



**NARRABRI MINE
ENVIRONMENTAL
MANAGEMENT
SYSTEM**


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WHC_PLN_NAR_HERITAGE MANAGEMENT PLAN - PANELS 201 - 202

NARRABRI MINE

EXTRACTION PLAN HERITAGE MANAGEMENT PLAN

PANELS 201 - 202

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Document review history

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Acronyms and abbreviations

Acronym	Description
ACHMP	Aboriginal and Cultural Heritage Management Plan
AHIP	Aboriginal Heritage Impact Permit
AoD	angle of draw
AR	Annual Review
ATSIHPA	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> (Cth)
CCC	Community Consultative Committee
CHL	Commonwealth Heritage List
CHPP	Coal Handling and Preparation Plant
Cth	Commonwealth
DGS	Ditton Geotechnical Services
DPE	NSW Department of Planning and Environment
DoE	The former Commonwealth Department of the Environment
DP&E	The former NSW Department of Planning and Environment (now DPE)
EA	Environmental Assessment
EIS	environmental impact statement
EPA	The NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EP HMP	Extraction Plan - Heritage Management Plan (this document)
EPL	environment protection licence under the POEO Act
ESCP	erosion and sediment control plan
GNAC	Gomerioi Narrabri Aboriginal Corporation
ha	hectare
LW	longwall panel (e.g. LW 109)
LiDAR	light detection and ranging
m	metre
mm	millimetre
MOP	Mining Operations Plan
MRZ	mining restriction zone
Mtpa	million tonnes per annum
NCOPL	Narrabri Coal Operations Pty Ltd
NHL	National Heritage List
NLALC	Narrabri Local Aboriginal Land Council
NP&W Act	<i>National Parks and Wildlife Act 1974</i> (NSW)
NNTT	National Native Title Tribunal



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Acronym	Description
NSC	Narrabri Shire Council
OEH	The former NSW Office of Environment and Heritage (now Heritage NSW)
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
POEO Regulation	Protection of the Environment Operations (General) Regulation 2009
RAP	Registered Aboriginal Party
URN	Unique Reference Number
WHC	Whitehaven Coal



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1. Introduction

This Extraction Plan-Heritage Management Plan (**EP-HMP** or **Plan**) has been prepared as part of the Extraction Plan for Pillar Reduction Panels CF201 to CF205 (formerly Longwalls 201 and 202), hereafter referred to as **Panels 201-202** in the Hoskissons Seam at the Narrabri Mine. The mine, which is located south of Narrabri, NSW, is owned and operated by Narrabri Coal Operations Pty Ltd (**NCOPL**). This EP-HMP sets out the management objectives and performance measures proposed to manage potential subsidence impacts to cultural heritage values within the Extraction Plan Area.

Subsidence predictions by Ditton Geotechnical Services (**DGS**) have been used as a basis for developing the performance measures, management actions and monitoring contained within this EP-HMP (Ditton Geotechnical Services Pty Ltd, 2021). DGS's analysis and results are contained, in full, as Appendix B to the Extraction Plan.

The management and monitoring measures outlined within this EP-HMP have been prepared based upon:

- the revised Narrabri Mine Aboriginal Cultural Heritage Management Plan (NCOPL, 2020);
- Stage 1 Aboriginal Heritage Assessment (Australian Archaeological Survey Consultants Pty Ltd, 2007);
- Stage 2 Aboriginal Heritage Assessment (Archaeological Surveys & Reports Pty Ltd, 2009);
- Stage 3 Aboriginal Cultural Heritage Assessment (Whincop Archaeology, 2020b);
- Aboriginal Cultural Heritage Review for the Narrabri Underground Mine Modification 7 in the Narrabri Shire, New South Wales (Whincop Archaeology, 2020c)
- Longwall Panels 101-104 - Archaeological assessment of subsidence impacts on Aboriginal objects (Niche Environment and Heritage, 2016);
- Longwall Panels 105-108 – Archaeological Assessment of Subsidence Impact on Aboriginal Objects (Whincop Archaeology 2020a); and
- subsequent consultation with the Narrabri Local Aboriginal Land Council (**NLALC**) and Gomeroi Narrabri Aboriginal Corporation (**GNAC**); the Registered Aboriginal Parties (**RAPs**) for the Narrabri Mine.

1.1 Scope

This EP-HMP applies to cultural heritage sites that have been recorded within the Panels 201 to 202 Extraction Plan Area only. The purpose of this document is to ensure that impacts to these sites are managed in accordance with the Project Approval and aim to:

1. provide a precise set of procedures to enable the identification and conservation of physical and cultural heritage sites and artefacts within the Extraction Plan Area;
2. ensure all personnel are aware of their obligations, responsibilities and the procedures under the *National Parks and Wildlife Act 1974* and *NSW Heritage Act 1977*; and
3. establish a consultation protocol with the RAPs, who are representatives of the local Aboriginal community.

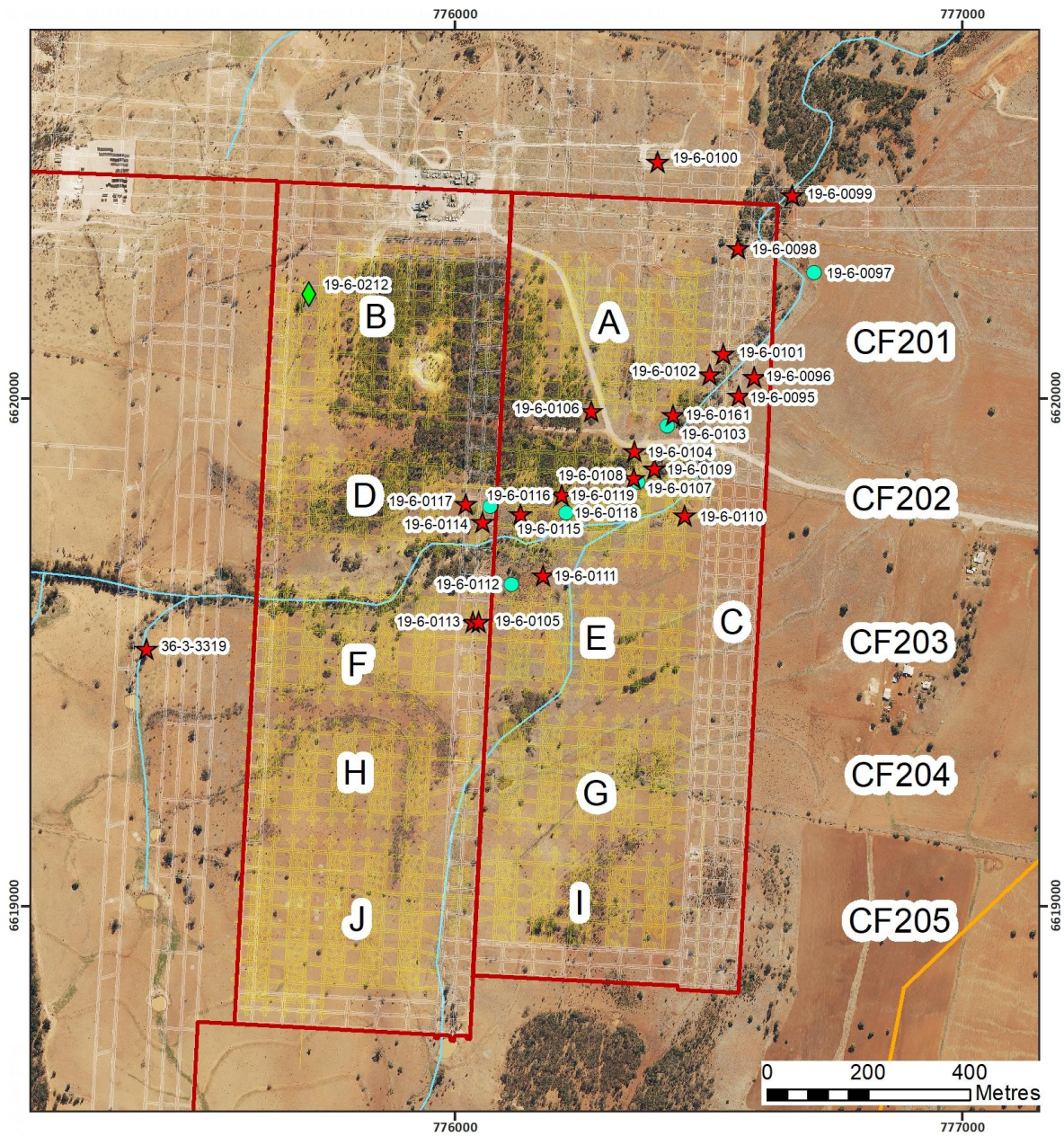
The proposed mine plan and the location of all recorded Aboriginal heritage sites are shown on Figure 1.1. A detailed description of the underground mining methods is provided within the Extraction Plan.



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ACH Sites in Panels 201-202 Extraction Plan Area

- ★ Artefact Scatter
- Isolated artefact
- ◆ Grinding Grooves
- Extraction Plan area
- Proposed Bord and Pillar Mining Layout
- ▭ ML 1609
- Major Hydroline
- Minor Hydroline

Drawn by: Katherine Whincop, 12 Nov 2021
Projection: GDA 1994 MGA Zone 55
Data sources: Whitehaven Coal Group, Geoscience Australia



Figure 1.1 - ACH sites within the Panels 201-202 Extraction Plan Area

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1.2 Legal requirements

This Plan has been prepared in accordance with Project Approval 08_0144 (as modified) (**Project Approval**), relevant legislation and guidelines, and in consultation with relevant government agencies and the RAPs, as discussed below.

1.2.1 Project Approval

Stage 1 of the Narrabri Mine was approved under Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) (**EP&A Act**) in November 2007 and involved initial site establishment activities and continuous mining operations. The Project Approval for Stage 2 of the Narrabri Mine was issued under Part 3A of the EP&A Act in 2010 and allowed the Narrabri Mine to convert to a longwall mining operation (“secondary extraction”) and install additional coal processing and handling infrastructure. The Project Approval has subsequently been modified on six occasions.

The Narrabri Mine, incorporating Stages 1 and 2, extracts coal from the Hoskissons Coal Seam. The Project Approval allows for the production and processing of up to 11 million tonnes per annum (Mtpa) of run-of-mine (**ROM**) coal until July 2031. The approved Narrabri Mine comprises 18 longwall panels (**LW**), LW 101 to LW 111 and LW 203 to LW 209. Modification 7 (**MOD 7**), approved on 23 November 2021, revised the mining method for two of the previously approved longwall mining panels, LW 201 and LW 202, to bord and pillar mining: a method of underground coal mining that results in less subsidence effects than the approved longwall mining method. Longwall mining of LW 101 commenced in 2012 and has progressed sequentially to LW 109.

Conditions 22 to 24, Schedule 4, of the Project Approval relate to the management and protection of Aboriginal objects affected by mine operations. Condition 22 requires that:

“The proponent shall not destroy, damage or deface any known Aboriginal objects (as defined in the National Parks and Wildlife Act 1974) without the written approval of the Secretary.”


Condition 23 required Narrabri Mine to revise the existing Stage 1 Aboriginal Cultural Heritage Management Plan (**ACHMP**) to encompass all proposed mine activities associated with Stage 2. The ACHMP was revised in 2019, and again in 2020 based on Modification 7 (NCOPL, 2020).

Prior to undertaking operations proposed as part of Stage 2 works, the Narrabri Mine Project Approval, (Schedule 3 Condition 4), required that:

“The proponents prepare and implement Extraction Plans for any second workings to be mined to the satisfaction of the Secretary.”

“Each Extraction Plan must [...] include a [...] Heritage Management Plan, which has been prepared in consultation with Heritage NSW and relevant stakeholders for Aboriginal heritage, to manage the potential environmental consequences of the proposed second workings on heritage sites or values.”

This Plan has been prepared for the Extraction Plan for Panels 201-202. It is noted in the Project Approval that management plans prepared under Schedule 3 Condition 4 (including this EP-HMP) should address all potential impacts of proposed underground coal extraction and that they are not required to duplicate management plans required elsewhere within the Project Approval. As a result, this Plan addresses only potential impacts of subsidence and associated remediation works on cultural heritage for the Panels 201-202 Extraction Plan Area. Protection of Aboriginal objects from the impacts of other mining operations is addressed in the ACHMP (NCOPL, 2020).

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The Project Approval conditions relevant to this EP-HMPMP have been presented in full in Table A4.1 in Attachment 4, together with a cross-reference where the requirements are addressed within this Plan.

1.3 Relevant legislation

1.3.1 Commonwealth legislation

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) (**ATSIHPA**) was enacted at a federal level to preserve and protect areas and objects of particular significance to Aboriginal Australians (e.g. sacred sites) from damage or desecration. Steps necessary for the protection of a threatened place are outlined in a gazetted Ministerial Declaration (ATSIHPA Sections 9 and 10). This can include the preclusion of development.

As well as providing protection to areas, it can also protect objects by Declaration, in particular Aboriginal skeletal remains (ATSIHPA Section 12). Although this is a Commonwealth Act, it can be invoked to manage State matters if the Commonwealth Minister determines that the State is unwilling or unable to provide protection for such sites or objects.

The *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) provides for the protection of natural and cultural heritage places. The EPBC Act establishes (amongst other things) a National Heritage List (**NHL**) and a Commonwealth Heritage List (**CHL**). Places on the NHL are of natural or cultural significance at a national level and can be in public or private ownership. The CHL is limited to places owned or occupied by the Commonwealth which are of heritage significance for certain specified reasons. The heritage values of places on the NHL or the CHL are protected under the terms of the EPBC Act. The proponent of an 'action' that has, will have, or is likely to have, a significant impact on the heritage values of a listed place must 'refer' the 'action' to the Minister for consent.


The *Native Title Act 1993* (Cth) provides recognition and protection for native title by establishing the National Native Title Tribunal (**NNTT**) to administer native title claims to rights and interests over lands and waters by Aboriginal people. The NNTT also administers the future act processes that attract the right to negotiate under the *Native Title Act 1993*.

1.3.2 NSW state legislation

The EP&A Act requires that environmental and heritage impacts are considered by consent authorities prior to granting development approvals. The original approvals for the Narrabri Mine were obtained under the Part 3A, 'Major Projects' provisions of the EP&A Act. While Part 3A has since been repealed, it remains applicable to Narrabri Coal Operations under transitional provisions. Under Section 75U(d) of these provisions, an Aboriginal Heritage Impact Permit (**AHIP**) under the *National Parks and Wildlife Act 1974* (NSW) (**NP&W Act**) is not required for a project approved under Part 3A. In such instances, management of Aboriginal heritage follows the applicable Aboriginal assessment guidelines and any relevant statement of commitments included in the Development Approval, which usually requires the development of a regulator-approved ACHMP.

The NP&W Act provides blanket protection for Aboriginal objects (material evidence of Indigenous occupation) and Aboriginal places (areas of cultural significance to the Aboriginal community) across New South Wales. An Aboriginal place is any place declared to be an Aboriginal place by the Minister for the Environment, under section 84 of the Act. An Aboriginal object is defined as:

Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or


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both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

It is an offence to disturb Aboriginal objects or places without an AHIP. In addition, anyone who discovers an Aboriginal object is obliged to report the discovery to the relevant authorities. Part 6 of the NP&W Act is administered by Heritage NSW.

The *Aboriginal Land Rights Act 1983* (NSW) allows for the transfer of ownership to a Local Aboriginal Land Council of vacant Crown Land not required for an essential purpose or for residential land. These lands are then managed and maintained by the Local Aboriginal Land Council.

Aboriginal stakeholder consultation undertaken for the preparation of this EP-HMP, including the Stage 2 Environmental Assessment (**EA**) (R.W. Corkery & Co. Pty. Limited, 2009), has been in accordance with the NSW Government's "*Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*" (NSW Department of Environment & Conservation, 2005) and *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (NSW Department of Environment Climate Change & Water, 2010). Future Aboriginal consultation on site will be undertaken in accordance with the Narrabri Mine ACHMP, which is based on principles outlined in *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010).

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2. Cultural heritage in Panels 201 to 202

2.1 Known Aboriginal cultural heritage sites

Archaeological surveys undertaken for the Narrabri Mine have identified a total of 178 Aboriginal cultural heritage sites within the Narrabri Mine (Advitech, 2012, 2013a, 2013b; Archaeological Surveys & Reports Pty Ltd, 2009; Australian Archaeological Survey Consultants Pty Ltd, 2007; Landskape, 2010; Niche Environment and Heritage, 2015b, 2016; Whincop Archaeology 2020b). Of these, 24 are located in the Panels 201-202 Extraction Plan Area (Table 2.1; Figure 1.1). This total includes 18 artefact scatters, five isolated artefacts, and one grinding groove site (Figures 1.1 and 3.1).

All 24 sites have been assessed as being of low scientific significance due to disturbed contexts and low artefact densities (<12 artefacts). Claremont GG1 has also been assessed as being of low scientific significance due to the presence of only one grinding groove on what appears to be a floating sandstone boulder. A more detailed description of each site is provided in the Aboriginal Cultural Heritage Assessments prepared for Stage 2 and Stage 3 (Archaeological Surveys & Reports Pty Ltd, 2009; Australian Archaeological Survey Consultants Pty Ltd, 2007; Landskape, 2010; Niche Environment and Heritage, 2015a, 2015b; Whincop Archaeology 2020b; 2020c).

Predictions of subsidence impacts and potential consequences to the known cultural heritage sites are described in section 3 of this EP-HMP.

Table 2.1 - Identified Aboriginal heritage sites Panels 201-202

AHIMS ID	Site Name	Easting Zone 55	Northing Zone 55	Type	Contents	Scientific Significance	CF / LW
19-6-0095	Kurrajong T1/OS 55	776560	6620006	AS	2	Low	CF201-A
19-6-0096	Kurrajong T1/OS 56	776590	6620043	AS	2	Low	CF201-A
19-6-0098	Kurrajong T1/OS 58	776558	6620297	AS	4	Low	CF201-A
19-6-0101	Kurrajong T1/OS 61	776529	6620088	AS	7	Low	CF201-A
19-6-0102	Kurrajong T1/OS 62	776503	6620048	AS	3	Low	CF201-A
19-6-0103	Kurrajong T1/ISO 64	776419	6619946	IA	1	Low	CF201-A
19-6-0104	Kurrajong T1/OS 65	776354	6619896	AS	2	Low	CF202-C
19-6-0105	Kurrajong T1/OS 66	776046	6619560	AS	4	Low	CF203-E
19-6-0106	Kurrajong T1/OS 67	776269	6619975	AS	2	Low	CF201-A
19-6-0107	Kurrajong T1/ISO 68	776360	6619836	IA	1	Low	CF202-C
19-6-0108	Kurrajong T1/OS 69	776353	6619843	AS	3	Low	CF202-C



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AHIMS ID	Site Name	Easting Zone 55	Northing Zone 55	Type	Contents	Scientific Significance	CF / LW
19-6-0109	Kurrajong T1/OS 70	776393	6619862	AS	4	Low	CF202-C
19-6-0110	Kurrajong T1/OS 71	776453	6619769	AS	2	Low	CF202-C
19-6-0111	Kurrajong T1/OS 72	776174	6619651	AS	9	Low	CF202-C
19-6-0112	Kurrajong T1/ISO 73	776111	6619633	IA	1	Low	CF203-E
19-6-0113	Kurrajong T1/OS 74	776035	6619560	AS	2	Low	CF203-E
19-6-0114	Kurrajong T1/OS 75	776054	6619757	AS	3	Low	CF202-C
19-6-0115	Kurrajong T1/OS 76	776129	6619772	AS	2	Low	CF202-C
19-6-0116	Kurrajong T1/ISO 77	776069	6619787	IA	1	Low	CF202-C
19-6-0117	Kurrajong T1/OS 78	776021	6619792	AS	3	Low	CF202-D
19-6-0118	Kurrajong T1/ISO 79	776219	6619775	IA	1	Low	CF202-C
19-6-0119	Kurrajong T1/OS 80	776210	6619810	AS	5	Low	CF202-C
19-6-0161	Kurrajong T1/OS 63	776430	6619968	AS	7	Low	CF201-A
19-6-0212	Claremont GG1	775711	6620205	GG	1	Low	CF201-B

2.2 Potential for additional sites


The Aboriginal objects within the wider landscape are characterised by diffuse artefact scatters or isolated artefacts that occur in higher densities along watercourses, but which conversely decrease in density with distance from water. There is a strong correlation between the size and density of artefact sites and water availability (i.e. the frequency of stone artefacts decreases with increasing distance from water). Artefacts sites associated with permanent water are generally more extensive and scientifically significant than those located in other landforms. While the distribution of Aboriginal objects is generally associated with the local hydrology, it is possible that isolated artefacts may occur anywhere across the landscape; such sites would generally be of lower scientific significance. The grinding groove site also bears witness to occasional grinding activities in the area, usually in association with a nearby water source.

The Extraction Plan Area is located on land that has been cleared and used for pastoral activities for more than 100 years. As a result, Aboriginal objects located within this area would likely not be in their original depositional context, having been impacted by a combination of land clearing, harrowing, ploughing, and the construction of contour banks and dams.

The archaeological assessment of Stage 2 noted that the potential for larger unidentified sites is relatively low, given the lack of reliable water source, few exposures of sandstone bedrock, and no rock overhangs

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(Archaeological Surveys & Reports Pty Ltd, 2009, 5-32; Landskape, 2010). Archaeological survey of the remainder of the Stage 2 area identified a concentration of artefact sites along Kurrajong Creek and one of its tributaries, with little identified beyond these watercourses.

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3. Subsidence and environmental consequences

3.1 Subsidence predictions

Predictions of subsidence have been prepared for Panels 201-202 by Ditton Geotechnical Services Pty Ltd (DGS) in June 2021 (Ditton Geotechnical Services Pty Ltd, 2021). These predictions include consideration of the proposed bord and pillar mining methods in the Extraction Plan Area for Pillar Reduction Panels CF201 to CF205. Predicted maximum subsidence estimates are summarised in Table 3.1 for the Extraction Plan Area.

Table 3.1 - Maximum final subsidence effect predictions (DGS, 2021)

Prediction limit (case)	Panel width / height ratio	Mining height (m)	Extraction ratio (%)	Effective mining height* (m)	Subsidence factor	Predicted maximum subsidence (m)
Production panels						
Lower Bound	0.77 - 1.48	4.3	66	4.13	0.45	1.22
Upper Bound	0.77 - 1.48	4.3	66	4.13	0.65	1.77
Gateroad access panels						
Lower Bound	N/A	4.3	35	4.13	0.35	0.50
Upper Bound	N/A	4.3	35	4.13	0.45	0.65

* - discontinuous strains (2 x smooth profile strains).

3.1.1 Subsidence cracking

Based on the predicted range of maximum strains and cover depths, DGS (2021, Table 12) has indicated the maximum surface cracking widths for sandy or loamy soils above the Extraction Plan Area are expected to be between 310-325 mm (Table 3.2). Where strain concentrations occur in near-surface rock, these widths may double locally to between 620-650 mm (Table 3.2). Crack widths may also exceed the predicted range near steep creek banks along Kurrajong Creek and its tributaries. Based on experience in the Newcastle Coalfields (ACARP, 2003 in Ditton Geotechnical Services Pty Ltd, 2012) cracks are likely to have fully developed by the time the longwall face has retreated past a given location by a distance equal to one to two times the cover depth.

Predicted subsidence cracking relative to the mine plan is presented within the Extraction Plan.


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Table 3.2 - Predicted maximum crack width for Extraction Plan Area in flat terrain

LW	XL	Panel width [W] (m)	Cover depth [H] (m)	Panel W/H	Effective bay length (m)	Predicted maximum tensile strain (mm/m)		Predicted U95%CL crack width (mm)	
						Mean	U95%	Sand or loam	Clay or rock
CF201- CF205	6	235	182	1.29	10.0	7	31	310	620
	6	273	210	1.30	10.5	7	31	325	650

Source: Table 12 DGS, 2021

3.1.2 Ponding

As reported by DGS (2021, p.6), the predicted maximum panel subsidence of up to 1.77 m could result in closed form depressions forming in some of the central areas of the panels with the flatter surface gradients and disrupt natural drainage pathways to watercourses and farm dams. Analysis of the pre- and post-mining surface levels also suggests that ponding (if it occurs) is likely to develop along Kurrajong Creek Tributary 1 and its tributaries.


Maximum potential ponding depths of 0.33 m to 0.71 m are estimated for CF 201 to CF 203 (DGS 2021, Table 18).

Predicted ponding relative to the mine plan are presented in the Extraction Plan.

3.1.3 Subsidence remediation

As reported in the Stage 2 EA disturbance resulting from any subsidence induced surface cracking and/or ponding will be progressively rehabilitated as follows:

- due to the relatively deep soil profile above the Extraction Plan Area, it is likely that many of the smaller width cracks would be filled in naturally by the actions of wind, water and natural soil movement. No additional remediation works would be required.
- larger surface cracks not filled in by natural processes will need to be repaired by ripping and re-compacting spoil material or pouring gravel or grout into deep cracks. In the interests of public and stock safety, temporary fencing may be installed around large cracks, or where erosion has increased slope instability before effective repairs can be completed.
- any changes to surface drainage paths and surface vegetation in areas of ponding development (if they occur) will be assessed at the completion of each pillar panel or longwall panel. Channel earthworks may be required to re-establish drainage pathways.
- identified sites occurring above Panels 201-202 will be avoided where practicable, but sites may be disturbed during the construction of gas drainage infrastructure and/or access tracks to these locations as per the Project Approval. A 'Permit to Disturb' procedure has been developed to ensure that proposed surface disturbance works are cross referenced with known Aboriginal cultural heritage sites prior to works commencing and will be managed separately to the extraction plan.

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3.2 Potential impacts to Aboriginal cultural heritage sites

The impact of subsidence on Aboriginal cultural heritage sites overlying Panels 201-202 and management recommendations are summarised in Table 3.3 and Table 3.4 (also Attachment 2) and may involve the following:

- vertical displacement;
- cracking;
- ponding; and
- subsidence remediation.

3.2.1 Artefact sites

The majority of artefact scatters and isolated artefacts occur on actively degrading surfaces and it is assumed that most of the artefacts have already been displaced by slope-wash, stock movement, land clearance, ploughing, harrowing and vehicular traffic. There would be few artefacts in their original depositional context or provenance and the direct impact of subsidence (vertical or horizontal displacement) is likely to be minimal. Significant subsidence events (cracks larger than 40 mm in width) and subsequent site remediation works such as the ripping of large surface cracks or channel earthworks have the potential to impact artefact scatters. However, it is likely that cracking alone will not impact surface artefacts, although they may be displaced through related surface erosional processes.

Both prior to and during mining, and if requested by the RAPs, those sites identified as being within 50 m of significant subsidence events will be surface collected. The remaining sites will be avoided where practicable. In the event that subsidence remediation works will result in impacts becoming unavoidable (subject to reasonable efforts to avoid such sites), the sites will also be collected in accordance with procedures outlined in this EP HMP.

3.2.2 Axe grinding grooves

One axe grinding groove site, Claremont GG1 (AHIMS 19-6-0212) has been identified as occurring within CF201 Panel B, as presented in Figure 3.1.

As highlighted in MOD 5, assuming that the groove site cannot be removed from above CF 201 (Panel B) before pillar reduction occurs, the reduction of tensile strain from 10 mm/m to 1.5 mm/m will decrease the potential for surface cracking at the Claremont GG1 site from 'possible / likely' to 'unlikely' according to the surface cracking likelihood criteria.

The minimum set back distance of 70 m to the potential goaf edge from the Claremont GG1 site has been estimated to reduce the horizontal strain to 1.5 mm/m for a cover depth of 210 m or an r/H of ~0.33. The pillars within the mining restriction zone (**MRZ**) will also need to remain long-term stable to achieve this outcome under side-abutment loading conditions. Reference to the UNSW method indicates that the remnant pillars should be left with a maximum height of 3.2 m after pillar reduction is completed to achieve the required criteria. This would mean that the coal floor may not be 'robbed' in the MRZ.

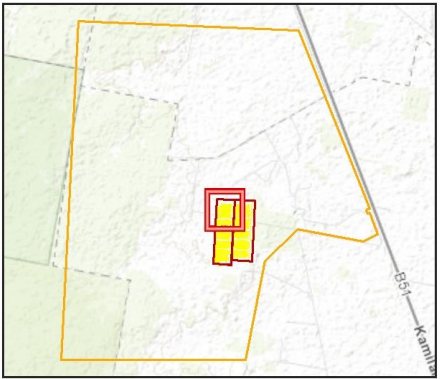
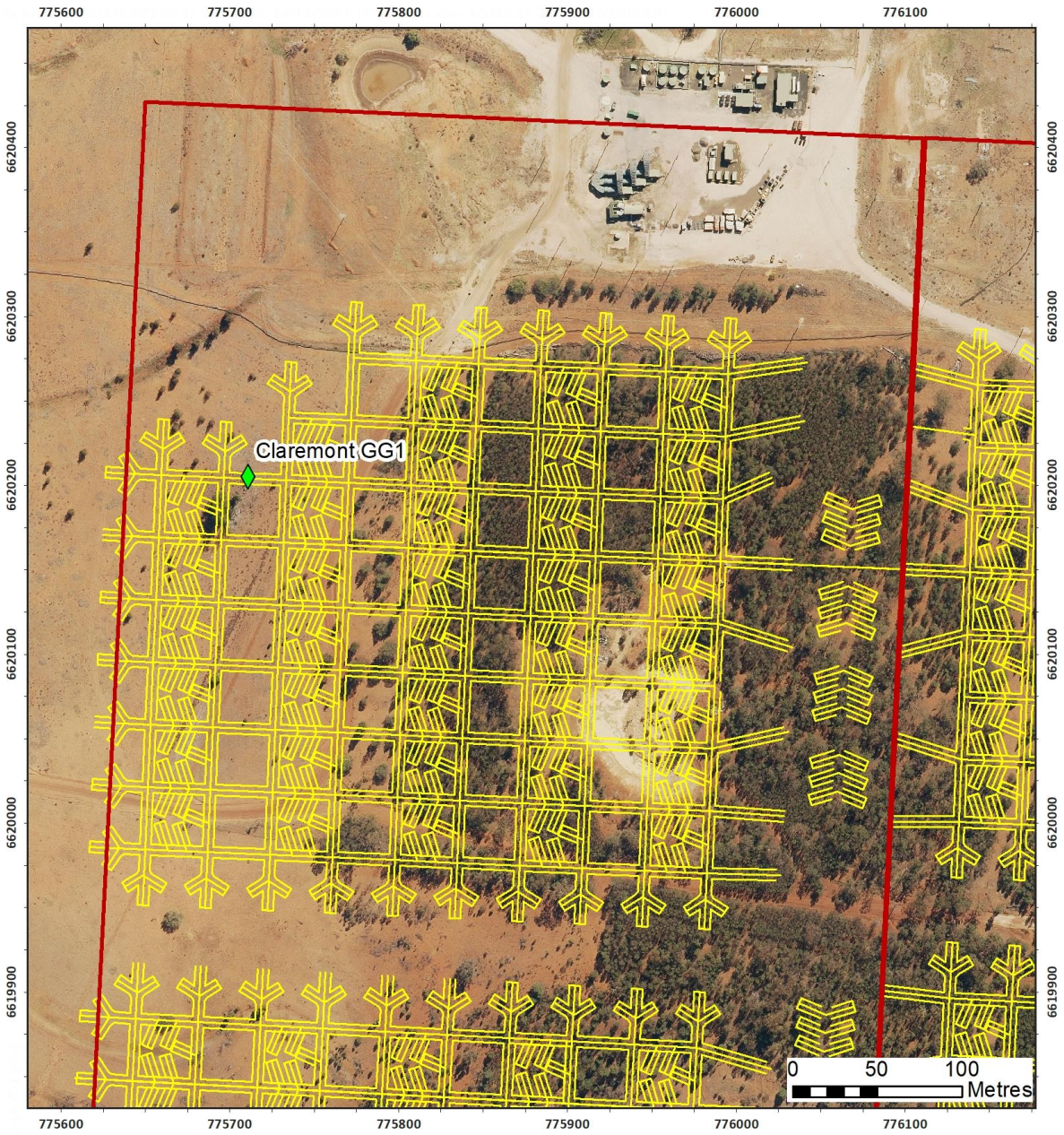
The proposed MRZ below the Claremont GG1 site is further detail in section 8.5 of the Subsidence Predictions Report, provided as Appendix B to the Extraction Plan.



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Claremont GG1

- ★ Artefact Scatter
- Isolated artefact
- ◆ Grinding Grooves
- Extraction Plan Area
- Proposed Bord and Pillar Mining Layout
- ML 1609

Drawn by: Katherine Whincop, 12 Nov 2021
Projection: GDA 1994 MGA Zone 55
Data sources: Whitehaven Coal Group, Geoscience Australia



Figure 3.1 - Context of Claremont GG1 (AHIMS 19-6-0212)


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Table 3.3 - Predicted subsidence effects at Aboriginal heritage sites

Site name	Site Type (No.)	Panel	Final subsidence (m)	Final tilt (mm/m)	Transient & final horizontal ground strain (mm/m) [^]	
					Transient	Final
Claremont GG1*	Grinding groove (1)	CF201(B)	0.002	0.5	-	< 1


[^] - Tensile strain is positive; (brackets) - Discontinuous strains due to tensile cracking or compressive shearing.

* - site protected by MRZ

Any site remediation works, such as the ripping of large surface cracks or channel earthworks, also have the potential to impact grinding grooves. For this reason, Claremont GG1 will be fenced and protected from inadvertent harm (see Attachment 1).

Table 3.4 - Management summary

Management Recommendation	AHIMS ID
Monthly monitoring whilst undermining	19-6-0212
Annual Monitoring	All sites
Installation of protective fencing	All sites
Remediation of Cracks	As required
Formulation of Action Plan	19-6-0212

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4. Subsidence management

4.1 Objectives

The objectives for the management of cultural heritage values of the Panels 201-202 Extraction Plan Area are to:

- identify, as far as practical, all Aboriginal cultural heritage sites and objects;
- consult and actively involve the RAPs in the management of Aboriginal cultural heritage sites and objects;
- advise mine staff and contractors of their personal responsibility in avoiding, managing and mitigating impacts on Aboriginal cultural heritage;
- provide a process for mine staff and contractors to follow in managing Aboriginal cultural heritage during the carrying out of their day-to-day operational activities at the Narrabri Mine site;
- avoid or mitigate disturbance to Aboriginal cultural resources as far as practicable;
- salvage archaeological and cultural values at sites where impacts on sites are unavoidable (refer Attachment 1);
- provide suitable conservation measures to ensure on-going protection to those Aboriginal sites and objects not impacted by the project;
- ensure Narrabri's commitment to best practice in the management and mitigation of Aboriginal cultural heritage is reflected in its environmental management policies and protocols; and
- meet the conditions of development consent and associated modifications.

NCOPL will implement all practical measures to prevent and/or minimise any harm to the environment that may result from construction, operation or rehabilitation activities at the Narrabri Mine.

4.2 Performance measures and indicators

Performance measures for cultural heritage values are presented in Table 4.1, and have been developed for the Panels 201-202 Extraction Plan Area in accordance with Project Approval and approved Statement of Commitments.

Monitoring will be used to assess the impact of the mining operations against the performance measures and indicators. If monitoring and assessment indicates that a performance indicator has been exceeded, or likely to be exceeded, Narrabri Mine will implement the contingency measures outlined in section 5.3.


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Table 4.1 - Performance measures – cultural heritage

Performance measure	Indicator of success	Key assessment considerations
Site remediation works do not compromise Aboriginal objects or cultural heritage values.	Works are undertaken in accordance with the Mining Operations Plan (MOP), ACHMP and the EP-HMP.	1. Does the monitoring and assessment indicate that a performance measure or development consent condition has been exceeded, or likely to be exceeded? 2. Does this exceedance increase the risk of any sites being impacted?
	Any new sites identified are assessed for impacts and any management recommendations are consistent with the management plan.	
Aboriginal cultural heritage values have been salvaged to contemporary best practice standards.	Salvage of Aboriginal objects undertaken prior to impact in accordance with the approved EP-HMP and with approval of the Secretary.	3. What is the nature of the risk? <ul style="list-style-type: none"> • Cracking • Ponding • Erosion • Subsidence remediation works 4. What are the potential factors that may have contributed to the risk i.e. subsidence, inadequate management measure or natural processes? What actions, if any are required to mitigate and/or minimise the potential for future impacts and monitor the long-term impacts of the exceedance?

4.3 Trigger Action Response Plan

Subsidence management for heritage considerations within Panels 201-202 has been presented as a Trigger Action Response Plan (TARP) as detailed within Table 4.2.



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Table 4.2 - Trigger action response plan (TARP)

Monitoring	Trigger	Action
All sites within a given pillar mining area	Level 1 Prior to mining	Installation of fencing at all sites to prevent inadvertent harm. Documented visual inspection (including photographs) of all sites within the Extraction Plan Area will be undertaken by a qualified archaeologist in consultation with RAPs to record the current condition of each site. Responsibility – Environmental Superintendent Reporting – Internal
	Level 1 During mining	Maintain fencing and inspect all sites on a monthly basis during undermining. The inspections will aim to monitor cracking (if any) within archaeological sites, any erosion potentially threatening the site and whether remediation works are required. Responsibility – Environmental Superintendent Reporting – Internal
	Level 1 Within six months of cessation of mining in a pillar	Documented visual inspection (including photographs) of all sites within the Extraction Plan Area will be undertaken by a qualified archaeologist in consultation with RAPs to record the current condition of each site Responsibility – Environmental Superintendent Reporting – Internal
All sites	Level 1 Prior to any surface disturbance within 10 m of an identified site.	Every effort will be made to avoid the remaining sites during all subsidence remediation works. If subsidence remediation works cannot avoid impacting a site, that site will be collected in accordance with Attachment 1. Responsibility – Environmental Superintendent Reporting – Internal
19-6-0212 (Claremont GG1)	Level 1 During mining	Maintain fencing and monitor monthly for potential subsidence impacts including cracking, ponding and/or increased erosion. All fencing and signage will be removed from Aboriginal sites on completion of mining operations. Responsibility – Environmental Superintendent Reporting – Internal
	Level 2 Prior to any surface disturbance within 10 m of sites	Should any subsidence remediation works be required within 10 metres and impact to the site is unavoidable, (subject to reasonable efforts to avoid such sites), the sites will be relocated as outlined within Attachment 1. Responsibility – Environmental Superintendent Reporting – Internal
Within 100 metres of Kurrajong Creek and tributaries	Level 1 Prior to topsoil stripping	RAPs will be invited to monitor the activities as outlined within Attachment 1. Responsibility – Environmental Superintendent Reporting – Internal
All of site	Level 1 Ongoing	All employees and contractors will be subject to cultural heritage awareness education as part of the induction. Employees and contractors involved with surface disturbance activities will be subject to a more comprehensive cultural heritage awareness education package. Until such a time as this awareness training is implemented, all stripping works onsite will involve representatives from the RAPs, except where the work is being undertaken in previously disturbed areas. Responsibility: Mining Engineering Manager, Employees and contractors Reporting – Internal
	Level 2 Discovery of new finds of Aboriginal objects.	The discovery of new Aboriginal objects will be recorded on standard AHIMS site cards and lodged with AHIMS as outlined in Attachment 3. Sites within the subsidence impact area will be managed in accordance with Attachment 1 and in consultation with the RAPs and archaeologist. Responsibility – Environmental Superintendent Reporting – Internal
	Level 3 Identification of potential human remains.	Cease work in that area. No works to recommence until clearance is provided by Heritage NSW and/or where appropriate the NSW Police as per the protocol outlined in Attachment 3. Responsibility – General Manager Reporting – Internal, Heritage NSW/NSW Police

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5. Implementation and operation

5.1 Resources and responsibilities

During the operational phases of the development, the Narrabri Mine will be managed by the General Manager who will have overall responsibility for ensuring contractors, employees and service providers comply with all laws, regulations, licences, approvals and conditions of the project approval. Table 5.1 outlines the roles and responsibilities outlined within this EP-HMP.

Table 5.1 - Roles and responsibilities

Role	Responsibility
General Manager	Provide the resources necessary to implement this EP-HMP.
Mining Engineering Manager	Ensure all contractors, subcontractors and service personnel are appropriately inducted, qualified, competent and/or licensed to undertake the required work and have a good environmental performance record
Technical Services Manager	Authorise changes to this EP-HMP
Environmental Superintendent	Implementing this EP-HMP on a day-to-day basis in consultation with the RAPs. EP-HMP review.
Archaeologist(s)	Provide technical advice on the management of archaeological values of Aboriginal cultural heritage objects and/or places.
RAPs	Provide expertise in the management of Aboriginal cultural heritage objects and/or places.


As part of all Narrabri Mine inductions, an Aboriginal cultural heritage component is included. This outlines current protocols and responsibilities with respect to the management of Aboriginal cultural heritage for the mine. It also provides an overview of the site types present and procedures for reporting the identification of Aboriginal objects. All employees and contractors will be subject to cultural heritage awareness education, and a record kept of all who have participated in the training.

An Aboriginal cultural awareness training package has been developed for use throughout the operational life of the Narrabri Mine. Employees and contractors involved with surface disturbance activities will be subject to this more comprehensive cultural heritage awareness education package, which has been/will be developed in consultation with the RAPs. Aboriginal cultural awareness training is mandatory for all staff whose roles may reasonably bring them into contact with Aboriginal objects and/or involve consultation with local Aboriginal community members. Training is also offered on a voluntary basis to all other mine staff and contractors.

It is important to note that failure to report the discovery of an Aboriginal object, and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to an Aboriginal object or place, may be prosecuted under the NP&W Act.

5.2 Stakeholder consultation

In accordance with Condition 4(h) of Schedule 3 of Project Approval, this EP-HMP has been prepared in consultation with Heritage NSW (formerly OEH) and relevant Aboriginal stakeholders.

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A draft (Revision B) of the EP-HMP was provided to Heritage NSW and to the RAPs for review and comment. Heritage NSW provided a response with no specific comments regarding on 10 January 2022. Comments received from RAPs during the consultation period have been incorporated into this EP-HMP, where appropriate.

A correspondence log for the development of this EP-HMP is provided in Attachment 5.

The following protocol will be followed with respect to ongoing consultation.

5.2.1 Notification

Notification to the RAPs will occur within a reasonably prompt timeframe where:

- changes to the Narrabri Mine may have implications for Aboriginal heritage management;
- there is a significant discovery in the course of development: e.g. Aboriginal ancestral remains or archaeological features; or
- where significant land management actions are required within close proximity to a known Aboriginal site.

Urgent issues requiring the attention of the RAPs will be communicated no later than one week of the issue arising.

5.2.2 Timeframes and format of responses

Feedback requested from the RAPs should be received by Narrabri Mine preferably within four weeks from the date correspondence is issued by Narrabri Mine, as per principles outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (NSW Department of Environment Climate Change & Water, 2010). The format of the response should be in written form as either a dated letter or email. The appropriate address for responses shall be provided as part of the request.

Where no response is issued within this timeframe, a follow-up phone call will be made by the Environmental Superintendent to close out the outstanding request.


5.2.3 Review of consultation protocol

The effectiveness and value of the consultation process will be periodically reviewed internally by Narrabri Mine based on past consultation and feedback from the RAPs. If the review determines that the approach to consultation needs adjusting, any changed procedures would be documented and a copy forwarded to the Secretary of the Department for approval.

5.3 Contingency response

In the event that the performance measures provided in section 4.2 are considered to have been exceeded, or are likely to be exceeded, Narrabri Mine will undertake the following:

1. report the likely exceedance of the performance indicator as soon as practicable to the relevant agencies as required under the Project Approval or legislation;

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2. identify an appropriate course of action with respect to the identified impact in consultation with appropriate specialists, relevant agencies and the RAPs; and
3. review the effectiveness of this EP-HMP and performance measures to adequately manage potential impacts within the limits of the PA.

5.4 Reporting

The Annual Review (**AR**) is the primary reporting tool. The AR is required to be prepared under the Narrabri Mine Project Approval to review the performance of the mine against the Environmental Management Strategy and the relevant Mining Operations Plan, the conditions of the Project Approval, and other licences, permits and approvals relating to the mine.

In the context of archaeology and cultural heritage management, the AR will report and review the findings of monitoring conducted in relation to the items in Table 3.3 and Table 3.4.

Once finalised and approved, the AR will be publicly available via the Whitehaven Coal (**WHC**) website.

5.5 Independent environmental audits

Prior to 13 September 2010, and every 3 years thereafter, unless the Secretary directs otherwise, NCOPL will commission and pay the full cost of an Independent Environmental Audit (**IEA**) of the operations at Narrabri Mine (Stages 1 and 2), to be conducted in accordance with the requirements under Schedule 6 Condition 7.

The audit team will be led by a suitably qualified auditor and the IEA will be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary.


5.6 Management plan review and evaluation

As required by Schedule 6 Condition 3 of the Project Approval, within three months of any of the following:

- completion of an independent environmental audit (as required by Schedule 6 Condition 7);
- submission of an Incident Report (as required by Schedule 6 Condition 4);
- submission of an Annual Review (as required by Schedule 6 Condition 6); and
- any modification to the conditions of the Project Approval (unless the conditions require otherwise),

NCOPL will the review, and if necessary, revise this EP-HMP. This is to ensure that the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Narrabri Mine operations. The review history table in the front of this Plan provides the details of each review.

Condition 3 of Schedule 6 further states that if the review determines that the EP-HMP requires revision, then this will be completed to the satisfaction of the Secretary.

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5.7 Complaints management

A complaints management protocol has been developed to ensure an appropriate and consistent level of reporting, response and follow-up is adopted by the Narrabri Mine. The following complaints management protocol will be followed for all complaints received relating to Aboriginal cultural heritage:


- a publicly advertised telephone complaints line will be in place to receive complaints during operating hours and record complaints at other times.
- each complaint received will be recorded on a Complaints Form, which will include the following details:
 - the date and time of complaint;
 - any personal details the complainant wishes to provide or if no such details are provided a note to that effect;
 - the nature of the complaint;
 - the action taken by Narrabri Mine in relation to the complaint, including any follow-up contact with the complainant; and
 - if no action was taken by Narrabri Mine, the reason why no action was taken;
- the Environmental Superintendent will be responsible for ensuring that an initial response is provided within 24 hours of receipt of a complaint (except in the event of complaints recorded when the mine is not operational).
- the cause of the complaint and any required remedial actions will be identified.
- additional measures will be undertaken as required to address the complaint.
- once the identified measures are undertaken, the Environmental Superintendent will sign off on the relevant complaint within the Complaints Register.
- if necessary, follow-up monitoring will take place to confirm the source of the complaint is adequately mitigated.
- a copy of a Complaints Register will be kept by Narrabri Mine and is available on the NCOPL website. A summary of complaints received every 12 months will be provided to the relevant regulators and included within the AR.

Based on the nature of individual complaints, specific contingency measures may be implemented to the (reasonable) satisfaction of the complainant. The Environmental Superintendent retains ultimate responsibility to ensure that complaints received are properly recorded and appropriately addressed.

5.8 Dispute resolution

In the event that a complainant consider that the mine's response or reactions do not adequately address their concerns, or that a person believes that the mine is not implementing this EP-HMP satisfactorily, the following procedure will be adopted:

1. a meeting will be convened with the General Manager, or delegate, and Environmental Superintendent to seek resolution of the matter. The complainant will be provided with a written response from Narrabri Mine detailing the results of investigations to date and the agreed actions to be taken in respect of the measures to be implemented. The mine may seek advice from a qualified expert to assist (e.g. archaeologist).
2. upon implementation of the nominated measures, a further meeting will be convened to seek advice of satisfaction or otherwise as to the outcomes.

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If, after 21 days following steps 1 and 2, the complainant believes the matter remains unresolved and no further agreement can be reached as to additional measures to be undertaken, the matter will be subject to an Independent Dispute Resolution Process (refer to Appendix 5 of the Project Approval)

5.9 Incident notification

An incident is defined under the Project Approval as *a set of circumstances that causes or threatens to cause material harm, and/or breaches or exceeds the limits of performance measures/criteria*. Material harm to the environment is defined under the Project Approval as *involving actual or potential harm to the health or safety of human beings or to the environment that is not trivial*. This definition excludes “harm” that is authorised under either the Project Approval or any other statutory approval (e.g., the EPL).

In the event of any exceedance of performance criteria, NCOPL will advise the Secretary and any other relevant agencies as soon as practicable after becoming aware of the incident, in accordance with Schedule 6 Condition 4. Within 7 days of the event, NCOPL will also provide the Secretary and any relevant agencies a detailed report which will:

- describe the date, time and nature of the exceedance/incident;
- identify the cause (or likely cause) of the exceedance/incident;
- describe what action has been taken to date; and
- describe the proposed measures to address the exceedance/incident.

Notifications to the EPA will be made by contacting the Environment Line service on 131 555 and written details of the notification will be provided within 7 days of the date on which the incident occurred.

Incident reporting and emergency response is further described in NCO’s Environmental Management System.


5.10 Non-compliance notification

In accordance with Schedule 6 Condition 2, where a non-compliance with statutory requirements or an exceedance of the relevant criteria or performance measures has occurred, NCOPL will, at the earliest opportunity, take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur. Once this has been achieved, all reasonable and feasible options for remediation (where relevant) will be considered.

In accordance with Schedule 6 Condition 4, within seven days of becoming aware of a non-compliance, NCOPL will notify DPE of the non-compliance¹. The notification will be made in writing via the Major Projects website and identify the development (including the development application number and name), set out the condition or requirement that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

NCOPL will implement any reasonable remediation measures as directed by the Secretary, to the satisfaction of the Secretary.


¹ A non-compliance which has been notified as an incident under section 5.9 does not need to also be notified as a non-compliance.

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5.11 Access to information


In accordance with Schedule 6 Condition 10 of the Project Approval, the approved Extraction Plan and all appendices, audits and reports, and summaries of all monitoring data (where relevant) will be made publicly available on the WHC website. All information will be kept up to date.

Note that any printed copies of this EP-HMP are uncontrolled.

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7. Glossary

Term	Definition
Council	Narrabri Shire Council
Cover depth	The depth of coal seam from the ground surface (metres).
Department	The NSW Department of Planning and Environment (DPE)
Environmental consequences	The environmental consequences of subsidence impacts including: damage to built features; loss of surface flows to the subsurface; loss of standing pools; adverse water quality impacts; development of iron bacterial mats; cliff falls; rock falls; damage to Aboriginal heritage sites; impacts to aquatic ecology; ponding.
Far-field subsidence	Mining-induced movements of the ground surface in areas where vertical subsidence is less than 20mm.
First workings	Development headings created by a continuous mining machine - designed to remain stable during development and longwall extraction. Provide ventilation and services, access for staff and materials, and allow for transportation of raw coal out of the mine (i.e. also referred to as mains headings, gate roads, maingate, tailgate).
Goaf	The mined-out area into which the immediate roof strata breaks.
Groundwater	Water contained in the interconnected pore spaces and voids of the saturated zone of sediments and rocks.
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance
Material harm	Material harm to the environment is defined in section 147 of the POEO Act
Minimise	Implement all reasonable and feasible mitigation measures to reduce the impacts of the Project
Mitigation	Activities associated with reducing the impacts of the development
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
Pollution incident	Has the same meaning as in the POEO Act
Project Approval	Development consent (DA_08_0144) issued on 26 July 2010 under Section 75J of the Environmental Planning and Assessment Act 1979 by the Department of Planning & Infrastructure (and as modified).
Second workings	Extraction of coal from longwall panels, mini-wall panels, or pillar extraction.
Subsidence	The totality of subsidence effects, subsidence impacts and environmental consequences of subsidence impacts.
Subsidence effects	Deformation of the ground mass due to mining, including all mining-induced ground movements, including both vertical and horizontal displacement, tilt, strain and curvature.
Subsidence impacts	Physical changes to the ground and its surface caused by subsidence effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface depressions or troughs.
Rehabilitation	The restoration of land disturbed by the development to ensure it is safe, stable and non-polluting over the short, medium and long term
Unacceptable risk	The level of risk at which mitigation actions are deemed to be warranted.
Upsidence	Relative vertical upward movements of the ground surface associated with subsidence.




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Term	Definition
Vertical subsidence	Vertical downward movements of the ground surface caused by underground coal mining.
Watercourse	A river, creek or other stream, including a stream in the form of an anabranch or tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events: In a natural channel, whether artificially modified or not, or in an artificial channel that has changed the course of the stream. It also includes weirs, lakes and dams

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Attachment 1 Management measures

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Introduction

The following management measures have been based upon the recommendations of the Stage 2 Aboriginal Heritage Assessment (Archaeological Surveys & Reports Pty Ltd, 2009), Stage 3 (Whincop Archaeology 2020b) and consultation with the Narrabri LALC and Gomeroi Narrabri People.

Subsidence impact monitoring

Subsidence cracking/ponding and subsequent site remediation works such as the ripping of large surface cracks or channel earthworks have the potential to impact artefact scatters. The extent of these potential impacts on site is difficult to predict given the lack of subsidence data and limited local knowledge of ground response to mining.

Weekly visual inspections will be undertaken to monitor for active subsidence (refer to the Land Management Plan). In the event that subsidence cracking, and/or remediation works are considered likely to occur within 10 m of a known Aboriginal cultural heritage site recorded over Panels 201-202, identified through subsidence monitoring, the site will be salvaged as outlined below. The remaining sites will be avoided where practicable. In the event that subsidence remediation works make impacts on sites unavoidable (subject to reasonable efforts to avoid such sites), the sites will also be salvaged in the manner described below.

Fencing of sites


Fences will be installed at all Aboriginal cultural heritage sites within the Narrabri Mine to protect them from inadvertent or accidental damage from vehicular traffic. While fenced, the sites will have signage identifying them as 'Environmental Protection Zones' to avoid damage to the sites that might otherwise occur if they were described as Indigenous or Culturally Sensitive Areas (Archaeological Surveys & Reports Pty Ltd, 2009).

Management of remediation works

The boundaries of all sites have been determined by an archaeologist in consultation with the representatives of the RAPs (Landskape, 2010). GPS coordinates for each site were recorded using a hand-held GPS unit and an appropriate works exclusion zone (minimum 10 m) was devised in consultation with the RAPs. Should any subsidence remediation works be required within 10 m of any site of low scientific significance, and impact to that site is unavoidable, (subject to reasonable efforts to avoid such sites), the Aboriginal objects within that site will be salvaged in accordance with the below Site Collection procedure.

Should any subsidence remediation works be required within 10 metres of an artefact scatter of moderate scientific significance, and impact to the site is unavoidable, (subject to reasonable efforts to avoid such sites), that site will be subject to archaeological salvage excavation in accordance with the below archaeological excavation procedure.

One grinding groove site is located within potential areas of subsidence, although DGS (2021) has determined that cracking of the Claremont GG1 (AHIMS 19-6-0212) grinding groove is unlikely due to the implementation of the MRZ. The site is to be fenced to protect the grinding groove from inadvertent or accidental damage. While fenced, the site will have signage identifying it as 'Environmental Protection Zones'. The site will be subject to monthly monitoring to ensure potential cracking as a result of subsidence is identified and can be effectively mitigated. An action plan will be developed for the management of these site, and will outline potential mitigation options in case cracking to a grinding groove site occurs. Mitigation options will include potential relocation of the grinding groove to a suitable location, as agreed in consultation with the RAPs and relevant technical experts (e.g. archaeologist, geotechnical).

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Aboriginal site salvage

Site collection


Only those sites with a high probability of impact from subsidence induced surface cracking will be subject to surface collection by the RAPs accompanied by an archaeologist according to the following procedure:

1. Notify the DPE prior to commencing any salvaging works;
2. Commission an archaeologist and invite representatives from the RAPs to salvage the artefacts by hand collection or excavation, when a subsurface component is deemed likely to exist;
3. Individual artefacts will be flagged;
4. The locations of flagged artefacts will be recorded by a Differential GPS;
5. Flagged artefacts will be allocated a Unique Reference Number (**URN**);
6. Each artefact will be individually bagged with relevant provenance data recorded on, or in, the bag with URN, site number, date and collection details;
7. Artefacts will be retained for recording and report preparation;
8. Basic attributes will be recorded on collected artefacts: raw material, technological type, implement type, weight, maximum dimension;
9. A summary report will be prepared with individual artefact locations mapped; and
10. Following site collection, the archaeologist will, in consultation with the attending RAPs, provide written notification (within 7 days) of the sites cleared for ground disturbance works.

Archaeological excavation

Excavation will be conducted by an archaeologist and RAPs at artefact scatters of moderate scientific significance, if needed. Excavation will be undertaken according to the following protocol:

1. Notify the DPE prior to commencing any salvaging works;
2. Commission an archaeologist and invite representatives from the RAPs to salvage the artefacts by excavation;
3. Open area excavation of artefact sites of moderate scientific significance will be undertaken only in the unlikely event that impact to the site is unavoidable (subject to reasonable efforts to avoid such sites) and for the purpose of identifying aspects of stone artefact technology and assemblage. These aspects will be analysed to explore the question of Aboriginal occupation and technological organisation within the region;
4. The extent of the site as visible on the surface (determined in the field by the archaeologist) will be subject to test pitting, where 0.5x0.5 m shovel test pits are dug by hand in 5 cm spits to an identifiable culturally sterile base, in order to assess the level of disturbance and extent of subsurface artefacts within the soil profile;
5. Based on the results of the test pitting (see above), an artefact site of moderate scientific significance may be subject to open area excavation, where in situ subsurface cultural deposits were identified within the test pitting. Excavation will occur in 1x1m units across areas where in situ material occurs;
6. Open area excavation will expand according to artefact densities encountered with the goal of recovering knapping floor concentrations to the extent reasonably possible. Where a hearth feature is encountered, the feature will be excavated in sections, to ensure careful stratigraphic control and to recover any charcoal for radiocarbon dating. Charcoal samples will be submitted for dating where suitable samples in reliable archaeological cultural contexts are recovered; and
7. Artefacts recovered from excavation will be analysed for the purpose of identifying aspects of stone artefact technology and assemblage. These aspects will be analysed to explore the question of Aboriginal technological organisation within the region, comparing and contrasting with the available reported results of assemblage characteristics.

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The research design outlined here would be developed further in the course of the archaeological salvage project and reporting.

The timeframe for analysis of stone artefacts recovered from the archaeological excavations will take up to 12 months from completion of fieldwork.

Aboriginal keeping place

Following completion of analyses and reporting, any salvaged Aboriginal objects will be stored in an Interim Keeping Place at the mine. In the event that further impacts are likely to occur and the salvaged material is to remain within a designated long term 'keeping place', an application for a care agreement must be sent to Heritage NSW to satisfy the requirements of the NP&W Act. A care agreement sets out the obligations of Heritage NSW and the Aboriginal person or Aboriginal organisation for the long-term safekeeping of the transferred Aboriginal object(s).

Where there is unlikely to be any further disturbance or site remediation works the artefacts can be returned to their original location. The AHIMS site cards will be updated to reflect the activities that have occurred.

Ground impacts from weed and feral animal management

Measures to control weeds and feral animals will avoid ground impacts to identified Aboriginal cultural heritage sites. Rabbit warrens at these locations will not be ripped.

Exemptions for emergency vegetation management

Should an emergency situation arise requiring vegetation clearance (for example firefighting) in the vicinity of protected Aboriginal cultural heritage sites, this will be undertaken with the minimum possible disturbance to the topsoil.

Consultation protocol

Prior to any topsoil stripping within 100 m of Kurrajong Creek and its tributaries, the RAPs will be informed of the extent, location, timing and expected duration of the planned remediation works and NCOPL will invite a representative of the RAPs to monitor the activities.


In the event that any potential Aboriginal objects are identified in the absence of the RAPs, the General Manager, or authorised delegate, will notify the RAPs following the initiation of the procedures as identified in Attachment 3.

In the event that any changes are proposed to the EP-HMP, or modifications are proposed to approved activities that may have impacts on items of cultural heritage significance, the General Manager, or authorised delegate will notify the RAPs for consideration and comment.

The effectiveness and value of the RAP consultation process will be periodically reviewed. In the event that the approach to consultation requires adjustment, revised procedures would be documented and a copy forwarded to the Secretary and recorded in the relevant AR.


Aboriginal Heritage Information Management System (AHIMS)

All previously unrecorded Aboriginal cultural heritage sites will be recorded by an archaeologist and submitted to AHIMS for registration.

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Workforce education and contractor awareness

All employees and contractors will complete cultural heritage awareness education as part of the induction. Employees and contractors involved with surface disturbance activities will be subject to a more comprehensive cultural heritage awareness education package to be developed in consultation with the RAPs. Until such a time as this awareness training is implemented, all stripping works onsite will involve representatives from the RAPs, except where the work is being undertaken in previously disturbed areas.

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Attachment 2 Management of Aboriginal sites


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Table A2.1 - Management of Aboriginal sites Panels 201 to 202

AHIMS	Site name	Type	#Scientific significance	Location	Potential impacts*	Management
19-6-0095	Kurrajong T1/OS 55	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP.
19-6-0096	Kurrajong T1/OS 56	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0098	Kurrajong T1/OS 58	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0101	Kurrajong T1/OS 61	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0102	Kurrajong T1/OS 62	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0103	Kurrajong T1/ISO 64	IA	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP



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AHIMS	Site name	Type	#Scientific significance	Location	Potential impacts*	Management
19-6-0104	Kurrajong T1/OS 65	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0105	Kurrajong T1/OS 66	AS	Low	CF203-E	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0106	Kurrajong T1/OS 67	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0107	Kurrajong T1/ISO 68	IA	Low	CF202-C	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0108	Kurrajong T1/OS 69	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0109	Kurrajong T1/OS 70	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP



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AHIMS	Site name	Type	#Scientific significance	Location	Potential impacts*	Management
19-6-0110	Kurrajong T1/OS 71	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0111	Kurrajong T1/OS 72	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0112	Kurrajong T1/ISO 73	IA	Low	CF203-E	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0113	Kurrajong T1/OS 74	AS	Low	CF203-E	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0114	Kurrajong T1/OS 75	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0115	Kurrajong T1/OS 76	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP



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AHIMS	Site name	Type	#Scientific significance	Location	Potential impacts*	Management
19-6-0116	Kurrajong T1/ISO 77	IA	Low	CF202-C	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0117	Kurrajong T1/OS 78	AS	Low	CF202-D	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0118	Kurrajong T1/ISO 79	IA	Low	CF202-C	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0119	Kurrajong T1/OS 80	AS	Low	CF202-C	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0161	Kurrajong T1/OS 63	AS	Low	CF201-A	<ul style="list-style-type: none"> • Site Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Annual monitoring • If remediation required, all works in accordance with procedures in EP HMP
19-6-0212	Claremont GG1	GG	Low	CF201-B	<ul style="list-style-type: none"> • Cracking • Ponding • Erosion 	<ul style="list-style-type: none"> • Avoid where practicable • Installation of protective fencing as per ACHMP • Monthly monitoring • Formulation of Action Plan within 6 months of EP HMP approval • If remediation required, all works in accordance with procedures in EP HMP

Note: This table refers to scientific significance: RAPs consider all sites to be culturally significant.

* Potential impacts identified by DGS (2021).

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Attachment 3 Chance Finds Protocol

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Non-indigenous heritage

No items of non-indigenous heritage have been identified during the various environmental impact assessment processes across the Narrabri Mine. In the event that any sites or items of potential historic significance are discovered during construction or operation, all work in the immediate area will halt and Narrabri Mine will seek specialist advice.

Discovery of Previously Unrecorded Aboriginal Heritage Object(s)

In the event that previously unidentified Aboriginal objects are discovered throughout the life of the mine, the following procedure (in consideration of the *Guide to Investigating, assessing and reporting on Aboriginal cultural heritage in NSW* [OEH, 2011]) is to be adopted:


1. All works will cease immediately in the area to prevent any further impacts to the object(s).
2. Notify the Environment Superintendent immediately, who will assess whether works can continue in the area with safeguards in place.
3. The work supervisor will notify the Environment Superintendent and/or General Manager or delegate, who will:
 - (a) Request a qualified archaeologist to attend the site and determine the nature, extent and scientific significance of the object(s);
 - (b) Request the site monitor from the RAPs, if not already present, to attend and advise on the cultural significance of the object(s) in consultation with the qualified archaeologist;
4. If the site is determined to be of Aboriginal origin by the qualified archaeologist:
 - (a) Proposed management actions will be discussed with attending RAPs.
 - (b) Management actions will be implemented (including salvage and/or other measures) in accordance with the procedures outlined in the Narrabri Mine ACHMP for the type of site; and
 - (c) the site will be registered on the AHIMS online database in compliance with s89A of the NP&W Act. A copy will also be provided to those RAPs who have indicated in writing that they would like a copy.
5. Subject to the recommendations of the archaeologist and the RAPs, the appropriate approvals will be applied for prior to further work being undertaken in the vicinity of the site. Any action to disturb or transfer Aboriginal items may also require the development of excavation and/or salvage plans in consultation with Heritage NSW and with approval of the Secretary.
6. Revision of the Narrabri Mine ACHMP would occur in accordance with the protocols outlined in the ACHMP. A revision would incorporate any newly identified sites and their management, but it is not required to occur prior to the implementation of the agreed management approach.

Failure to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to an Aboriginal object may be prosecuted under the NP&W Act (as amended).

Discovery of skeletal remains

In the event that construction activity reveals possible human skeletal material (remains) within the development area, the following procedure is to be followed:

1. As soon as remains are exposed, all work is to halt at that location and the General Manager or other senior Narrabri Mine person on site is to be immediately notified;
2. General Manager, or other senior Narrabri Mine person, will contact NSW police (000); and
3. General Manager, or other senior Narrabri Mine person, will contact the Heritage NSW Environment Line (131 555) and the Heritage Division (02 9873 8500).


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A physical or forensic anthropologist should inspect the remains in situ (organised by the police unless otherwise directed by the police), and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic):

1. If the remains are identified as forensic the area is deemed as a crime scene;
2. If the remains are found to be archaeological, rather than forensic, Heritage NSW of the Department of Premier and Cabinet must be notified in writing
- 3.

The above process functions only to appropriately identify the remains and secure the site. The management of the area and remains is to be determined as follows:

1. If the human remains are identified as a forensic matter, liaise with the police;
2. Depending on the nature of the human remains (historical or Aboriginal), notification is required either under the Heritage Act 1977 or the National Parks and Wildlife Act 1974.; and
3. If the remains are identified as non-human, work can recommence once the appropriate clearances have been given.

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Attachment 4 Compliance conditions relevant to the EP-HMP


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Table A4.1 - Relevant Project Approval 08_0144 requirements

Project Approval 08_0144 conditions		Document reference
Condition	Requirement	
Schedule 2 Condition 1	The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.	Section 4.1
Schedule 2 Condition 11	<p>With the approval of the Secretary, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.</p> <p>Note: <i>The conditions of this approval require certain strategies, plans, and programs to be prepared for the project. They also require these documents to be reviewed and audited on a regular basis to ensure they remain effective. However, in some instances, it will not be necessary or practicable to prepare these documents for the whole project at any one time, particularly as these documents are intended to be dynamic and improved over time. Consequently, the documents may be prepared and implemented on a progressive basis, subject to the conditions of this approval. In doing this however, the Proponent will need to demonstrate that it has suitable documents in place to manage the existing operations of the project.</i></p>	There is no staging for the EP-HMP for Panels 201-202
Schedule 3, Condition 4 (h)	<p>The Proponent shall prepare and implement Extraction Plans for any second workings to be mined to the satisfaction of the Secretary. Each Extraction Plan must:</p> <p>include a:</p> <p>Heritage Management Plan, which has been prepared in consultation with Heritage NSW and relevant stakeholders for Aboriginal heritage, to manage the potential environmental consequences of the proposed second workings on heritage sites or values; and;</p> <p>Notes: <i>Management plans prepared under condition 4(h) should address all potential impacts of proposed underground coal extraction on the relevant features. Other similar management plans required under this approval (eg under conditions 13 and 23 of schedule 4 or condition 3 of schedule 5) are not required to duplicate these plans or to otherwise address the impacts associated with underground coal extraction.</i></p>	This Plan
Schedule 3, Condition 5	<p>The Proponent shall ensure that the management plans required under Schedule 3 Condition 4(h) include:</p> <p>a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval;</p> <p>b) a detailed description of the measures that would be implemented to remediate predicted impacts; and</p> <p>c) a contingency plan that expressly provides for adaptive management.;</p>	Section 3
Schedule 3, Condition 5	b) a detailed description of the measures that would be implemented to remediate predicted impacts; and	Section 3.1.3
	c) a contingency plan that expressly provides for adaptive management.;	Section 4.3
	Schedule 6, Condition 2	<p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>a) detailed baseline data;</p>



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Project Approval 08_0144 conditions		Document reference
Condition	Requirement	
	b) a description of:	
	<ul style="list-style-type: none"> the relevant statutory requirements (including any relevant approval, licence or lease conditions); 	Section 1.2
	<ul style="list-style-type: none"> any relevant limits or performance measures/criteria; 	Section 4.2
	<ul style="list-style-type: none"> the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures 	Section 4.2
	c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria:	Attachment 1
	d) a program to monitor and report on the:	
	<ul style="list-style-type: none"> impacts and environmental performance of the project; 	Section 4.2
	<ul style="list-style-type: none"> effectiveness of any management measures (see (c) above); 	Section 5.4
	e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 5.3
	f) a program to investigate and implement ways to improve the environmental performance of the project over time;	Section 5.5
	g) a protocol for managing and reporting any:	
	<ul style="list-style-type: none"> incidents; 	Section 5.9
	<ul style="list-style-type: none"> complaints; 	Section 5.7
	<ul style="list-style-type: none"> non-compliances with statutory requirements; and 	Section 5.10
	<ul style="list-style-type: none"> exceedances of the impact assessment criteria and/or performance criteria; and 	
	h) a protocol for periodic review of the plan.	Section 5.5
Schedule 6 Condition 3	Within 3 months of the submission of an:	Section 5.5
	a) audit under condition 7 of Schedule 6;	
	b) incident report under condition 4 of Schedule 6; and	
	c) annual review under condition 5 of Schedule 6; and	
	d) any modification to the conditions of this approval (unless the conditions require otherwise),	
	the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.	




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Project Approval 08_0144 conditions		Document reference
Condition	Requirement	
Schedule 6 Condition 4	The Proponent shall notify the Secretary in writing via the Major Projects website and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident.	Section 5.9
Schedule 6 Condition 5	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Secretary.	Section 5.4
Schedule 6 Condition 6	By the end of March each year, the Proponent must submit a review of the environmental performance of the project for the previous calendar year to the satisfaction of the Secretary.	Section 5.4
Schedule 6 Condition 7	Prior to 13 September 2010, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project (Stages 1 and 2).	Section 5.5
Schedule 6 Condition 10	<p>The Proponent shall:</p> <ul style="list-style-type: none"> • (a) make copies of the following publicly available on its website: <ul style="list-style-type: none"> • the documents referred to in Condition 2 of Schedule 2; • all current statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; • a complaints register, updated on a monthly basis; • minutes of CCC meetings; • the annual reviews of the project; • any independent environmental audit of the project, and the Proponent's response to the recommendations in any audit; • any other matter required by the Secretary; and • (b) keep this information up-to-date, to the satisfaction of the Secretary. 	Section 5.11
		Section 5.11

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Attachment 5 Consultation records



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**Premier
& Cabinet**

Our ref: DOC21/1138309-1

Mr. Brent Baker
Environmental Superintendent - Narrabri Mine
Narrabri Coal Operations Pty Ltd

Dear Mr. Baker

Inland Rail - Narrabri to North Star - SSI 7474 - Request for Consultation as part of an Independent Environmental Audit - Project Approval 08_0144 - Whitehaven Coal - Narrabri Coal Operations - Narrabri Mine Extraction Plan - Panels 201 to 202

Thank you for your referral on 9 December 2021, inviting comments from the Heritage NSW on the above SSI proposal with respect to an Independent Environmental Audit, in relation to Aboriginal cultural heritage (ACH).

Heritage NSW has reviewed *Appendix H – Heritage Management Plan - Whitehaven Coal - Narrabri Coal Operations - Extraction Plan - Panels 201 to 202, 25 November 2021*, as requested and makes the following comments.


As per Schedule 3 Condition 4 of the Project Approval, the Narrabri Mine must prepare and implement Extraction Plans for any second workings to be mined to manage subsidence associated with underground coal mining, where mining has already received approval. The Narrabri Mine Project Approval requires that Each Extraction Plan must include a Heritage Management Plan, which is to be prepared in consultation with Heritage NSW and relevant Aboriginal stakeholders, to manage the potential consequences of the proposed second workings on heritage sites or values.

Heritage NSW understands that the Extraction Plan-Heritage Management Plan (EP-HMP) has been prepared as part of the Extraction Plan for Longwalls 201 and 202, in the Hoskissons Seam at the Narrabri Mine. The EP-HMP sets out the management objectives and performance measures proposed to manage potential subsidence impacts to cultural heritage values within the Extraction Plan Area. Heritage NSW notes that consultation with the Narrabri Local Aboriginal Land Council (NLALC) and Gomeroi Narrabri Aboriginal Corporation (GNAC), all the Registered Aboriginal Parties (RAPs) for the Narrabri Mine has been maintained throughout the development of the EP-HMP.

The EP-HMP applies to cultural heritage sites that have been recorded within the Panels 201 to 202 Extraction Plan Area only, and that the purpose of the EP-HMP is to ensure that impacts to these sites are managed in accordance with the Project Approval, which aims to:

1. Provide a precise set of procedures to enable the identification and conservation of physical and cultural heritage sites and artefacts within the Extraction Plan Area.
2. Ensure all personnel are aware of the obligations, responsibilities and the procedures under the *National Parks and Wildlife Act 1974* and *NSW Heritage Act 1977*.

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3. Establish a consultation protocol with the RAPs, who are representatives of the local Aboriginal community and to document the location of all recorded Aboriginal sites.

Heritage NSW notes that 178 Aboriginal sites are recorded within the broader Narrabri Mine footprint, and of these, 24 are located within the Panels 201-202 Extraction Plan Area. This includes 18 artefact scatters, five isolated artefacts, and one grinding groove site. All 24 sites have been assessed as being of low scientific significance due to disturbed contexts and low artefact densities (< 12 artefacts). The grinding Groove site (Claremont GG1) has also been assessed as being of low scientific significance due to the presence of only one grinding groove on a floating sandstone boulder.

A risk assessment for the subsidence associated with the extraction of coal from Panels 201 to 202 was undertaken on 29 September 2021. Heritage NSW notes that all risks associated with subsidence above Panels 201 to 202 with respect to Aboriginal cultural heritage were assessed as low to moderate, and there were no high-risk items identified. Heritage NSW has no additional comments or recommendations in relation to the *Appendix H – Heritage Management Plan - Whitehaven Coal - Narrabri Coal Operations - Extraction Plan - Panels 201 to 202, 25 November 2021*.

Should you require any further information with respect to the advice and guidance provided, please contact Nicole Y Davis, Manager - Assessments, Heritage NSW at Nicole.davis@environment.nsw.gov.au

Yours sincerely



Nicole Y Davis
Manager - Assessments
Heritage NSW
Department of Premier and Cabinet

10 January 2022

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