




**NARRABRI MINE
ENVIRONMENTAL
MANAGEMENT SYSTEM**

Document Owner:	Technical Services Manager
Revision Period:	3 years
Issue:	2
Last Revision Date:	18/05/2016
Date Printed:	19/05/2016

**WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN
LW101 to LW106**

EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106

Edition	Rev.	Comments	Author	Authorised By	Date
1	0	Initial document	J Woodhouse/ L Kirkwood		
1	1	LW106 Update	K Quirk/ L Kirkwood		
1	2	OEH Comments	L Kirkwood		18 May 2016

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

This page has been intentionally left blank

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Contents

ACRONYMS USED THROUGHOUT THIS DOCUMENT	6
DEFINITIONS USED THROUGHOUT THIS DOCUMENT	7
1 INTRODUCTION	8
1.1 Scope	8
1.2 Legal Requirements	10
1.2.1 Project Approval	10
1.3 Relevant Legislation	11
2 Cultural Heritage in LW101 – 106.....	12
2.1 Known Aboriginal Heritage Sites	12
2.2 Potential for Additional Sites.....	16
3 Subsidence and Environmental Consequences	17
3.1 Revised Subsidence Predictions	17
3.1.1 Subsidence Cracking.....	17
3.1.2 Ponding	17
3.1.3 Subsidence Remediation.....	18
3.2 Potential Environmental Consequences: Cultural Heritage.....	18
3.2.1 Artefact Scatters	19
3.2.2 Scarred Trees.....	19
3.2.3 Axe-grinding Grooves.....	19
4 Subsidence Management	25
4.1 Objectives.....	25
4.2 Performance Measures and Indicators.....	25
4.3 Summary of Management Actions and Responsibilities.....	26
5 Implementation and Operation	17
5.1 Resources and Responsibilities	17
5.2 Communications / Consultation	17
5.2.1 Notification.....	18
5.2.2 Timeframes & Format of Responses.....	18
5.2.3 Review of Consultation Protocol.....	18
5.3 Contingency Response	18
5.4 Reporting	19
5.5 Review	19
5.6 Complaints Management.....	19
5.7 Dispute Resolution	20

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

6	References	21
---	------------------	----

Tables

Table 1: Identified Aboriginal Heritage Sites – Longwalls 101 to 106	13
Table 2: Subsidence effect predictions (DGS, 2015)	17
Table 3: Management of Aboriginal Heritage Sites – Longwalls 101 to 106	20
Table 4: Performance Measures – Cultural Heritage	26
Table 5: Management and Monitoring Actions	16
Table 6: Roles and Responsibilities	17

Figures

Figure 1: Mine Plan and Cultural Heritage Sites	9
---	---

Appendices

Appendix A Management Measures	22
Appendix B New Sites and Discovery of Skeletal Remains	28
Appendix C Records of Consultation	31

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
		WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106	

This page has been intentionally left blank

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

ACRONYMS USED THROUGHOUT THIS DOCUMENT

ACHMP	Aboriginal Cultural Heritage Management Plan
AEMR	Annual Environment Management Report
AHIP	Aboriginal Heritage Impact Permit
CCC	Community Consultative Committee
DGS	Ditton Geotechnical Services
DRE	Division of Resources and Energy
DP&E	Department of Planning & Environment
EA	Environmental Assessment
EP&A Act	NSW Environmental Planning and Assessment Act
EP-HMP	Extraction Plan - Heritage Management Plan
GNAC	Gomeroi Narrabri Aboriginal Corporation
LALC	Local Aboriginal Land Council
LW	Longwall
MOP	Mining Operations Plan
NLALC	Narrabri Local Aboriginal Land Council
OEH	Office of Environment and Heritage
PA	Project Approval
RAP	Registered Aboriginal Party

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

DEFINITIONS USED THROUGHOUT THIS DOCUMENT

Ground Disturbance	Events where significant subsidence or activities including subsequent site remediation works such as the ripping of large surface cracks or channel earthworks have the potential to impact archaeological sites
Significant Subsidence Events	Events where surface cracks resulting from subsidence appear larger than 1cm in width
Breach	A breach is any incident where the management actions and requirements outlined in this AHMP have not been followed.
Complaints	A complaint occurs where a party is dissatisfied or feels that the AHMP has not been complied with.
Disputes	<p>A general dispute occurs where two parties (one of which is Narrabri Mine) do not agree on the implementation of any of the management recommendations of this AHMP.</p> <p>A technical dispute occurs where two parties (one of which is Narrabri Mine) disagree on a methodological or interpretative issue for any of the management recommendations of this AHMP.</p>

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016

**WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN
LW101 to LW106**

1 **INTRODUCTION**

This Extraction Plan - Heritage Management Plan (EP-HMPEP-HMP) has been prepared as part of the Extraction Plan for Longwalls (LW) 101 to 106 in the Hoskissons Seam at the Narrabri Mine, located south of Narrabri, NSW which is owned and operated by Narrabri Coal Operations Pty Ltd. This plan sets out the management objectives and performance measures proposed to manage potential subsidence impacts to cultural heritage 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, 2015). DGS's analysis and results are contained, in full, as an appendix to the Extraction Plan.

The management and monitoring measures outlined within this management plan have been prepared based upon the Whitehaven Cultural Heritage Management Plan, the recommendations of the Stage 1 Aboriginal Heritage Assessment (Australian Archaeological Survey Consultants Pty Ltd, 2007), Stage 2 Aboriginal Heritage Assessment (Archaeological Surveys & Reports Pty Ltd, 2009) 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 LW101-106 extraction 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 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.

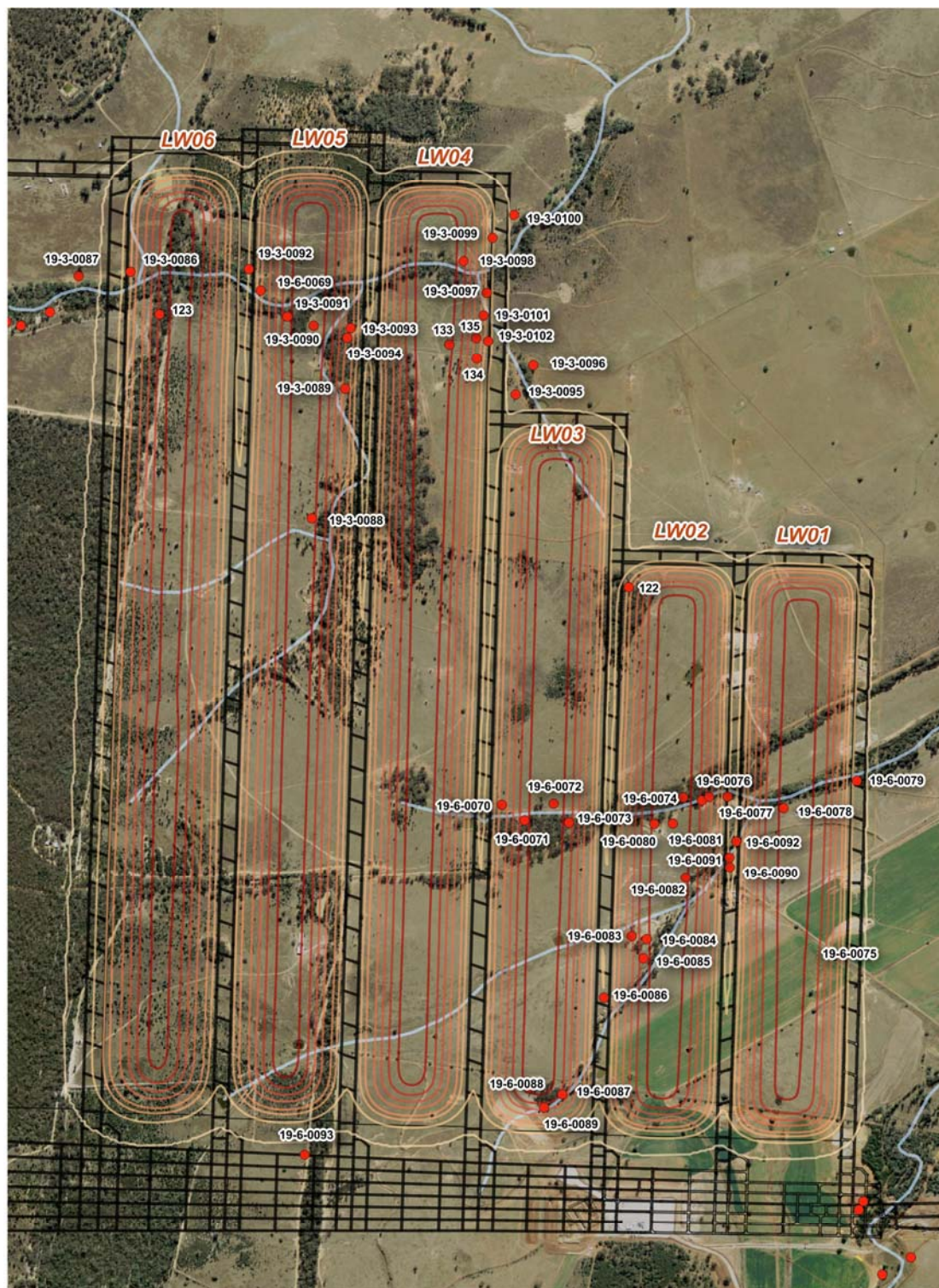
The proposed mine plan and the location of all recorded Aboriginal heritage sites are shown on Figure 1. A detailed description of the underground mining is provided within the Extraction Plan.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Technical Services Manager
Revision Period:	3 years
Issue:	2
Last Revision Date:	18/05/2016
Date Printed:	19/05/2016

WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106



Legend

- AHIMS Registered Archaeological Sites
- Longwalls
- Drainage Lines

NARRABRI MINE AHMP PREVIOUSLY RECORDED ABORIGINAL HERITAGE SITES

0 200 400 600 800 1000 m

MAR 2016
60427521

Figure 1: Mine Plan and Cultural Heritage Sites

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

1.2 Legal Requirements

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

1.2.1 Project Approval

The Narrabri Mine was granted project approval for Stage 1, by the NSW Minister for Planning in November 2007 under Part 3A of the NSW Environmental Planning and Assessment Act, 1979 (EP&A Act). This included the development of a continuous miner underground mining operation. Stage 2 involves commencement of longwall mining operation ("secondary extraction"), and the installation of additional coal processing and handling infrastructure. Stage 2 was approved by the minister in July 2010.

The Project Approval, Schedule 4, Conditions 22 to 24 related 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 requires Narrabri Mine to revise the existing Stage 1 Aboriginal Cultural Heritage Management Plan (ACHMP) to encompass all proposed mine activities associated with Stage 2. This revised plan (Whitehaven Coal, 2011) has been prepared and submitted to the Secretary for approval.

Prior to undertaking longwall 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 Plan for any second workings to be mined to the satisfaction of the Secretary."

"Each Extraction Plan must...include the following to the satisfaction of DRE...Heritage Management Plan, which has been prepared in consultation with OEH and relevant stakeholders for Aboriginal heritage, to manage the potential environmental consequences of the proposed second workings on heritage sites or values."

Approval was initially granted in 2012 for the Narrabri Mine Extraction Plan for longwall panels (LW) 101-105. In 2015, additional approval was sought for operations in the adjacent LW106, requiring revision of existing Extraction Plans and associated sub-plans, including this EP-HMP. This document has been updated to include LW106 in compliance with these requirements.

It is noted in the Project Approval that management plans prepared under Condition 4 (including this Heritage Management Plan) 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.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Therefore, this plan addresses only potential impacts of subsidence and associated remediation works on cultural heritage. Protection of Aboriginal objects from the impacts of other mining operations is addressed in the Stage 2 ACHMP (Whitehaven Coal, 2011).

1.3 Relevant Legislation

The protection of Indigenous cultural heritage in New South Wales is principally governed by the National Parks and Wildlife Act 1974 (NPW Act), which is administered by the Office of Environment and Heritage (OEH). Major developments, as is the case for the Narrabri Mine, are principally governed by the *Environmental Planning and Assessment Act 1979* (EP&A Act). The EP&A Act is designed to facilitate major and critical infrastructure developments.

The original approvals for the Narrabri Mine were obtained under the Part 3A, 'Major Projects' provisions of the EP&A Act. Part 3A has since been repealed, but remains applicable to Narrabri Coal Operations under transitional provisions. Under Section 75U(d) of these provisions, an Aboriginal Heritage Impact Permit (AHIP) under the NPW Act is not required for a project approved under Part 3A. Project approvals usually require a Cultural Heritage Management Plan (CHMP) and the approved project can proceed provided it is undertaken in compliance with the CHMP and the agreed management strategies.

Consultation undertaken for the Stage 1 and 2 EAs, has been in accordance with the NSW Government's "Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation" (NSW Department of Environment & Conservation, 2005). Future investigations on site will also give due consideration to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (NSW Department of Environment Climate Change & Water, 2010).

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

2 Cultural Heritage in LW101 – 106

2.1 Known Aboriginal Heritage Sites

Previous archaeological surveys undertaken for the Narrabri Mine have identified a total of 142 Aboriginal sites within the mine site (Advitech, 2012, 2013a, 2013b; Archaeological Surveys & Reports Pty Ltd, 2009; Australian Archaeological Survey Consultants Pty Ltd, 2007; Landskape, 2010; Niche Environment and Heritage, 2015). Of these 45 are located over LW101-106 (refer to Table 3 and Figure 1). Note that site 20 (AHIMS ID: 19-6-0078) is no longer considered to be a site and is not included in this tally.

Six sites, 10b, 38, 39, 43, 122 & 123 (AHIMS ID: 19-3-0094, 19-3-0098, 19-3-0099 & 19-6-0033 respectively, sites 122 & 123 have not been submitted to AHIMS at the time of preparation of this EP-HMP) are recognised as being of high scientific significance due to their research potential and ability to provide a greater understanding of the past Aboriginal occupation of the region. These sites have been fenced to protect them from inadvertent or accidental damage from vehicular traffic and will be managed in accordance with management and monitoring procedures outlined in Appendix A.

Sites 38 and 39 represent camp sites, containing both knapping sites and multiple activity sites. These sites contain at least 13 and 100+ artefacts respectively and have the potential to contain more extensive subsurface deposits. Site 43, a series of hearths, also has the potential to provide important information in the understanding of the local archaeological record.

Although not reported as being scientifically significant in the original report (Archaeological Surveys & Reports Pty Ltd, 2009), the grinding groove site 10b has been specifically noted by the RAPs as being significant with the 2009 EA identifying sites 10b and 39 as being of greatest significance (R.W. Corkery & Co. Pty. Limited, 2009). Sites 122 and 123

The remaining sites are recorded in disturbed contexts and comprised of very low artefact densities (<20 artefacts). A more detailed description of the sites is provided in the Aboriginal Heritage Assessments prepared for the Stage 1 and 2 projects (Advitech, 2012, 2013a, 2013b; Archaeological Surveys & Reports Pty Ltd, 2009; Australian Archaeological Survey Consultants Pty Ltd, 2007; Landskape, 2010; Niche Environment and Heritage, 2015). Predictions of subsidence impacts and potential consequences to the known cultural heritage sites are described in Section 3 of this management plan.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Table 1: Identified Aboriginal Heritage Sites – Longwalls 101 to 106

Site No.	Site Name	AHIMS ID	Site Type	Easting	Northing	Long Wall	Description
<i>Archaeological Surveys & Reports Pty Ltd, 2009 - Narrabri Coal Mine Stage 2 Assessment (Longwall Panels 1 to 7)</i>							
3	Pine Creek T2/OS 2	19-3-0086	Artefact Scatter	774680	6623380	106	4 artefacts in a 3m*3m area on an eroding creek bank. 3 additional artefacts 10m west.
5	Pine Creek T2/OS 4	19-3-0088	Artefact Scatter	775150	6622600	105	3 artefacts over 2m*2m area adjacent to Pine Creek.
6	Pine Creek T2/OS 5	19-3-0089	Artefact Scatter	775250	6623000	105	3 artefacts over 3m*2m area adjacent to track at creek crossing.
7	Pine Creek T2/OS 6	19-3-0090	Artefact Scatter	775170	6623200	105	6 artefacts over 30m*10m area within horseshoe bend of creek.
8	Pine Creek T2/ISO 2	19-3-0091	Isolated Artefact	775100	6623230	105	Chert flaked piece within 10m of creek.
9	Pine Creek T2/ISO 3	19-3-0092	Isolated Artefact	775000	6623380	105	Quartz trimming flake (debitage) within 20m of creek.
10a	Pine Creek T2/OS 7	19-3-0093	Artefact Scatter	775270	6623190	105	2 artefacts (chert flakes) 2m apart 20m from creek.
10b	Pine Creek T2/AGG 1	19-3-0094	Grinding Grooves	775260	6623160	105	3 grooves on 2 floaters of sandstone within 50m of creek.
11	Pine Creek T1/OS 8	19-6-0069	Artefact Scatter	775030	6623313	105	11 artefacts over 12m*4m area within 20m of creek. Incorrect AHIMS co-ordinates. Archaeological Surveys & Reports Pty Ltd record Site 11 as TS1/ISO 3 in Appendix V, however refer to it as TS1/OS 8 in text (Archaeological Surveys & Reports Pty Ltd, 2009)
12	Pine Creek T1/OS 9	19-6-0070	Artefact Scatter	775640	6621690	103	3 artefacts over 2m*2m area being 3 cores of chert.
13	Pine Creek T1/OS 10	19-6-0071	Artefact Scatter	775700	6621640	103	4 artefacts over 30m*2m area comprising core and flakes.
14	Pine Creek T1/ISO 4	19-6-0072	Isolated Artefact	775780	6621690	103	Flaked piece of chert within 20m of creek.
15	Pine Creek T1/OS 11	19-6-0073	Artefact Scatter	775820	6621630	103	2 Artefacts 3m apart, core and flake.
16	Pine Creek T1/OS 12	19-6-0074	Artefact Scatter	776130	6621700	102	7 Artefacts over 30m*3m area within 20m of creek.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016

**WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN
LW101 to LW106**

Site No.	Site Name	AHIMS ID	Site Type	Easting	Northing	Long Wall	Description
17	Pine Creek T1/ISO 5	19-6-0075	Isolated Artefact	776180	6621690	102	Chert flake 10m from creek.
18	Pine Creek T1/OS 13	19-6-0076	Artefact Scatter	776200	6621700	102	4 artefacts over 30m*2m area within 20m of creek comprising core and flakes.
19	Pine Creek T1/OS 14	19-6-0077	Artefact Scatter	776250	6621700	102	18 artefacts over 20m*20m area including collapsed wall of dam.
20	Pine Creek T1/ST 1	19-6-0078	See description	776400	6621660	101	RAPs advised during December 2014 that this is not a scarred tree.
21	Pine Creek T1/ISO 6	19-6-0079	Isolated Artefact	776600	6621740	101	Chert flake within 30m of creek.
22	Pine Creek T1/OS 15	19-6-0080	Artefact Scatter	776050	6621620	102	5 artefacts over 15m*5m area south of the wall of a dam.
23	Pine Creek T1/OS 16	19-6-0081	Artefact Scatter	776100	6621620	102	3 artefacts over 25m*1m area – all flakes, 30-40m from creek.
24	Pine Creek T1/OS 17	19-6-0082	Artefact Scatter	776130	6621450	102	2 artefacts in vehicle track crossing creek comprising Core and Flake.
25	Pine Creek T1/ISO 7	19-6-0083	Isolated Artefact	775980	6621270	102	Chert flake at junction of drainage line with creek.
26	Pine Creek T1/ISO 8	19-6-0084	Isolated Artefact	776020	6621260	102	Chert flake at junction of drainage line with creek.
27	Pine Creek T1/OS 18	19-6-0085	Artefact Scatter	776010	6621200	102	2 artefacts 3m apart, 2 flakes.
28	Pine Creek T1/ISO 9	19-6-0086	Isolated Artefact	775900	6621080	102	Flake at junction of drainage channel and creek.
29	Pine Creek T1/ISO 10	19-6-0087	Isolated Artefact	775780	6620780	103	Core at junction of drainage channel and creek.
30	Pine Creek T1/OS 19	19-6-0088	Artefact Scatter	775690	6620800	103	2 artefacts 4m apart on gully bank.
31	Pine Creek T1/OS 20	19-6-0089	Artefact Scatter	775730	6620740	103	3 artefacts in 5m*1m area. Core and flakes within gully bank.
32	Pine Creek T1/OS 21	19-6-0090	Artefact Scatter	776250	6621480	102	2 artefacts 10m apart. core and flake 40m from creek.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Site No.	Site Name	AHIMS ID	Site Type	Easting	Northing	Long Wall	Description
33	Pine Creek T1/OS 22	19-6-0091	Artefact Scatter	776250	6621510	102	2 artefacts 15m apart. flakes 12m from creek.
34	Pine Creek T1/OS 23	19-6-0092	Artefact Scatter	776270	6621560	101	4 artefacts 15m apart. flakes 10m from creek.
35	Pine Creek T2/OS 24	19-3-0095	Artefact Scatter	775710	6622970	104	2 artefacts 20m apart. flakes 30m from creek.
36	Pine Creek T2/ISO 11	19-3-0096	Isolated Artefact	775760	6623060	104	Chert flake 35m from creek.
37	Pine Creek T2/ISO 12	19-3-0097	Isolated Artefact	775640	6623290	104	Chert flake in road 15m from drainage line and 50m from creek.
38	Pine Creek T2/OS 25	19-3-0098	Artefact Scatter	775580	6623390	104	13 artefacts in 20m*15m area over low rise 30m from creek.
39	Pine Creek T2/OS 26	19-3-0099	Artefact Scatter	775660, 775680, 775680, 775650	6623460, 6623480, 6623520, 6623530	104	>100 artefacts contained within these coordinates, 30m from the creek, comprising flakes and flake pieces.
40	Pine Creek T2/OS 27	19-3-0100	Artefact Scatter	775720	6623530	104	4 artefacts over 7m*5m area 10m from creek comprising flakes and flake pieces.
41	Pine Creek T2/OS 27	19-3-0101	Artefact Scatter	775630	6623220	104	7 artefacts over 10m*5m area 15m from creek comprising scrapers and flakes.
42	Pine Creek T2/OS 28	19-3-0102	Artefact Scatter	775640	6623140	104	2 artefacts 5m apart comprising flakes 15m from creek.
43	Pine Creek T1/FP1	19-6-0093	Open Camp Site	775080	6620610	105	3 hearths identified in washout beside road approx. 40m from drainage line.
Advitech, 2012 - Archaeological Survey Report Site "Pine Creek T1/AGG 1"							
122			Grinding Grooves	776000	6622361	102	6 grinding grooves located on 3 sandstone platforms
Advitech, 2013b - Archaeological Survey Aboriginal Sites within Panels 6 and 7							
123			Scarred Tree	774755	6623246	106	Genuine looking scar with modern surveyors markings
Niche Environment and Heritage, 2015 - Narrabri Mine – Verification of Newly Identified Aboriginal Cultural Heritage Objects							
133			Artefact Scatter	775535	6623132	104	5 stone artefacts located in Pine Tree grove
134			Isolated Artefact	775608	6623085	104	Isolated broken flake artefact on elevated area north-east of Site 133

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Site No.	Site Name	AHIMS ID	Site Type	Easting	Northing	Long Wall	Description
135			Isolated Artefact	775608	6623150	104	Isolated stone artefact on elevated area south of creek line

2.2 Potential for Additional Sites

While the distribution of sites within the LW101-106 extraction area is directly associated with watercourses, it is likely that isolated artefacts or low density scatters also occur concealed beneath the pasture grasses.

These sites would not be in their depositional context, having been disturbed during land clearing, harrowing, ploughing, and the construction of contour banks and dams. Such a background of very low density sites is typical of open country on the western slopes and is generally considered to be the “archaeological background” with a typical artefact density in the order of one artefact per >1,000m² (Archaeological Surveys & Reports Pty Ltd, 2009).

The archaeological assessments of LW101-106 (Archaeological Surveys & Reports Pty Ltd, 2009; Landskape, 2010) have 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.

The management measures outlined in Table 5 and Appendix B have been developed in consultation with the RAPs and includes protocols and contact details in regards to the discovery of new sites and skeletal remains.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016

**WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN
LW101 to LW106**

3 Subsidence and Environmental Consequences

3.1 Revised Subsidence Predictions

Revised predictions of subsidence were prepared by DGS (2015) in response to the proposed addition of LW106 to mine operations. Predicted maximum subsidence estimates are summarised in Table 2. The DGS (2015) report is provided in full as an appendix to the Extraction Plan.

Table 2: Subsidence effect predictions (DGS, 2015)

LW	Cover Depth (m)	Maximum Subsidence $S_{max}(m)$	Tilt T_{max} (mm/m)	Tensile Strain (mm/m)	Compressive Strain (mm/m)
101	165 - 177	2.57 - 2.65	44 - 47	9 - 10	12 - 13
102	175 - 188	2.65	40 - 45	8 - 9	10 - 12
103	190 - 200	2.71	38 - 41	7 - 8	9 - 10
104	180 - 215	2.66 - 2.71	34 - 43	6 - 9	8 - 11
105	200 - 235	2.71	30 - 38	5 - 7	7 - 9
106	220 - 255	2.58 - 2.61	25 - 31	4 - 6	6 - 7

3.1.1 Subsidence Cracking

Based on the predicted range of maximum strains and cover depths for LW101-106, DGS (2015) has indicated that maximum surface cracking widths of between 40 – 260mm may occur above the longwall panels and within the limits of extraction. Where strain concentrations occur in near-surface rock, these widths may double locally to between 80-520mm. Crack widths may also exceed the predicted range near steep creek banks along Pine 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. Therefore, for LW101-106, with cover depths of between 165 – 255m, cracks are likely to have appeared once the longwall has passed a given point by 310m.

Predicted subsidence cracking relative to the mine plan is shown in Appendix B of the Extraction Plan.

3.1.2 Ponding

As reported by DGS (2015), the predicted maximum panel subsidence of 2.75 m could result in closed form depressions forming in the central areas of the panels and disrupt natural drainage pathways. Analysis of the pre and post mining surface levels also suggests that ponding (if it occurs) is likely to develop along Pine Creek and Pine Creek Tributary 1.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Maximum potential ponding depths of 0.25 - 2.1 m are estimated for LW101-106. DGS (2015) note that this is a significant increase from the 0.1 – 1.3 m previously predicted for LW101-105.

Predicted ponding relative to the mine plan are shown in Appendix B of the Extraction Plan.

3.1.3 Subsidence Remediation

As reported in the Stage 2 EA (R.W. Corkery & Co. Pty. Limited, 2009) disturbance resultant from any subsidence induced surface cracking and/or ponding will be progressively rehabilitated as follows:

- Due to the relatively deep soil profile above the longwall panels, 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 longwall panel. Channel earthworks may be required to re-establish drainage path ways to the east of LWs 104-106 along Pine Creek and LWs 101 and 102 along its tributary (No.1) to the south; and
- Identified sites occurring above LW101-106 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 Stage 1 Project Approval. A 'Permit to Disturb' procedure has been developed to ensure that proposed surface disturbance works are cross referenced with the identified archaeological sites prior to works commencing and will be managed separately to the extraction plan.

3.2 Potential Environmental Consequences: Cultural Heritage

The impact of subsidence on Aboriginal sites overlying LW101-106 and management recommendations are summarised in Table 3 & Table 4 and may involve the following:

- Vertical Displacement;
- Cracking;
- Ponding; and
- Subsidence Remediation.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016

**WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN
LW101 to LW106**

3.2.1 Artefact Scatters

All of the 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 very few artefacts in their original depositional context or provenance and the direct impact of subsidence (vertical or horizontal displacement) is likely to be minimal. Additionally, DGS (Ditton Geotechnical Services Pty Ltd, 2015) reports that to date there have been no identifiable impacts to previously identified archaeological sites above LW101 to 104 through subsidence activities.

Significant subsidence events (cracks larger than 4cm 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 the surface artefacts, although they may be displaced through related surface erosional processes. Cracking does have the potential to impact the integrity of *in-situ* archaeological deposits

Both prior 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 make impacts on sites unavoidable (subject to reasonable efforts to avoid such sites), the sites will also be collected in accordance with procedures outlined in Appendix A.

3.2.2 Scarred Trees

One scarred tree (Site 123) is located in LW106 and is described as a genuine looking scar with modern markings. While it is possible that subsidence could result in a changed drainage pattern, it is considered that the tree's root system would resist undermining.

3.2.3 Axe-grinding Grooves

Two axe grinding groove sites (Site 10b and 122) are identified as occurring on sandstone floaters, not bedrock and as such the only impact to the site from subsidence would be the vertical displacement of the floaters, which would have no direct impact on the axe-grinding grooves (Archaeological Surveys & Reports Pty Ltd, 2009).

Any site remediation works such as the ripping of large surface cracks or channel earthworks also have the potential to impact grinding grooves. Site 10b and 122 should be fenced and protected from any machinery as outlined in Appendix A.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Table 3: Management of Aboriginal Heritage Sites – Longwalls 101 to 106

Site No.	Site Name	AHIMS ID	Archaeological Significance [#]	Potential Impacts [*]	Management
3	Pine Creek T2/OS 2	19-3-0086	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
5	Pine Creek T2/OS 4	19-3-0088	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
6	Pine Creek T2/OS 5	19-3-0089	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
7	Pine Creek T2/OS 6	19-3-0090	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
8	Pine Creek T2/ISO 2	19-3-0091	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
9	Pine Creek T2/ISO 3	19-3-0092	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
10a	Pine Creek T2/OS 7	19-3-0093	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
10b	Pine Creek T2/AGG 1	19-3-0094	High	<ul style="list-style-type: none"> Erosion 	<ul style="list-style-type: none"> Grinding grooves are considered to be located on sandstone 'floaters' in alluvial soils and are not at risk from site cracking. This site has been fenced to provide additional protection Where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.
11	Pine Creek T1/OS 8	19-6-0069	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
12	Pine Creek T1/OS 9	19-6-0070	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
13	Pine Creek T1/OS 10	19-6-0071	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Site No.	Site Name	AHIMS ID	Archaeological Significance [#]	Potential Impacts [*]	Management
14	Pine Creek T1/ISO 4	19-6-0072	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
15	Pine Creek T1/OS 11	19-6-0073	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site will be fenced to provide additional protection.
16	Pine Creek T1/OS 12	19-6-0074	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
17	Pine Creek T1/ISO 5	19-6-0075	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
18	Pine Creek T1/OS 13	19-6-0076	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
19	Pine Creek T1/OS 14	19-6-0077	Low.	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> This site has been fenced to provide additional protection Where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.
20	Pine Creek T1/ST 1	19-6-0078	Low.	<ul style="list-style-type: none"> Not a site 	<ul style="list-style-type: none"> Update AHIMS Site Card to reflect that this item is no longer considered to be cultural in origin. This site has been fenced to provide additional protection.
21	Pine Creek T1/ISO 6	19-6-0079	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
22	Pine Creek T1/OS 15	19-6-0080	Low.	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
23	Pine Creek T1/OS 16	19-6-0081	Low	<ul style="list-style-type: none"> Unlikely to be impacted 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
24	Pine Creek T1/OS 17	19-6-0082	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
25	Pine Creek T1/ISO 7	19-6-0083	Low	<ul style="list-style-type: none"> Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Technical Services Manager
Revision Period:	3 years
Issue:	2
Last Revision Date:	18/05/2016
Date Printed:	19/05/2016

WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106

Site No.	Site Name	AHIMS ID	Archaeological Significance [#]	Potential Impacts [*]	Management
26	Pine Creek T1/ISO 8	19-6-0084	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
27	Pine Creek T1/OS 18	19-6-0085	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
28	Pine Creek T1/ISO 9	19-6-0086	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
29	Pine Creek T1/ISO 10	19-6-0087	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
30	Pine Creek T1/OS 19	19-6-0088	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
31	Pine Creek T1/OS 20	19-6-0089	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
32	Pine Creek T1/OS 21	19-6-0090	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
33	Pine Creek T1/OS 22	19-6-0091	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
34	Pine Creek T1/OS 23	19-6-0092	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
35	Pine Creek T2/OS 24	19-3-0095	Low	Unlikely to be impacted	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
36	Pine Creek T2/ISO 11	19-3-0096	Low	<ul style="list-style-type: none"> Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
37	Pine Creek T2/ISO 12	19-3-0097	Low	<ul style="list-style-type: none"> Site Cracking Erosion 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Site No.	Site Name	AHIMS ID	Archaeological Significance [#]	Potential Impacts [*]	Management
38	Pine Creek T2/OS 25	19-3-0098	High	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
39	Pine Creek T2/OS 26	19-3-0099	High	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Management of these sites will be undertaken in consultation with the RAPs. Predicted impact to these sites will be updated following the completion of mining within LW104 and based on the results of the subsidence monitoring. The remaining sites will be avoided where practicable. In the event that subsidence remediation works make impacts on sites unavoidable, the sites will be collected in accordance with Appendix A. Sites 38 and 39 have been fenced to provide additional protection and where possible, no subsidence remediation works will be undertaken within 10m of the site boundaries as outlined within Appendix A.
40	Pine Creek T2/OS 27	19-3-0100	Low	<ul style="list-style-type: none"> Unlikely to be impacted 	<ul style="list-style-type: none"> Management of these sites will be undertaken in consultation with the RAPs. Predicted impact to these sites will be updated following the completion of mining within LW101 and based on the results of the subsidence monitoring. The remaining sites will be avoided where practicable. In the event that subsidence remediation works make impacts on sites unavoidable, the sites will be collected in accordance with Appendix A. Sites 38 and 39 have been fenced to provide additional protection and where possible, no subsidence remediation works will be undertaken within 10m of the site boundaries as outlined within Appendix A.
41	Pine Creek T2/OS 27	19-3-0101	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
42	Pine Creek T2/OS 28	19-3-0102	Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If surface cracking or subsidence remediation works make impacts unavoidable, collect in accordance with procedures in Appendix A. This site has been fenced to provide additional protection.
43	Pine Creek T1/FP1	19-6-0093	High	<ul style="list-style-type: none"> Unlikely to be impacted 	<ul style="list-style-type: none"> This site has been fenced to provide additional protection. Where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.
122			High	<ul style="list-style-type: none"> Erosion 	<ul style="list-style-type: none"> Grinding grooves are considered to be located on sandstone 'floaters' in alluvial soils and are not at risk from site cracking. This site has been fenced to provide additional protection. Where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.
123			High	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> Avoid where practicable and monitor. If the site is to be impacted by subsidence remediation, all works will be undertaken in accordance the procedures outlined in Appendix A. This site has been fenced to provide additional protection.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016

**WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN
LW101 to LW106**

Site No.	Site Name	AHIMS ID	Archaeological Significance [#]	Potential Impacts [*]	Management
133			Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> This site has been fenced to provide additional protection. where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.
134			Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> This site has been fenced to provide additional protection. where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.
135			Low	<ul style="list-style-type: none"> Site Cracking 	<ul style="list-style-type: none"> This site has been fenced to provide additional protection. where possible, no subsidence remediation works will be undertaken within 10m of the site boundary as outlined within Appendix A.

Source: Modified from Advitech, 2012, 2013a, 2013b; Archaeological Surveys & Reports Pty Ltd, 2009; Australian Archaeological Survey Consultants Pty Ltd, 2007; Landskape, 2010; Niche Environment and Heritage, 2015.

Note: This table refers to archaeological significance as described in Section 2.1. RAPs consider all sites to be culturally significant.

***** Potential impacts identified by Ditton Geotechnical Services Pty Ltd, 2015Impacts as identified from DGS (2015) Table 16

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

4 **Subsidence Management**

4.1 **Objectives**

The objectives for the management of cultural heritage values of the site are to:

- Identify, as far as practical, all Aboriginal 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 Appendix A);
- 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.

4.2 **Performance Measures and Indicators**

Performance measures for cultural heritage values are presented in Table 4, and have been developed for the LW101-106 extraction area in accordance with Project Approval 08_0144 (as modified) 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.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Table 4: Performance Measures – Cultural Heritage

Performance Measure	Indicator of Success	Key Assessment Considerations
Site remediation works do not compromise Aboriginal cultural heritage relics or values.	Works are undertaken in accordance with the Mining Operations Plan (MOP) and the EP-HMP.	<ol style="list-style-type: none"> Does the monitoring and assessment indicate that a performance measure or development consent condition has been exceeded, or likely to be exceeded? Does this exceedance increase the risk of any sites being impacted? What is the nature of the risk? <ul style="list-style-type: none"> Cracking Ponding Subsidence remediation works.
	Any new sites identified are assessed for impacts and any management recommendations are consistent with the management plan.	
The archaeological and cultural heritage values have been salvaged to contemporary best practice standards.	Salvage of archaeological and cultural values of sites undertaken prior to impact in accordance with the approved EP-HMP and with approval of the Secretary.	<ol style="list-style-type: none"> 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 Summary of Management Actions and Responsibilities

Subsidence management within LW101-106 as detailed within Table 5 has been categorised into:

- Monitoring;
- Management; and
- Incidence Response.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Technical Services Manager
Revision Period:	3 years
Issue:	2
Last Revision Date:	18/05/2016
Date Printed:	19/05/2016

WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106

Table 5: Management and Monitoring Actions

Item	Action	Trigger/Timing	Responsibility	Reporting
1.0	Monitoring			
1.01	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 archaeological site.	Immediately prior to and at the completion of each longwall panel (within six months.	Environmental Officer	Internal Documentation and AR
1.02	Site personnel will inspect each site on a monthly basis during undermining. The inspections will aim to observe the relation of cracking (if any) to archaeological sites, any erosion potentially threatening the site and whether intervention and remediation works are required.	Monthly during undermining.	Environmental Officer	Internal Documentation
2.0	Management			
2.01	Site 21 (isolated artefact), if locatable, will be salvaged in the event that subsidence monitoring behind the longwall face (refer to Land Management Plan) indicates that subsidence cracking, and/or remediation works are considered likely to occur within 10m of the isolated artefact as outlined within Appendix A.	Prior to site 21 being undermined.	Environmental Officer	Internal Documentation
2.02	The predicted impact to the remaining sites overlying LW101-106 will be updated based on the results of the subsidence monitoring. Those sites identified as having a high likelihood of impact will be salvaged ahead of mining as outlined within Appendix A.	Following completion of mining within LW104.	Environmental Officer	Internal Documentation
2.03	Every effort will be made to avoid the remaining sites during all subsidence remediation works. In the event that subsidence remediation works make impacts on sites unavoidable the sites will also be collected in accordance with Appendix A.	Prior to any surface disturbance within 10m of an identified site.	Environmental Officer	Internal Documentation
2.04	Maintain fencing around Sites 10b, 38, 39 and 43 and monitor (see item 1.02) 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.	During mining.	Environmental Officer	Internal Documentation
2.05	Should any subsidence remediation works be required within 10 metres of sites 19 or 10b, and impact to the site is unavoidable, (subject to reasonable efforts to avoid such sites), the sites will be managed as outlined within Appendix A.	Prior to any surface disturbance within 10m of Site 10b or 19.	Environmental Officer	Internal Documentation
2.06	Should any subsidence remediation works be required within 10 metres of sites 38, 39 and 43, they will be excavated in the manner described in Appendix A and the results used to provide a greater understanding of the past Aboriginal occupation of the	Prior to any surface disturbance within 10m of Site 38, 39 or 43.	Environmental Officer	Internal Documentation



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Technical Services Manager
Revision Period:	3 years
Issue:	2
Last Revision Date:	18/05/2016
Date Printed:	19/05/2016

WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106

Item	Action	Trigger/Timing	Responsibility	Reporting
	region.			
2.07	Prior to any topsoil stripping within 100m of the Pine Creek tributaries, the RAPs will be invited to monitor the activities as outlined within Appendix A.	Prior to any topsoil stripping within 100m of the Pine Creek tributaries.	Environmental Officer	Internal Documentation
2.08	All employees and contractors will be subject to cultural heritage awareness education as part of the induction when the package is developed and implemented. 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.	Ongoing.	Mining Engineering Manager, Employees and Contractors	Internal Documentation
3.0	Incident Response			
3.01	The discovery of new finds of Aboriginal objects will be recorded on standard AHIMS site cards and lodged with AHIMS as outlined in Appendix B. Sites within the subsidence impact area will be managed in accordance with Appendix A and in consultation with the RAPs and archaeologist.	Discovery of new finds of Aboriginal objects.	Environmental Officer	Internal Documentation
3.02	Identification of a potential burial – cease work in that area. No works to recommence until clearance is provided by OEH and/or where appropriate the NSW Police as per the protocol outlined in Appendix B.	Identification of a potential burial.	General Manager	Internal Documentation

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

5 Implementation and Operation

5.1 Resources and Responsibilities

During the operational phases of the development, the Narrabri Coal 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 6 outlines the roles and responsibilities subject of this EP-HMP.

Table 6: Roles and Responsibilities

Role	Responsibility
General Manager	Provide the resources necessary to implement this EP-HMP.
Mining Engineering Manager	Ensure all contractors, sub-contractors 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 Officer	Implementing this EP-HMP on a day-to-day basis in consultation with the RAPs. EP-HMP review.
Archaeologist(s)	Provide expertise in the management of the archaeological values of Aboriginal cultural heritage objects and/or places.
RAPs	Provide expertise in the management of Aboriginal cultural heritage objects and/or places.

All employees and contractors will be subject to cultural heritage awareness education as part of the induction when the package is developed and implemented. 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.

It is important to note that failure to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to archaeological material may be prosecuted under the NPW Act (as amended).

5.2 Communications / Consultation

An initial draft of this EP-HMP has been prepared based on the requirements of PA 08_0144, as modified, the recommendations and findings of the Stage 1 and Stage 2 Environmental Assessments and the associated Aboriginal Heritage Assessments. A copy of this draft EP-HMP has been referred to the RAPs and the OEH for further consideration and ratification. Correspondence with the RAPs and the OEH will be attached as Appendix C.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

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 Project may have implications for Aboriginal heritage management;
- there is a significant discovery in the course of development eg Aboriginal ancestral remains or archaeological features; or
- where significant land management actions are required in Aboriginal site protection areas not envisaged by this plan.

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

5.2.2 Timeframes & Format of Responses

Feedback requested from the RAPs should be received by Narrabri Mine preferably within two weeks and no later than four weeks from the date correspondence is issued by Narrabri Mine. 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 Officer 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. In the event there is a determination that the approach to consultation needs to change, the 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 development consent or legislation;
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 project approval.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

5.4 **Reporting**

The Annual Review (AR) is the primary reporting tool. The AR is required to be prepared under the Narrabri Coal Stage 2 development consent to review the performance of the mine against the Environmental Management Strategy and the relevant Mining Operations Plans, the conditions of this consent, and other licenses' and approvals relating to the mine.

In the context of archaeology and cultural heritage management the AR will report against and review the findings of monitoring conducted in relation to the items in Table 3 and Table 4.

Once finalised and approved, the AR will be made publicly available via the mines website.

5.5 **Review**

The EP-HMP will be reviewed at least every three years and following any significant changes (i.e. changes to consent/licence requirements or monitoring protocol). Each review will be undertaken in consultation with the RAPs and will be submitted to the Secretary for approval.

Narrabri Mine will investigate and implement ways to improve the environmental performance of the project over time. This will be achieved by keeping abreast of best practice in the industry for cultural heritage management and controls and reporting on outcomes of surveys and monitoring annually in the AR.

5.6 **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 Narrabri Mine. The following complaints management protocol will be followed on 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 Register, 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.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

- If no action was taken by Narrabri Mine, the reason why no action was taken.
- The Environmental Officer 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 identified.
- Additional measures will be undertaken as required to address the complaint.
- Once the identified measures are undertaken, the Environmental Officer 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 the Complaints Register will be kept by Narrabri Mine and made available to the CCC and the complainant (on request). A summary of complaints received every 12 months will be provided to DP&E, OEH, DRE and the CCC through the AEMR.

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

5.7 **Dispute Resolution**

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

- a meeting will be convened with the General Manager and/or Technical Services Manager and/or Group Environment Manager and Environmental Officer 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 archaeologist to assist.
- upon implementation of the nominated measures, a further meeting will be convened to seek advice of satisfaction or otherwise as to the outcomes.

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 referred to the Secretary.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

6 References

- ACARP. (2003). *ACARP Project No. C10023, Review of Industry Subsidence Data in Relation to the Impact of Significant Variations in Overburden Lithology and Initial Assessment of Sub-Surface Fracturing on Groundwater*,.
- Advitech. (2012). *Archaeological Survey Report Site "Pine Creek T1/AGG 1."*
- Advitech. (2013a). *Aboriginal Cultural Heritage Assessment Narrabri Mine Panels 8 to 13.*
- Advitech. (2013b). *Archaeological Survey Aboriginal Sites within Panels 6 and 7.*
- Archaeological Surveys & Reports Pty Ltd. (2009). *Narrabri Coal Mine State 2 Longwall Project: Aboriginal Heritage Assessment*. Report prepared for Narrabri Coal.
- Australian Archaeological Survey Consultants Pty Ltd. (2007). *Narrabri Coal Project: Aboriginal Heritage Assessment Prepared*.
- Ditton Geotechnical Services Pty Ltd. (2012). *Mine Subsidence Effect Predictions and Impact Assessment for the Proposed Longwalls 101 to 105 at the Narrabri Coal Mine, Narrabri.*
- Ditton Geotechnical Services Pty Ltd. (2015). *Mines Subsidence Assessment for the Proposed Addition of Long (LW) 106 to the Approved LW101 to 105 Extraction Plan at the Narrabri Mine, Narrabri.*
- Landskape. (2010). *Correspondence - RE: Aboriginal Cultural Heritage Site Locations: Narrabri Coal Mine.*
- Niche Environment and Heritage. (2015). *Re: Narrabri Mine – Verification of Newly Identified Aboriginal Cultural Heritage Objects.*
- NSW Department of Environment & Conservation. (2005). *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation*. Sydney: Department of Environment and Conservation.
- NSW Department of Environment Climate Change & Water. (2010). *Aboriginal Cultural Heritage Consultation Requirements for Proponents*. Department of Environment, Climate Change and Water.
- R.W. Corkery & Co. Pty. Limited. (2009). *Environmental Assessment for the Narrabri Coal Mine Stage 2 Longwall Project*.
- Whitehaven Coal. (2011). *Narrabri Mine Environmental Management System: Aboriginal Cultural Heritage Management Plan*.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Appendix A

Management Measures

(No of pages excluding this page = XX)

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Introduction

The following management measures have been based upon the recommendations of the Stage 1 Aboriginal Heritage Assessment (Australian Archaeological Survey Consultants Pty Ltd, 2007), Stage 2 Aboriginal Heritage Assessment (Archaeological Surveys & Reports Pty Ltd, 2009) 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 immediately behind the longwall face will be undertaken to monitor for active subsidence (refer to Land Management Plan). In the event that subsidence cracking, and/or remediation works are considered likely to occur within 10m of previously identified archaeological sites recorded over LW101-106 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 collected in the manner described below.

Management and Fencing of Sites

Sites 19, 38, 39 and 43

Sites 19, 38, 39 and 43 have been fenced 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). All fencing and signage will be removed from Aboriginal sites on completion of mining operations.

The boundaries of these sites were determined in the field by an archaeologist in consultation with the representatives of the RAPs (Landscape, 2010). GPS coordinates of the centre of each site were recorded using a hand-held GPS unit and an appropriate works exclusion zone (minimum 10m) was devised in consultation with the RAPs.

Should any subsidence remediation works be required within 10 metres of site 19, and impact to the site is unavoidable, (subject to reasonable efforts to avoid such sites), the sites will be salvaged in the manner described below.

Should any subsidence remediation works be required within 10 metres of sites 38, 39 or 43, and impact to the site is unavoidable, (subject to reasonable efforts to avoid such sites), they will be excavated in the manner described below and the results used to provide a greater understanding of the past Aboriginal occupation of the region.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Scarred Tree (Site 123)

Site 123, a scarred tree is identified as having a culturally made scar(s) and will be retained in situ. While not expected to be impacted through undermining, if unintentional subsidence impacts do occur that will impact the health of the tree, then it will be cut down to preserve the scar and be relocated to a designated protected area in consultation with the RAPs and a qualified archaeologist.

Grinding Grooves (Site 10b & 122)

Although within potential areas of subsidence, grinding groove sites 10b and 122 are considered to be located on sandstone 'floaters' in alluvial soils and as such are not at risk from site cracking. Both sites are to be fenced to protect the grinding grooves and sandstone floaters from inadvertent or accidental damage from vehicular traffic. While fenced, the site will have signage identifying it as 'Environmental Protection Zones. All fencing and signage will be removed from Aboriginal sites on completion of mining operations.

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 prior to commencement of mining according to the following procedure:

1. notify the Secretary of the Department of Planning and Environment (or their delegate) 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;
3. individual artefacts will be flagged;
4. the locations of flagged artefacts will be recorded in Differential GPS;
5. flagged artefacts will be numbered and collected into a bag labelled with site number, date and collection details;
6. artefacts will be retained for recording and report preparation;
7. basic attributes will be recorded on collected artefacts: raw material, technological type, implement type, weight, maximum dimension;
8. a descriptive report will be prepared with map of individual artefact locations within site or exposure boundaries;
9. following site collections the field archaeologist in consultation with the attending RAPs will provide written notification (within 7 days) of the sites cleared for ground disturbance works; and

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Archaeological Excavations

Excavations will be conducted by an archaeologist and the RAPs as follows:

1. notify the Secretary of the Department of Planning and Environment (or their delegate) 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 excavations of sites 38, 39 and 43 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 settlement patterning 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 dug by hand in 50 cm units to an identifiable culturally sterile base;
5. After an initial sample of squares dug in 5 cm spits to define the vertical distribution of artefacts within the soil, each square will be dug as a single context to an identifiable culturally sterile base;
6. The excavation will expand according to artefact densities encountered with the goal of recovering knapping floor concentrations to the extent reasonably possible. Where hearth features are encountered (site 43) a careful sectioning procedure will be followed to record the characteristics and recover charcoal for radiocarbon dating where possible. Charcoal samples will be submitted for dating where suitable samples in reliable archaeological cultural contexts are recovered; and
7. Artefacts recovered from the excavations 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 settlement patterning and technological organisation within the region, comparing and contrasting with the available reported results of assemblage characteristics.

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 Aboriginal heritage material recovered from collections and salvage excavations will be placed in the care and control of the Aboriginal organisation agreed to by the RAPs (Narrabri Mine, if required, has agreed to provide a 'keeping place' within the Pit Top Area until such time as a suitable location is identified and agreed to by the RAPs).

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 the OEH to satisfy the requirements of the NPW Act. A care agreement sets out the

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

obligations of OEH 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 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 heritage sites, this will be undertaken with the minimum possible disturbance to the topsoil.

Consultation Protocol

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

In the event that any possible archaeological sites 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 Appendix B.

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 consultation process will be periodically reviewed with the RAPs, including rehabilitation and revegetation of the mine site. In the event there is an agreement that the approach to consultation needs to change, the changed procedures would be documented and a copy forwarded to the Secretary and recorded in the relevant AR.

Aboriginal Heritage Information System (AHIMS)

AHIMS site cards have been designed to complement the Aboriginal Heritage Information Management System (AHIMS) data structure as well as to meet the professional standards for archaeological recording of potentially sensitive information. All new sites (both previously unrecorded and salvaged/relocated sites) will be recorded by an archaeologist on standard AHIMS site cards and submitted to OEH for registration on the AHIMS database.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Workforce Education and Contractor Awareness

All employees and contractors will be subject to cultural heritage awareness education as part of the induction when the package is developed and implemented. 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.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Appendix B

New Sites and Discovery of Skeletal Remains

(No of pages excluding this page = XX)

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

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 are discovered during construction or operation, all work in the immediate area will halt and Narrabri Mine will consult with the NSW Heritage Division.

Unrecorded Aboriginal Heritage Sites

Any previously unrecorded Aboriginal heritage sites identified by contractors or during fieldwork (monitoring, supplementary fieldwork or follow up inspections etc.) will be left undisturbed. If the area of discovery is in deposited material, then work will also cease in the area where the material originated from.

The person discovering the artefact will notify their supervisor who will ensure that work has ceased and area(s) is (are) cordoned off with tape.

The supervisor will notify the General Manager or other senior Narrabri Mine person on site.

The General Manager, or other senior Narrabri Mine person, will:

1. Request a qualified archaeologist to attend the site and advise on its archaeological significance;
2. Request the site monitor from the RAPs if not already present to attend and advise on its cultural significance in consultation with the qualified archaeologist; and
3. If the find is determined to be a site, notify the OEH with the advice from the archaeologist and the RAPs for determination of further procedures.

If the find is confirmed as a site, the archaeologist will complete a OEH Standard AHIMS Site Recording Form and forward to the OEH for inclusion on the Aboriginal Heritage Information management System (AHIMS) database.

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 OEH and with approval of the Secretary.

The General Manager, or other senior Narrabri Mine person, will implement any other procedures or recommendations issued by the OEH.

Failure to report a discovery and those responsible for the damage or destruction occasioned by unauthorised removal or alteration to a site or to archaeological material may be prosecuted under the NPW Act (as amended).

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

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 police by ringing **000**; and
3. General Manager, or other senior Narrabri Mine person, will contact OEH's Environment line on **131 555** and the Heritage Division of OEH on **(02) 9873 8500**.

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 identified as Aboriginal, the site is to be secured and DP&E, OEH and the RAPs are to be notified in writing; and
3. If the remains are identified as non-Aboriginal (historical) remains, the site is to be secured and the Heritage Division of OEH is to be contacted.

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 remains are identified as a forensic matter liaise with the police;
2. If the remains are identified as Aboriginal liaise with the DP&E, the OEH and the RAPs;
3. If the remains are identified as non-Aboriginal (historical) liaise with the DP&E and the Heritage Division of OEH; and
4. If the remains are identified as not being human, then work can recommence once the appropriate clearances have been given.

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Appendix C

Records of Consultation

(No of pages excluding this page = XX)

	NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM	Document Owner:	Technical Services Manager
		Revision Period:	3 years
		Issue:	2
		Last Revision Date:	18/05/2016
		Date Printed:	19/05/2016
WHC_PLN_NAR_EXTRACTION PLAN HERITAGE MANAGEMENT PLAN LW101 to LW106			

Record of Consultation between Narrabri Mine and Narrabri LALC, Gomerioi Narrabri Aboriginal Corporation and OEH

Date	Stakeholder	Consultation
10 November 2011	GNAC	Copy of draft Heritage Management Plan provided for comment.
10 November 2011	NLALC	Copy of draft Heritage Management Plan provided for comment.
20 January 2012	GNAC	Provided with copy of updated Figure of mining footprint and outline of amended salvage measure for LW101.
20 January 2012	NLALC	Provided with copy of updated Figure of mining footprint and outline of amended salvage measure for LW101.
2 March 2012	GNAC and NLALC	Meeting to discuss the draft Heritage Management Plan. Comments made on the day by the RAPs incorporated into this version of the report (Rev F).
17 August 2015	GNAC	Copy of revised draft Heritage Management Plan provided for comment. Sought comments by 14 September 2015.
17 August 2015	NLALC	Copy of revised draft Heritage Management Plan provided for comment. Sought comments by 14 September 2015.
9 October 2015	GNAC	Reminder email seeking comments.
9 October 2015	NLALC	Reminder email seeking comments.

10 November 2011

The Manager
Gomerioi Narrabri Aboriginal Corporation
29 Doyle Street
Narrabri NSW 2390

Dear Sir/Madam

NARRABRI COAL MINE - LW 101-105 EXTRACTION PLAN

I refer to the approved Narrabri Coal Mine Stage 2 Longwall Project located 30 km south-southeast of Narrabri and 10 km north-northwest of Baan Baa. As you may be aware, Narrabri Coal Operations Pty Ltd (NCOPL) received approval for the Stage 2 Longwall Project in July 2010 (Project Approval (PA) 08_0144).

NCOPL has commissioned AECOM to prepare an Extraction Plan for the proposed mining within Longwall Panels 101 to 105. In accordance with PA 08_0144 (Schedule 3 Condition 4), this Extraction Plan includes a Heritage Management Plan, looking specifically at any potential environmental consequences of secondary extraction on heritage sites or values.

In accordance with the NCOPL consultation protocols, a draft copy of the Heritage Plan (Longwall Panels 101 to 105) is attached and we welcome any feedback or comments the Gomerioi Narrabri People may have in relation to this plan.


NCOPL will also be seeking a review by the Narrabri Local Aboriginal Land Council prior to formalisation of the management plan. Upon completion of the review process, NCOPL will require formal advice from Gomerioi Narrabri People identifying concurrence (or otherwise) to the management plan and providing any additional recommendations. Once this is received, the management plan and advice will be referred to the Office of Environment and Heritage (formerly Department of Environment, Climate Change and Water - DECCW) for their review.

I look forward to your early advice in relation to the draft plan as it is our intention to submit the management plan to OEH in early December. All correspondence should be addressed to:

Steve Farrar
Environmental Officer – Narrabri Mine
Whitehaven Coal Limited
Locked Bag 1002
Narrabri NSW 2390

Should you have any queries or would like to arrange a meeting for further discussions please contact Steve Farrar on (02) 6794 4167.

Yours faithfully



Amanda Kerr
Senior Environmental Engineer
amanda.kerr@aecom.com

Direct Dial: +61 2 4911 4841
Direct Fax: +61 2 4911 4999

encl: Draft Heritage Management Plan, Narrabri Mine LW 101 to 105



20 January 2012

The Manager
Gomeroi Narrabri Aboriginal Corporation
29 Doyle Street
NARRABRI NSW 2390

Dear Sir/Madam

RE: NARRABRI COAL MINE – LW101 to 105 EXTRACTION PLAN

I refer to earlier correspondence from AECOM on behalf of Narrabri Mine (dated 10 November 2011) regarding the Heritage Management Plan prepared as part of the Extraction Plan for Longwall Panels 101 to 105.

Following discussion with the Department of Planning & Infrastructure and Office of Environment and Heritage, Narrabri Mine is considering some minor amendments to the proposed management options under the plan. This includes not salvaging Site 21 (isolated artefact) ahead of longwall mining. Observations obtained of subsidence cracking in the vicinity of this site will be used to improve the prediction of impacts for subsequent longwall panels and the development of appropriate management actions.

In addition to the above change, I have attached an updated figure of the proposed mining footprint. The extent of mining to the north has been generally extended compared to the version you were provided on 10 November 2011.

Given the above amendments, we would appreciate any comments you may have on the Heritage Management Plan within 21 days of the date of this letter.

Should you have any queries or would like to arrange a meeting during this time for further discussions please don't hesitate to contact myself on (02) 6794 4167.

Yours sincerely

A handwritten signature in blue ink, appearing to read "Steven Farrar".

Steven Farrar
Environmental Officer – Narrabri Mine

10 November 2011

The Manager
Narrabri Local Aboriginal Land Council
96 Barwan Street
Narrabri NSW 2390

Dear Sir/Madam

NARRABRI COAL MINE - LW 101-105 EXTRACTION PLAN

I refer to the approved Narrabri Coal Mine Stage 2 Longwall Project located 30 km south-southeast of Narrabri and 10 km north-northwest of Baan Baa. As you may be aware, Narrabri Coal Operations Pty Ltd (NCOPL) received approval for the Stage 2 Longwall Project in July 2010 (Project Approval (PA) 08_0144).

NCOPL has commissioned AECOM to prepare an Extraction Plan for the proposed mining within Longwall Panels 101 to 105. In accordance with PA 08_0144 (Schedule 3 Condition 4), this Extraction Plan includes a Heritage Management Plan, looking specifically at any potential environmental consequences of secondary extraction on heritage sites or values.

In accordance with the NCOPL consultation protocols, a draft copy of the Heritage Plan (Longwall Panels 101 to 105) is attached and we welcome any feedback or comments the Narrabri Local Aboriginal Land Council may have in relation to this plan.

NCOPL will also be seeking a review by the Gomeroi Narrabri People prior to formalisation of the management plan. Upon completion of the review process, NCOPL will require formal advice from the Narrabri Local Aboriginal Land Council identifying concurrence (or otherwise) to the management plan and providing any additional recommendations. Once this is received, the management plan and advice will be referred to the Office of Environment and Heritage (formerly Department of Environment, Climate Change and Water - DECCW) for their review.

I look forward to your early advice in relation to the draft plan as it is our intention to submit the management plan to OEH in early December. All correspondence should be addressed to:

Steve Farrar
Environmental Officer – Narrabri Mine
Whitehaven Coal Limited
Locked Bag 1002
Narrabri NSW 2390

Should you have any queries or would like to arrange a meeting for further discussions please contact Steve Farrar on (02) 6794 4167.

Yours faithfully



Amanda Kerr
Senior Environmental Engineer
amanda.kerr@aecom.com

Direct Dial: +61 2 4911 4841
Direct Fax: +61 2 4911 4999

encl: Draft Heritage Management Plan, Narrabri Mine LW101 to 105



20 January 2012

The Manager
Narrabri Local Aboriginal Land Council
96 Barwan Street
NARRABRI NSW 2390

Dear Sir/Madam

RE: NARRABRI COAL MINE – LW101 to 105 EXTRACTION PLAN

I refer to earlier correspondence from AECOM on behalf of Narrabri Mine (dated 10 November 2011) regarding the Heritage Management Plan prepared as part of the Extraction Plan for Longwall Panels 101 to 105.

Following discussion with the Department of Planning & Infrastructure and Office of Environment and Heritage, Narrabri Mine is considering some minor amendments to the proposed management options under the plan. This includes not salvaging Site 21 (isolated artefact) ahead of longwall mining. Observations obtained of subsidence cracking in the vicinity of this site will be used to improve the prediction of impacts for subsequent longwall panels and the development of appropriate management actions.

In addition to the above change, I have attached an updated figure of the proposed mining footprint. The extent of mining to the north has been generally extended compared to the version you were provided on 10 November 2011.

Given the above amendments, we would appreciate any comments you may have on the Heritage Management Plan within 21 days of the date of this letter.

Should you have any queries or would like to arrange a meeting during this time for further discussions please don't hesitate to contact myself on (02) 6794 4167.

Yours sincerely

Steven Farrar
Environmental Officer – Narrabri Mine



WHITEHAVEN COAL

17th August 2015

Craig Trindall
Chair
Gomerioi Narrabri Aboriginal Corporation
29 Doyle Street
NARRABRI NSW 2390
Via email: trigupnorth@yahoo.com.au

Dear Craig,

RE: NARRABRI MINE EXTRACTION PLAN REVISION TO INCLUDE LW106

I refer to the approved Narrabri Mine Stage 2 Longwall Project (Project Approval [PA] 08_0144) located 30 km south-southeast of Narrabri and 10 km north-northwest of Baan Baa. As you may be aware, Narrabri Coal Operations Pty Ltd (NCOPL) received approval for an Extraction Plan that covered the first five longwall panels (LW) at the mine, known as LW101 to LW105, in March 2012. The mine is proposing to amend the existing LW101 to LW105 Extraction Plan to include LW106.

In accordance with Schedule 3, Condition 4(h) of PA 08_0144 the revised Extraction Plan includes a Heritage Management Plan (EP-HMP) which looks specifically at any potential environmental consequences of secondary extraction, i.e. longwall extraction, on heritage sites or values.

A copy of the revised EP-HMP is enclosed and a hard copy will be forwarded in the mail for your review. All comments received will be taken into consideration as the EP-HMP is finalised. Any feedback with respect to the revised EP-HMP is to be provided by **5:00pm Monday 14 September 2015**.

Should you have any queries or if you would like to arrange a meeting for further discussions please contact myself on 02 6794 4755 or at sfarrar@whitehavencoal.com.au.

Regards,

Steven Farrar
Environmental Superintendent – Narrabri Mine
Ref: sf150817_EP-HMP Rvw_GNAC

encl: Extraction Plan Heritage Management Plan LW101 to LW106



WHITEHAVEN COAL

17th August 2015

Lynn Trindall
Chief Executive Officer
Narrabri Local Aboriginal Land Council
96 Barwan Street
NARRABRI NSW 2390
Via email: admin@narrabrilalc.com.au

Dear Lynn,

RE: NARRABRI MINE EXTRACTION PLAN REVISION TO INCLUDE LW106

I refer to the approved Narrabri Mine Stage 2 Longwall Project (Project Approval [PA] 08_0144) located 30 km south-southeast of Narrabri and 10 km north-northwest of Baan Baa. As you may be aware, Narrabri Coal Operations Pty Ltd (NCOPL) received approval for an Extraction Plan that covered the first five longwall panels (LW) at the mine, known as LW101 to LW105, in March 2012. The mine is proposing to amend the existing LW101 to LW105 Extraction Plan to include LW106.

In accordance with Schedule 3, Condition 4(h) of PA 08_0144 the revised Extraction Plan includes a Heritage Management Plan (EP-HMP) which looks specifically at any potential environmental consequences of secondary extraction, i.e. longwall extraction, on heritage sites or values.

A copy of the revised EP-HMP is enclosed and a hard copy will be forwarded in the mail for your review. All comments received will be taken into consideration as the EP-HMP is finalised. Any feedback with respect to the revised EP-HMP is to be provided by **5:00pm Monday 14 September 2015**.

Should you have any queries or if you would like to arrange a meeting for further discussions please contact myself on 02 6794 4755 or at sfarrar@whitehavencoal.com.au.

Regards,

Steven Farrar
Environmental Superintendent – Narrabri Mine
Ref: sf150817_EP-HMP Rvw_NLALC

encl: Extraction Plan Heritage Management Plan LW101 to LW106



**Office of
Environment
& Heritage**

Date: 30 September 2015
Your reference: SF150825_EP LW106
Rev_OEH
Our reference: DOC15/372702
Contact: Paul Houston 02 - 6883 5361

Steven Farrer
Environmental Superintendent
Narrabri Mine
Whitehaven Coal
Locked Bag 1002
Narrabri NSW 2390

Dear Steven

RE: Narrabri Mine Extraction Plan Revision to Include LW106

I refer to your letter dated 25 August 2015 seeking comment from the Office of Environment and Heritage (OEH) on the revisions to the Extraction Plans dealing with Biodiversity, Landscape, Water and Heritage. This response deals with the Aboriginal heritage aspects of the plan, and are in addition to comments made in our letter dated 22 September 2015.

If you have any questions regarding this matter please contact Paul Houston on 02 6883 5361 or email paul.houston@environment.nsw.gov.au.

Yours sincerely

SONYA ARDILL
Senior Team Leader Planning, North West Region
Regional Operations

Attachment A: OEH review of the Narrabri Mine Extraction Plan Revision – Aboriginal Heritage comments

OEH review of the Narrabri Mine Extraction Plan Revision – 08_0144 – Aboriginal Heritage comments and recommendations

Issue 1: Consultation protocols.

The proponent should develop a communication strategy in consultation with the Registered Aboriginal Parties (RAPs) that defines the process for how the communication will occur between the parties and include:

- Address for service
- What is an acceptable form of communication e.g. in written form email or by phone
- Timeframes (for requests and responses)
- Process if there is no response within the timeframe

Issue 2: Dispute Resolution

The proponent should provide a clear definition of what constitutes a dispute, and develop a dispute resolution process (with appropriate timeframes) in consultation with the RAPs.

Issue 3: Handling complaints

The proponent should develop a process for handling complaints or reinstate the previous process for handling complaints.

Issue 5: Definitions or interpretations

The lack of definitions or interpretations may lead to confusion for the parties involved in this plan. The proponent should include a definitions table for any potentially contentious words e.g. Ground Disturbance, Complaints, Disputes etc. so there a clear understand by all parties about the interpretation of what is meant by these words.

Issue 6: Appendix A - Aboriginal Site salvage, Site collection

Step 9: The proponent should insert appropriate timeframes in relation to written notification. These timeframes should be form part of the communication strategy.

Step 10: If the proponent is to return the salvage material to an authorised Aboriginal organisation this needs to be done under a Care Agreement. An additional step should be added in relation to applying for a care agreement before the material can be returned to an authorised Aboriginal organisation.

Issue 7: Which sites have a high likelihood of been impacted upon from the project:

OEH is unsure from reading the report which of the sites have a high likelihood of been impacted upon by this project. Under 2.1 Artefact scatters (last paragraph) “Those sites identified as having a high likelihood will be salvaged prior to mining”, however Table 3 does not clearly define which sites are of high, medium or low likelihood of been impacted.

To avoid confusion, Table 3 should be updated to clearly describe which of the sites is of high, medium or low likelihood of been impacted upon.

Issue 8: Table 5 -1.01

To avoid confusion about the condition of the sites before and after the completion of each longwall panel, this process should be done in conjunction with the RAPs, not just the Archaeologist. Further,

appropriate timeframes should be developed for this process to occur. Table 5, 1.01 should be amended accordingly.