut area was logged in the early 20<sup>th</sup> century and the vegetation is largely comprised of regrowth Spotted Gum (*Eucalyptus maculata*) and Ironbark (*E. fibrosa* and *E. paniculata*), although some isolated remnant trees are present. There are no waterways within the Creek Cut area, although a dammed ephemeral tributary to Elwells Creek is located along the eastern boundary of the area.

The Workshop area is mostly situated on landforms that have been modified by open cut mining activities since the 1970s. The Workshop area was cleared of vegetation in the 1970s and the current vegetation comprises regrowth and rehabilitation plantings. Ephemeral tributaries to Elwells Creek are present within the Workshop area, although their natural course has been significantly altered by mining activities and reshaping.

Figure 1-2: Aerial of the Additional Project Areas for Mining.



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## 2 THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT

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### 2.1 RELEVANT LEGISLATION

Cultural heritage is managed by several state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Burra Charter 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

Several Acts of parliament provide for the protection of heritage at various levels of government.

#### 2.1.1 Commonwealth legislation

##### 2.1.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water, provides a framework to protect nationally significant flora, fauna, ecological communities, and heritage places. The EPBC Act establishes both a National Heritage List and Commonwealth Heritage List of protected places. These lists may include Aboriginal cultural sites or sites in which Aboriginal people have interests. The assessment and permitting processes of the EPBC Act are triggered when a proposed activity or development could potentially have an impact on one of the matters of national environment significance listed by the Act. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to national/commonwealth heritage places.

##### 2.1.1.2 *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* is aimed at the protection from injury and desecration of areas and objects that are of significance to Aboriginal Australians. This legislation has usually been invoked in emergency and conflicted situations.

#### Applicability to the proposal

It is noted there are no Commonwealth or National heritage listed places within the Project Area, and as such, the heritage provisions of the EPBC Act and other Commonwealth Acts do not apply.

## 2.1.2 State legislation

### 2.1.2.1 *Environmental Planning and Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (EP&A Act) established requirements relating to land use and planning. The main parts of the EP&A Act that relate to development assessment and approval are Part 4 (development assessment) and Part 5 (environmental assessment). The Minister responsible for the Act is the Minister for Planning and Open Spaces.

The EP&A Act currently provides the primary legislative basis for planning and environmental assessment in NSW. The objects of the EP&A Act include encouragement of:

- The proper management, development, and conservation of natural resources
- The provision and coordination of the orderly and economic use and development of land
- Protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats
- Ecologically sustainable development.

The objects also provide for increased opportunity for public involvement and participation in environmental planning and assessment.

The EP&A Act includes provisions to ensure that the potential environmental impacts of a development or activity are rigorously assessed and considered in the decision-making process.

The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- Part 4: Local government development assessments, including heritage. May include schedules of heritage items
  - Division 4.7: Approvals process for State Significant Development (SSD)

#### Applicability to the proposed modification

The proposed modification will be assessed under section 4.55(2) of the EP&A Act.

As the project is a modification of a SSD, if approved, Section 4.41 of the EP&A Act would apply and therefore an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the *National Parks and Wildlife Act 1974* (NPW Act) to harm Aboriginal objects would not be required. Instead, all management related to Aboriginal cultural heritage within the Additional Project Areas for Mining would be governed by the policies of the Bloomfield Mining Operations *Aboriginal Cultural Heritage Management Plan* (ACHMP) (as amended and approved by NSW Department of Planning, Housing and Infrastructure [DPHI]).

### 2.1.2.2 *National Parks and Wildlife Act 1974*

The NPW Act provides for the protection of Aboriginal objects (sites, objects, and cultural material) and Aboriginal places. Under the Act (Part 6), an Aboriginal object is defined as: any deposit, object, or material evidence (not being a handicraft for sale) relating to Aboriginal habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

It is an offence under Section 86 of the NPW Act to ‘harm or desecrate an object the person knows is an Aboriginal object’. It is also a strict liability offence to ‘harm an Aboriginal object’ or to ‘harm or desecrate an Aboriginal place’, whether knowingly or unknowingly. Section 87 of the Act provides a series of defences against the offences listed in Section 86, such as:

- The harm was authorised by and conducted in accordance with the requirements of an *Aboriginal Heritage Impact Permit* (AHIP) under Section 90 of the Act
- The defendant exercised ‘due diligence’ to determine whether the action would harm an Aboriginal object
- The harm to the Aboriginal object occurred during the undertaking of a ‘low impact activity’ (as defined in the regulations).

Under Section 89A of the Act, it is a requirement to notify the Secretary of the Department of Climate Change, Energy, the Environment and Water (DCCEEW) of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS) that is administered by Heritage NSW.

#### Applicability to the proposed modification

Any Aboriginal sites within the Additional Project Areas for Mining are afforded legislative protection under the NPW Act.

The Secretary of DCCEEW will be notified of the location of an Aboriginal object recorded by sending the relevant details to the AHIMS register.

## 2.2 ASSESSMENT APPROACH

The archaeological assessment followed the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010).

The Aboriginal cultural heritage assessment followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (the Guide; OEH 2011) and the *Aboriginal cultural heritage consultation requirements for proponents* (ACHCRs) (DECCW 2010b).

## 2.3 PURPOSE AND OBJECTIVES

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

The study will apply the Code of Practice, the Guide, and the ACHCRs in the completion of the Aboriginal cultural heritage assessment to meet the following objectives:

**Objective One:** Undertake background research on the study area to formulate a predicative model for site location within the study area

**Objective Two:** Identify and record Aboriginal cultural heritage values within the survey areas. This includes intangible cultural values, Aboriginal objects, and any landforms likely to contain further archaeological deposits

**Objective Three:** To assess the significance of any recorded Aboriginal cultural values, Aboriginal objects, or sites in consultation with Registered Aboriginal Parties (RAPs)

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

## 2.4 REPORT COMPLIANCE WITH THE CODE OF PRACTICE

The Code of Practice establishes requirements that should be followed by all archaeological investigations where harm to Aboriginal objects may be possible. **Table 2-1** tabulates the compliance of this report with the requirements established by the Code of Practice.

**Table 2-1: Report compliance with the Code of Practice.**

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 1a	Review previous archaeological work	<b>Section 5</b>
Requirement 1b	Review AHIMS searches	<b>Section 5.3.1</b>
Requirement 2	Review the landscape context	<b>Section 4</b>
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	<b>Section 5</b>
Requirement 4a	Develop predictive model	<b>Section 5.5</b>
Requirement 4b	Present predictive model results	<b>Section 5.5.3</b>
Requirement 5a	Archaeological survey sampling strategy	<b>Section 6.1</b>
Requirement 5b	Archaeological survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Archaeological survey units	<b>Section 4.1.1</b>
Requirement 6	Site definition	<b>Section 5.5.1</b>
Requirement 7a	Site recording information to be recorded	Not applicable to this report as no new sites were recorded.
Requirement 7b	Site recording: scales for photography	Not applicable to this report as no new sites were recorded.
Requirement 8a	Geospatial information	All pedestrian transects were logged using a non-differential handheld GPS.

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 56.
Requirement 9	Record survey coverage data	<b>Section 6.3</b>
Requirement 10	Analyse survey coverage	<b>Section 6.3</b>
Requirement 11	Archaeological Report content and format	This report adheres to this Requirement.
Requirement 12	Records	OzArk undertakes to maintain all survey records for at least five years.
Requirement 13a	Notifying Heritage NSW of breaches	Not applicable
Requirement 13b	Providing Heritage NSW with information	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	Not applicable as test excavation was not warranted.
Requirement 15a	Consultation regarding test excavation	N/A
Requirement 15b	Developing a test excavation sampling strategy	N/A
Requirement 15c	Providing Heritage NSW with notification of the test excavation	N/A
Requirement 16a	Test excavation that can be carried out in accordance with the Code of Practice	N/A
Requirement 16b	Objects recovered during test excavations	N/A
Requirement 17	When to stop test excavations	N/A
Requirement 18–20	Artefact recording	The procedures for artefact recording were not required during the investigation.

## 2.5 DATE OF ARCHAEOLOGICAL ASSESSMENT

The field survey was undertaken by OzArk on 27 February 2024.

## 2.6 OZARK INVOLVEMENT

### 2.6.1 Field survey

The fieldwork survey was undertaken by:

- Harrison Rochford (OzArk Project Archaeologist, B Liberal Studies [Hons] University of Sydney, M. Phil, University of Sydney).

### 2.6.2 Reporting

The reporting component of the assessment was undertaken by:

- Report author: Tenae Robertson (OzArk Project Archaeologist, B Archaeological Practice, Australian National University)
- Report author: Harrison Rochford
- Reviewer: Ben Churcher (OzArk Principal Archaeologist; BA [Hons], Dip Ed).

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## 3 ABORIGINAL COMMUNITY CONSULTATION

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### 3.1 INTRODUCTION TO CULTURAL VALUES

*No matter who you are, we all have culture. Each person's culture is important; it's part of what makes us who we are.*

Australianstogether.org.au

Many Aboriginal people in Australia have a unique view of the world that's distinct from the mainstream. Land, family, law, ceremony, and language are five key interconnected elements of Aboriginal culture. For example, families are connected to the land through the kinship system, and this connection to land comes with specific roles and responsibilities which are enshrined in the law and observed through ceremony. In this way, the five elements combine to create a way of seeing and being in the world that is distinctly Aboriginal.

Aboriginal and Torres Strait Islander peoples are connected to Country through lines of descent (paternal and maternal), as well as clan and language groups. Territory is defined by spiritual as well as physical links. Landforms have deep meaning, recorded in art, stories, songs, and dance. Songlines or Dreaming Tracks as well as kinship structures link Aboriginal peoples to the territories of other groups. In the past, these links were also used for trade.

Living on this land for more than 50,000 years, Aboriginal and Torres Strait Islanders established effective ways to use and sustain resources. One important aspect is the right of certain people to control the use of resources in a particular area, as well as cultural and spiritual values like totemism that were fundamental in resource management. There was a wide range of traditional methods for gathering food including fish traps, subsistence agriculture, hunting and harvesting a wide range of natural fruits and vegetables. Some groups of people would stay in one place, while others moved around the land according to the seasons, to ensure sustainable and rich food supplies, and to fulfil their spiritual and cultural obligations.

In much of eastern Australia, Aboriginal communities live their lives like most Australians. However, in certain crucial areas, particularly associated with family, leadership roles and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

### 3.2 ABORIGINAL COMMUNITY CONSULTATION

A major aim of this assessment is to identify any cultural values within the landscape in which the proposed modification is located so that those values can be recognised and incorporated into the proposed modification's management recommendations.

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

The ACHCRs include four main stages, and these will be detailed in the following sections.

### 3.2.1 ACHCRs Stage 1

The aim of Stage 1 is to identify the RAPs who wish to be consulted about the proposed modification.

On 1 December 2023 an advertisement was placed in the *Maitland Mercury* requesting expressions of interest in being consulted about the proposed modification (**Appendix 1 Figure 1**). In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Mindaribba Local Aboriginal Land Council (LALC); the Office of The Registrar, *Aboriginal Land Rights Act 1983*; the National Native Title Tribunal; Native Title Services Corporation Limited (NTSCORP); Cessnock City Council; and the Hunter Local Land Services (**Appendix 1 Figure 2**).

Based on the responses from the agencies listed above, all identified stakeholders were written to enquiring if they wished to be consulted about the modification (**Appendix 1 Figure 4**).

As a result, the following individuals/groups registered to be consulted about the proposed modification:

- A1 Indigenous Services
- Amanda Hickey Cultural Services
- Awabakal Descendants Traditional Owners Aboriginal Corporation
- Culturally Aware
- D F T V Enterprises
- Didge Ngunawal Clan
- Gomery Cultural Consultants
- Gunjeewong Cultural Heritage Aboriginal Corporation
- Hunter Traditional Owner
- Kawul Pty Ltd trading as Wonn1 Sites
- Kevin Duncan
- Murra Bidgee Mullangari Aboriginal Corporation
- Stakeholder 1<sup>1</sup>
- Stakeholder 2

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<sup>1</sup> Two RAPs did not wish their details to be publicly available and are referred to as Stakeholder 1 and Stakeholder 2.

- Thomas Dahlstrom
- Wallagan Cultural Services
- Wonnarua Nation Aboriginal Corporation.

Please note that Mindaribba LALC did not formally register for the proposed modification, however, they have been included in all correspondence for transparency.

These individuals/groups constitute the RAPs for the proposed modification.

### 3.2.2 ACHCRs Stage 2

The aim of Stage 2 is to provide information about the project to the RAPs.

Detailed project information was provided in the assessment methodology that was issued to all RAPs for their consideration on 18 January 2024 (**Appendix 1 Figure 4** and **Appendix 2**).

### 3.2.3 ACHCRs Stage 3

The aim of Stage 3 is to acquire information regarding Aboriginal cultural values associated with the proposed modification through RAP consultation and field work.

To inform the RAPs of the assessment, an assessment methodology was issued to all RAPs for their consideration on 18 January 2024 (**Appendix 1 Figure 4** and **Appendix 2**). This document provided the archaeological context, a description of the proposed survey, and requested input regarding cultural values that should be considered in the assessment. The closing date for comment was 16 February 2024.

Four responses were received from Didge Ngunnawal Clan, Murra Midgee Mullangari Aboriginal Corporation, Stakeholder 1, and Stakeholder 2 between 18 January 2024 to 6 February 2024 advising that they had reviewed and supported the methodology (**Appendix 1 Figure 5**).

The field survey as per Stage 3 of the ACHCRs was undertaken with the assistance of RAP representatives on 27 February 2024. **Table 3-1** provides a log of the RAPS and their representatives who participated in fieldwork.

**Table 3-1: Aboriginal community involvement in the fieldwork.**

Individual/group	Name	Day of participation
Awabakal Descendants Traditional Owners Aboriginal Corporation	Tori Davis	27/2/2024
Kawul Pty Ltd (trading as Wonn1 Sites)	Donna Rasmussen	27/2/2024
Mindaribba LALC	Jason Brown	27/2/2024

### 3.2.4 ACHCRs Stage 4

Stage 4 involves the production of a draft ACHAR that is issued to all RAPs for their consideration. The draft ACHAR was distributed to the RAPs for the project on 16 April 2024 requesting

feedback on the report before 15 May 2024. An example cover letter distributed to the RAPs is provided as **Appendix 1 Figure 6**.

One response was received from Kawul Pty Ltd (trading as Wonn1 Sites) supporting the draft report. This response is shown in **Appendix 1 Figure 7**.

An update letter was sent on 10 July 2025 informing RAPs that the Modification Report had been reviewed by Heritage NSW. This project update letter noted that there were no responses from Heritage NSW that necessitated significant changes to the ACHAR except for a renewed AHIMS search (**Appendix 4**). The letter is presented in **Appendix 1 Figure 8**.

### **3.3 CULTURAL VALUES IDENTIFIED THROUGHOUT THE ACHCR PROCESS**

No specific cultural values were identified by the RAPs regarding the Additional Project Areas for Mining, however, the strong cultural values of Aboriginal communities towards landscapes and cultural heritage sites are recognised.

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## 4 LANDSCAPE CONTEXT

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An understanding of the environmental context of a study area is requisite in any Aboriginal archaeological investigation (DECCW 2010). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as human-activated landscape processes, influence the degree to which the remains of material culture are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

### 4.1 TOPOGRAPHY AND HYDROLOGY

The Additional Project Areas for Mining are located within the Central Lowlands region of the lower Hunter Valley. It is situated within the East Maitland Hills sub-region defined by Matthei (1995), comprising undulating low hills and rises.

There are no waterways within the Creek Cut area apart from V-shaped gullies. The modified headwaters of Elwells Creek are present along the southern boundary of the Workshop area. The nearest semi-permanent water source to the Additional Project Areas for Mining is Four Mile Creek, which flows generally south to north approximately 850 m east of the Workshop area (**Figure 4-1**).

The topography of the Creek Cut study area consists of moderate and steep slopes, with limited areas of gently inclined slopes less than five degrees, as defined in the *Australian Soil and Land Survey Field Handbook* (CSIRO 2009). The gentle slopes are localised along the northern boundary of the Creek Cut area, with some level benches and crests located in the south. The topography of the Additional Project Areas for Mining is shown on **Figure 4-2**.

The Workshop area consists of broad gentle spur crests, with gently inclining slopes situated along the southern boundary (**Figure 4-2**). It is important to note that these landforms have been greatly modified through mining activity and the subsequent remediation of the area, therefore the landforms within the Workshop area largely comprise reshaped overburden.

A Digital Elevation Model (DEM) of the Creek Cut area is shown on **Figure 4-3**. This figure includes the landform types referred to in this report (see **Section 4.1.1**)

Moderate and steep inclining slopes are highly erodible landforms which were not favourable areas for camping among past Aboriginal communities. Some portions of the gentle inclines within the Creek Cut area are situated within crest landforms, where soils are thin and unlikely to preserve subsurface deposits. Views of the Additional Project Areas for Mining are shown on **Figure 4-4**

Figure 4-1: Waterways near the Additional Project Areas for Mining.



Figure 4-2: Topography and drainage of the Additional Project Areas for Mining.

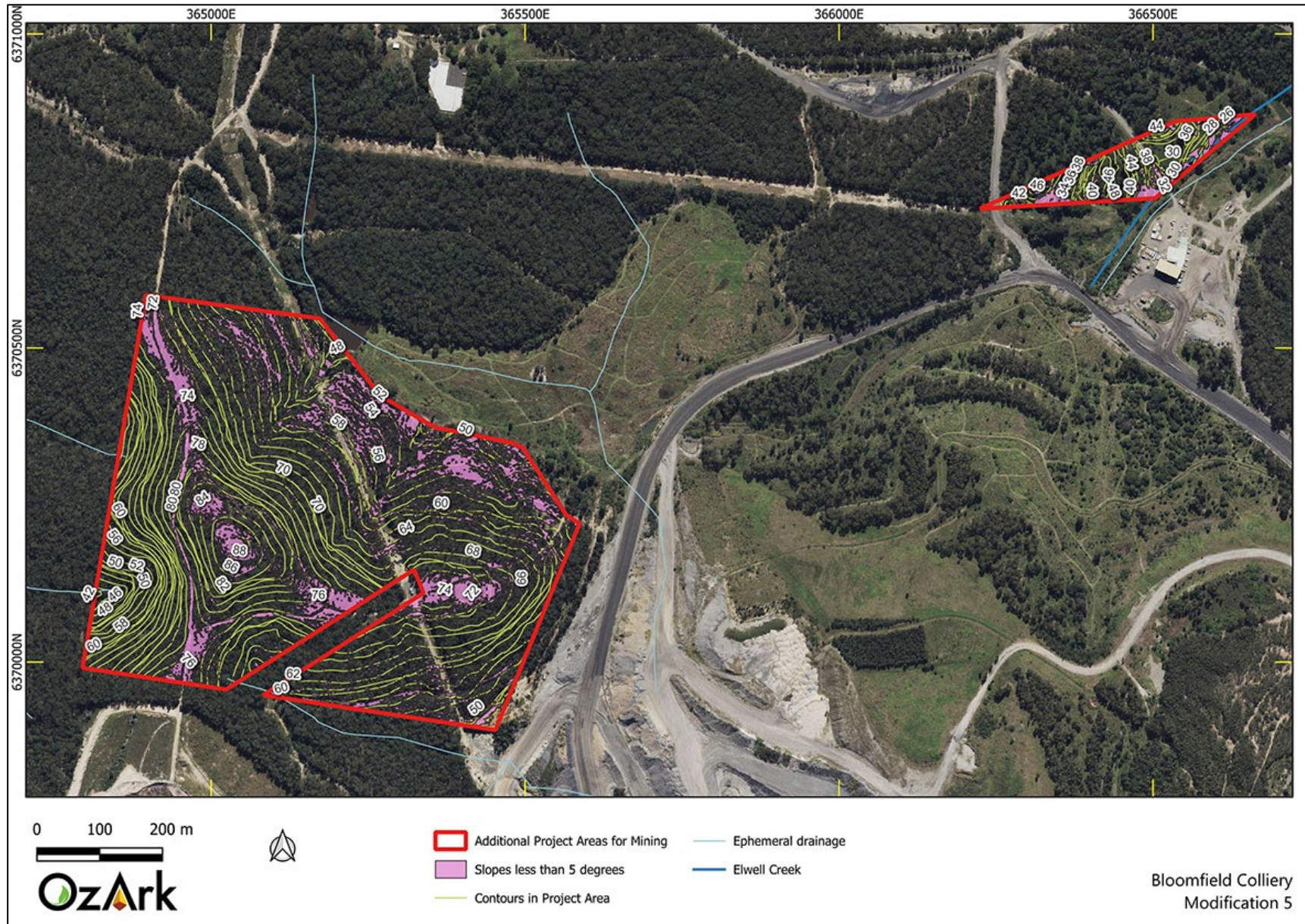


Figure 4-3: Digital elevation model of the Creek Cut area with landform types shown, view north.



**Figure 4-4: Examples of the topography of the Creek Cut area.**

#### 4.1.1 Survey units

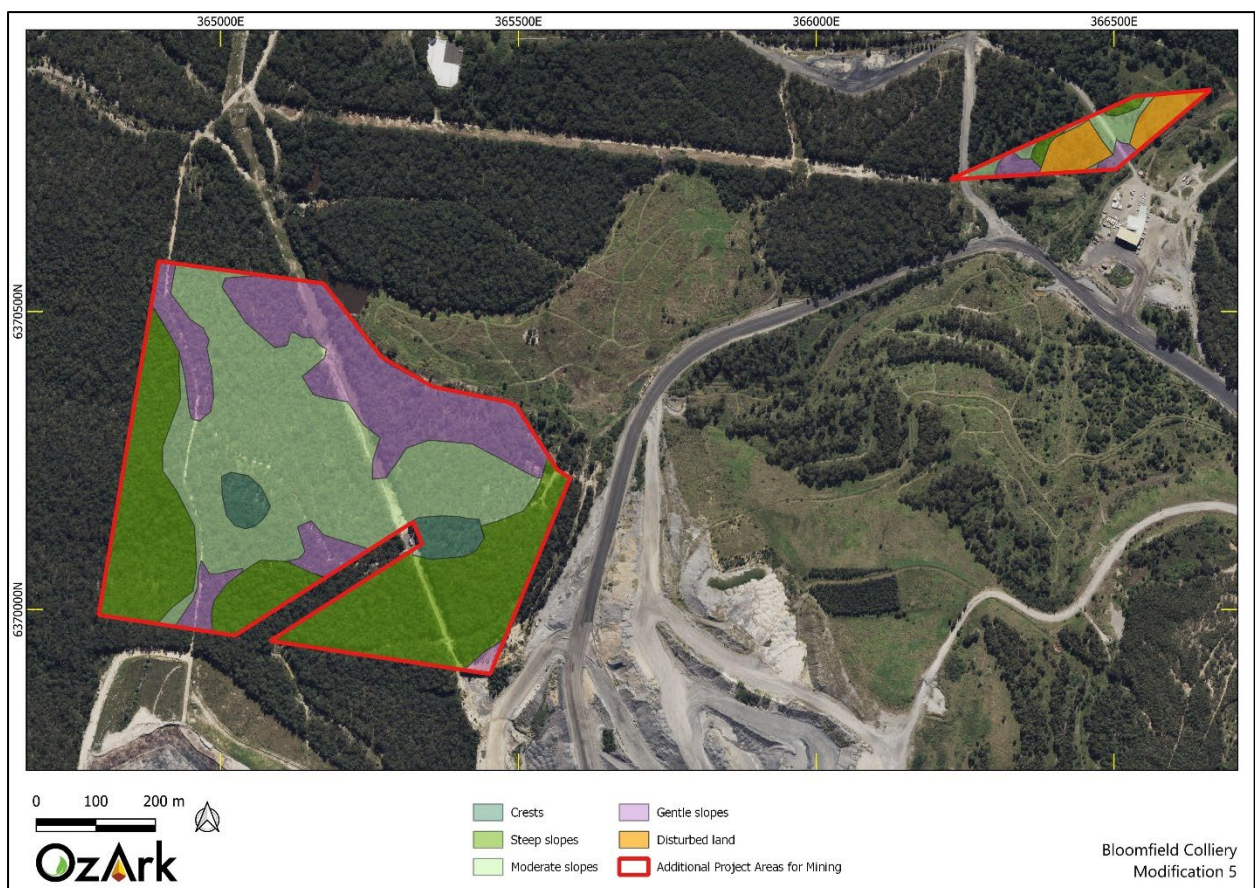
Based on the topography of the Additional Project Areas for Mining, survey units were identified to capture the major topographical features of the Additional Project Areas for Mining. The designation of survey units will allow a comparison of the archaeological potential of each major topographical feature within the Additional Project Areas for Mining to understand whether certain landform types are more likely to contain Aboriginal objects than others.

Landform mapping within the Additional Project Areas for Mining indicates there are four landform types: crests, steep slopes, moderate slopes, and gentle slopes (**Figure 4-3**). An additional fifth category is 'modified landforms' that is applicable to the Workshop area where large portions are rehabilitation landforms. These landform types were re-categorised following the survey as there was a larger area of gentle slopes than initially identified in the survey methodology (**Appendix 2**) and a higher level of disturbance at the Workshop area. The survey units at the Additional Project Areas for Mining are:

- Survey Unit 1: crests – level or very gently inclined landforms above all (or most) of the surrounding terrain
- Survey Unit 2: steep slopes – mostly upper slopes with an estimated incline greater than 30 degrees
- Survey Unit 3: moderate slopes – moderately inclined slopes, mostly mid-slopes, with an estimated gradient between five degrees and 30 degrees
- Survey Unit 4: gentle slopes – gently inclined slopes with an estimated gradient of less than five degrees (for the mapped extent of slopes under five degrees, see **Figure 4-2**).
- Survey Unit 5: modified landforms – areas that have previously been mined and the current landform is the result of reshaped overburden.

The survey units across the Additional Project Areas for Mining are shown on **Figure 4-5**.

**Figure 4-5: Aerial of the study area showing the location of survey units.**



## 4.2 GEOLOGY AND SOILS

Soil analysis has important ramifications for archaeological research through the potential impact of different soils on human activity (such as agricultural exploitation) and the impact of the soils on archaeological evidence (such as post-depositional movement).

The underlying geology of the Additional Project Areas for Mining comprises shale, mudstone, sandstone, tuff, and coal of the Palaeozoic, Late Permian Era Tomago Coal Measures

(Rose et al. 1966). Sandstone and sedimentary gravel are common, with minor quantities of small quartz, silcrete, and tuff gravel in a few locations (South East Archaeology 2008:7). Soils are predominantly of the Shamrock Hill erosional landscape, the Beresfield residual landscape, and areas of disturbed terrain (Matthei 1995). Due to the high erodibility of these soils, the preservation of subsurface deposits within this soil landscape is likely to be poor, leading to the displacement of Aboriginal objects, if present. If Aboriginal objects are present, they are more likely to have been exposed by these erosional processes than concealed by soil aggradation.

### 4.3 VEGETATION

The Additional Project Areas for Mining contains approximately 38 ha of native vegetation, consisting of shrubby open forest which was heavily harvested by timber getters in the early 1800s (South East Archaeology 2008:7). The regrowth forest predominantly consists of Spotted Gum (*Eucalyptus maculate*) and Ironbark (*E. fibrosa* and *E. paniculata*). An understorey of Paperbarks (e.g. *Melaleuca nodosa*), Wattles (e.g. *Acacia falcata*), and Blackthorn (*Bursaria spinosa*) and grass is present. The Creek Cut area has previously been subject to logging, therefore the vegetation is largely comprised of regrowth and immature trees, although some isolated remnant trees are present. The Workshop area has been entirely cleared in the past, so all vegetation is regrowth and plantings for landform rehabilitation (see **Figure 4-7**).

### 4.4 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

Historical records indicate that the wider area has been impacted by timber harvesting, coal extraction, and pastoral use. From available evidence, it appears that the logging that took place within the Creek Cut area occurred in the 19<sup>th</sup> century and that the forest had substantially regrown before 1954 as **Figure 4-6** shows a well vegetated area at that time. Disturbances within the Creek Cut area are largely confined to the construction of vehicle tracks, as well as the vegetation clearing and installation of structures for the existing transmission line which traverses diagonally through the Creek Cut area.

The Workshop area has been significantly modified by mining activities and subsequent landscape rehabilitation. **Figure 4-7** shows an aerial of the Workshop area during the period of active mining of the Big Ben open cut in the 1970s. The extent of the known open cut disturbance is shown on **Figure 4-8**, however, as shown on **Figure 4-7** unmodified landforms within this area are very rare.

Figure 4-6: 1954 aerial of the Additional Project Areas for Mining (source: SS 2021).

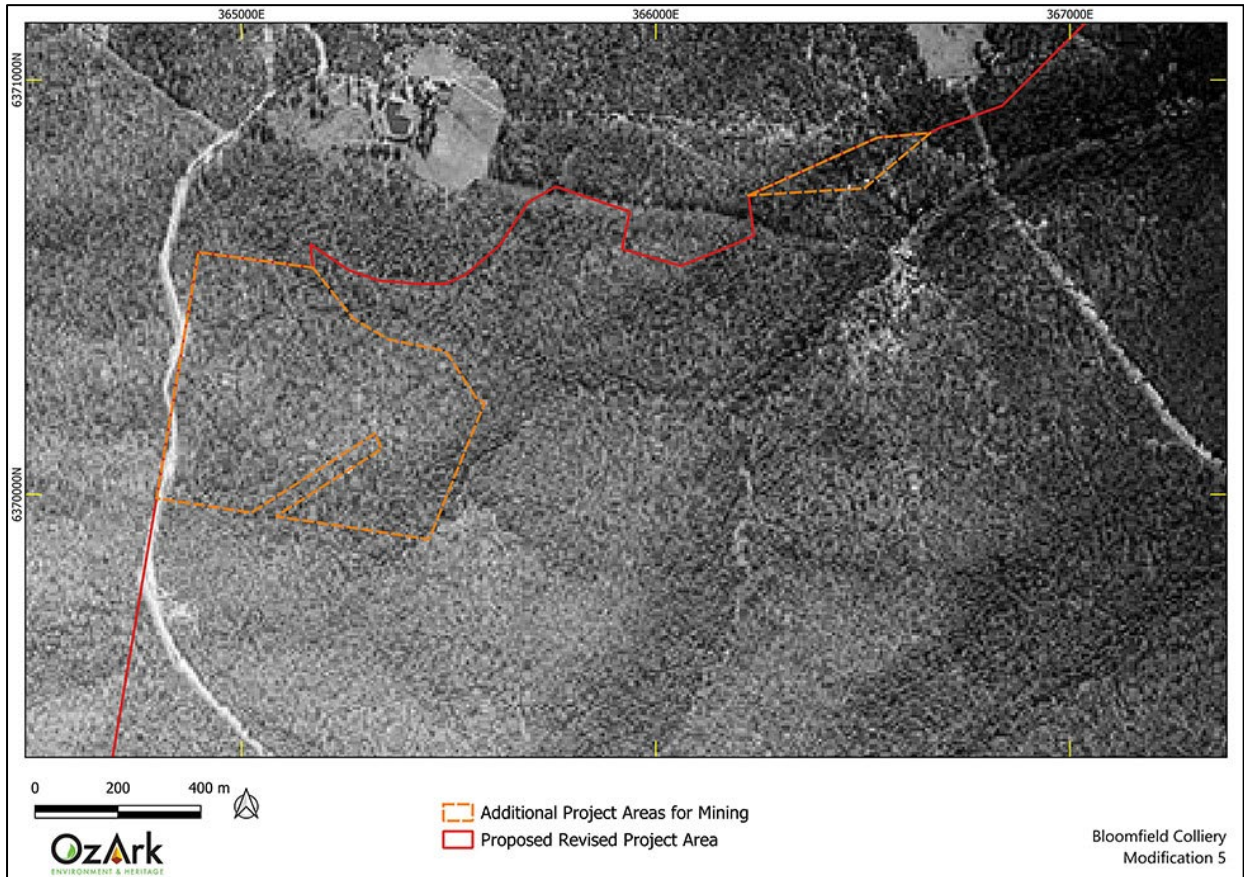
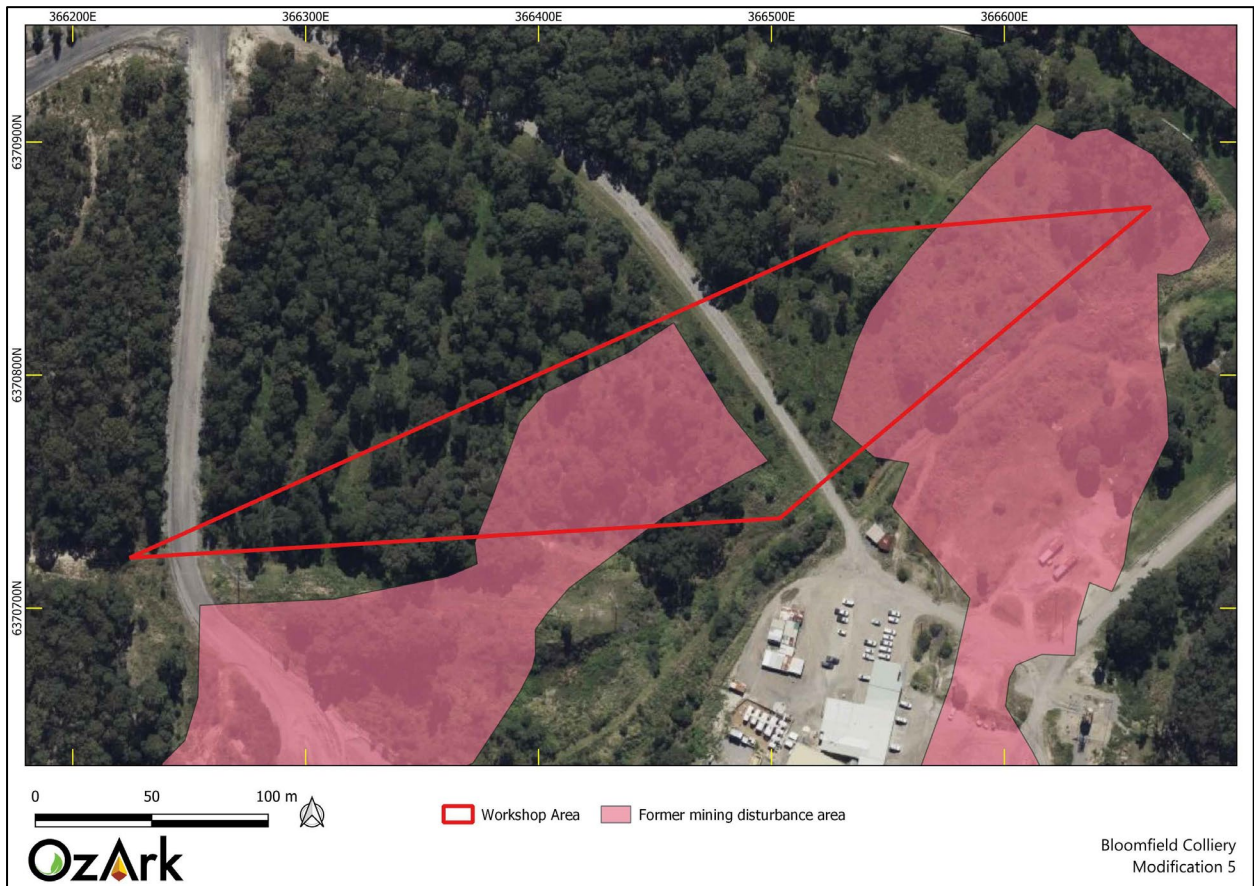


Figure 4-7: 1976 aerial of the Workshop area.



**Figure 4-8: Former Big Ben open cut workings at the Workshop area.**

## 4.5 CONCLUSION

The review of the environmental factors associated with the Additional Project Areas for Mining allows the following conclusions to be drawn in terms past Aboriginal occupation:

- **Topography and hydrology:** the moderate and steep sloping landforms within the Additional Project Areas for Mining would not be favourable locations for Aboriginal people to use for camping, with activities within these landforms likely consisting of transit and resource gathering. Crest landforms may have been occupied by Aboriginal people due to the gentle gradient, although these landforms are distant to water and unlikely to retain archaeological evidence due to shallow soil profiles which are less likely to contain subsurface archaeological deposits. The gently sloping landforms within the Additional Project Areas for Mining would have been hospitable to Aboriginal people, however due to the limited availability of reliable water sources, few areas would have encouraged long-term Aboriginal occupation of the landscape.
- **Geology and soils:** the geology of the area may support outcropping rock resources for the procurement of stone tool materials, such as tuff. The distance to a reliable water source is likely to restrict the presence of grinding groove sites. The erosional qualities of the soils will have likely caused archaeological deposits, if present, to become displaced. If Aboriginal objects are present, the soil characteristics of the Additional Project Areas for Mining suggest that they would be revealed by erosional processes, rather than concealed by aggradation.

- Vegetation: the Additional Project Area for Mining would have been an open woodland in the past, which may have provided resources for Aboriginal subsistence in the past. However, resources likely to have supported a large population would have been present closer to the banks of more permanent water sources such as Four Mile Creek. The timber logging that has occurred within the Creek Cut substantially reduces the likelihood that any culturally modified trees remain present, as does the extensive clearing and mining activities within the Workshop area.
- Land Use: the ground surface disturbances within the Creek Cut area, such as logging, track, and transmission line construction may have displaced Aboriginal objects and are likely to have reduced the potential for intact subsurface archaeological deposits. However, disturbed contexts can reveal objects previously within a subsurface context. The high level of disturbances to the Workshop area through previous mining activity and subsequent remediation has been significant. Therefore, the potential for archaeological deposits within the Workshop area is negligible.

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## 5 ARCHAEOLOGICAL CONTEXT

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### 5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

The Awabakal people are described as occupying land between Wyong, Maitland, Kurri Kurri, and Newcastle while the Wonnarua occupied an extensive territory from west of Maitland to the Dividing Range (Tindale 1974). The Additional Project Areas for Mining lies close to the boundary of these groups, although it is noted that such boundaries were fluid (Peterson 1976).

The area was chiefly occupied by members of the Pambalong clan, and possibly other people. Kuskie and Kamminga's study produced in 2000 provides a comprehensive analysis of occupation for Black Hill and the surrounding area, noting that occupation focused on the resource rich wetlands, swamps, lakes, estuaries, and coastline of the tribal territory, possibly more so near the junction of multiple resource zones. Occupation in this area predominantly occurred within the past 4,000 years, after climatic change and rising sea-levels transformed the environment of the region. While occupation may have extended as far back as 30,000 to 40,000 years, there are few landscape contexts existing in the area in which Pleistocene archaeological evidence would be preserved (Kuskie and Kamminga 2000).

Evidence shows that occupation included a wide range of activities, such as transitory movement, hunting, gathering, procurement of stone, heat treatment of stone, camping by small parties of hunters, camping by small parties of gatherers, nuclear family base camps, community base camps, camping by larger congregations of groups, ceremonial or spiritual activity, and burial practices.

The favoured materials for stone-working activities included indurated rhyolitic tuff and silcrete. Tuff was favoured over silcrete for knapping and producing tools and was primarily procured from exposed bedrock in hills, along drainage depressions, and along the coastline where this rock type exists. It is available in many locations due to its abundance in the local coal measures. Silcrete was also procured from local sources (alluvial and terrace gravels) but was not as readily available as tuff and was not used as frequently. A high proportion of silcrete used in knapping was heat treated, and some of the products include asymmetrical blades or bondi points. It is speculated that colours had important symbolic meaning and part of the reason for heat treatment may have been to obtain a desired colour, as well as to improve the flaking properties of the stone (Kuskie and Kamminga 2000).

Minimal use was made of other stone materials. Several of those that were utilised (quartz, quartzite, acidic volcanics, chalcedony, and chert) were probably obtained from local sources such as alluvial and terrace gravels, terrestrial outcrops, and weathered conglomerate rock. However, other types such as dacite and rhyodacite (used for grindstones) may have been obtained from sources on the coast north of Newcastle (around Birubi Point) by either trade or special exchange with another cultural group (in recent times the Worimi people), special purpose

trips, or visits during the normal seasonal round. Ochre was used for ceremonial purposes and may have been procured from sources near Lake Macquarie, the Hunter River, or from outside the region (Kuskie and Kamminga 2000).

Plant and animal foods were processed and consumed at temporary hunters or gatherers camps, at family base camps, campsites of larger congregations of people, often at the site of where the resources were located. A range of plant resources were available in the locality and women played a large role in obtaining and processing plant foods and obtaining small game, while men hunted for large game.

Macrozamia kernels from cycads were collected on the ridges and slopes within a day's walk of the campsites and prepared by a special process to remove toxins. This involved soaking the kernels for up to two weeks, then pounding and roasting them (cf. David 1890, Backhouse in Gunson 1974). This activity may have occurred at camping places around the margins of Hexham Wetland and other swamps.

Hunting was a planned and coordinated event, as evidenced by the capture of kangaroos '*enclosed in a nook or bend in the river or some other obstacle*' (Dawson 1830:119) and the use of fire to burn-off and promote fresh grass growth (Sokoloff 1978:a-b).

Fish were obtained by several methods. People used bark canoes on lakes, wetlands, and rivers, and angled with shell fish-hooks and line. Fish were also obtained directly by spearing, while standing in a canoe or on a bank, or using hand nets to form a circle in shallow waters and enclose the fish. Another group activity was the planting of sprigs of bushes in streams, with some men frightening the fish towards an opening, at which point others stood ready with nets to catch them (cf. Threlkeld in Gunson 1974). Eels were also caught in an organised manner, with small trenches being dug in the swamps, particularly near the narrower outlet (cf. David and Etheridge 1890:46). Birds such as swans and ducks were also caught around the swamps and lakes (cf. Threlkeld in Gunson 1974). Managing resources using facilities (e.g. fish and eel traps) and fire were additional strategies aimed at increasing the reliability and productivity of food resources (Rich 1995:4).

There are several documented cultural connections within the regional context of the Additional Project Areas for Mining, relating to the Black Hill pathway and the 'Doghole' ceremonial site. Interviews by Kuskie (Kuskie and Kamminga 2000), with Black Hill residents Mrs. Beryl Hades and Mrs Judith Crockett, identified knowledge that the Black Hill Spur was a route or pathway used by Aboriginal people. It is likely that this pathway extended from Rocky Knob in Hexham Swamp to Mount Sugarloaf. A ceremonial site known as 'the Doghole' is located '*a couple of miles from Minmi at the head of the Big (Hexham) Swamp*' (Wallsend & Plattsburg Sun 2/1/1891). It has been described as a ceremonial ground for weddings and initiations of the Pambalong clan located '*on the hills of Doghole, between Minmi and Black Hill, west of Lenaghans Drive*'

(*Wallsend & Plattsburg Sun* 3/1/1891, also 13/12/1890, 7/1/1891), in the vicinity of Stockrington and Long Gully. The 'Doghole' was '*held in sacred regard*' and only initiated men were allowed to visit the place (*Wallsend & Plattsburg Sun* 3/1/1891).

Kuskie notes that these accounts in the *Wallsend and Plattsburg Sun* appear to be based on information from early non-Indigenous settlers. Kuskie proposed that the aim of the *Sun's* series was to generate public interest with the hope of revealing more information on the local Aboriginals for the education and benefit of future generations. It does not appear that the exact location of the site has been physically relocated although it is suggested that it was in the area now called 'Stockrington' and associated with rock shelves and small caves nearby (South East Archaeology 2012:27).

## 5.2 REGIONAL ARCHAEOLOGICAL CONTEXT

Numerous surveys and several excavations have been conducted in the vicinity of the Additional Project Areas for Mining. Many of these investigations have been within landform units in the East Maitland Hills, including areas fringing the wetlands and Hunter River floodplain. Typically, small and often low-density artefact scatter sites have been identified, but only when exposed by erosion, disturbance, or deliberate excavation. The most pertinent investigations are summarised below.

### 5.2.1 Investigations at the Donaldson Coal Mine

Brayshaw (1985) located two artefact scatters close to Four Mile Creek, during a survey for the proposed 'Ironbark Colliery'. The sites are located near the junction of John Renshaw Drive and Black Hill Road, in the Donaldson Mine area, approximately 4 km east of the Additional Project Areas for Mining. Site #38-4-139 consisted of 19 silcrete artefacts, adjacent to Four Mile Creek. Site #38-4-140 consisted of 10 chert (tuff) and silcrete artefacts, within a 70 x 4 metre (m) area, 20 m from the creek.

Effenberger (1997) investigated the 546 ha Donaldson Exploration Lease with a sample survey and located 11 heritage sites. Except for one large artefact scatter (WF1 consisting of over 100 artefacts on a rise adjacent to a floodplain) and a possible scarred tree, the sites comprised small artefact scatters (less than five artefacts) or isolated artefacts. Concerns about the assessment were raised by the National Parkes and Wildlife Service (NPWS) and subsequent surveying revealed an additional four isolated artefacts.

Umwelt (2001c) surveyed for seven days within two conservation areas located in the Donaldson Lease Area. These areas, known as 'Bushland Area 1' and 'Bushland Area 2' totalled 956 ha. An additional eight Aboriginal sites to those previously recorded were identified in the Bushland Conservation Areas. These were almost all isolated artefacts, except for one small artefact scatter.

Umwelt (2002c) investigated proposed road works along John Renshaw Drive including immediately south of the Bloomfield Colliery, and west to Stanford Merthyr. Three artefact scatter sites and one isolated artefact were identified on crests and slopes along John Renshaw Drive.

### **5.2.2 Investigations at Black Hill (Kuskie and Kamminga 2000)**

A key study for the lower Hunter region is that by Kuskie and Kamminga (2000), who undertook extensive testing and salvage excavations along the F3 Freeway at Black Hill and Woods Gully, adjacent to Hexham Swamp, approximately 5 km southeast of the Additional Project Areas for Mining. The 14-week excavation program comprised an initial phase of testing, a second phase of broad area excavations, and a third phase of mechanical surface scrapes.

The excavations resulted in a total of 72.4 tonnes (64.6 cubic metres) of soil being dug by hand and wet-sieved. Through the hand excavations and surface scrapes, a total of 37,585 lithics were identified and recorded. This assemblage comprised 22,921 identifiable Aboriginal artefacts and 14,664 items described as 'lithic fragments', which were lithic items that did not have sufficient morphological attributes to positively identify them as artefacts, even though many must be fragmentary debris from stone knapping (Kuskie and Kamminga 2000).

A total of 44 categories of stone artefacts were identified in the Black Hill 2 and Woods Gully assemblages. Six basic categories of activities were identified through the artefactual evidence at the sites: non-specific stone flaking, bipolar flaking, microblade production, backing retouch of microblades, loss or intentional discard of microliths, and loss or intentional discard of non-microlith tools. However, many of the artefact categories represented debris from stone knapping, with production of microblades being the most common specific activity. Some of the microblades were further knapped to make microliths, particularly bondi points (Kuskie and Kamminga 2000).

Seven different types of stone materials were identified in the excavated assemblages; however, the assemblages were overwhelmingly dominated by indurated rhyolitic tuff (70.45% of combined artefact assemblages) and to a lesser extent silcrete (20.4%), materials which were favoured for making microblades, microliths, eloueras, and worimi cleavers in the Hunter Valley during recent millennia (Kuskie and Kamminga 2000).

### **5.2.3 Test excavations in Cessnock, NSW (ERM 2003)**

In 2002 and 2003 an archaeological salvage program was undertaken by ERM approximately 8 km southwest of the current Additional Project Areas for Mining. Three targeted areas of archaeological interest were identified during the preliminary archaeological investigations. These landforms consisted of:

- Valley side slopes along Chinamans Hollow Creek
- A ridge forming a drainage divide between Chinamans Hollow Creek and its eastern tributaries

- The headwaters of the tributaries associated with present-day swamps.

Test excavations undertaken within these targeted areas. The excavations found that two of the three areas were almost completely absent of archaeological deposits, with one isolated find recovered from the tributary area. However, significant archaeological deposits were recorded within the deep aeolian sands associated with Chinamans Hollow Creek.

#### **5.2.4 Investigations at Beresfield (Kuskie 2005)**

In 2005 Kuskie investigated an area of approximately 90 ha southwest of the junction of Weakleys Drive and the New England Highway at Beresfield, for the proposed Freeway North Business Park. The study area was subdivided and inspected within 17 environmentally discrete survey areas. Visibility tended to be relatively high on a number of vehicle tracks and low elsewhere in the regrowth forest. A total of 18 Aboriginal heritage sites, all stone artefact sites, were recorded, with a total of 178 stone artefacts (Kuskie 2005). The items were dominated by silcrete (87% of the assemblage), with a lower frequency of volcanic tuff (12%) and a single quartz artefact.

The artefacts almost entirely comprised items associated with non-specific knapping, including flakes (38% of the artefact assemblage), cores and core fragments (7%), and flake portions (51%). One microblade core was identified and six retouched flakes (3% of the assemblage). Kuskie (2005) inferred that Aboriginal occupation of the study area was widespread, but typically of a low intensity, possibly in relation to the procurement of food (hunting, gathering) or transitory movement through the landscape. The study area was assessed as comprising two distinct zones, in terms of the nature of soil deposits and the potential for further heritage evidence to occur (Kuskie 2005):

- Moderate to highly disturbed and typically elevated, erosional landform units, which with their shallow A unit soils and levels of ground disturbance, along with their inferred use for low intensity activities (producing evidence consistent with 'background discard') have a low potential for subsurface deposits, particularly deposits that may be in situ and/or of research value
- Higher order watercourses and associated flats with deeper soil deposits and potentially more focused activity such as encampments having occurred, in which there remains a high potential for further heritage evidence to occur in the form of artefact deposits, including deposits of sufficient integrity to be of research value.

#### **5.2.5 Investigations at Thornton Bridge, Thornton (Umwelt 2014)**

A salvage excavation program was undertaken in accordance with an AHIP following the identification of the Aboriginal site Thornton Bridge 1 during a Preliminary Archaeological Assessment undertaken in 2010 (Umwelt 2014). The site was located on a flat to gently sloping landform associated with Woodberry Swamp. The Thornton Bridge 1 site was identified within a substantially disturbed context associated with road works, and therefore initial assessments

deemed the archaeological potential of the site to be low, and that subsurface deposits would likely be of low densities.

Across seven areas, a total of 747 test units measuring 1 x 1 m were excavated. Surface salvage and grading was also conducted, resulting in the recovery of 32,671 artefacts. Of the 747 test units, 79 test units contained over 100 artefacts. Broken flakes comprised 61% of the artefact assemblage, followed by flakes (27%). Flaked pieces, retouched flakes, cores, grindstones, and a hammer stone were also recovered in much lower frequencies. Of the artefacts, 84.1% were manufactures from silcrete.

The excavation at Thornton Bridge 1 indicated that the site was a substantial community base camp used seasonally from approximately 3,500 years ago to colonisation (Umwelt 2014). Prior to this, the area may have been utilised for the procurement of silcrete, however, Woodberry Swamp would not have had the resources needed to support a community until the sea level rise in the late Holocene (10,000 to 4,500 years ago).

## 5.2.6 Implications for the Additional Project Areas for Mining

Assessments undertaken in the general vicinity of the Additional Project Areas for Mining indicate that open artefact sites, such as isolated finds and artefact scatters, are the most common site type identified. Silcrete and tuff are the predominant manufacturing materials. Therefore, it is likely that should Aboriginal sites be located within the Additional Project Areas for Mining, they will reflect these site types and materials.

Regional studies have indicated that high-density sites in the region are primarily located along high order watercourses and associated flats. These landforms are largely absent from the Additional Project Areas for Mining, which is characterised by disturbed, elevated, and erosional landforms which regional studies have a low potential for subsurface deposits (ERM 2003, Kuskie 2005). It is likely that activity within the Additional Project Areas for Mining were limited to hunting and travelling between resource locations, such as named creek lines.

## 5.3 LOCAL ARCHAEOLOGICAL CONTEXT

### 5.3.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any previously recorded heritage within the study area. The results of this search are summarised in **Table 5-1** and presented in detail in **Appendix 3**.

**Table 5-1: Aboriginal cultural heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	20/12/2023	Cessnock LGA	No places listed on either the National or Commonwealth heritage lists are located within the study area

Name of Database Searched	Date of Search	Type of Search	Comment
National Native Title Claims Search	20/12/2023	Cessnock City Council	No Native Title Claims cover the study area.
AHIMS	20/12/2023	4 x 4 km centred on the study area	21 sites AHIMS sites are within the search area. None occur within the Additional Project Areas for Mining
Local Environmental Plan (LEP)	20/12/2023	Cessnock LEP of 2011	None of the Aboriginal places noted occur near the study area.

A search of the Heritage NSW administered AHIMS database on 20 December 2023 returned 21 results for Aboriginal sites within a 4 km search area centred on the Additional Project Areas for Mining (GDA Zone 56 Eastings: 363000–367000, Northings 6368400–6372400).

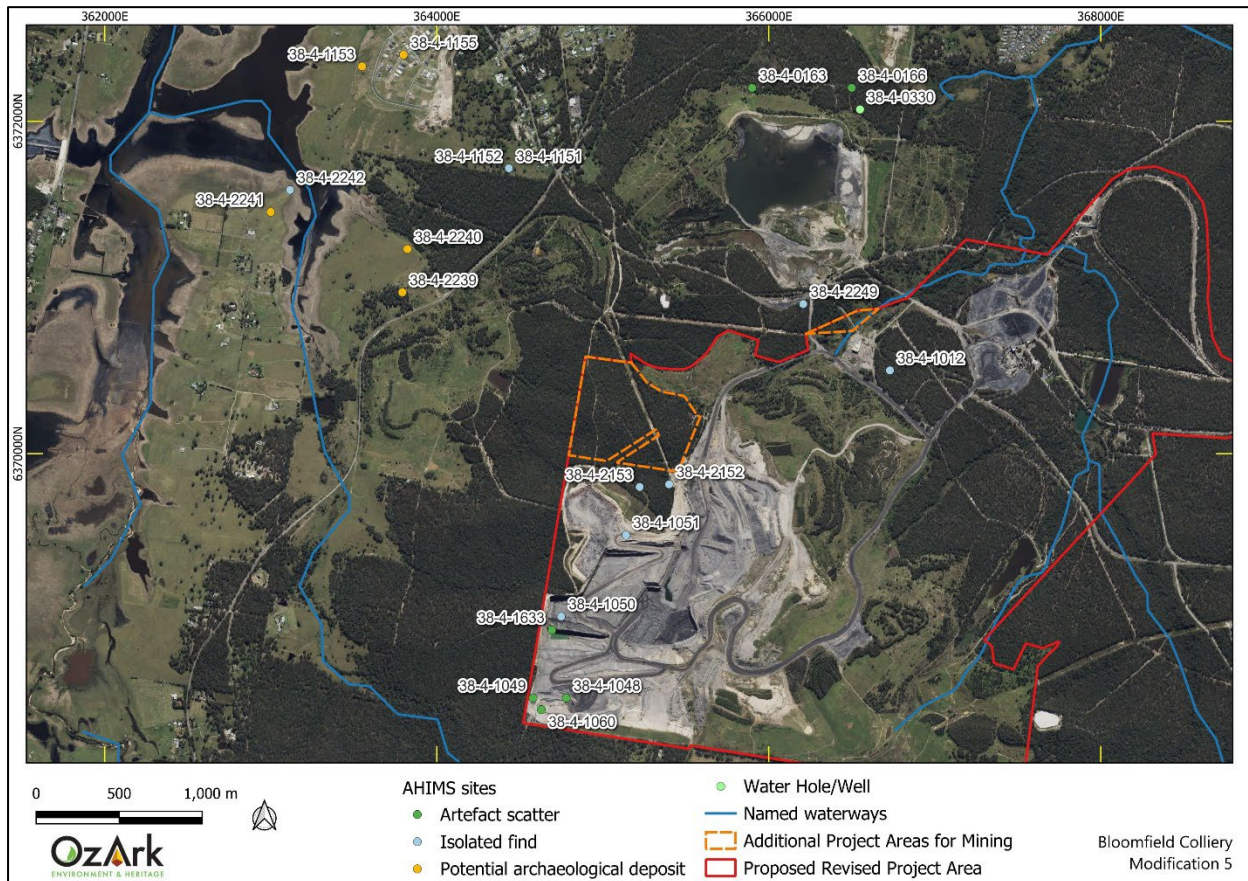
The most frequently recorded site types are artefact scatters, isolated finds, and potential archaeological deposits (PADs). A waterhole has also been identified. **Table 5-2** provides the site types and their frequencies. There are no previously recorded sites in the Additional Project Areas for Mining.

**Figure 5-1** shows the location of previously recorded sites in the vicinity of the Additional Project Areas for Mining. The AHIMS results show a cluster of sites recorded and subsequently salvaged under permit within the Bloomfield Colliery, however, the remainder of the results do not display any spatial distribution patterns but are rather ad-hoc recordings associated with the many developments in the area. It is noted that there are no culturally modified trees recorded in the region of the Additional Project Areas for Mining, likely reflecting the long history of timber getting in the area.

The AHIMS results suggest that if Aboriginal sites are identified within the Additional Project Areas for Mining, they are most likely to be isolated finds or artefact scatters. The closest sites to the Cut Creek area are two isolated finds (approximately 85 m to the south) that remain in the landscape: 38-4-2152 (Bloomfield 26 - Locus A) and 38-4-2153 (Bloomfield 4 - Locus A). Approximately 170 m northwest of the Workshop area is an isolated find that remains in the landscape: 38-4-2249 (KKLP IA2).

**Table 5-2: Site types and frequencies of AHIMS sites near the Additional Project Areas for Mining**

Site Type	Number	% Frequency
Isolated find	8	38
Artefact scatter	7	33
PAD	5	24
Water hole/well	1	5
<b>Total</b>	<b>21</b>	<b>100</b>

**Figure 5-1: Location of previously recorded AHIMS sites.**

### 5.3.1.1 2025 AHIMS search

As some time has elapsed since the original search, an updated search of the Heritage NSW administered AHIMS database using identical search parameters was carried out on 18 June 2025 (**Appendix 4**). The search returned 21 sites within a 4 km buffer of the study area (GDA Zone 56 Eastings: 363000–367000, Northings 6368400–6372400), demonstrating that no new AHIMS sites have been recorded within the search area since the 2023 search was performed.

### 5.3.2 Previous studies near or within the Additional Project Areas for Mining

#### 5.3.2.1 Abel Underground Mine survey (Kuskie 2006)

Kuskie (2006) assessed areas within Donaldson Mine and Bloomfield Colliery for Donaldson's Project Abel Part 3A application. The investigation area for the Abel Underground Mine consisted of the underground mining lease of approximately 2,750 ha south of John Renshaw Drive (the 'southern investigation area') and the area north of John Renshaw Drive primarily within the existing Donaldson open cut mine but also including a portion of the Bloomfield lease area (the 'northern investigation area'). This area included a broad corridor extending northwest from John Renshaw Drive to adjacent to the Bloomfield Workshop area presently under investigation and northeast to the rail loop.

Kuskie (2006) located two grinding groove sites near Black Hill, south of John Renshaw Drive, two small artefact scatter site loci, and two isolated artefact loci south of John Renshaw Drive, and 10 small artefact scatter/isolated artefact site loci in the Donaldson and Bloomfield lease areas north of John Renshaw Drive. One of these site loci, 38-4-1012 (A7/A), lies 340 m east of the Workshop area of the Additional Project Areas for Mining. It comprises a single tuff flake located on a gentle spur crest adjacent to the above-ground water pipeline.

### **5.3.2.2 *Bloomfield Collieries Part 3A Major Project application for the completion of open-cut mining and rehabilitation (South East Archaeology 2008, AECOM 2018)***

In 2008 South East Archaeology were commissioned by the Bloomfield Colliery to undertake an Aboriginal heritage impact assessment. A field survey was conducted, with particular focus on the remaining 'unmodified' area of 108 ha, where archaeological potential was considered the highest. The unmodified portion was subdivided and inspected within 26 environmentally discrete survey areas. The total survey coverage (ground physically inspected for heritage evidence) equated to approximately 15.4% of the unmodified study area. The total effective survey coverage equated to around 1.9% of the unmodified area.

They noted that within the unmodified area, levels of ground disturbance were typically high, due to the removal of the forest vegetation in early 2004 by earthmoving equipment under existing approvals. This process extensively impacted the A unit soil (in which stone artefacts could be expected to occur), often totally removing it or covering it with B unit clay (culturally sterile), and thereby reducing the levels of archaeological visibility and effective survey coverage.

A total of six Aboriginal heritage sites, comprising 19 loci of identified evidence, were recorded within the 108 ha unmodified study area. These site loci were all stone artefact occurrences and contained a total of 53 artefacts. The identified artefact evidence occurred in a very low-density distribution. Further artefacts were expected to occur across the unmodified study area in a distribution and density consistent with the survey results. It was predicted that shallow deposits may be present in some forested areas or along the drainages where A unit soil may have been retained, however, the potential for subsurface deposits of artefacts that may be in situ and/or of research value was low to very low. Other types of heritage evidence (e.g. scarred trees and grinding grooves) were not anticipated to occur within the unmodified study area.

The significance of the Aboriginal heritage evidence was assessed as being of low scientific significance within a local context, due to their common nature, low representative value, low integrity and limited potential for deposits that may be in situ and/or of research value.

Archaeological salvage of the six Aboriginal heritage sites was undertaken by South East Archaeology in 2010 with representatives from Mindaribba LALC. The process included surface collection and documentation of 70 artefacts.

In 2014, representatives of the Mindaribba LALC monitored the initial vegetation and topsoil removal from within a 3.8 ha area of previously undisturbed land. Six stone artefacts were identified, recorded, assessed, and collected by South East Archaeology and Mindaribba LALC.

In 2016, an additional 3 ha was cleared of vegetation and stripped of topsoil in preparation for mining activities. Representatives of the Mindaribba LALC and South East Archaeology monitored the ground disturbance works and one additional artefact was identified (AECOM 2018:115).

### **5.3.2.3 *Bloomfield Collieries addendum report to assess powerline relocation (South East Archaeology 2009)***

Following the Bloomfield Colliery 3A Major Project Approval, South East Archaeology undertook an assessment for a proposed electricity transmission line. This study was undertaken within the south-eastern section of the Creek Cut area assessed within the current Additional Project Areas for Mining.

No Aboriginal sites were identified during the survey. While it was noted that a low-density surface distribution of artefacts may occur across the study area, the landforms within the study area were assessed to be of low potential to contain subsurface deposits. This low potential was attributed to the sloping landforms of the study area, as well as the high levels of existing impacts, especially along the ridge crest.

## **5.4 ARCHAEOLOGICAL CONTEXT: CONCLUSION**

Archaeological investigations in the northern foothills of the Sugarloaf Range around Black Hill (**Sections 5.2** and **5.3**) have resulted in the identification of a number of isolated finds, open artefact scatters, and grinding groove sites, with less common sites such as scarred trees, stone arrangements, natural mythological, and rock engravings also identified.

Artefact occurrences tend to be identified near water sources, particularly on level or gently inclined landform units and close to higher order streams, wetlands/swamps, lakes, and estuaries. Few instances of artefacts are reported along ridgelines and further away from watercourses.

Artefact density in surface assemblages varies, but is generally low, while subsurface excavations near reliable water sources have often resulted in the location of artefacts within the upper (A horizon) soil. Two stone materials dominate, tuff and silcrete. Artefacts that have been retouched or utilised typically comprise less than 5% of overall assemblages. Often bondi points or other microliths comprise much of the retouched/utilised category.

Strong traditional, historical, and contemporary Aboriginal cultural values have also been identified. The Black Hill Spur was a route or pathway used by Aboriginal people, extending from

Hexham Swamp to Mount Sugarloaf, and an initiation and ceremonial site known as 'the Doghole', is also located in this locality (Kuskie and Kamminga 2000).

Assessment within or adjacent to the Additional Project Areas for Mining have identified few sites, which have largely consisted of isolated finds and low-density artefact scatters. The absence of complex and high-density sites, in contrast with those identified in the surrounding region, is likely due to the topography and hydrology within the Bloomfield area. Larger sites identified in regional studies have been primarily located near to reliable water sources, such as creeks and swamps, and situated within associated low-lying landforms suitable for the establishment of campsites (Kuskie & Kamminga 2000, ERM 2003, Umwelt 2014).

While the density and complexity of sites within and near to the Bloomfield area is lower than in the surrounding region, the materials within the assemblages across the studies are dominated by silcrete and tuff, which is consistent with the surrounding region. It is therefore likely that the Bloomfield area was not an area of high occupation, rather a transitory space.

## **5.5 PREDICTIVE MODEL FOR SITE LOCATION**

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including plant and animal foods, stone and ochre resources and rock shelters, as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes, or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shells, and some bones that remain preserved in the current landscape. Even these, however, may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport, both over short- and long-time scales, or (b) the historical impacts associated with the introduction of European farming practices including grazing and cropping, land degradation, and farm related infrastructure. Scarred trees, due to their nature, may survive for up to several hundred years but rarely beyond.

### 5.5.1 Site types in the region of the Additional Project Areas for Mining

The site types listed in **Table 5-3** are present in the region of the Additional Project Areas for Mining. The likelihood of these sites being present in the study area is discussed in **Section 5.5.2**.

**Table 5-3: Site types recorded in the region of the Additional Project Areas for Mining.**

Site type	Site description
Isolated finds	May be indicative of random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or subsurface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
Open artefact scatters	Artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of a background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'. Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources. Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.
Potential archaeological deposits	These site types are not known to contain Aboriginal objects until further investigation, such as test excavation, has taken place. At best these site recordings identify archaeologically sensitive landforms where sites may be present.
Boral/Ceremonial sites	Places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.

### 5.5.2 Landform modelling of archaeological potential

The large number of archaeological studies undertaken within the vicinity of the Additional Project Areas for Mining provides information to obtain a sound understanding of the nature and distribution of archaeological sites within the area.

Based on the results of Kuskie 2005 and Kuskie 2006, the landforms within Additional Project Areas for Mining have low potential to contain archaeological sites. The sloping landforms, distant to water, may have been used for transitory movement or hunting and gathering, but these activities do not commonly leave an identifiable archaeological trace. If sites are present, they are likely to be isolated finds or low-density artefact scatters.

Historical records indicate that the Additional Project Areas for Mining has been heavily impacted by timber harvesting. This impact is likely to have reduced the integrity of any artefact evidence within the Additional Project Areas for Mining. The timber logging and vegetation clearance makes the likelihood of identifying modified trees within the Additional Project Areas for Mining extremely low; however, given the potential presence of some remnant mature native trees, it cannot be entirely discounted.

### 5.5.3 Conclusion

Based on knowledge of the environmental contexts of the Additional Project Areas for Mining and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of landforms within the Additional Project Areas for Mining to contain Aboriginal objects (**Table 5-4**), and what types of sites may be present (**Table 5-5**).

**Table 5-4: Likelihood of landforms within the Additional Project Areas for Mining to contain Aboriginal objects.**

Survey Unit	Landform type	Likelihood to contain Aboriginal objects
1	Crests	Crests can contain Aboriginal sites if the crest is prominent enough to have been used as a lookout location or as a level landform within the surrounding slopes. Generally, crests are a degraded landform where soils are thin.
2	Steep slopes	Steep slopes are a degrading landform, especially where vegetation removal has accelerated soil loss. These landforms are unsuitable for occupation and Aboriginal objects recorded in such landforms are likely to be in a secondary context.
3	Moderate slopes	Slopes are a degrading landform, especially where vegetation removal has accelerated soil loss. These landforms are unsuitable for occupation and Aboriginal objects recorded in such landforms are likely to be in a secondary context. The exception is in localised flat benches, if they are present, where occupation may have been possible.
4	Gentle slopes	Gentle slopes are suitable for habitation and resource gathering. However, within the Additional Project Areas for Mining, they are unlikely to have been utilised for long-term occupation as they are distant to reliable water sources.
5	Modified landforms	Landforms within this survey unit have been heavily modified through past mining activities and subsequent remediation. Should isolated finds or low-density artefact scatters be present within this landform, they will be in a secondary context.

**Table 5-5: Likelihood of certain site types being present in the Additional Project Areas for Mining.**

Site type	Likelihood of being present in the study area
Isolated finds	As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Additional Project Areas for Mining.
Open artefact scatters	As most of the Additional Project Areas for Mining is within sloping landforms distant to permanent water, this site type is not predicted to be common. However, in flat or ridge landforms this site type is possible, although the moderate degree of disturbance in the Additional Project Areas for Mining will probably mean that the scatter has become displaced. It is likely that any sites associated with such landforms will have a low artefact density and a low complexity of tool types as the sites are either one-off events or only infrequently used.
Potential archaeological deposits	Due to the high levels of disturbance in the Additional Project Areas for Mining, as well as the nature of the landforms and the lack of waterways, this site type is predicted to be very rare.
Bora/Ceremonial sites	This site type does not necessarily follow landform predictability and are, overall, a rare site type with a low likelihood of being present and remaining extant. These sites are generally identified through consultation with the RAPs.

The available archaeological and landscape information suggest that the Additional Project Areas for Mining has low archaeological potential. The moderate to steep slopes present are degrading landforms and not suited for occupation reducing the likelihood of archaeological evidence remaining in situ. The crest landforms have a shallow soil profile which is not conducive to the preservation of subsurface deposits. While the gentle sloping landforms are more suitable for habitation, the distance to a reliable water source indicates a reduced likelihood of repeated or long-term occupation sites being present.

However, previously recorded sites near to the study area indicate that despite disturbances and distances from named water sources, isolated finds may still be present.

## **5.6 RESEARCH QUESTIONS**

Several research questions can meaningfully be applied to the investigation of the Additional Project Areas for Mining. These research questions include:

- What resources were available to the Aboriginal people using the land within the Additional Project Areas for Mining (food, stone, and water) and what resources were transported to the area?
- What tasks were Aboriginal people undertaking at the sites?
- Are there outcropping rock materials present suitable for stone tool procurement and manufacture?
- Do the findings within the Additional Project Areas for Mining (if any) accord with the regional archaeological context examined in **Section 5.2**?
- Do the survey results support the predictive model set out in **Section 5.5**?

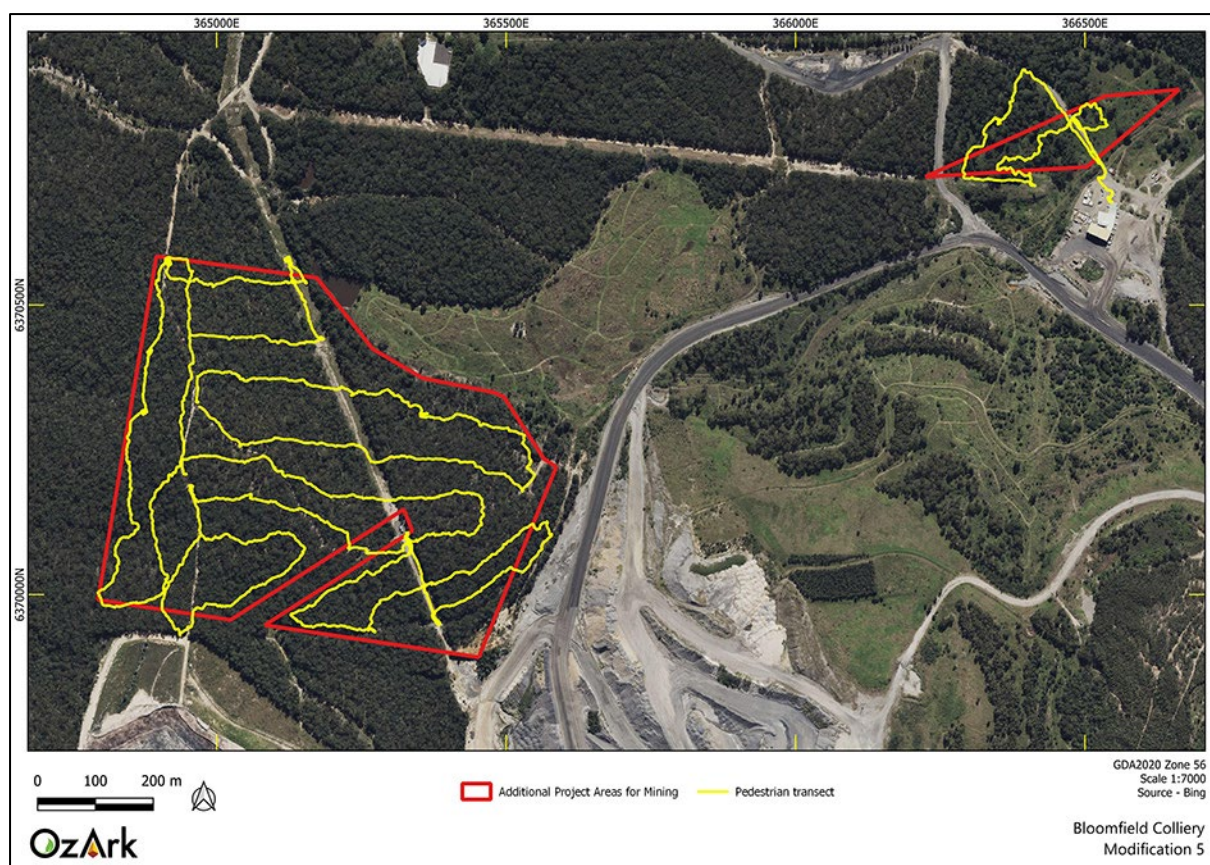
## 6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

### 6.1 SAMPLING STRATEGY AND FIELD METHODS

The archaeological methods utilised in the Aboriginal archaeological assessment follows the Code of Practice. Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004).

The Additional Project Areas for Mining were inspected on foot by OzArk Project Archaeologist, Harrison Rochford, and representatives from Awabakal Descendant Traditional Owners Aboriginal Corporation, Kawul Pty Ltd, and Mindaribba LALC (see **Section 3.2.3**). The survey coverage is shown on **Figure 6-1**.

**Figure 6-1: Aerial showing survey coverage of the Additional Project Areas for Mining.**



### 6.2 PROJECT CONSTRAINTS

The primary constraint encountered during the survey was poor ground surface visibility (GSV) due to dense vegetation and leaf litter. Views of the GSV during the assessment area shown on **Figure 6-2**.

**Figure 6-2: Examples images of the GSV within the Additional Project Areas for Mining**

	
1. Example of the low GSV within the Workshop area.	2. Example of the low GSV within the Creek Cut area.

### 6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are GSV and ground surface exposure (GSE). These factors are quantified to ensure that the survey data provides adequate evidence for the evaluation of the archaeological materials across the landscape. For the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice.

GSV is defined as:

*... the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stone ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals' (DECCW 2010:39).*

GSE is defined as:

*... different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals' (DECCW 2010:37).*

**Table 6-1** calculates the effective survey coverage within the study area. In general, **Table 6-1** presents an approximation of the amount of ground surface able to be seen at any location within specific landform units. For example, within the gentle slopes landform (Survey Unit 4) approximately 7% of the ground surface could be seen. Exposures in these landforms were

generally confined to disturbed areas resulting from track and transmission line construction and exposures associated with gulying. The amount of visible ground decreased across the moderate (Survey Unit 3) and steep slopes (Survey Unit 2), as well as the crest landforms (Survey Unit 1). The access tracks within the Creek Cut area allowed for some small areas of GSE within all survey units while GSV across the Additional Project Areas for Mining was hampered by vegetation, leaf litter, and gravels. Although survey efficacy across the Additional Project Areas for Mining was low, there is confidence that sufficient exposures were available to allow an accurate understanding of the various landforms' potential to contain Aboriginal objects.

As no Aboriginal objects were recorded in the Additional Project Areas for Mining, it is not possible to determine whether certain landforms are more likely to contain Aboriginal objects. While the low survey efficacy may have obscured Aboriginal objects, it is assessed that all survey units have low archaeological potential due to the nature of the topography (mostly sloping with very few flat landforms) and the distance to reliable water.

**Table 6-1: Effective survey coverage within the Additional Project Areas for Mining.**

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)
1	Crests	12768	50	5	319	2.5
2	Steep slopes	126047	50	5	3151	2.5
3	Moderate slopes	147178	50	5	3679	2.5
4	Gentle slopes	87384	70	10	6117	7
5	Modified land	12071	50	10	603	5

## 6.4 SUMMARY OF SURVEY RESULTS

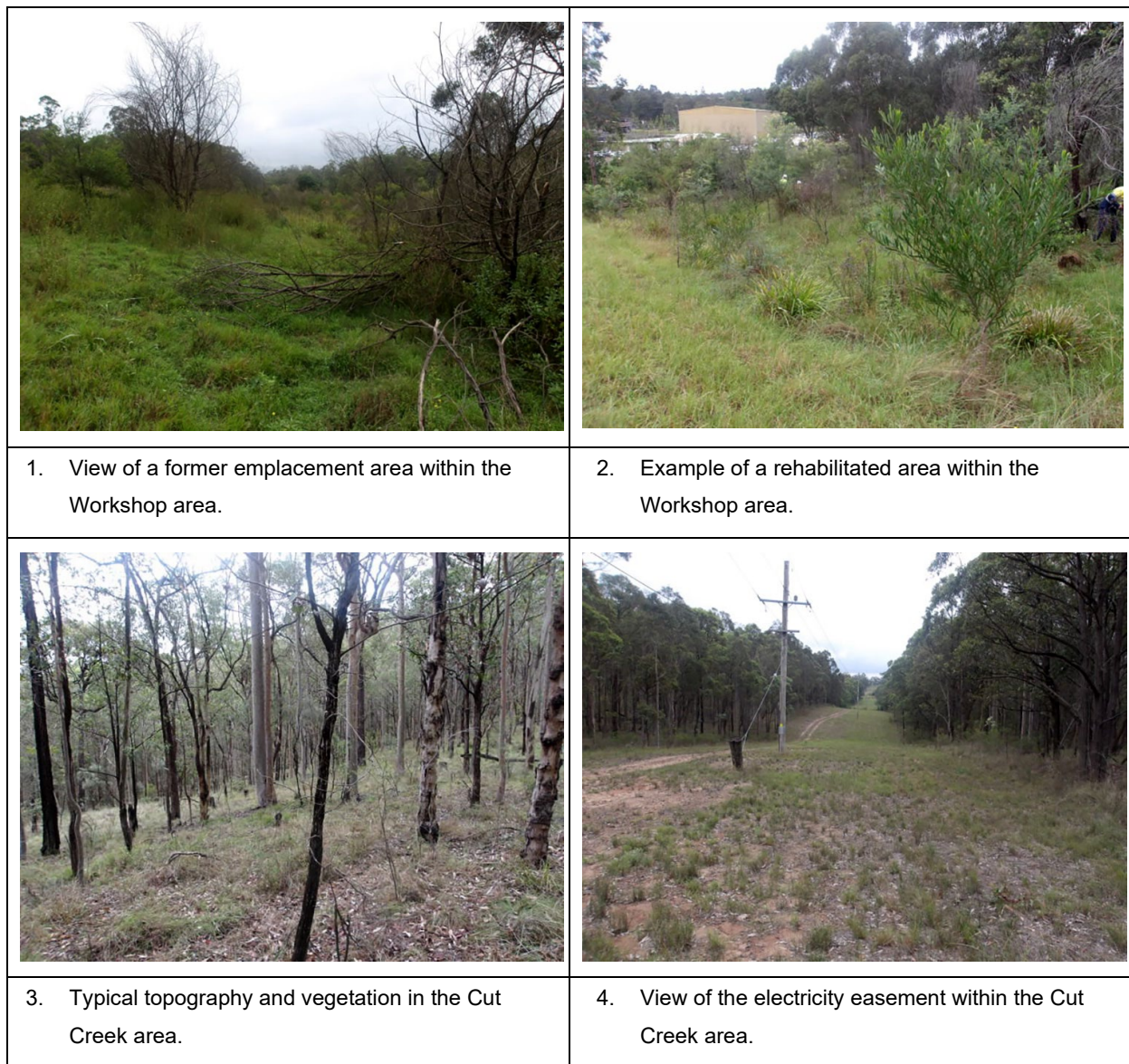
No previously unrecorded Aboriginal sites were identified during the survey. The Additional Project Areas for Mining were assessed as having low archaeological potential.

Further, no landforms within the Additional Project Areas for Mining were assessed to have the potential for subsurface archaeological deposits. This is unsurprising, as the Creek Cut area is distant from reliable water sources with which PADs are often associated (for example, see Umwelt 2014), and the Workshop area has been subject to significant modification.

**Figure 6-3** presents a sample of images showing the Additional Project Areas for Mining. These photos show typical views of both the Workshop area and the Cut Creek area and demonstrate that, generally, the Workshop area is modified and now thickly vegetated, while the Cut Creek area contains an open woodland of regrowth vegetation. Disturbances from an electricity easement, tracks, and earthmoving are reasonably widespread. While the GSV was generally low, some areas, such as within the electricity easement afforded adequate GSE (**Figure 6-3**,

photo 4). This allowed the range of landforms within the Additional Project Areas for Mining to be adequately assessed.

**Figure 6-3: Example images of the Additional Project Areas for Mining**



### 6.4.1 Discussion

The predictive model set out in **Section 5.5** concluded that isolated finds were the most likely site types to be present in the Additional Project Areas for Mining based on previous archaeological assessments and landform modelling. However, no Aboriginal sites were recorded within the Additional Project Areas for Mining. It is noted that this result accords with other investigations near the Additional Project Areas for Mining, particularly South East Archaeology's 2009 survey that included some of the Cut Creek area and similarly recorded no Aboriginal objects. While studies close to waterways (i.e. Kuskie & Kamminga 2000, ERM 2003, Umwelt 2014) have recorded significant archaeological remains, studies such as Kuskie 2006, have recorded a low density of sites in landforms distant to water. Despite the disturbances that have occurred in the

Additional Project Areas for Mining, it is assessed that the unfavourable topography (sloping landforms) and the distance to water is probably the greatest contributor to the lack of Aboriginal objects recorded during the survey.

As the Additional Project Areas for Mining includes no level landforms near reliable water sources, it was assessed that test excavation would not significantly alter the conclusions of the survey that the Additional Project Areas for Mining has a low archaeological potential. In addition, the significant suite of disturbances, the erodibility of the soils, and the observed thin A Horizon soil profile reinforces the conclusion that test excavation is not warranted.

#### 6.4.2 Responses to the research questions

In **Section 5.6** several research questions were advanced to guide the survey of the study area. Following the survey, responses to these research questions are set out below.

- What resources were available to the Aboriginal people using the land within the Additional Project Areas for Mining (food, stone, and water) and what resources were transported to the area?
  - No specific food resources were noted, and water resources were absent. While gravels and exposed degrading bedrock were observed within the Additional Project Areas for Mining, no evidence of quarrying was identified. Therefore, the implication is that while the gentle landform may have been habitable, this may have been a transitional space rather than an area of occupation or acquisition.
- What tasks were Aboriginal people undertaking at the sites?
  - As no Aboriginal sites were identified during the survey, there is no data to indicate the presence or nature of tasks undertaken within the Additional Project Areas for Mining.
- Are there outcropping rock materials present suitable for stone tool procurement and manufacture?
  - Discreet areas of outcropping sandstone were observed during the survey, along the steep V-shaped gullies in the southwest of the Creek Cut area. The stone observed was not suited for tool manufacture and no evidence of quarrying or stone tool procurement and manufacture was identified.
- Do the findings within the Additional Project Areas for Mining (if any) accord with the regional archaeological context examined in **Section 5.2**?
  - While there were no Aboriginal sites identified within the Additional Project Areas for Mining, the surveyed areas are over 800 m from permanent water sources, and the Creek Cut area is 900 m from a named water source. At a regional level, sites tend to be identified in proximity to water sources, particularly higher order streams. Additionally, artefact sites are less likely to be recorded along ridgelines. Therefore, the lack of identified sites within the Additional Project Areas for Mining is in accordance with the archaeological context of the region.

- Do the survey results support the predictive model set out in **Section 5.5**?
  - The findings within the Additional Project Areas for Mining, as discussed in **Section 6.4.1** support the predictive model that sites in topographies distant to water will be generally rare.

## **7 SIGNIFICANCE ASSESSMENT**

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As no Aboriginal objects were recorded in the Additional Project Areas for Mining, this section has been omitted.

### **7.1 STATEMENT OF SIGNIFICANCE**

Although the study may contain places of intangible cultural significance, no specific locations have been identified by Aboriginal community members to date. Likewise, no places of historic or aesthetic value are present. During the survey, no Aboriginal objects were recorded and therefore no places of archaeological significance are present within the Additional Project Areas for Mining.

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## 8 ASSESSING HARM

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### 8.1 AVOIDING AND MINIMISING HARM

#### 8.1.1 Conserving significant Aboriginal cultural heritage

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

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

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

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

#### 8.1.2 Opportunities to conserve Aboriginal cultural heritage values

No Aboriginal sites have been identified within the Additional Project Area for Mining and as such the proposed modification will not enhance nor diminish known Aboriginal cultural heritage values.

### 8.2 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROPOSED MODIFICATION

No Aboriginal sites or specific cultural values were recorded or identified within the Additional Project Areas for Mining during the current assessment. There are no known impacts to Aboriginal cultural heritage from the proposed modification.

### 8.3 ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES

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

#### 8.3.1 Intergenerational equity

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

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

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

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

### **8.3.2 The precautionary principle**

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

In relation to Aboriginal cultural heritage values, the precautionary principle should be applied if:

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

### **8.3.3 Principle of Integration**

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

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

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

### **8.3.4 Applicability to the proposed modification**

There are no known impacts to Aboriginal cultural heritage values as no sites were recorded, and no intangible heritage values have been identified within the Additional Project Areas for Mining.

The results of the survey indicate that significant Aboriginal cultural heritage values will not be harmed by the proposed modification.

**Table 8-1** examines the application of ESD principles to the proposed modification.

**Table 8-1: Application of ESD principles to the proposal.**

ESD principle	Response
Avoiding and minimising harm	<b>Section 9</b> sets out mechanisms by which to avoid and minimise harm. As no Aboriginal sites are present, these mechanisms will be limited to an unanticipated finds protocol in the unlikely event that Aboriginal objects are noted during the proposed works associated with the modification.
The integration principle	The proposed modification presents a strong case for the broader environmental benefits arising from environmentally responsible development. The environmental consequences of the proposal have been carefully assessed.
The precautionary principle	The Aboriginal cultural heritage investigation has followed the precautionary principle though undertaking a robust Aboriginal cultural heritage assessment to ensure that harm to Aboriginal objects and values is minimised. The survey adopted a precautionary principle when it came to describing and assessing landforms within the Additional Project Areas for Mining.
The intergenerational equity principle	It is assessed that the proposed modification will not harm significant Aboriginal cultural heritage values and that there will be a manageable diminution of intergenerational equity.

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## 9 MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE SITES

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### 9.1 GENERAL MANAGEMENT PRINCIPLES

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

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

As no Aboriginal cultural heritage values have been identified within the Additional Project Areas for Mining, alteration to the proposed modification layout is not necessary in terms of Aboriginal cultural heritage.

- If impact is unavoidable then approval to disturb sites/cultural values under the authority of an ACHMP will be required.

As there are no identified Aboriginal cultural values within the Additional Project Areas for Mining, management recommendations relate only to appropriate management protocols for unanticipated finds and skeletal remains.

### 9.2 MANAGEMENT AND MITIGATION OF RECORDED ABORIGINAL SITES

No Aboriginal sites were recorded within the Additional Project Areas for Mining, therefore no site-specific management and mitigation measures are applicable to the proposed modification. The existing Bloomfield Mining Operations ACHMP employs standard management measures for recorded Aboriginal sites and this document will be undated should the proposed modification be approved.

In the unlikely event that Aboriginal objects are noted during the proposed works, the actions outlined on pages 8 to 10 of the Bloomfield Mining Operations ACHMP, (or as modified and approved) must be followed.

The ACHMP (page 10) also contains procedures should the discovery of human skeletal remains be made during the proposed works.

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## 10 RECOMMENDATIONS

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Under Section 89A of the NPW Act it is mandatory that all newly recorded Aboriginal sites be registered with AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that no Aboriginal sites were recorded during the assessment.

The following recommendations are made based on these impacts and regarding:

- Legal requirements under the terms of the NPW Act whereby it is illegal to damage, deface or destroy an Aboriginal place or object without an approved ACHMP
- The findings of the current investigations undertaken within the Additional Project Areas for Mining
- The interests of the Aboriginal community.

Recommendations concerning Aboriginal cultural values within the Additional Project Areas for Mining are as follows:

1. Following approval of the proposed modification, the management measures, including the unanticipated finds protocol, outlined in the existing Bloomfield Mining Operations ACHMP (as amended and approved by DPHI) must be followed.
2. All land disturbing activities associated with the proposed modification must be confined within the Additional Project Areas for Mining. Should the parameters of the proposed modification extend beyond this area then further archaeological assessment may be required.

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## APPENDIX 1: ABORIGINAL COMMUNITY CONSULTATION

**Appendix 1 Table 1: Community consultation log.**

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
27.11.23	Maitland Mercury	Catherine Burrowes (CB) rang - newspaper is printed on a Friday 1st December 23 Closing date 15.12.23	Email
4.12.23	Heritage NSW	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 18.12.23	Email
4.12.23	Office of The Registrar, ALRA	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 18.12.23	Email
4.12.23	National Native Title Tribunal	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 18.12.23	Email
4.12.23	NTSCORP	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 18.12.23	Email
4.12.23	Cessnock City Council	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 18.12.23	Email
4.12.23	Hunter Local Land Services	CB sent stage 1 agency letter requesting potential stakeholders. Closing date 18.12.23	Email
4.12.23	Scott Franks	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Email
4.12.23	Mindaribba LALC	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Email
4.12.23	Arthur Fletcher: Wonn1	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Email
4.12.23	Gordon Griffiths	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Post
4.12.23	Shane Frost	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Post
4.12.23	Kerry Brauer	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Post
4.12.23	Ann Hickey	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Post
4.12.23	Lea-Anne Ball	CB sent stage 1 letter to existing Bloomfield RAPs Closing date 18.12.23	Post
7.12.23	Wonnarua Nation Aboriginal Corporation	CB received email registering for the project	Email
7.12.23	Wonnarua Nation Aboriginal Corporation	CB replied with thanks	Email
15.12.23	Kerry Brauer	RTS letter	Post
19.12.23	A1 Indigenous Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Aboriginal Native Title Consultants	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	AGA Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Aliera French Trading	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Arwarbukarl Cultural Resource Association, Miromaa Aboriginal Language and Technology Centre	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Awabakal & Guringai Pty Ltd	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Awabakal Descendants Traditional Owners	CB emailed Stage 1 Community letters - closing date 5.1.24	Email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
19.12.23	Awabakal Local Aboriginal Land Council	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Awabakal Traditional Owners Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Biraban Local Aboriginal Land Council	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Cacatua Culture Consultants	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Stakeholder 2	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Culturally Aware	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	D F T V Enterprises	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Deslee Talbott Consultants	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Didge Ngunawal Clan	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Gidawaa Walang & Barkuma Neighbourhood Centre Inc.	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Glen Morris	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Gomery Cultural Consultants	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Gunjeewong Cultural Heritage Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Hunter Traditional Owner	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Hunter Valley Cultural Surveying	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Indigenous Learning	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Jarban & Mugrebea	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Kamilaroi Yankuntjatjara Working Group	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Kauma Pondee Inc.	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Kawul Pty Ltd trading as Wonn1 Sites	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Kevin Duncan	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Lower Hunter Aboriginal Incorporated	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Lower Hunter Wonnarua Cultural Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Mayaroo	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Metropolitan Local Aboriginal Land Council	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Murra Bidgee Mullangari Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Myland Cultural & Heritage Group	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Nunawanna Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Renee Sales	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Sharon Hodgetts	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Steve Talbott	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	The Men's Shack Indigenous Corporations	CB emailed Stage 1 Community letters - closing date 5.1.24	Email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
19.12.23	Thomas Dahlstrom	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Trent Hodgetts	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Ungooroo Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Wallagan Cultural Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Wanaruah Local Aboriginal Land Council	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Warragil Cultural Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	WATTAKA Pty Ltd	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Stakeholder 1	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Wurrumay Pty Ltd	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Yinarr Cultural Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Girragirra Murun Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Wingarra Wilay Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Long Gully Cultural Services	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Guthers Aboriginal Corporation	CB emailed Stage 1 Community letters - closing date 5.1.24	Email
19.12.23	Gomery Cultural Consultants	CB received email registering for the project	Email
19.12.23	Gomery Cultural Consultants	CB replied with thanks	Email
19.12.23	Didge Ngunawal Clan	CB received email registering for the project	Email
19.12.23	Didge Ngunawal Clan	CB replied with thanks	Email
19.12.23	Wallagan Cultural Services	CB received email registering for the project	Email
19.12.23	Wallagan Cultural Services	CB replied with thanks	Email
19.12.23	Stakeholder 1	CB received email registering for the project	Email
19.12.23	Stakeholder 1	CB replied with thanks	Email
19.12.23	Culturally Aware	CB received email registering for the project	Email
19.12.23	Culturally Aware	CB replied with thanks	Email
19.12.23	D F T V Enterprises	CB received email registering for the project	Email
19.12.23	D F T V Enterprises	CB replied with thanks	Email
19.12.23	Kawul Pty Ltd trading as Wonn1 Sites	CB received email registering for the project	Email
20.12.23	Kawul Pty Ltd trading as Wonn1 Sites	CB replied with thanks	Email
20.12.23	Kevin Duncan	CB received email registering for the project	Email
20.12.23	Kevin Duncan	CB replied with thanks	Email
4.1.24	Murra Bidgee Mullangari Aboriginal Corporation	CB received email registering for the project	Email
9.1.24	Murra Bidgee Mullangari Aboriginal Corporation	CB replied with thanks	Email
5.1.24	Awabakal Descendants Traditional Owners Aboriginal Corporation	CB received email registering for the project	Email
9.1.24	Awabakal Descendants Traditional Owners Aboriginal Corporation	CB replied with thanks	Email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
5.1.24	Thomas Dahlstrom	CB received email registering for the project	Email
9.1.24	Thomas Dahlstrom	CB replied with thanks	Email
8.1.24	A1 Indigenous Services	CB received email registering for the project	Email
9.1.24	A1 Indigenous Services	CB replied with thanks	Email
8.1.24	Amanda Hickey Cultural Services.	CB received email registering for the project	Email
9.1.24	Amanda Hickey Cultural Services.	CB replied with thanks	Email
9.1.24	Gunjeewong Cultural Heritage Aboriginal Corporation	CB received email registering for the project	Email
10.1.24	Gunjeewong Cultural Heritage Aboriginal Corporation	CB replied with thanks	Email
11.1.24	Stakeholder 2	CB received email registering for the project	Email
12.1.24	Stakeholder 2	CB replied with thanks	Email
12.1.24	Hunter Traditional Owner	CB received email registering for the project	Email
12.1.24	Hunter Traditional Owner	CB replied with thanks	Email
18.1.24	Mindaribba LALC	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Wonnarua Nation Aboriginal Corporation	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Gomery Cultural Consultants	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Didge Ngunawal Clan	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Wallagan Cultural Services	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Stakeholder 1	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Culturally Aware	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	D F T V Enterprises	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Kawul Pty Ltd trading as Wonn1 Sites	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Kevin Duncan	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Murra Bidgee Mullangari Aboriginal Corporation	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Awabakal Descendants Traditional Owners Aboriginal Corporation	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Thomas Dahlstrom	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	A1 Indigenous Services	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Amanda Hickey Cultural Services	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Gunjeewong Cultural Heritage Aboriginal Corporation	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Stakeholder 2	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Hunter Traditional Owner	CB emailed Stage 2 Draft Methodology, Closing date 16.2.24	Email
18.1.24	Didge Ngunawal Clan	CB received email comments methodology - <i>We are happy with what you proposed towards the Bloomfield project</i>	Email
18.1.24	Didge Ngunawal Clan	CB replied with thanks	Email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
4.2.24	Stakeholder 1	CB received email comments on methodology <i>Thank you for the project information. Steven Hickey has viewed and supports the methods outline in stage 2 draft ACHAR. Thank you</i>	Email
5.2.24	Stakeholder 1	CB replied with thanks	Email
6.2.24	Murra Bidgee Mullangari Aboriginal Corporation	CB received email comments on methodology - <i>I have read the project information and methodology for the above project, I endorse the recommendations made.</i>	Email
6.2.24	Murra Bidgee Mullangari Aboriginal Corporation	CB replied with thanks	Email
6.2.24	Stakeholder 2	CB received email comments on methodology <i>We agree with draft ACHAR</i>	Email
7.2.24	Stakeholder 2	CB replied with thanks	Email
16.4.24	Mindaribba LALC	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Wonnarua Nation Aboriginal Corporation	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Gomery Cultural Consultants	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Didge Ngunawal Clan	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Wallagan Cultural Services	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Stakeholder 1	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Culturally Aware	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	D F T V Enterprises	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Kawul Pty Ltd trading as Wonn1 Sites	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Kevin Duncan	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Murra Bidgee Mullangari Aboriginal Corporation	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Awabakal Descendants Traditional Owners Aboriginal Corporation	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Thomas Dahlstrom	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	A1 Indigenous Services	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Amanda Hickey Cultural Services	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Gunjeewong Cultural Heritage Aboriginal Corporation	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Stakeholder 2	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
16.4.24	Hunter Traditional Owner	CB emailed Stage 4 Draft ACHAR. Closing date for feedback 15.5.24	Email
30.4.24	Kawul Pty Ltd trading as Wonn1 Sites	CB received email - <i>We are more than happy to progress with this Stage 4 draft for Bloomfield</i>	Email
10.7.25	Mindaribba LALC	CB emailed project update letter	Email
10.7.25	Wonnarua Nation Aboriginal Corporation	CB emailed project update letter	Email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
10.7.25	Gomery Cultural Consultants	CB emailed project update letter	Email
10.7.25	Didge Ngunawal Clan	CB emailed project update letter	Email
10.7.25	Wallagan Cultural Services	CB emailed project update letter	Email
10.7.25	Stakeholder 1	CB emailed project update letter	Email
10.7.25	Culturally Aware	CB emailed project update letter	Email
10.7.25	D F T V Enterprises	CB emailed project update letter	Email
10.7.25	Kawul Pty Ltd trading as Wonn1 Sites	CB emailed project update letter	Email
10.7.25	Kevin Duncan	CB emailed project update letter	Email
10.7.25	Murra Bidgee Mullangari Aboriginal Corporation	CB emailed project update letter	Email
10.7.25	Awabakal Descendants Traditional Owners Aboriginal Corporation	CB emailed project update letter	Email
10.7.25	Thomas Dahlstrom	CB emailed project update letter	Email
10.7.25	A1 Indigenous Services	CB emailed project update letter	Email
10.7.25	Amanda Hickey Cultural Services	CB emailed project update letter	Email
10.7.25	Gunjeewong Cultural Heritage Aboriginal Corporation	CB emailed project update letter	Email
10.7.25	Stakeholder 2	CB emailed project update letter	Email
10.7.25	Hunter Traditional Owner	CB emailed project update letter	Email

Appendix 1 Figure 1: Advertisement, 1 December 2023.

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OzArk Environment & Heritage (OzArk) has  
been engaged by Bloomfield Collieries Pty  
Limited (the proponent) to complete an  
Aboriginal cultural heritage assessment for the  
Bloomfield Colliery Continuation Project within  
the Cessnock Local Government Area. The  
project will involve continuing mining  
operations at the site until 2035. Operations  
will move further north of the existing approved  
project area by approximately 38.5 hectares.  
These activities may result in harm to  
Aboriginal cultural heritage.

OzArk is seeking relevant Aboriginal  
stakeholder groups and individuals in the area  
who hold cultural knowledge relevant to  
determining the significance of Aboriginal  
objects or places within the Project Area. This  
consultation group will assist OzArk and the  
proponent in the preparation of an Aboriginal  
Cultural Heritage Assessment Report.

If you hold cultural knowledge relevant to  
determining the significance of Aboriginal  
objects or places in the Project Area,  
please register your interest to be consulted.

Registrations can be made by post: OzArk  
PO Box 2069 Dubbo NSW 2830; email:  
[catherine@ozarkem.com.au](mailto:catherine@ozarkem.com.au) or by phoning  
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## Appendix 1 Figure 2: Stage 1 agency letter (sample).



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Wollongong | Newcastle      enquiry@ozarkehm.com.au  
Katoomba                      www.ozarkehm.com.au

**ABN 59 104 582 354**

145 Wingewarra St  
PO Box 2069  
DUBBO NSW 2830

4 December 2023

Heritage NSW  
Department of Premier and Cabinet  
heritagemailbox@environment.nsw.gov.au  
Locked Bag 5020, Parramatta NSW 2124

**ABORIGINAL CULTURAL HERITAGE ASSESSMENT  
BLOOMFIELD COLLIERY CONTINUATION PROJECT**

---

Dear Sir/Madam,

OzArk Environment & Heritage (OzArk) has been engaged by GHD on behalf of Bloomfield Collieries Pty Limited (the proponent) to undertake Aboriginal community consultation as per the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010). The Bloomfield Colliery is located near Ashtonfield, NSW 2323, to the south of Maitland within the Cessnock Local Government Area (**Figure 1**).

Bloomfield Collieries Pty Limited (the proponent), proposes to continue mining operations at the site until 2035. Operations will move further north of the existing approved project area within Mining Lease (ML) 1738. The Modification will modify PA 07\_0087. Two areas will be part of the Modification as shown on **Figure 2**. These areas are collectively referred to as the Project Area:

- Creek Cut Area. Approximately 36 hectares (ha) of woodland with limited areas associated with waterways.
- Workshop Cut Area. Approximately 2.5ha of disturbed land with a modified creek comprising roads, hardstand, and rehabilitation.

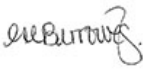
Activities associated with the Modification have potential to harm Aboriginal cultural heritage objects and/or values.

We are therefore seeking Expressions of Interest from relevant Aboriginal stakeholder groups and individuals in the area who hold cultural knowledge relevant to determining the significance of Aboriginal objects or places within or near the Project Area. This consultation group will assist OzArk in preparing the Aboriginal Cultural Heritage Assessment Report (ACHAR).

If your organisation can recommend and provide contact details for any known Aboriginal groups or individuals with cultural knowledge relevant to determining the impacts to the cultural significance of the Project Area, please advise our office.

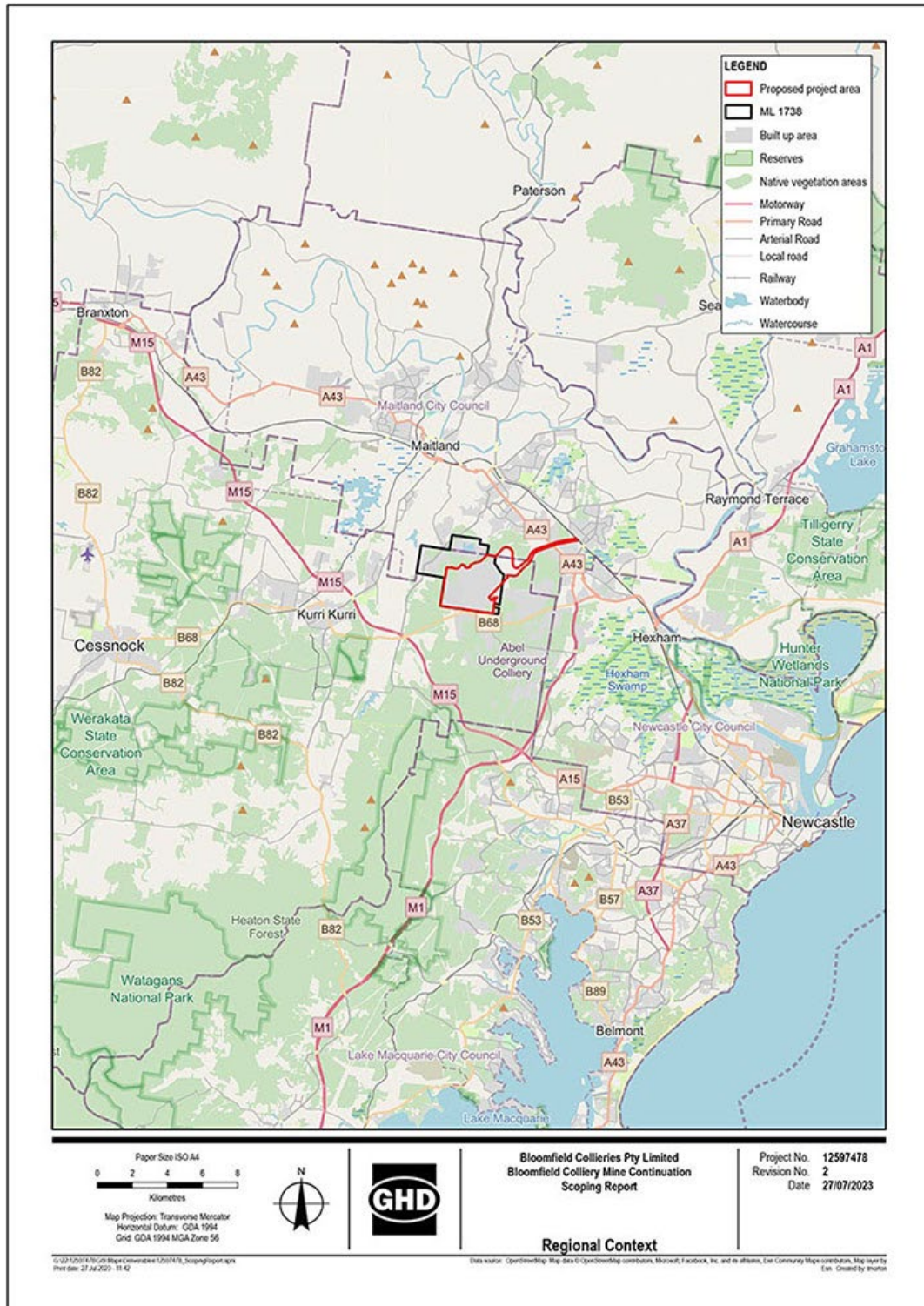
We would appreciate it if you could provide any feedback, by responding to this email catherine@ozarkehm.com.au, regarding these Aboriginal stakeholder groups by 18 December 2023, or sooner if possible.

Kind regards,




Catherine Burrowes  
**Office Manager/ Community Liaison**

Figure 1: Location of the Bloomfield Colliery.





## Appendix 1 Figure 3: Stage 1 community letter (sample).

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

4 December 2023

Members  
 Mindaribba Local Aboriginal Land Council  
 1A Chelmsford Drive, Metford NSW 2323  
 Operations@mindaribbalalc.org

**ABORIGINAL CULTURAL HERITAGE IMPACT ASSESSMENT**  
**BLOOMFIELD COLLIERY CONTINUATION PROJECT**

---

Dear Sir/Madam,

OzArk Environment & Heritage (OzArk) has been engaged by GHD on behalf of Bloomfield Collieries Pty Limited (the proponent) to undertake Aboriginal community consultation as per the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010).

The Bloomfield Colliery is located near Ashtonfield, NSW 2323, to the south of Maitland within the Cessnock Local Government Area (**Figure 1**).

Bloomfield Collieries Pty Limited (the proponent), proposes to continue mining operations at the site until 2035. Operations will move further north of the existing approved project area within Mining Lease (ML) 1738. The Modification will modify PA 07\_0087. Two areas will be part of the Modification as shown on **Figure 2**. These areas are collectively referred to as the Project Area:


- Creek Cut Area. Approximately 36 hectares (ha) of woodland with limited areas associated with waterways.
- Workshop Cut Area. Approximately 2.5ha of disturbed land with a modified creek comprising roads, hardstand, and rehabilitation.

Activities associated with the Modification have potential to harm Aboriginal cultural heritage objects and/or values.

We look forward to working with you on this Project. However, we ask you to let us know if you still wish to be consulted about this project and so we have your correct contact details.

Should you have any questions in relation to the Project or any details within this letter, please do not hesitate to email me at catherine@ozarkehm.com.au.

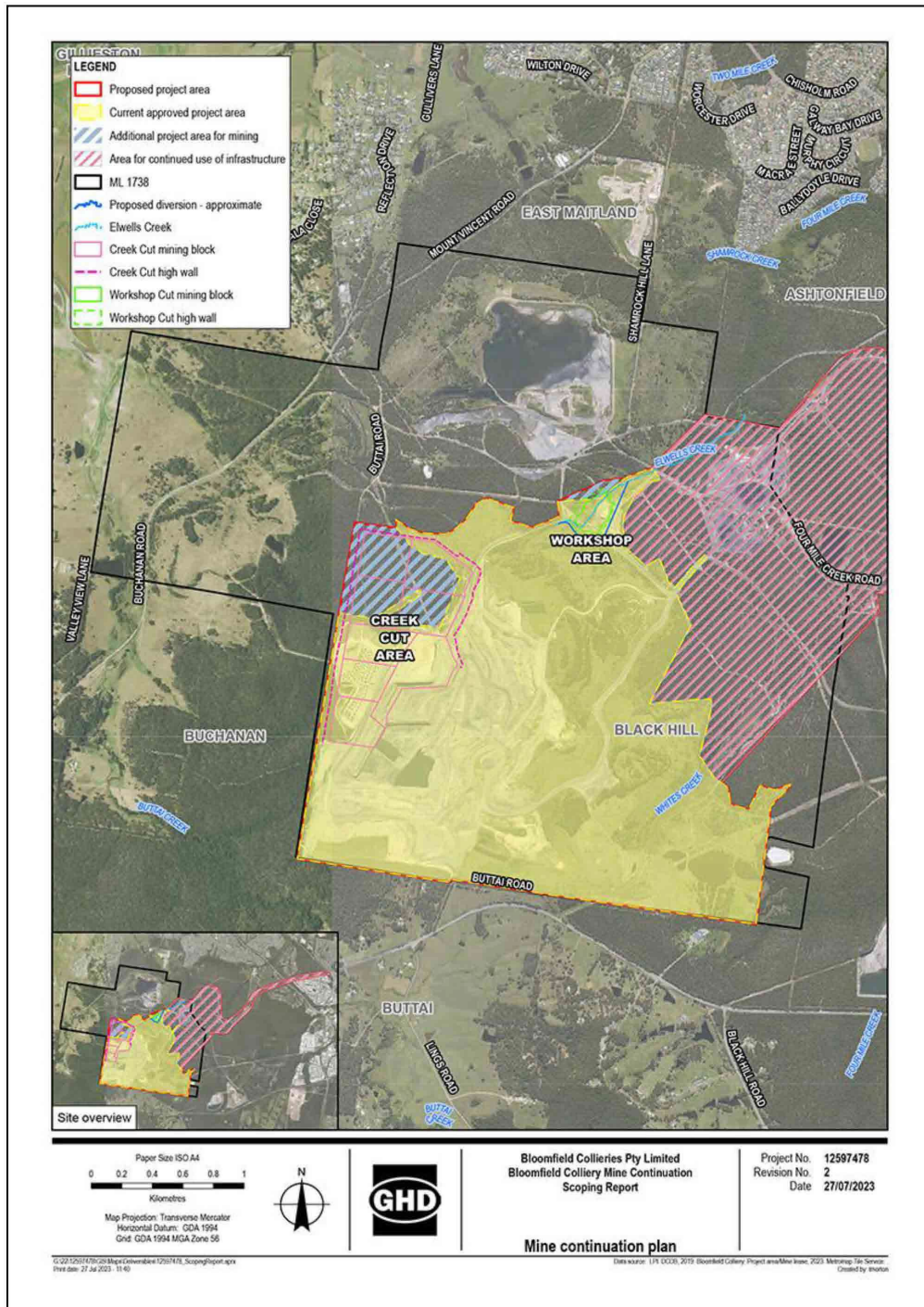
Kind regards,



Catherine Burrowes  
**Office Manager/ Community Liaison**



Figure 2. Location of the additional Project Area for mining.






## Appendix 1 Figure 4: Stage 2/3 cover letter for assessment methodology (sample).





	<p><b>OzArk Environment &amp; Heritage</b></p> <p>Dubbo   Queanbeyan T: 02 6882 0118  Wollongong   Newcastle enquiry@ozarkehm.com.au  Katoomba www.ozarkehm.com.au</p>	<p><b>ABN 59 104 582 354</b></p> <p>145 Wingewarra St  PO Box 2069  DUBBO NSW 2830</p>
<p>18 January 2024</p>		
<p style="text-align: center;"><b><i>Aboriginal Cultural Heritage Assessment Draft</i></b>  <b><i>Modification 5 Bloomfield Colliery Continuation Project</i></b></p> <hr/>		
<p>Dear Members,</p>		
<p>Thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) to be consulted regarding the Modification 5 Bloomfield Colliery Continuation Project. The Bloomfield Colliery is an existing open cut mining operation located approximately 20 kilometres (km) northeast of Newcastle, centrally located between the suburbs of Kurri Kurri, East Maitland, and Beresfield. The Colliery is situated north of John Renshaw Drive, Buttai and the east of Buchanan Road, Buchanan. The proposed modification is within the Cessnock Local Government Area.</p>		
<p>The purpose of this letter is to invite you to comment on the enclosed draft methodology for the Aboriginal cultural heritage assessment.</p>		
<p>In addition to comments on the draft methodology, if you can share any Aboriginal cultural heritage knowledge relevant to the assessment areas, we welcome this input so as to improve our assessment outcomes and to ensure Aboriginal cultural values are considered.</p>		
<p>OzArk Environment &amp; Heritage is required to give you 28 days to supply feedback on the attached documents. This period closes 5pm on <b>Friday 16 February 2024</b>.</p>		
<p>If you need any help supplying feedback or have any queries in relation to the enclosed information, please do not hesitate to contact our office.</p>		
<p>Kind regards,</p>		
		
<p>Catherine Burrowes  <b>Customer Liaison</b></p>		

## Appendix 1 Figure 5: Stage 2/3 assessment methodology responses.

### Didge Ngunnawal Clan

Re: Stage 2 Draft ACHAR - Bloomfield Colliery Continuation Project

 Lilly Carroll   
To  Catherine Burrowes

 Reply  Reply All  Forward 




Thu 18/01/2024 2:40 PM





Hi Catherine

We are happy with what you proposed towards the Bloomfield project


### Murra Bidgee Mullangari Aboriginal Corporation

Re: Stage 2 Draft ACHAR - Bloomfield Colliery Continuation Project

 Darleen Johnson   
To  Catherine Burrowes

 Reply  Reply All  Forward 



Mon 5/02/2024 5:15 PM

Hi Catherine  
I have read the project information and methodology for the above project, I endorse the recommendations made.  
Kind regards  
Darleen Johnson  


### Stakeholder 1

RE: Stage 2 Draft ACHAR - Bloomfield Colliery Continuation Project

  
To  Catherine Burrowes

 Reply  Reply All  Forward 

Sun 4/02/2024 3:26 PM

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Hi Catherine,





Thank you for the project information. Steven Hickey has viewed and supports the methods outline in stage 2 draft ACHAR. Thank you


Regards  


Stakeholder 2

Re: Stage 2 Draft ACHAR - Bloomfield Colliery Continuation Project

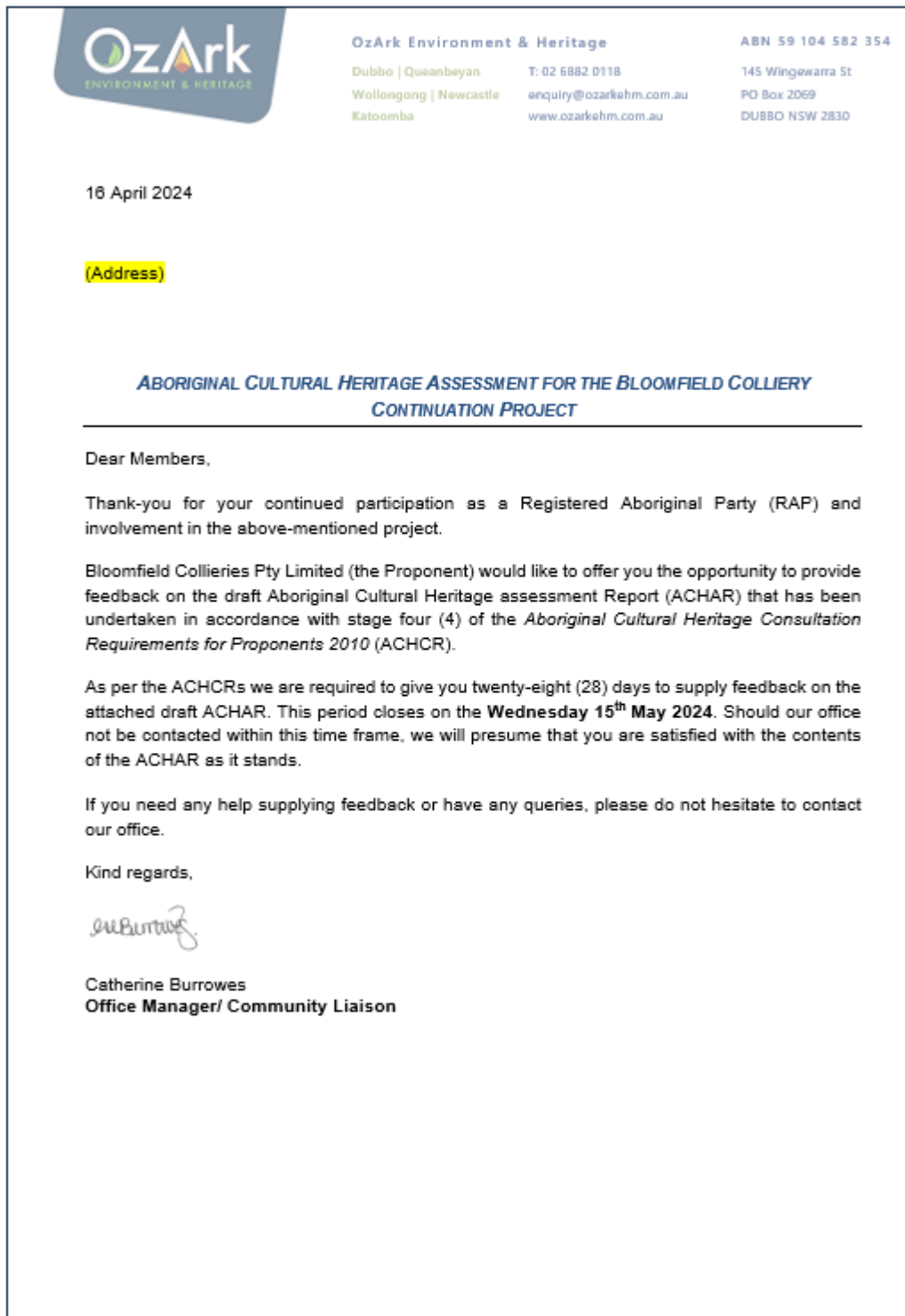
[Redacted] To  Catherine Burrowes Tue 6/02/2024 11:14 PM

 Reply  Reply All  Forward 

 You replied to this message on 7/02/2024 9:51 AM.

Hi Catherine  
We agree with draft ACHAR.  
Kind regards  
[Redacted]

## Appendix 1 Figure 6: Stage 4 cover letter sent 16 April 2024



**Appendix 1 Figure 7: Response received to the draft ACHAR (Stage 4)**

**From:** [REDACTED]  
**To:** [REDACTED]  
**Subject:** Re: Stage 4 - DRAFT Aboriginal Cultural Heritage Assessment Report–Bloomfield Colliery Continuation Project  
**Date:** Tuesday, 30 April 2024 11:32:59 AM

---

Ala Catherine

We hope all is well with you . And yes we are more than happy to progress with this Sage 4 draft for Bloomfield . All stay safe . Arthur - Kauwul and Lynne and Families.

On Tue, 16 Apr 2024 at 12:50 PM, Arthur Fletcher [REDACTED] > wrote:  
Thanks for that.

On Tue, 16 Apr 2024 at 12:38 PM, Catherine Burrowes <[catherine@ozarkehm.com.au](mailto:catherine@ozarkehm.com.au)> wrote:

Good afternoon Members,

Please find attached **Stage 4 DRAFT Aboriginal Cultural Heritage Assessment Report– Bloomfield Colliery Continuation Project.**

I look forward to hearing from you with any feedback you may have by Wednesday 15<sup>th</sup> May.

Regards, Catherine

**Catherine Burrowes**

OzArk Environment & Heritage

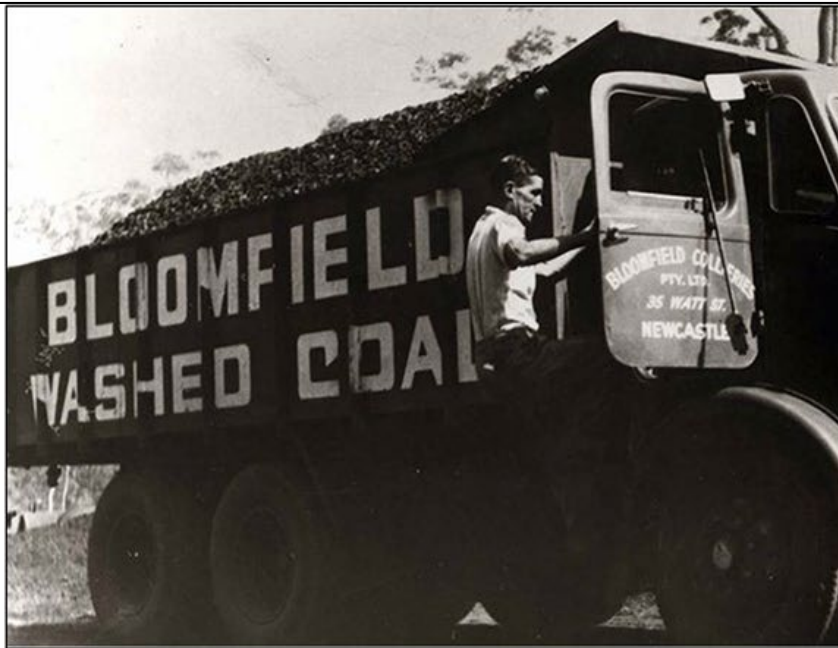
Office Manager

(02) 6882 0118

## Appendix 1 Figure 8: Project update letter sent to RAPs.



## APPENDIX 2: ASSESSMENT METHODOLOGY



Historic image of one of Bloomfield Colliery's early coal trucks.

### ABORIGINAL CULTURAL HERITAGE ASSESSMENT METHODOLOGY

#### MODIFICATION 5 BLOOMFIELD COLLIERY CONTINUATION PROJECT

CESSNOCK LOCAL GOVERNMENT AREA, NSW

FEBRUARY 2024

Report prepared by  
OzArk Environment & Heritage  
for Bloomfield Collieries Pty Limited



#### OzArk Environment & Heritage

145 Wingewarra St  
(PO Box 2069)  
Dubbo NSW 2830

Phone: (02) 6882 0118  
Fax: (02) 6882 0630  
enquiry@ozarkehm.com.au  
www.ozarkehm.com.au

## DOCUMENT CONTROLS

Proponent	Bloomfield Collieries Pty Limited	
Client	GHD Pty Ltd	
Document Description	Assessment Methodology: Modification 5 Bloomfield Colliery Continuation Project	
File Location	OzArk Job No.	
Clients\GHD Coffs Harbour\Bloomfield Colliery Continuation Project 2023\Assessment Methodology	4096	
Document Status: V3.0 Final	Date: 19 February 2024	
Draft V1: OzArk internal edits	V1.0 BD author 21/12/23	
Draft V2: OzArk and client edits	V2.0 BC edit 3/1/24 V2.1: BC amends with client comments 16/1/24 V2.2: BC amends with client comments 17/1/24	
Final V3: Final document	V3.0: BC finalises 19/2/24	
Prepared for	Prepared by	
Ben Luffman Technical Director – Environment GHD P: 02 66505613 Ben.Luffman@ghd.com	Dr. Bernadette Drabsch OzArk Affiliate OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 bernie@ozarkehm.com.au	

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Enquiries should be addressed to OzArk Environment & Heritage.

**Acknowledgement**

OzArk acknowledge the traditional custodians of the area on which this assessment will take place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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## 1 INTRODUCTION

OzArk Environment & Heritage (OzArk) has been engaged by GHD Pty Ltd on behalf of Bloomfield Collieries Pty Limited, part of the Bloomfield Group of companies (the proponent) to prepare an assessment methodology for investigation of Aboriginal cultural values associated with the proposed Modification 5 Bloomfield Colliery Continuation Project (the proposed modification).

The Bloomfield Colliery (the colliery) is an existing open cut mining operation located approximately 20 kilometres (km) northeast of Newcastle, centrally located between the suburbs of Kurri Kurri, East Maitland, and Beresfield (**Figure 1-1**). The Colliery is situated north of John Renshaw Drive, Buttai and the east of Buchanan Road, Buchanan. The proposed modification is within the Cessnock Local Government Area.

This methodology is in accordance with Stage 3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs; DECCW 2010b). The project information provided here also complies with Stage 2 of the ACHCRs.

The investigation set out in this methodology aims to identify Aboriginal cultural values, both tangible and intangible, that exist in the Additional Project Areas for Mining. The results of this investigation will be presented in an *Aboriginal Cultural Heritage Assessment Report* (ACHAR).

### 1.1 PROPOSED ADDITIONAL PROJECT AREAS FOR MINING

The proposed modification is to occur within the proposed Additional Project Areas for Mining, consisting of two individual areas known as, Creek Cut area and Workshop area, located to the north of the existing approved Project Area (**Figure 1-2**). The Additional Project Areas for Mining covers approximately 38.5 hectares (ha).

### 1.2 PROPOSED MODIFICATION OVERVIEW

Bloomfield proposes to continue mining operations in two areas north of the existing approved Project Area.

Mining of these additional areas will extend the life of the site until 31 December 2035. The approval to use the Coal Handling and Preparation Plant (CHPP), train load out, rail loop, and water management structures are covered under the Abel Project Approval (PA 05\_0136) to December 2030. To maintain use of these facilities post 2030, it is proposed that these facilities be included in the proposed modification to MP07\_0087 so that these facilities may continue to be used and aligned with the proposed duration of mining activities.

**Figure 1-1** provides an overview of the proposed modification in relation to the existing approved Project Area. The proposed Additional Project Areas for Mining consists of:

- The current approved mining area under PA 07\_0087

- The Project Area to include the use of the CHPP, train load out, rail loop, and water management structures currently noted as part of the “Bloomfield Site” in the Abel consent PA 05\_0136
- The additional project area for mining in the Creek Cut area and Workshop area.

Existing mining methods would continue to be employed to extract up to a maximum of 0.9 million tonnes per annum of run of mine coal.

**Figure 1-1: Map showing the location of the Additional Project Areas for Mining.**

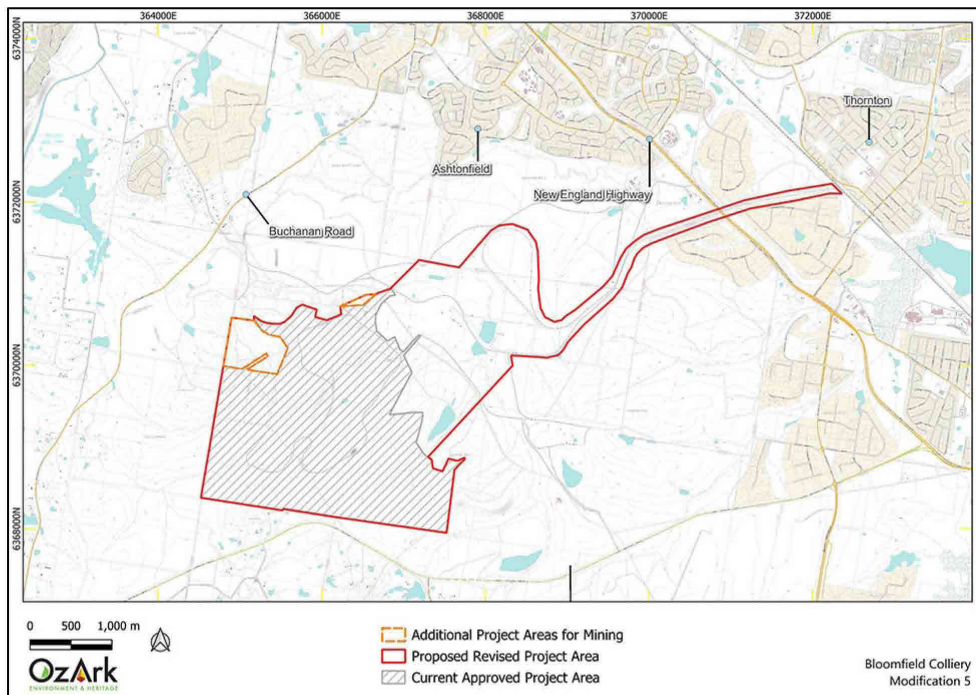
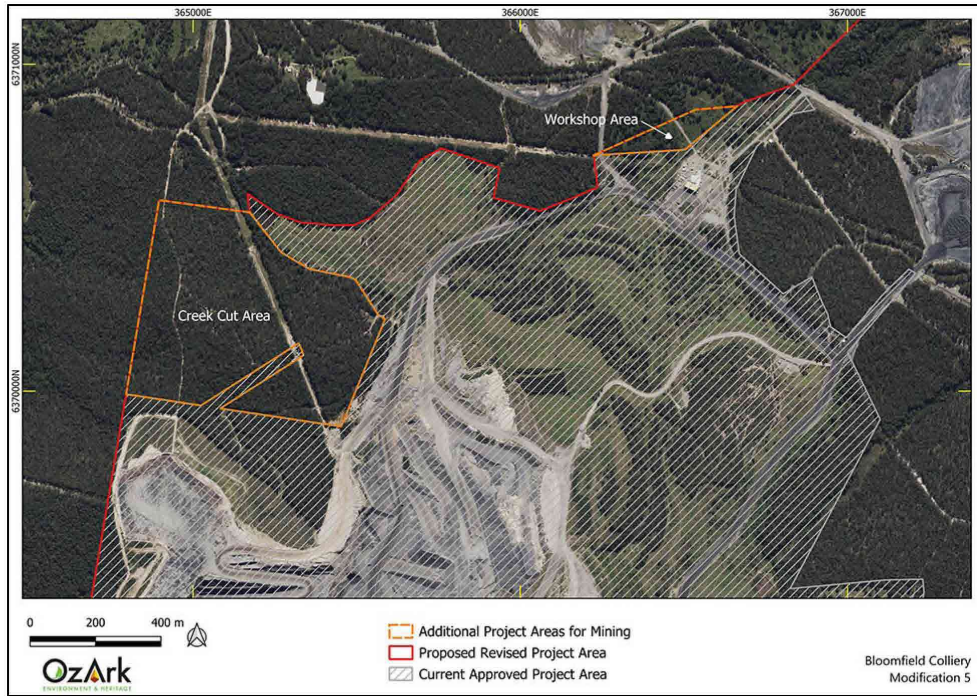


Figure 1-2. Aerial of the Additional Project Areas for Mining.



### 1.3 CONSULTATION ON THIS METHODOLOGY

Consultation for this proposed modification has followed the guidelines established in the ACHCRs (DECCW 2010b) whereby an advertisement was placed in the local press and relevant agencies were contacted to ascertain if they were aware of groups or individuals who may have cultural knowledge of the region containing the project.

On 1 December 2023 an advertisement was placed in the *Maitland Mercury* requesting expressions of interest in being consulted about the proposed modification. In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Mindaribba Local Aboriginal Land Council (LALC); the Office of The Registrar, *Aboriginal Land Rights Act 1983*; the National Native Title Tribunal; Native Title Services Corporation Limited (NTSCORP); Cessnock City Council; and the Hunter Local Land Services.

As a result, the following individuals/groups registered to be consulted about the proposed modification:

- A1 Indigenous Services
- Amanda Hickey Cultural Services
- Awabakal Descendants Traditional Owners Aboriginal Corporation
- Corroboree Aboriginal Corporation
- Culturally Aware
- D F T V Enterprises
- Didge Ngunawal Clan
- Gomery Cultural Consultants
- Gunjeewong Cultural Heritage Aboriginal Corporation
- Hunter Traditional Owner
- Kawul Pty Ltd trading as Wonn1 Sites
- Kevin Duncan
- Mindaribba LALC
- Murra Bidgee Mullangari Aboriginal Corporation
- Stakeholder 1
- Thomas Dahlstrom
- Wallagan Cultural Services
- Wonnarua Nation Aboriginal Corporation.

These individuals/groups constitute the Registered Aboriginal Parties (RAPs) for the proposed modification.

#### 1.4 LANDSCAPE CHARACTERISTICS OF THE ADDITIONAL PROJECT AREAS FOR MINING

The Additional Project Areas for Mining is located within the Central Lowlands region of the lower Hunter Valley. It is situated within the East Maitland Hills sub-region defined by Matthei (1995), comprising undulating low hills and rises.

The Additional Project Areas for Mining is within a generally well-watered landscape that has often been modified by urban, industrial, and mining related development. There are no named waterways in the Creek Cut area while the modified headwaters of Elwells Creek is within the Workshop area (Figure 1-3).

The Creek Cut area contains localised crests and is associated with moderately steep slopes. There are no waterways in the Creek Cut area beyond V-shaped valleys with run-off gullies (Figure 1-4). The Workshop area consists of a broad gentle spur crests with the modified headwaters of Elwells Creek along its southern boundary (Figure 1-5).

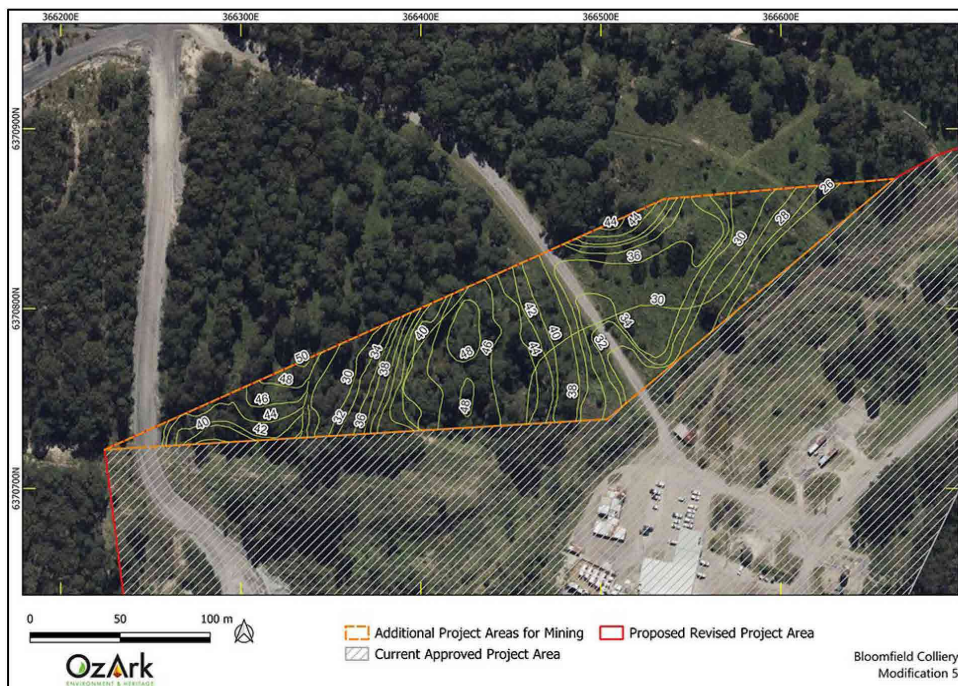
Figure 1-3: Waterways near the Additional Project Areas for Mining.



Figure 1-4: Topography of the Creek Cut area.



Figure 1-5: Topography of the Workshop area.



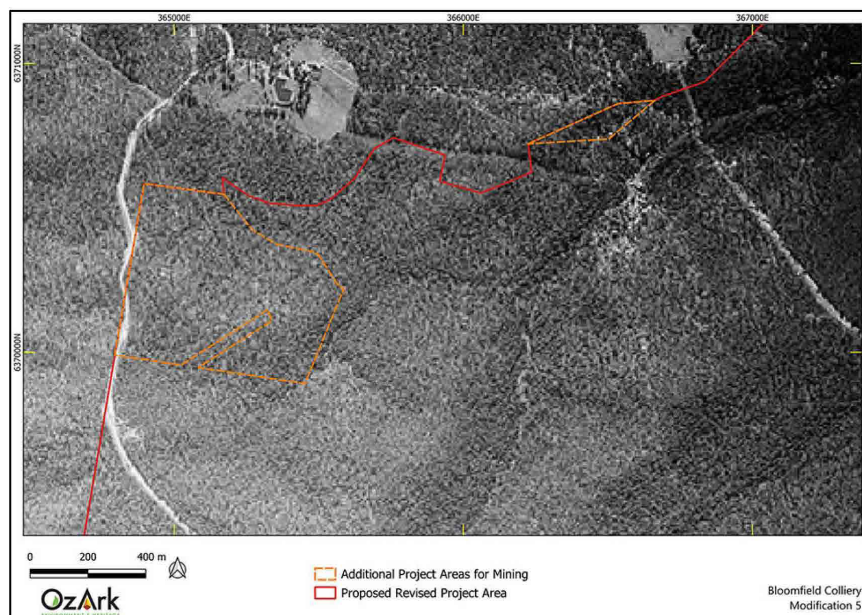
The underlying geology of the Additional Project Areas for Mining comprises shale, mudstone, sandstone, tuff, and coal of the Palaeozoic, Late Permian Era Tomago Coal Measures (Newcastle SI-56-2 1:250,000 geological map). Sandstone and sedimentary gravel are common, with minor quantities of small quartz, silcrete, and tuff gravel in a few locations (South East Archaeology 2008:7). Soils are predominantly of the Shamrock Hill erosional landscape, the Beresfield residual landscape, and areas of disturbed terrain (Matthei 1995).

The Additional Project Areas for Mining contains approximately 38 ha of native vegetation, consisting of shrubby open forest which was heavily harvested by timber getters in the early 1800s (South East Archaeology 2008:7). The regrowth forest predominantly consists of Spotted Gum (*Eucalyptus maculata*) and Ironbark (*E. fibrosa* and *E. paniculata*), with an understorey of Paperbarks (eg. *Melaleuca nodosa*), Wattles (eg. *Acacia falcata*), and Blackthorn (*Bursaria spinosa*) and grass is present.

Historical records indicate that the wider area has been impacted by timber harvesting, coal extraction, and pastoral use. From available evidence, it appears that the Additional Project Areas for Mining has never been comprehensively cleared: at least not within the past 100 years as aerial imagery from 1954 shows an intact woodland at that time (Figure 1-6). However, it is known that the Additional Project Areas for Mining have been selectively logged, particularly for items such as mine props.

The impact of timber harvesting in Additional Project Areas for Mining is likely to have reduced the integrity of any Aboriginal sites, had they been present.

**Figure 1-6: 1954 aerial with overlay of Additional Project Areas for Mining (source: SS 2021).**



## 2 CULTURAL VALUES

### 2.1 INTRODUCTION TO CULTURAL VALUES

*No matter who you are, we all have culture. Each person's culture is important; it's part of what makes us who we are.*

Australianstogether.org.au

Many Aboriginal people in Australia have a unique view of the world that's distinct from the mainstream. Land, family, law, ceremony, and language are five key interconnected elements of Aboriginal culture. For example, families are connected to the land through the kinship system, and this connection to land comes with specific roles and responsibilities which are enshrined in the law and observed through ceremony. In this way, the five elements combine to create a way of seeing and being in the world that is distinctly Aboriginal.

Fundamentally, culture is living and is not static:

- Culture is acquired - we learn about culture from others in our community, including our parents
- Culture is shared - culture does not exist in a vacuum, it is shared amongst a group of people
- Culture defines core values - because we have been taught our culture and share it with our cultural group, we tend to form the same core values
- Cultures resist change but are not static - culture does and can change, but change is usually slow and gradual.

#### 2.1.1 Connection to Country

Aboriginal and Torres Strait Islander peoples are connected to Country through lines of descent (paternal and maternal), as well as clan and language groups.

Although in the past (and sometimes into the present) there have been conflicts between different tribal groups, these were rarely over land. Aboriginal and Torres Strait Islander people have such a strong sense of belonging to country; they have no desire to own the land of others.

Territory is defined by spiritual as well as physical links. Landforms have deep meaning, recorded in art, stories, songs, and dance. Songlines or Dreaming Tracks as well as kinship structures link Aboriginal peoples to the territories of other groups. In the past, these links were also used for trade.

*"When we say Country we might mean homeland, or tribal or clan area and in saying so we may mean something more than just a place; somewhere on the map. We are not necessarily referring to place in a geographical sense. But we are talking about the whole of the landscape, not just the places on it."*

Professor Mick Dodson AM, August 2007

### 2.1.2 Managing Country

Living on this land for around 50,000 years, Aboriginal and Torres Strait Islanders established effective ways to use and sustain resources. One important aspect is the right of certain people to control the use of resources in a particular area. Aboriginal and Torres Strait Islander people don't see themselves as 'owning' land, animals, plants, or nature, but rather belonging with these things as equal parts of creation.

The rights of different groups to live in and manage certain areas of land are clear and recorded through art, stories, songs, and dance.

Deep cultural and spiritual values like totemism have also played an important part in Aboriginal and Torres Strait Islander resource management. Totemism is a belief and value system that connects human beings to other animals, plants, and aspects of nature. Groups and individuals are assigned a particular animal that they are related to and must care for. This gives them a profound sense of connection to and responsibility for the natural world.

Aboriginal and Torres Strait Islanders people have a wide range of traditional methods for gathering food including fish traps, subsistence agriculture, hunting and harvesting a wide range of natural fruits and vegetables. Some groups of people would stay in one place, while others moved around the land according to the seasons, to ensure sustainable and rich food supplies, and to fulfil their spiritual and cultural obligations.

There were complex relationships for long distance trade between Aboriginal and Torres Strait Islander communities especially for coastal shells and stone hatchets. When people from different groups met socially to share resources, for ceremonies or to settle disputes, they brought items to exchange. Items included stones for hatchets, kangaroo skins, timber for spears, ochre or clay for paint and marine shells for decoration. The exchange of objects was not motivated by a desire for wealth accumulation but a social system to build connection between people and groups.

### 2.1.3 Recognising lore

In much of eastern Australia, Aboriginal communities live their lives like most Australians. However, in certain crucial areas, particularly associated with family, leadership roles and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

## 2.2 IDENTIFYING CULTURAL VALUES

A major aim of this assessment is to identify any cultural values within the landscape in which the proposed modification is located so that those values can be recognised and incorporated into the ACHAR's management recommendations.

Any cultural values relating to the Additional Project Areas for Mining will be captured by the OzArk archaeologists (if such information is provided by RAPs during the survey) and included in the ACHAR.

Understanding cultural landscapes can only come from the views of a particular community, in this case, the Aboriginal community. Unless informed, OzArk will not know of the community's feelings towards the cultural landscape in which the Project will be located. Should any RAPs have knowledge of cultural values regarding the Additional Project Areas for Mining that they wish to share or that may affect the survey methodology set out in **Section 5**, OzArk invites them to contact us so that these values can be recorded and/or responded to in the methodology.

### **2.2.1 Use of information collected**

An ACHAR will be prepared for the project which articulates Aboriginal cultural values and associated conservation methods across the Additional Project Areas for Mining, as identified during the consultations. The ACHAR will be circulated to all RAPs for comment as is set out in the ACHCRs. The ACHAR will be available to Heritage NSW for their consideration of the proposed modification and the report will be publicly available.

### **2.2.2 Public / confidential information**

Information will be treated in accordance with instructions received by Aboriginal informants. Information described as confidential (culturally sensitive) will not be detailed in the publicly available report. Confidential information should be made available to the proponent, its heritage consultants, and Heritage NSW so that significant cultural values can be conserved. On advice from the provider of the information, a redacted ACHAR would be made available to the wider public where any sensitive cultural information is removed.

### **2.2.3 Copyright**

Information collected for this assessment remains the property of the Aboriginal informants and the author. Without written permission from individual informants and the author information may not be used for purposes other than those outlined above.

### 3 ARCHAEOLOGICAL CONTEXT

#### 3.1 ABORIGINAL PEOPLE OF THE ADDITIONAL PROJECT AREAS FOR MINING

The Awabakal people are described as occupying land between Wyong and Maitland and Newcastle, west to Kurri Kurri and the Wonnarua occupied an extensive territory from west of Maitland to the Dividing Range (Tindale 1974). The Additional Project Areas for Mining lies close to the boundary of these groups, although it is noted that such boundaries tended to fluid (Peterson 1976).

The area was chiefly occupied by members of the Pambalong clan, and possibly other people. Kuskie and Kamminga's study produced in 2000, provides a comprehensive analysis of occupation for Black Hill and surrounding area, noting that occupation focused on the resource rich wetlands, swamps, lakes, estuaries, and coastline of the tribal territory, possibly more so near the junction of multiple resource zones. Occupation in this area predominantly occurred within the past 4,000 years, after climatic change and rising sea-levels transformed the environment of the region. While occupation may have extended as far back as 30,000 to 40,000 years, there are few landscape contexts existing in the area in which archaeological evidence for older occupation would be conserved (Kuskie and Kamminga 2000).

It is likely that occupation extended over the entire region, with varying intensities and at different times of the year, due to the availability of food resources, and different periods within the overall time-span of occupation.

Evidence shows that occupation included a wide range of purposes, such as transitory movement, hunting, gathering, procurement of stone, heat treatment of stone, camping by small parties of hunters, camping by small parties of gatherers, nuclear family base camps, community base camps, camping by larger congregations of groups, and ceremonial or spiritual activity and burial practices.

The favoured materials for stone-working activities included indurated rhyolitic tuff and silcrete. Tuff was favoured over silcrete for knapping and producing tools and was primarily procured from exposed bedrock in hills, along drainage depressions, and along the coastline where this rock type exists. It is available in many locations due to its abundance in the local coal measures. Silcrete was also procured from local sources (alluvial and terrace gravels) but was not as readily available as tuff and was not used as frequently. A high proportion of silcrete used in knapping was heat treated, and some of the products include asymmetrical blades or bondi points. It is speculated that colours had important symbolic meaning and part of the reason for heat treatment may have been to obtain a desired colour, as well as to improve the flaking properties of the stone (Kuskie and Kamminga 2000).

Minimal use was made of other stone materials. Several of those that were utilised (quartz, quartzite, acidic volcanics, chalcedony, and chert) were probably obtained from local sources such as alluvial and terrace gravels, terrestrial outcrops, and weathered conglomerate rock. However, other types such as dacite and rhyodacite (used for grindstones) may have been obtained from sources on the coast north of Newcastle (around Birubi Point) by either trade or special exchange with another cultural group (in recent times the Worimi people), special purpose trips, or visits during the normal seasonal round. Ochre was used for ceremonial purposes and may have been procured from sources near Lake Macquarie, the Hunter River, or from outside the region (Kuskie and Kamminga 2000).

Plant and animal foods were processed and consumed at temporary hunters or gatherers camps, at family base camps, campsites of larger congregations of people, often at the site of where the resources were located. A range of plant resources were available in the locality and women played a large role in obtaining and processing plant foods and obtaining small game, while men hunted for large game.

Macrozamia kernels from cycads were collected on the ridges and slopes within a day's walk of the campsites and prepared by a special process to remove toxins. This involved soaking the kernels for up to two weeks, then pounding and roasting them (cf. David 1890, Backhouse in Gunson 1974). This activity may have occurred at camping places around the margins of Hexham Wetland and other swamps.

Hunting was a planned and coordinated event, as evidenced by the capture of kangaroos '*enclosed in a nook or bend in the river or some other obstacle*' (Dawson 1830:119) and the use of fire to burn-off and promote fresh grass growth (Sokoloff 1978a-b).

Fish were obtained by several methods. People used bark canoes on lakes, wetlands, and rivers, and angled with shell fish-hooks and line. Fish were also obtained directly by spearing, while standing in a canoe or on a bank, or using hand nets to form a circle in shallow waters and enclose the fish. Another group activity was the planting of sprigs of bushes in streams, with some men frightening the fish towards an opening, at which point others stood ready with nets to catch them (cf. Threlkeld in Gunson 1974). Eels were also caught in an organised manner, with small trenches being dug in the swamps, particularly near the narrower outlet (cf. David and Etheridge 1890:46). Birds such as swans and ducks were also caught around the swamps and lakes (cf. Threlkeld in Gunson 1974). Managing resources using facilities (eg. fish and eel traps) and fire were additional strategies aimed at increasing the reliability and productivity of food resources (Rich 1995:4).

There are several documented cultural connections within the regional context of the Additional Project Areas for Mining, relating to the Black Hill pathway and the 'Doghole' ceremonial site. Interviews by Kuskie (Kuskie and Kamminga 2000), with Black Hill residents Mrs. Beryl Hardes

and Mrs Judith Crockett, identified knowledge that the Black Hill Spur was a route or pathway used by Aboriginal people. It is likely that this pathway extended from Rocky Knob in Hexham Swamp to Mount Sugarloaf. A ceremonial site known as 'the Doghole' is located '*a couple of miles from Minmi at the head of the Big (Hexham) Swamp*' (Wallsend & Plattsburg Sun 2/1/1891). It has been described as a ceremonial ground for weddings and initiations of the Pambalong clan located 'on the hills of Doghole, between Minmi and Black Hill, west of Lenaghans Drive' (Wallsend & Plattsburg Sun 3/1/1891, also 13/12/1890, 7/1/1891), in the vicinity of Stockrington and Long Gully. The 'Doghole' was 'held in sacred regard' and only initiated men were allowed to visit the place (Wallsend & Plattsburg Sun 3/1/1891).

Kuskie notes that these accounts in the Wallsend and Plattsburg Sun appear to be based on information from early non-Indigenous settlers. They proposed that 'the aim of the series was to generate public interest with the hope of revealing more information on the local Aboriginals for the education and benefit of future generations. It does not appear that the exact location of this site has been physically relocated although Hartley (1990) notes that it is in the area now called 'Stockrington' and 'rock shelves and small caves were nearby' (South East Archaeology 2012:27).

### **3.2 REGIONAL ARCHAEOLOGICAL CONTEXT**

The Aboriginal occupation of Australia begins prior to 40,000 BP (years before present) and possibly earlier than 50,000 BP. Dates exceeding 20,000 years occur in almost all parts of Australia resulting in the expectation that most areas should have a Pleistocene (>12,000 BP) occupational signature. However, such dates remain relatively rare due to a range of factors, both behavioural and post-depositional. These factors include a possible low density of occupation in the Pleistocene period and poor preservation of archaeological materials (particularly dateable organic materials).

Numerous surveys and several excavations have been conducted in the vicinity of the Additional Project Areas for Mining. Many of these investigations have been within landform units in the East Maitland Hills, including areas fringing the wetlands and Hunter River floodplain. Typically, small and often low density, artefact scatter sites have been identified, but only when exposed by erosion, disturbance, or deliberate excavation. The most pertinent investigations are summarised below.

#### **3.2.1.1 *Investigations at the Donaldson Coal Mine***

Brayshaw (1985) located two artefact scatters close to Four Mile Creek, during a survey for the then proposed 'Ironbark Colliery'. The sites are located near the junction of John Renshaw Drive and Black Hill Road, in the Donaldson Mine area, approximately 4 km east of the Additional Project Areas for Mining. Site #38-4-139 consisted of 19 silcrete artefacts, adjacent to Four Mile

Creek. Site #38-4-140 consisted of 10 chert and silcrete artefacts, within a 70 x 4 metre (m) area, 20 m from the creek.

Effenberger (1997) investigated the 546 ha Donaldson Exploration Lease with a sample survey and located 11 heritage sites. Except for one large artefact scatter (WF1, over 100 artefacts on a rise adjacent to a floodplain) and a possible scarred tree, the sites comprise small artefact scatters (less than five artefacts) or isolated artefacts. Concerns about the assessment were raised by the National Parkes and Wildlife Service (NPWS) and subsequent surveying revealed an additional four isolated artefacts.

Umwelt (2001c) surveyed for seven days within two conservation areas located in the Donaldson Lease Area. These areas, known as 'Bushland Area 1' and 'Bushland Area 2' total 956 ha. An additional eight Aboriginal sites to those previously recorded were identified in the Bushland Conservation Areas. These were almost all isolated artefacts, except for one small artefact scatter.

Umwelt (2002c) investigated proposed road works along John Renshaw Drive including immediately south of the Bloomfield Colliery, and west to Stanford Merthyr. Three artefact scatter sites and one isolated artefact were identified on crests and slopes along John Renshaw Drive.

#### **3.2.1.2 *Investigations at Black Hill (Kuskie and Kamminga 2000)***

The key study for the lower Hunter region is that by Kuskie and Kamminga (2000), who undertook extensive testing and salvage excavations along the F3 Freeway at Black Hill and Woods Gully, adjacent to Hexham Swamp, approximately 5 km southeast of the Additional Project Areas for Mining. The 14 week excavation program comprised an initial phase of testing, a second phase of broad area excavations, and a third phase of mechanical surface scrapes.

The excavations resulted in a total of 72.4 tonnes (64.6 cubic metres) of soil being dug by hand and wet-sieved. Through the hand excavations and surface scrapes, a total of 37,585 lithics were identified and recorded. This assemblage comprised 22,921 identifiable Aboriginal artefacts and 14,664 items described as 'lithic fragments', which were lithic items that did not have sufficient morphological attributes to positively identify them as artefacts, even though many must be fragmentary debris from stone knapping (Kuskie and Kamminga 2000).

A total of 44 categories of stone artefacts were identified in the Black Hill 2 and Woods Gully assemblages. Six basic categories of activities were identified through the artefactual evidence at the sites: non-specific stone flaking, bipolar flaking, microblade production, backing retouch of microblades, loss or intentional discard of microliths, and loss or intentional discard of non-microlith tools. However, many of the artefact categories represented debris from stone knapping, with production of microblades being the most common specific activity. Some of the microblades were further knapped to make microliths, particularly bondi points (Kuskie and Kamminga 2000).

Seven different types of stone materials were identified in the excavated assemblages; however, the assemblages were overwhelmingly dominated by indurated rhyolitic tuff (70.45% of combined artefact assemblages) and to a lesser extent silcrete (20.4%), materials which were favoured for making microblades, microliths, eloueras, and worimi cleavers in the Hunter Valley during recent millennia (Kuskie and Kamminga 2000).

### 3.2.1.3 *Investigations at Beresfield (Kuskie 2005)*

In 2005 Kuskie investigated an area of approximately 90 ha southwest of the junction of Weakleys Drive and the New England Highway at Beresfield, for the proposed Freeway North Business Park. The study area was subdivided and inspected within 17 environmentally discrete survey areas. Visibility tended to be relatively high on a number of vehicle tracks and low elsewhere in the regrowth forest. A total of 18 Aboriginal heritage sites, all stone artefact sites, were recorded, with a total of 178 stone artefacts (Kuskie 2005a). The items were dominated by silcrete (87% of the assemblage), with a lower frequency of volcanic tuff (12%) and a single quartz artefact.

The artefacts almost entirely comprised items associated with non-specific knapping, including flakes (38% of the artefact assemblage), cores and core fragments (7%), and flake portions (51%). One microblade core was identified and six retouched flakes (3% of the assemblage). Kuskie (2005a) inferred that Aboriginal occupation of the study area was widespread, but typically of a low intensity, possibly in relation to the procurement of food (hunting, gathering) or transitory movement through the landscape. The study area was assessed as comprising two distinct zones, in terms of the nature of soil deposits and the potential for further heritage evidence to occur (Kuskie 2005a):

- Moderate to highly disturbed and typically elevated, erosional landform units, which with their shallow A unit soils and levels of ground disturbance, along with their inferred use for low intensity activities (producing evidence consistent with 'background discard') have a low potential for sub-surface deposits, particularly deposits that may be in situ and/or of research value
- Higher order watercourses and associated flats with deeper soil deposits and potentially more focused activity such as encampments having occurred, in which there remains a high potential for further heritage evidence to occur in the form of artefact deposits, including deposits of sufficient integrity to be of research value.

### 3.3 LOCAL ARCHAEOLOGICAL CONTEXT

A search of the Heritage NSW administered Aboriginal Heritage Information Management System (AHIMS) database on the 20 December 2023 returned 21 results for Aboriginal sites within a 4 km radius of the Additional Project Areas for Mining (GDA Zone 56 Eastings: 363000–367000, Northings 6368400–6372400 with no buffer) (see **Table 3-1** for site types and frequencies).

The most frequently recorded site types are artefact scatters, isolated finds, and potential archaeological deposits (PADs). A waterhole has also been identified (see **Table 3-1**).

It is noted that there are no culturally modified trees recorded in the region of the Additional Project Areas for Mining, probably reflecting the long history of timber getting in the area.

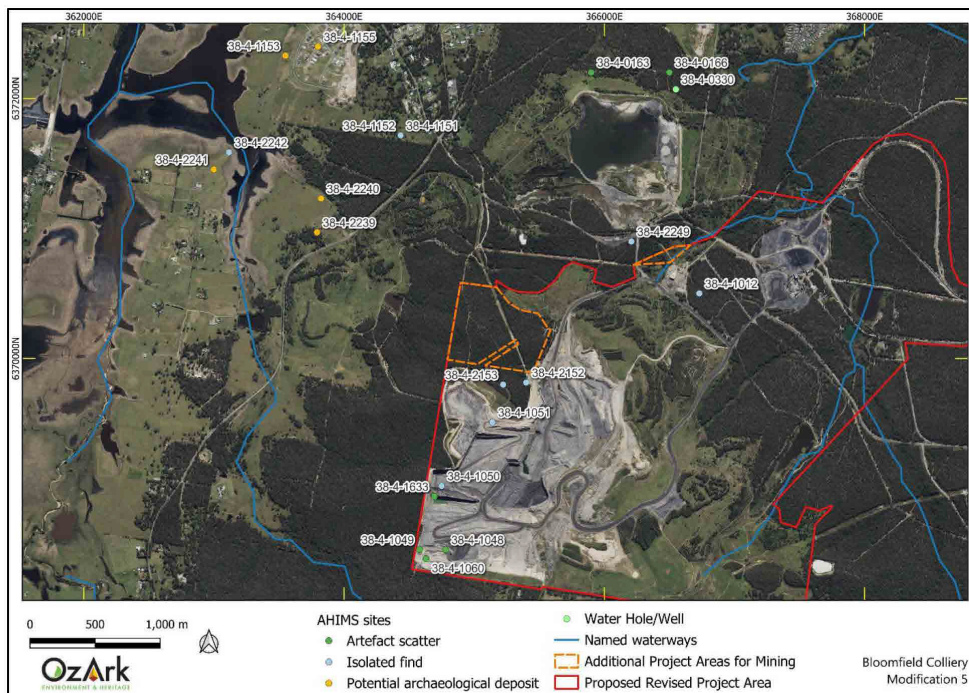
**Figure 3-1** shows the location of previously recorded sites in the vicinity of the Additional Project Areas for Mining. There are no previously recorded sites in the Additional Project Areas for Mining. The AHIMS results show a cluster of sites recorded and subsequently salvaged under permit within the Bloomfield Colliery, however, the remainder of the results do not display any spatial distribution patterns but are rather ad-hoc recordings associated with the many developments in the area.

Approximately 85 m south of the Cut Creek area are two isolated finds that remain in the landscape: 38-4-2152 Bloomfield 26 - Locus A) and (38-4-2153 (Bloomfield 4 - Locus A). Approximately 170 m northwest of the Workshop area is an isolated find that remains in the landscape: 38-4-2249 (KKLP IA2).

**Table 3-1: AHIMS site types and frequencies**

Site Type	Number	% Frequency
Isolated find	8	38
Artefact scatter	7	33
Potential archaeological deposit	5	24
Water hole/well	1	5
<b>Total</b>	<b>21</b>	<b>100</b>

Figure 3-1. AHIMS sites in relation to the Additional Project Areas for Mining.



### 3.3.1 Archaeological investigations near the Additional Project Areas for Mining

### 3.3.2 Abel Underground Mine survey (Kuskie 2006)

Kuskie (2006) assessed areas within Donaldson Mine and Bloomfield Colliery for Donaldson's Project Abel Part 3A application. The investigation area for the Abel Underground Mine consisted of the underground mining lease of approximately 2,750 ha south of John Renshaw Drive (the 'southern investigation area') and the area north of John Renshaw Drive primarily within the existing Donaldson open cut mine but also including a portion of the Bloomfield lease area (the 'northern investigation area'). This area included a broad corridor extending northwest from John Renshaw Drive to adjacent to the Bloomfield Workshop area presently under investigation and northeast to the rail loop. Kuskie (2006) located two grinding groove sites near Black Hill, south of John Renshaw Drive, two small artefact scatter site loci, and two isolated artefact loci south of John Renshaw Drive, and 10 small artefact scatter/isolated artefact site loci in the Donaldson and Bloomfield lease areas north of John Renshaw Drive. One of these site loci, 38-4-1012 (A7/A), lies 340 m east of the Workshop area of the Additional Project Areas for Mining. It comprises a single tuff flake located on a gentle spur crest adjacent to the above-ground water pipeline.

### **3.3.2.1 *Bloomfield Collieries Part 3A Major Project application for the completion of open-cut mining and rehabilitation (South East Archaeology 2008, AECOM 2018)***

In 2008 South East Archaeology were commissioned by Bloomfield Collieries to undertake an Aboriginal heritage impact assessment. A field survey was conducted, with particular focus on the remaining 'unmodified' area of 108 ha, where archaeological potential was considered the highest. The unmodified portion was subdivided and inspected within 26 environmentally discrete survey areas. The total survey coverage (ground physically inspected for heritage evidence) equated to approximately 15.4% of the unmodified study area. The total effective survey coverage equated to around 1.9% of the unmodified area.

They noted that within the unmodified area, levels of ground disturbance were typically high, due to the removal of the forest vegetation in early 2004 by earthmoving equipment under existing approvals. This process extensively impacted the A unit soil (in which stone artefacts could be expected to occur), often totally removing it or covering it with B unit clay (culturally sterile), and thereby reducing the levels of archaeological visibility and effective survey coverage.

A total of six Aboriginal heritage sites, comprising 19 loci of identified evidence, were recorded within the 108 ha unmodified study area. These site loci were all stone artefact occurrences and contained a total of 53 artefacts. The identified artefact evidence occurred in a very low-density distribution. Further artefacts were expected to occur across the unmodified study area in a distribution and density consistent with the survey results. It was predicted that shallow deposits may be present in some forested areas or along the drainages where A unit soil may have been retained, however, the potential for sub-surface deposits of artefacts that may be in situ and/or of research value was considered to be low to very low. Other types of heritage evidence (eg. scarred trees and grinding grooves) were not anticipated to occur within the unmodified study area.

The significance of the Aboriginal heritage evidence was assessed as being of low scientific significance within a local context, due to their common nature, low representative value, low integrity and limited potential for deposits that may be in situ and/or of research value.

Archaeological salvage of the six Aboriginal heritage sites was undertaken by South East Archaeology in 2010 with representatives from Mindaribba LALC. The process included surface collection and documentation of 70 artefacts.

In 2014, representatives of the Mindaribba LALC monitored the initial vegetation and topsoil removal from within a 3.8 ha area of previously undisturbed land. Six stone artefacts were identified, recorded, assessed and collected by South East Archaeology and Mindaribba LALC.

In 2016, an additional 3 ha was cleared of vegetation and stripped of topsoil in preparation for mining activities. Representatives of the Mindaribba LALC and South East Archaeology

monitored the ground disturbance works and one additional artefact was identified (AECOM 2018:115).

### **3.4 ARCHAEOLOGICAL CONTEXT: CONCLUSION**

Archaeological investigations in the northern foothills of the Sugarloaf Range around Black Hill (**Sections 3.2 and 3.3**) have resulted in the identification of a number of isolated finds, open artefact scatters, and grinding groove sites, with less common sites such as scarred trees, stone arrangements, natural mythological, and rock engravings also identified.

Artefact occurrences tend to be identified near water sources, particularly on level or gently inclined landform units and close to higher order streams, wetlands/swamps, lakes, and estuaries. Few instances of artefacts are reported along ridgelines and further away from watercourses.

Artefact density in surface assemblages varies, but is generally low, while subsurface excavations have often resulted in the location of artefacts within the upper (A horizon) soil. Two stone materials dominate, tuff and silcrete. Artefacts that have been retouched or utilised typically comprise less than 5% of overall assemblages. Often bondi points (spear barbs) or other microliths comprise much of the retouched/utilised category.

Strong traditional, historical, and contemporary Aboriginal cultural values have also been identified. The Black Hill Spur was a route or pathway used by Aboriginal people, extending from Hexham Swamp to Mount Sugarloaf, and an initiation and ceremonial site known as 'the Doghole', is also located in this locality (Kuskie and Kamminga 2000).

## 4 PREDICTIVE MODEL

### 4.1 PREDICTIVE MODEL FOR THE ADDITIONAL PROJECT AREAS FOR MINING

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including: plant and animal foods; stone and ochre resources and rock shelters; as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these however may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of colonial farming practices. Scarred trees, by their nature, may survive for up to several hundred years but rarely beyond.

#### 4.1.1 Site types in the region of the Additional Project Areas for Mining

The site types listed in **Table 4-1** are present in the region of the Additional Project Areas for Mining. The likelihood of these sites being present is discussed in **Section 4.2.2**.

**Table 4-1: Site types recorded in the region of the Additional Project Areas for Mining.**

Site type	Site description
Isolated finds	May be indicative of random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or subsurface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
Open artefact scatters	Artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of a background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'. Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Site type	Site description
	Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.
Potential archaeological deposits	These site types are not known to contain Aboriginal objects until further investigation, such as test excavation, has taken place. At best these site recordings identify archaeologically sensitive landforms where sites may be present.
Ceremonial sites	Places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.

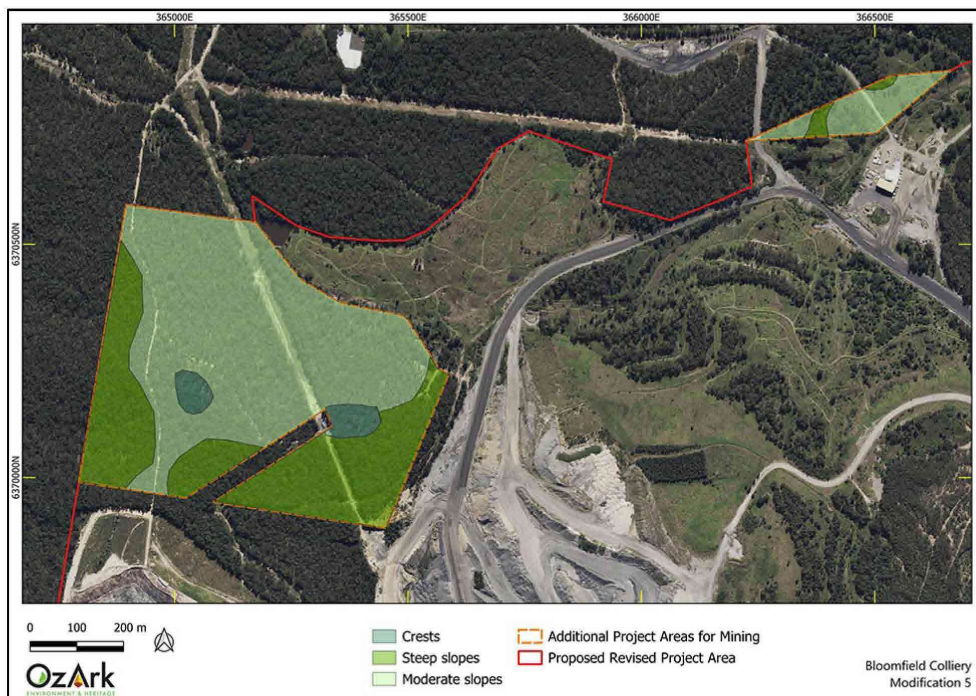
#### 4.2 LANDFORM MODELLING

The topography of the Additional Project Areas for Mining is moderately steep hills with localised crests in the Cut Creek Area (see **Figure 1-4**) and simple slopes in the Workshop area (**Figure 1-5**).

Preliminary landform mapping within the Additional Project Areas for Mining indicates there are several landform types; crests, steep slopes, and moderate slopes (**Figure 4-1**). Drainage and flat landforms are not present despite the Workshop area being close to the modified headwaters of Elwells Creek.

The Additional Project Areas for Mining contains native vegetation which has previously been harvested, as well as disturbed by access tracks and powerlines.

**Figure 4-1: Landforms within the Additional Project Areas for Mining.**



#### 4.2.1 Landform modelling of archaeological potential

The large number of archaeological studies undertaken within the vicinity of the Additional Project Areas for Mining provides information to obtain a sound understanding of the nature and distribution of archaeological sites within the area.

Based on Kuskie 2005a and Kuskie 2006, there are no landforms with Additional Project Areas for Mining that have potential to contain significant archaeological sites. The sloping landforms, distant to water, may have been used for transitory movement or hunting and gathering, but these activities do not commonly leave an identifiable archaeological trace.

Crucial for the preservation of archaeological deposits is the history of past land use in an area. Historical records indicate that the Additional Project Areas for Mining has been heavily impacted by timber harvesting. This impact is likely to have reduced the integrity of any artefact evidence within the Additional Project Areas for Mining, had it been present.

Both the vegetation removal and the long passage of time since the practice of tree modification was prevalent makes the likelihood of identifying modified trees within the Additional Project Areas for Mining extremely low; however, given the potential presence of remnant mature native trees, it cannot be discounted.

#### 4.2.2 Conclusion

Based on knowledge of the environmental contexts of the Additional Project Areas for Mining and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of landforms within the Additional Project Areas for Mining to contain Aboriginal objects (Table 4-2), and what types of sites may be present (Table 4-3).

**Table 4-2: Likelihood of landforms within the Additional Project Areas for Mining to contain Aboriginal objects.**

Survey Unit	Landform type	Likelihood to contain Aboriginal objects
1	Crests	Crests can contain Aboriginal sites if the crest is prominent enough to have been used as a lookout location. Generally, crests are a degraded landform where soils are thin.
2	Steep slopes	Steep slopes are a degrading landform, especially where vegetation removal has accelerated soil loss. These landforms are very unsuitable for occupation and Aboriginal objects recorded in such landforms are likely to be in a secondary context.
3	Moderate slopes	Slopes are a degrading landform, especially where vegetation removal has accelerated soil loss. These landforms are unsuitable for occupation and Aboriginal objects recorded in such landforms are likely to be in a secondary context. The exception is in localised flat benches, if they are present, where occupation may have been possible.

**Table 4-3: Likelihood of certain site types being present in the Additional Project Areas for Mining.**

Site type	Likelihood of being present in the Additional Project Areas for Mining
Isolated finds	As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Additional Project Areas for Mining.
Open artefact scatters	As most of the Additional Project Areas for Mining is within sloping landforms distant to permanent water, this site type is not predicted to be common. However, in flat or ridge landforms this site type

Site type	Likelihood of being present in the Additional Project Areas for Mining
	is possible although the moderate degree of disturbance in the Additional Project Areas for Mining will probably mean that the scatter has become displaced. It is likely that any sites associated with such landforms will have a low artefact density and a low complexity of tool types as the sites are either one-off events or only infrequently used.
Potential archaeological deposits	Due to the high levels of disturbance in the Additional Project Areas for Mining, as well as the nature of the landforms and the lack of waterways, this site type is predicted to be very rare.
Bora/Ceremonial sites	This site type does not necessarily follow landform predictability and are, overall, a rare site type with a low likelihood of being present and remaining extant. These sites are generally identified through consultation with the RAPs.

### 4.3 RESEARCH QUESTIONS

A number of research questions can meaningfully be applied to the investigation of the Additional Project Areas for Mining. These research questions include:

- What resources were available to the Aboriginal people using the land within the Additional Project Areas for Mining (food, stone, and water) and what resources were transported to the area?
- What tasks were Aboriginal people undertaking at the sites?
- Are there outcropping rock materials present suitable for stone tool procurement and manufacture?
- Do the findings within the Additional Project Areas for Mining (if any) accord with the regional archaeological context examined in **Section 3.2?**
- Do the survey results support the predictive model set out in **Section 4.2.2?**

The survey methodology set out in **Section 5** will be framed to help answer these questions; should sites of sufficient significance be encountered. However, based on the results of previous assessments and past disturbances, it not expected that the land within the Additional Project Areas for Mining will contain sites of sufficient significance to help answer those research questions that require a robust data set.

## 5 SURVEY METHODOLOGY

### 5.1 ASSESSMENT APPROACH

The Aboriginal cultural heritage assessment of the Additional Project Areas for Mining will follow the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010). The field inspection will follow the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (The Guide, OEH 2011).

Survey for Aboriginal cultural heritage values will concentrate on the Additional Project Areas for Mining where project impacts will be located.

### 5.2 PROPOSED ADDITIONAL PROJECT AREAS FOR MINING SURVEY AIMS

The aim of any archaeological survey is not to locate each artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within the Additional Project Areas for Mining are known. Therefore, the aims of the survey will be to:

- Inspect all landform types in the Additional Project Areas for Mining so that their archaeological potential can be determined
- Evaluate whether the predictive model set out in **Section 4.1** is valid
- Determine if the research questions set out in **Section 4.1.1** can be answered
- Determine if any landforms of the Additional Project Areas for Mining require test excavation to understand the archaeological potential at a particular location
- Undertake sufficient assessment to satisfy Sections 2.2, 2.4, 2.5, 2.6, and 2.7 in the Guide
- Collect sufficient data so that the results can be presented in an ACHAR as set out in Section 3 in the Guide
- Undertake survey and record keeping satisfying Requirements 1–13 of the Code of Practice.

### 5.3 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004) and will follow the Code of Practice.

Due to the small size of the Additional Project Areas for Mining a ‘full pedestrian survey’ will be conducted. ‘Full pedestrian survey’ refers to systematic transects walked by surveyors spaced approximately 10 m apart throughout the landform or area being surveyed.

In the field, OzArk staff will identify, record, and evaluate physical (i.e., archaeological) evidence. Site recording will capture all the information required to complete current AHIMS site recording forms (e.g., site location, site boundary, site plan, representative photographs, artefact recording

and feature recording). RAPs will participate in the survey, identifying Aboriginal objects, determining the cultural significance of Aboriginal objects and identifying cultural places or non-physical site types within the Additional Project Areas for Mining Disturbance Boundary. OzArk staff understand that cultural knowledge may not be provided in some instances due to cultural sensitivities (e.g., men's and/or women's places). Under these circumstances, to assess the potential impacts, OzArk staff will need to be told, only in general terms, why a particular place is important, and what the significance of the impact will be.

#### **5.4 TEST EXCAVATION**

It is possible that the survey may identify landforms where test excavation under the Code of Practice (Requirements 14–17) is required. Should such landforms be identified during the survey, the test excavation methodology will be prepared as a separate document that will be circulated to all RAPs for review and comment.


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## APPENDIX 3: 2023 AHIMS SEARCH RESULTS

 <b>AHIMS Web Services (AWS)</b> <span style="float: right;">Your Ref/PO Number : 4096 Client Service ID : 850652</span>										
Extensive search - Site list report										
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
38-4-1633	Bloomfield 17	GDA	56	364694	6368939	Open site	Valid	Artefact : -		
	<b>Contact</b>	<b>Recorders</b>								
			South East Archaeology							
38-4-1151	Louth Park 1 (LP1)	GDA	56	364435	6371717	Open site	Destroyed	Artefact : 5		101348
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd							
38-4-1051	Bloomfield 2	GDA	56	365140	6369510	Open site	Destroyed	Artefact : 1		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology							
38-4-2241	KKLP PAD2	GDA	56	363000	6371454	Open site	Valid	Potential Archaeological Deposit (PAD) :-		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-0330	Delta Colliery Waterhole	AGD	56	366550	6372070	Open site	Valid	Water Hole : -	Water Hole/Well	100896,102388
	<b>Contact</b>	<b>Recorders</b>								
			Ms Jill Ruig							
38-4-1048	Bloomfield 20	GDA	56	364780	6368530	Open site	Destroyed	Artefact : 4		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology							
38-4-0166	Delta 6;	AGD	56	366500	6372200	Open site	Valid	Artefact : -	Open Camp Site	1674,102388
	<b>Contact</b>	<b>Recorders</b>								
			Pam Dean-Jones							
38-4-1050	Bloomfield 16	GDA	56	364750	6369020	Open site	Destroyed	Artefact : 1		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology							
38-4-2249	KKLP IA2	GDA	56	366208	6370900	Open site	Valid	Artefact : -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-2240	KKLP PAD10	GDA	56	363824	6371231	Open site	Valid	Potential Archaeological Deposit (PAD) :-		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-2242	KKLP IA1	GDA	56	363116	6371587	Open site	Valid	Artefact : -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-1012	A7/A	AGD	56	366730	6370500	Open site	Valid	Artefact : 1		102388
	<b>Contact</b>	<b>Recorders</b>								
			South East Archaeology							
38-4-1049	Bloomfield 18	GDA	56	364580	6368530	Open site	Destroyed	Artefact : 18		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology							
38-4-1153	Louth Park PAD1 (LP PAD1)	GDA	56	363550	6372330	Open site	Destroyed	Potential Archaeological Deposit (PAD) :-		101348,102231
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd,RPS AAP Consulting Pty Ltd							
38-4-2153	Bloomfield 4 - Locus A	GDA	56	365223	6369800	Open site	Valid	Artefact : 1	York Street	4587
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie							
38-4-2152	Bloomfield 26 - Locus A	GDA	56	365400	6369816	Open site	Valid	Artefact : 1		

Report generated by AHIMS Web Service on 20/12/2023 for Imogen Crome for the following area at Datum :GDA, Zone : 56, Eastings : 363000.0 - 367000.0, Northings : 6368400.0 - 6372400.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 21

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 2

 <b>AHIMS Web Services (AWS)</b> <span style="float: right;">Your Ref/PO Number : 4096 Client Service ID : 850652</span>										
Extensive search - Site list report										
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
38-4-1152	Louth Park 2 (LP2)	GDA	56	364435	6371717	Open site	Destroyed	Artefact : 1		101348
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie							
38-4-0163	Delta Site 1;	AGD	56	365900	6372200	Open site	Valid	Artefact : -	Open Camp Site	1674
	<b>Contact</b>	<b>Recorders</b>								
			Pam Dean-Jones							
38-4-2239	KKLP PAD9	GDA	56	363793	6370971	Open site	Valid	Potential Archaeological Deposit (PAD) :-		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-1155	Louth Park PAD3 (LP PAD3)	GDA	56	363800	6372400	Open site	Destroyed	Potential Archaeological Deposit (PAD) :-		101348,102231
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd							
38-4-1060	Bloomfield 19	GDA	56	364630	6368460	Open site	Destroyed	Artefact : 15		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology							

**\*\* Site Status**

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

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

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


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

Report generated by AHIMS Web Service on 20/12/2023 for Imogen Crome for the following area at Datum :GDA, Zone : 56, Eastings : 363000.0 - 367000.0, Northings : 6368400.0 - 6372400.0 with a Buffer of 0 meters. Number of Aboriginal sites and Aboriginal objects found is 21

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## APPENDIX 4: 2025 AHIMS SEARCH RESULTS

 <b>AHIMS Web Services (AWS)</b> Extensive search - Site list report		Your Ref/PO Number : 4096 Client Service ID : 1017357								
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
38-4-1151	Louth Park 1 (LP1)	GDA	56	364435	6371717	Open site	Destroyed	Artefact: 5		101348
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd							
38-4-1051	Bloomfield 2	GDA	56	365140	6369510	Open site	Destroyed	Artefact: 1		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology - Hughes ACT							
38-4-1633	Bloomfield 17	GDA	56	364694	6368939	Open site	Valid	Artefact: -		
	<b>Contact</b>	<b>Recorders</b>								
			South East Archaeology - Hughes ACT							
38-4-0330	Delta Colliery Waterhole	AGD	56	366550	6372070	Open site	Valid	Water Hole: -	Water Hole/Well	100898,10238 8
	<b>Contact</b>	<b>Recorders</b>								
			Ms Jill Reig							
38-4-2241	KRLP PAD2	GDA	56	363000	6371454	Open site	Valid	Potential Archaeological Deposit (PAD): -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-0166	Delta 6;	AGD	56	366500	6372200	Open site	Valid	Artefact: -	Open Camp Site	1674,102388
	<b>Contact</b>	<b>Recorders</b>								
			Pam Dean-Jones							
38-4-1048	Bloomfield 20	GDA	56	364780	6368530	Open site	Destroyed	Artefact: 4		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology - Hughes ACT							
38-4-1012	A7/A	AGD	56	366730	6370500	Open site	Valid	Artefact: 1		102388
	<b>Contact</b>	<b>Recorders</b>								
			South East Archaeology - Hughes ACT							
38-4-1050	Bloomfield 16	GDA	56	364750	6369020	Open site	Destroyed	Artefact: 1		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology - Hughes ACT							
38-4-2249	KRLP IA2	GDA	56	366208	6370900	Open site	Valid	Artefact: -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-2240	KRLP PAD10	GDA	56	363824	6371231	Open site	Valid	Potential Archaeological Deposit (PAD): -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-2242	KRLP IA1	GDA	56	363116	6371587	Open site	Valid	Artefact: -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-1153	Louth Park PAD1 (LP PAD1)	GDA	56	363550	6372330	Open site	Destroyed	Potential Archaeological Deposit (PAD): -		101348,10223 1
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd,RPS AAP Consulting Pty Ltd	York Street	Permits	4587				
38-4-1049	Bloomfield 18	GDA	56	364580	6368530	Open site	Destroyed	Artefact: 18		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology - Hughes ACT							
38-4-2152	Bloomfield 26 - Locus A	GDA	56	365400	6369816	Open site	Valid	Artefact: 1		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie							
38-4-2153	Bloomfield 4 - Locus A	GDA	56	365223	6369800	Open site	Valid	Artefact: 1		

Report generated by AHIMS Web Service on 25/06/2025 for William Marris for the following area at Datum :GDA, Zone : 56, Eastings : 363000.0 - 367000.0, Northings : 6368400.0 - 6372400.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 21  
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 <b>AHIMS Web Services (AWS)</b> Extensive search - Site list report		Your Ref/PO Number : 4096 Client Service ID : 1017357								
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
38-4-1152	Louth Park 2 (LP2)	GDA	56	364435	6371717	Open site	Destroyed	Artefact: 1		101348
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd,MCH - McCardle Cultural Heritage Pty Lt							
38-4-0163	Delta Site 1;	AGD	56	365900	6372200	Open site	Valid	Artefact: -	Open Camp Site	1674
	<b>Contact</b>	<b>Recorders</b>								
			Pam Dean-Jones							
38-4-1155	Louth Park PAD3 (LP PAD3)	GDA	56	363800	6372400	Open site	Destroyed	Potential Archaeological Deposit (PAD): -		101348,10223 1
	<b>Contact</b>	<b>Recorders</b>								
			MCH - McCardle Cultural Heritage Pty Ltd							
38-4-2239	KRLP PAD9	GDA	56	363793	6370971	Open site	Valid	Potential Archaeological Deposit (PAD): -		
	<b>Contact</b>	<b>Recorders</b>								
			Umwelt (Australia) Pty Limited - Individual users, Miss Alison Fenwick							
38-4-1060	Bloomfield 19	GDA	56	364630	6368460	Open site	Destroyed	Artefact: 15		
	<b>Contact</b>	<b>Recorders</b>								
			Mr.Peter Kuskie,South East Archaeology - Hughes ACT							

**\*\* Site Status**

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

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

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

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

Report generated by AHIMS Web Service on 25/06/2025 for William Marris for the following area at Datum :GDA, Zone : 56, Eastings : 363000.0 - 367000.0, Northings : 6368400.0 - 6372400.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 21  
 This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

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