HERITAGE MANAGEMENT PLAN

Version	Issue Date	Section Revised	Reason for Revision	Review Team
1	July 2008	All	Original AHMP for Open Cut 1 and MIA	G Hamm, Wells Environmental Services
2	May 2013	All	New ACHMP to address all of Stage 1 Project Approval area and replace previous AHMP for MIA and OC1	P Kuskie, L Bowden
3	February 2015	All	To incorporate Modification 9 to the Stage 1 Project Approval	MCO
4	June 2015	All	To include management and mitigation measures for both Stage 1 and Stage 2 of the Project	MCO, UQCHU
5	December 2015	Sections 1.2, 2.0 and 5.0, Table D-1, and Figures 2 to 5	To reflect approval of Modification 11 (Stage 1) and Modification 1 (Stage 2)	MCO
6	November 2017	All	To incorporate approved modifications to Stage 1 (MOD 11 & MOD 12) and Stage 2 (MOD 1 & MOD 2) of the Project	MCO
7	May 2020	All	To incorporate approved modifications to Stage 1 (MOD 14) and Stage 2 (MOD 3) of the Project	MCO

Approved: _____ Date: _____

Document	Version	Issue	Effective	Review	Author	Approved
MCO_ENV_PLN_0029	7	May 20			MCO, UQCHU	S. Archinal

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1.0 INTRODUCTION

The Moolarben Coal Complex is located approximately 40 kilometres north of Mudgee in the Western Coalfield of New South Wales (NSW) (Figure 1).

Moolarben Coal Operations Pty Ltd (MCO) is the operator of the Moolarben Coal Complex on behalf of the Moolarben Joint Venture (Moolarben Coal Mines Pty Ltd [MCM], Sojitz Moolarben Resources Pty Ltd and a consortium of Korean power companies). MCO and MCM are wholly owned subsidiaries of Yancoal Australia Limited.

1.1 APPROVED MOOLARBEN COAL PROJECT (STAGES 1 AND 2)

Mining operations at the Moolarben Coal Complex are currently approved until 31 December 2038 and would continue to be carried out in accordance with NSW Project Approval (05_0117) (Moolarben Coal Project Stage 1) (as modified) and NSW Project Approval (08_0135) (Moolarben Coal Project Stage 2) (as modified).

Mining operations at the Moolarben Coal Complex are undertaken in accordance with various approvals under the Commonwealth *Environmental Protection and Biodiversity Conservation Act, 1999* (EPBC Act).

The current mining operations at the Moolarben Coal Complex are conducted in accordance with the requirements of the conditions of Mining Lease (ML) 1605, ML 1606, ML 1628, ML 1691 and ML 1715 granted under the *Mining Act, 1992*.

Stage 1 at the Moolarben Coal Complex has been operating for several years and at full development will comprise three open cut mines (OC1, OC2, and OC3), a longwall underground mine (UG4), and mining related infrastructure (including coal processing and transport facilities) (Figure 2).

Stage 2 at the Moolarben Coal Complex has commenced and at full development will comprise one open cut mine (OC4), two longwall underground mines (UG1 and UG2), and mining related infrastructure (Figure 2).

INSERT FIGURE 1: REGIONAL LOCATION

INSERT FIGURE 2: APPROVED MOOLARBEN COAL PROJECT (STAGE 1 AND STAGE 2) GENERAL ARRANGEMENT

Stages 1 and 2 at Moolarben Coal Complex operate concurrently in accordance with the limits stipulated in the NSW Project Approval (05_0117) and NSW Project Approval (08_0135), and are summarised as follows:

- The total run-of-mine (ROM) coal extracted from the Moolarben Coal Complex (open cut and underground mining) is no more than 24 million tonnes in any calendar year, comprising:
  - No more than 16 million tonnes of ROM coal from the open cut mining operations in any calendar year, considering:
    - No more than 10 million tonnes of ROM coal from Stage 1 open cut mining operations in any calendar year.
    - No more than 16 million tonnes of ROM coal from Stage 2 open cut mining operations in any calendar year.
  - No more than 8 million tonnes of ROM coal from the underground mining operations in any calendar year.
- No more than 16 million tonnes of coal from the Moolarben Coal Complex can be processed (washed) in any calendar year.
- No more than 22 million tonnes of coal can be transported from the Moolarben Coal Complex in any calendar year.
- All product coal is transported from the Moolarben Coal Complex by rail with:
  - No more than 8 laden trains leaving the site each day (on average when calculated over any calendar year); and
  - No more than 11 laden trains leaving the site each day.

1.1.1 Operational Status

Open cut and underground mines are in operation with activities focused in OC1, OC2, OC3, OC4 and UG1 (Figure 2). The mining will progress to other approved mines in the future.

Construction/development activities are currently focused on works to facilitate open cut mining progression and development and progression of underground mining operations of the Moolarben Coal Complex.

Construction works in support of open cut mining progression include mine infrastructure areas, offices, water management works, haul roads, diversions, water storages, exploration within ML areas and other ancillary works.

Construction in support of underground mining progression include mine infrastructure areas, materials handling and processing, water management infrastructure, exploration within ML areas and underground mining surface facilities.

1.2 SCOPE AND PURPOSE

This Heritage Management Plan (HMP) has been prepared on behalf of MCO by Dr Andrew Sneddon and Dr Matthew Whincop of the University of Queensland Culture and Heritage Unit (whose appointment has been approved by the former NSW Department of Planning & Environment [DP&E] [letter dated 11 February 2015] as "*suitably qualified and experienced persons*"), to satisfy the requirements under Project Approval (05_0117) (Moolarben Coal Project Stage 1) (as modified) and Project Approval (08_0135) (Moolarben Coal Project Stage 2) (as modified).

The purpose of the HMP is to describe the management of Aboriginal and historic heritage at the Moolarben Coal Complex associated with the above listed Project Approvals.

This version (Version 7) has been prepared to incorporate the Moolarben Coal Complex Open Cut Optimisation Modification (Modification 14 of Project Approval [05_0117] and Modification 3 of Project Approval [08_0135]).

Upon approval, this HMP will supersede the previously approved HMP dated November 2017 (MCO, 2017).

1.3 STRUCTURE OF THE HERITAGE MANAGEMENT PLAN

The remainder of the HMP is structured as follows:

Section 2: Outlines the statutory requirements applicable to the HMP.

Section 3: Outlines the Aboriginal archaeological sites and Aboriginal heritage values at the Moolarben Coal Complex.

Section 4: Outlines the historic heritage sites and values at the Moolarben Coal Complex.

Section 5: Outlines management measures for Aboriginal heritage at the Moolarben Coal Complex.

Section 6: Outlines management measures for historic heritage at the Moolarben Coal Complex.

Section 7: Describes the protocols for heritage inductions and training.

Section 8: Describes the performance measures applicable to the management of Aboriginal and historic heritage at the Moolarben Coal Complex.

Section 9: Provides a contingency plan to manage any unprecedented impacts and their consequences.

Section 10: Provides details for the review and improvement of environmental performance process.

Section 11: Describes the management and reporting of incidents, complaints and non-compliances.

Section 12: Outlines the key roles and responsibilities.

Section 13: Provides the references cited in the HMP.

Appendix A: Provides a reconciliation of the Project Approval requirements.

Appendix B: Provides a glossary of terms and abbreviations.

Appendix C: Summarises the archaeological investigations at the Moolarben Coal Complex.

Appendix D: Provides a summary of the management commitments for Aboriginal archaeological sites at the Moolarben Coal Complex.

Appendix E: Describes the previously managed Aboriginal archaeological sites at the Moolarben Coal Complex.

Appendix F: Describes the previously managed historic heritage sites at the Moolarben Coal Complex.

Appendix G: Moolarben Coal Complex Ground Disturbance Permit.

Appendix H: Describes the Aboriginal archaeological sites located outside of the Moolarben Coal Complex but within the immediate surrounds.

1.4 CONSULATION FOR THE HERITAGE MANAGEMENT PLAN

In accordance with Condition 39(b) of Schedule 3 of the Stage 1 Project Approval (05_0117) and Condition 46(b) of Schedule 3 of the Stage 2 Project Approval (08_0135), this HMP has been provided to the NSW ~~Office of Environment and Heritage~~Biodiversity Conservation Division (~~OEH~~BCD) and the Registered Aboriginal Parties (RAPs) for their review and comment. Comments received within the specific time period were considered during finalisation of the HMP and prior to lodgement with the Secretary of the ~~DP&E~~Department of Planning, Industry and Environment (DPIE) for approval.

2.0 STATUTORY REQUIREMENTS

MCO's statutory obligations are contained in:

i. the conditions of the NSW Project Approval (05_0117) (as modified) and NSW Project Approval (08_0135) (as modified); and

ii. other relevant legislation.

2.1 EP&A ACT PROJECT APPROVAL

The conditions of the NSW Project Approvals (05_0117 and 08_0135) relevant to heritage management are described below. A comprehensive list of all conditions in the NSW Project Approval relevant to heritage management, and a description of where they are referenced in this HMP, is provided in Appendix A.

2.1.1 Heritage Management Plan

Condition 39, Schedule 3 of the Stage 1 Project Approval (05_0117) requires the preparation of a HMP[1]. A reconciliation of where these requirements have been addressed in this HMP is provided in Appendix A. Condition 39 states:

Heritage Management Plan

39. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary within six (6) months from the date of approval for MOD 9. This plan must:

(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;

(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);

(c) include results of further archaeological survey of the 10 hectares of land (as identified on Figure 10 of Appendix F of the EA) that has not been surveyed, and any land adjacent to the open cut mines that has not been surveyed and may be subject to blasting impacts;

(d) include the following for the management of Aboriginal Heritage:

- *a detailed archaeological test excavation and potential salvage program for site S1MC331;*
- *a detailed archaeological test excavation and potential salvage program for sites S1MC343 and S1MC344, if it is determined by a qualified archaeologist that these sites may be subject to impacts associated with blasting;*
- *a description of the measures that would be implemented for:*
  - *protecting, monitoring and/or managing the heritage sites/items identified in the EA and any sites identified during the surveys required in (c) above;*

[1] The Stage 1 Aboriginal Heritage Management Plan dated November 2014 (MCO, 2014) and Stage 1 Heritage Management Plan dated September 2013 (MCO, 2013) have already been prepared and approved for the Stage 1 Moolarben Coal Project. This HMP will supersede both of these previously approved plans.

- *conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence and/or blasting;*
- *managing the discovery of any human remains or previously unidentified Aboriginal objects on site;*
- *maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site;*
- *ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and*
- *ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;*

- *a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;*

(e) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 9, including archival recording, historical research and archaeological assessment prior to any disturbance.

Condition 46, Schedule 3 of the Stage 2 Project Approval (08_0135) requires the preparation of a HMP. A reconciliation of where these requirements have been addressed in this HMP is provided in Appendix A. Condition 46 states:

Heritage Management Plan

46. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:

(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;

(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);

(c) be submitted to and approved by the Secretary prior to construction, unless the Secretary agrees otherwise;

(d) include a description of the measures that would be implemented for:

- *managing the discovery of human remains or previously unidentified heritage items on site; and*
- *ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;*

(e) include the following for the management of Aboriginal Heritage:

- *a detailed plan of management for the Murragamba Creek, Red Hills and Powers conservation areas;*
- *a description of the measures that would be implemented for:*
  - *protecting, monitoring and/or managing (including any proposed archaeological investigations and/or salvage measures) the heritage items identified in the tables in the EA;*
  - *managing the discovery of previously unidentified Aboriginal items on site;*
  - *conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence;*
  - *maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site and within any Aboriginal heritage conservation areas;*

- *ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and*

- *a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;*

(f) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 8, including archival recording, historical research and archaeological assessment prior to any disturbance.

2.1.2 Management Plan Requirements

Condition 3, Schedule 5 of the Stage 1 Project Approval (05_0117) and Condition 3, Schedule 6 of the Stage 2 Project Approval (08_0135) outline the management plan requirements that are applicable to the preparation of the HMP. Table 1 presents these requirements and indicates where they are addressed within this HMP.

Table 1: Management Plan Requirements

NSW Project Approval Condition	HMP Section
3. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:	
(a) detailed baseline data;	Sections 3 and 4
(b) a description of:	
• *the relevant statutory requirements (including any relevant approval, licence or lease conditions);*	Section 2
• *any relevant limits or performance measures/criteria;*	Section 8
• *the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;*	Section 8
(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Sections 5 and 6
(d) a program to monitor and report on the:	
• *impacts and environmental performance of the project;*	Sections 5, 6 and 11
• *effectiveness of any management measures (see c above);*	
(e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 9
(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	Section 10
(g) a protocol for managing and reporting any:	
• *incidents;*	
• *complaints;*	Section 11
• *non-compliances with statutory requirements; and*	
• *exceedances of the impact assessment criteria and/or performance criteria; and*	
(h) a protocol for periodic review of the plan.	Section 10

2.2 OTHER RELEVANT LEGISLATION

The Acts, Regulations and Guidelines that may be applicable to the Moolarben Coal Complex include, but are not limited to, the:

- Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act, 1984;*
- Commonwealth *Australian Heritage Council Act, 2003;*
- Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999*;
- Commonwealth *Native Title Act, 1993;*
- NSW *Heritage Act, 1977*;
- NSW *National Parks and Wildlife Act, 1974*;
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW Department of Environment, Climate Change and Water [DECCW], 2010a);
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b); and
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011).

3.0 ABORIGINAL ARCHAEOLOGICAL SITES AND ABORIGINAL HERITAGE VALUES

MCO has established and maintains an Aboriginal Archaeological Sites Database. The database is based on numerous archaeological surveys and assessments undertaken at the Moolarben Coal Complex. A summary of previous archaeological investigations is presented in Appendix C.

3.1 ABORIGINAL ARCHAEOLOGICAL SITES

Known Aboriginal archaeological sites covered by this HMP are listed in Appendix D. This HMP also covers any previously unknown Aboriginal archaeological sites that relate to the Moolarben Coal Complex. Sites identified at the Moolarben Coal Complex include those that will be left *in situ* within designated heritage conservation areas linked to the Moolarben Coal Complex (e.g. Red Hills Conservation Area, Murragamba Creek Management Area, Bora Creek Management Area and Powers Conservation Area shown on Figure 3). The table presented in Appendix D is based on the results of earlier assessments (Appendix C) and refined by a desktop study conducted by the University of Queensland Culture & Heritage Unit and subsequent assessments (Appendix C).

As a result of previous assessments and archaeological salvage works, approximately 414 sites at the Moolarben Coal Complex have already been managed (e.g. salvaged) and/or require no further management. These sites are described in Appendix E. An additional 102 sites have also been identified on lands immediately adjacent to the Moolarben Coal Complex. These sites are located outside of the Project boundary and hence are outside the scope of this HMP, however for completeness these sites are listed in Appendix H.

A summary of the remaining 423 known Aboriginal archaeological sites at the Moolarben Coal Complex is described in Table 2 and presented on Figure 3, while Appendix D describes the management measures applicable to each of these sites under this HMP.

Table 2: Summary of the Known Aboriginal Archaeological Sites at the Moolarben Coal Complex

Site Type	Number of Sites at the Moolarben Coal Complex
Potential Archaeological Deposit (PAD)	7
Artefact Scatter (with or without PAD)[1]	189
Grinding Grooves[2]	5
Isolated Finds (with or without PAD) [1]	188
Rock Shelters[3]	34
TOTAL	**423**

[1] Shown collectively on Figure 3 as 'Open Artefact Sites'.
[2] Including grinding grooves with or without artefact scatters or isolated finds.
[3] Including rock shelters with or without art and/or artefact scatters and/or isolated finds and/or grinding grooves and/or PAD.

INSERT FIGURE 3: MOOLARBEN COAL COMPLEX ABORIGINAL ARCHAEOLOGICAL SITES

3.2 ABORIGINAL CULTURAL HERITAGE VALUES

The RAPs for the Moolarben Coal Complex (Section 5.1.1) have been consulted on the nature and extent of Aboriginal cultural heritage at the Moolarben Coal Complex on a number of occasions, including during the community consultation processes undertaken for previous cultural heritage assessments and investigations (Appendix C).

Previous assessments have identified and documented cultural heritage values for the Moolarben Coal Complex area, including the following:

- Archaeological sites having contemporary cultural value because they provide a tangible link to the traditional past (Kuskie, 2013).
- The presence of flora and fauna species with known traditional uses (Kuskie, 2013).
- The area of Moolarben Ridge to the south of Carrs Gap having contemporary cultural value to the Wiradjuri community (Hamm, 2008 and Kuskie, 2013).
- The area along the Goulburn River known as “The Drip” is considered to have high cultural value as the sites in this area represent easily identified material remains and the area is ceremonially important (Hamm, 2006).

Responses received as part of the consultation process associated with the review of this HMP collectively indicated that all Aboriginal archaeological sites at the Moolarben Coal Complex, known or otherwise, have high cultural significance.

4.0 HISTORIC HERITAGE SITES AND VALUES

4.1 HISTORIC HERITAGE AT THE MOOLARBEN COAL COMPLEX

Sites of known and potential historical (non-Aboriginal) heritage significance at the Moolarben Coal Complex that may be impacted by activities at the Moolarben Coal Complex, have been identified through a range of previous studies including:

- Moolarben Coal Project Non-Aboriginal Heritage Assessment by Veritas Archaeology and History Service (2005).
- Stage 2 - Moolarben Coal Project, Ulan, NSW; European Heritage Assessment of Identified Items within Stage 2 of the Moolarben Coal Project, by Heritas Architecture (2008).
- Moolarben Coal Project - Stage 1 Optimisation Modification Historic Heritage Impact Assessment, by EMGA Mitchell McLennan (2013).

The conclusions of the above reports are reproduced in this section in summary form.

Table 3 lists the *in situ* known and potential historic heritage sites identified at the Moolarben Coal Complex by these previous studies, including assessed levels of significance, following the Stage 1 Project Approval (05_0117) and the Stage 2 Project Approval (08_0135). Some identified historic heritage sites have previously been managed in accordance with the Stage 1 Project Approval (05_0117) and/or Stage 2 Project Approval (08_0135) and are therefore not included in Table 3. These sites listed in Appendix F and include the following:

- Site 8 (Murragamba School Site).
- Site 9 (Farm Site).
- Site 11 (Farm Site).
- Site 14 (House Site).
- Site 29 (House Site).
- Site 30 (School Site).
- Site 32 (House Site).
- Site 35 (House Site).
- Site 36a (House Site).
- Site 36b (Burial).
- Site 37 (House Site).
- Site 55 (Water Trough and Spring Fed Well).
- Site 56 (Water Trough and Spring Fed Well).

The known and potential historic heritage sites at the Moolarben Coal Complex requiring further management under this HMP are presented in Figure 4. A detailed description and implementation schedule for the mitigation measures described for each specific heritage item in Table 3 is provided in Section 6.

This section discusses the nature of the heritage values associated with the identified historic heritage sites in order to provide an understanding of the ways in which those places have heritage significance. This will determine the appropriate management response. For example, places that are significant for their historical values may require a different management response to places that are significant principally for their aesthetic values.

Table 3: Summary of Remaining Historic Heritage Sites at the Moolarben Coal Complex

Site Number	Site Name	Site Location	Site Description	Significance
2	Farm Site	Adjacent to OC2	Selected by Sarah A Roberts in 1909. Chimney, foundations, shed, yards and exotic plants[1].	Local – moderate[2]
3	Burial Site – Roberts Family	Adjacent to OC3	Two areas marked with field stones[1].	Local – high[2]
4	House and Burial Site	Adjacent to OC3	Selected by M Robison in 1875. Sarah Roberts believed to have lived here. Base of chimney, stone floor and exotic plants. Rose marking possible burial site[1].	Local – moderate[2]
15	Moolarben Dam	Adjacent to OC1	Land resumed for public utility in 1949, constructed in 1950s. Concrete and earth dam wall[1].	Local – moderate[2]
18	Carr's Gap Road[3]	Adjacent to OC2	Foundations of road to Wollar via Carr's Gap. Rough dry stone retaining wall[1, 4].	Local – moderate[2]
19	Farm Site – 'Glen Moor'	Adjacent to OC1	Selected by JW Robinson. House, dairy, shearing shed, bails, stables, hay shed, machinery shed, exotic trees and bridge[1].	Local – exceptional[2]
20	Grave and Memorial Garden	Adjacent to UG4	Originally part of Travelling Stock Route 109. CL by AFC Green in 1937[1].	Local – high[2]
22	Stockyards	Adjacent to UG4	Originally part of Travelling Stock Route 109, proclaimed 23 September 1879[1].	Local – moderate[2]
23	Natural Environment – 'The Drip'	Adjacent to UG4	Natural sandstone cliff through which water seeps.	Local – high[2]
31	House Site	Adjacent to OC2	Selected by Sarah A Roberts in 1911. Two houses, exotic trees and remains of other buildlings[1].	Local – moderate[2]
33	Recreation Ground	Adjacent to OC3	Dedicated 6 September 1935. Tennis court, toilet and shed[1].	Local – moderate[2]
57	Feed Trough	Adjacent to Stage 2 Infrastructure	A hollowed timber log used as a feed or water trough[2].	Item of Interest[5]

1 Source: Veritas Archaeology and History Service (2005).
2 As stated in Stage 1 Project Approval (05_0117).
3 Note that this site is also referred to as the "Carr's Gap Road Stone Wall" in the Stage 2 Project Approval (08_0135).
4 Source: Heritas Architecture (2008).
5 As stated in Stage 2 Project Approval (08_0135).

INSERT FIGURE 4: MOOLARBEN COAL COMPLEX HISTORIC HERITAGE SITES

In assessing the levels of significance for the places noted in Table 3, the heritage practitioners applied the NSW heritage 'assessment criteria' contained within the guideline document entitled 'Assessing Heritage Significance' (NSW Heritage Manual, 1996). The assessments considered whether or not the sites were:

- of historical importance;
- associated with the life or works of a person or persons of historical importance;
- aesthetically significant;
- of social significance (i.e. have associations with a community or cultural group for social, cultural or spiritual reasons);
- of scientific significance (i.e. have potential to address substantive research questions);
- rare; and
- representative of a type of site or cultural place (i.e. the way in which they demonstrate the characteristics of a class of cultural place).

All of the sites listed in Table 3 have been assessed as being significant at the **local level** (as distinct from places significant at State or National level). This is reflected in the Stage 1 and Stage 2 Project Approvals. In particular, the sites were assessed as being significant, at the local level, for their:

- historical significance;
- aesthetic significance, and as good representative examples of certain types of rural place;
- social significance, including strong family associations with certain grave sites; and
- scientific significance.

4.2 HISTORICAL SIGNIFICANCE

The former NSW Heritage Council has prepared a document entitled 'New South Wales Historical Themes' (2001) to assist heritage practitioners, and others who are responsible for the management of heritage places, to better understand the historical importance of places. These 'State' themes can also assist in understanding places of local significance and include:

- Ethnic influences and migration – the formation of common cultural traditions that bound the local community, as well as the arrival of newcomers, resettling from other places.
- The development of agriculture, forestry, pastoralism, commerce and communications – the emergence of a local economy through determination, and flexible and adaptive responses to a challenging environment.
- Cultural landscapes – the interaction of humans and their natural environment resulting in the shaping of their physical surroundings.
- Important events such as floods, bush fires, political activities etc.
- Exploration by newcomers of their environment.

- Mining.
- Towns, suburbs and villages – the expansion of the community from settlement to today.
- Education.
- Labour – the kinds of work and workers that characterised the local area in different periods.
- Domestic life and leisure.
- Religion and social institutions.
- Birth and death – the typical life cycle from birth, through education and work to old age and death.

The items/places identified in Table 3 are physical reminders of the historical themes identified above, although they have different levels of potential for the study of historical trends.

4.3 AESTHETIC SIGNIFICANCE

Australia International Council on Monuments and Sites (ICOMOS) (the author of the Burra Charter) defines 'aesthetic significance' as referring 'to the sensory and perceptual experience of a place' (Australia ICOMOS, 2013). Importantly, places need not be conventionally 'beautiful' to be aesthetically significant. Instead, they may embody a particular style or ideal, such as a 'rural' aesthetic. Some of the identified heritage places at the Moolarben Coal Complex are significant because they embody a certain rural aesthetic, including the form and fabric of certain houses, the location and nature of gardens and trees, and the layout and definition of land holdings (e.g. through the use of boundary markers reflecting land tenure).

4.4 SOCIAL SIGNIFICANCE

Australia ICOMOS states that 'social significance' 'refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds for them' (Australia ICOMOS, 2013).

Places of social significance may be important as a local marker or symbol, or as part of community identity, or important to a community or cultural group because of associations and meanings developed from long use and association (Australia ICOMOS, 2013).

Previous assessments have noted a level of local community connection with some of the identified heritage places. In particular, grave sites and places that were central to community activities (such as schools) have inspired this form of connection.

4.5 SCIENTIFIC SIGNIFICANCE

Sites 3 and 4 in Table 3 are known potential archaeological sites. Archaeological sites are typically significant for their scientific value (i.e. for their potential to contribute information that might be used to address research questions about the community that produced them). Archaeological sites may also be significant for the other values described above.

When assessing historical archaeology sites, archaeologists commonly ask three questions additional to the assessment criteria presented above, including (following Bickford and Sullivan, 1984):

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge that no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

If, for example, an archaeological site is identified that is unlikely to yield information additional to what archival documents and oral histories can yield then that site might be assessed as having lower scientific significance. Similarly, if there are other, better archaeological sites of the same type and period, this too will reduce the relative level of scientific significance of the site.

Further, historical archaeologists also consider the site's 'integrity'. 'Integrity' refers to the levels of disturbance that the site has experienced. Usually, sites that have low integrity (i.e. those that have been disturbed or contaminated) have a lower potential to answer research questions than those of high integrity that have remained largely undisturbed by later activities.

On assessment, the archaeological sites identified at the Moolarben Coal Complex are:

- Unlikely to yield data that cannot be obtained through archival research, oral histories, historical photographs and historical journals, etc.
- Common examples of archaeological sites from small communities in rural NSW.
- Somewhat disturbed by recent activities including natural deterioration, vandalism, demolition, erosion, etc.
- Of limited value in addressing substantive research questions.
- Of low scientific significance.

The 'archaeological assessment' recommended in Section 6.4 will be undertaken in accordance with the NSW government guideline document entitled, 'Assessing Significance for Historical Archaeological Sites and Relics' (NSW Department of Planning and Heritage Council of New South Wales, 2009) (or contemporary equivalent).

4.6 SUMMARY STATEMENT OF SIGNIFICANCE

The heritage places identified in Table 3:

- Embody aspects of the history of the local area, including its early settlement and the activities that sustained it, such as pastoralism, forestry, water management and agriculture.
- Reflect past ways of doing things in the local area including early land tenure and housing, leisure and education.
- Tell the story of the ongoing development of the local area including the introduction of new roads and communications systems, and the evolution of townships.
- Illustrate the life cycle of the typical member of the local community from birth, through education and working life, to death and burial.
- Recall certain aesthetic characteristics of nineteenth and twentieth century rural landscapes, especially in the local area, through the form of houses and agricultural infrastructure, cultural plantings (trees and gardens), land forming and artefacts. Some of the identified sites are good representative examples of certain types of local cultural phenomena (e.g. schools, farm houses etc).
- Are held in some regard by some members of the local community, especially grave sites and former community buildings.
- Can provide information that will help us to better understand the local area's history.

4.7 SPECIFIC SITE ANALYSIS

The heritage values embodied by the sites listed in Table 3 are discussed further in Section 6. Section 6.1 includes a succinct statement of the precise heritage values that each site embodies, drawing on the Stage 1 Project Approval (05_0117) and the Stage 2 Project Approval (08_0135).

5.0 MANAGEMENT OF ABORIGINAL HERITAGE

This section outlines the management and mitigation measures proposed[2] for identified and potential Aboriginal archaeological sites at the Moolarben Coal Complex, consistent with the requirements of the Stage 1 Project Approval (05_0117) (as modified) and the requirements of the Stage 2 Project Approval (08_0135) (as modified).

5.1 PROTOCOL FOR ONGOING INVOLVEMENT OF THE ABORIGINAL COMMUNITY

MCO acknowledges that Aboriginal heritage is of primary interest to the Aboriginal community and that Aboriginal people have the right to be consulted and involved in relation to the management of their heritage. MCO recognises that the Aboriginal community has a paramount role in identifying cultural significance and cultural heritage values.

5.1.1 Registered Aboriginal Parties

Consistent with ~~OEH~~BCD requirements, the RAPs for the Moolarben Coal Complex were identified through a comprehensive program of Aboriginal community consultation undertaken for Stage 1, Stage 2 and subsequent assessments at the Moolarben Coal Complex. The RAPs at the Moolarben Coal Complex are listed in Table 4.

Table 4: Registered Aboriginal Parties at the Moolarben Coal Complex

Group/Individual
Mudgee Local Aboriginal Land Council
Murong Gialinga Aboriginal and Torres Strait Islanders Corporation
North-East Wiradjuri Company Ltd
Warrabinga Native Title Claimants Aboriginal Corporation
Wellington Valley Wiradjuri Aboriginal Corporation
Craig McConnell
Aleisha Lonsdale
Warranha Ngumbaay

5.1.2 Native Title

Through the operation of the Commonwealth *Native Title Act, 1993* (NT Act), an Ancillary Deed of Agreement is maintained between MCO and the North-Eastern Wiradjuri People of the Bathurst/Lithgow/Mudgee Area (Native Title Party).

[2] The implementation of all management measures described in this HMP is subject to landowner consent where the Aboriginal archaeological site is located on land not controlled by MCO.

The "Deed" (Government Party Deed) represents an agreement for the purposes of section 31(1)(b) of the NT Act, and was executed on 7 July 2008. The Deed includes obligations for MCO and the Native Title Party, such as the funding of apprenticeships and scholarships, and the formation of an Aboriginal Cultural Liaison Sub-Committee and an Implementation Committee.

5.1.3 Ongoing Consultation with Registered Aboriginal Parties

MCO is committed to maintaining ongoing consultation with all RAPs throughout the life of the Moolarben Coal Complex; however, it is the responsibility of RAPs to ensure that up-to-date contact details (full name, postal address, telephone number, email address) are provided to MCO.

Ongoing consultation with RAPs will occur via meetings throughout the life of the Moolarben Coal Complex. Meetings will be open to all RAPs and will provide a forum for RAPs to raise any issues they may have regarding the Moolarben Coal Complex, and for MCO to provide updates.

Meetings with RAPs will be convened at least annually by MCO. Issues and matters that may be discussed in the meetings include (but are not limited to):

- mine progress;
- proposed fieldwork;
- implementation of Aboriginal Cultural Awareness Training;
- review of the HMP;
- key results of any fieldwork; and
- updates on the Aboriginal Heritage Conservation Strategy (Section 5.2).

RAPs will be notified of upcoming meetings with a minimum of 10 business days notice. Additional meetings with RAPs may be held on an as required/requested basis if agreed by MCO. Minutes (notes) from these meetings will be made available to all RAPs within four weeks of the meeting.

MCO will provide the RAPs with notification of and a minimum 21 days to comment on any proposed amendments to the HMP (Section 10.2), where the changes proposed are material in nature.

Subject to agreement by ~~DP&E~~DPIE, MCO may submit a revised HMP for approval without undertaking consultation, in instances where the changes proposed to the HMP are not material in nature. In the context of this HMP, changes that would not be considered material in nature may include updates to the project description of the Moolarben Coal Complex, updates to the list of RAPs, updates to the salvage status of known sites and/or the incorporation of additional sites (for example those recorded during future surveys, ongoing salvage works and recording during future modifications where the impact to and management of the sites has been discussed in consultation with the RAPs). MCO will distribute copies of any updated version of this HMP to the RAPs.

5.1.4 Involvement of Registered Aboriginal Parties in Fieldwork

MCO recognises that the Mudgee Local Aboriginal Land Council, Murong Gialinga Aboriginal and Torres Strait Islanders Corporation, North-East Wiradjuri Company Ltd, Wellington Valley Wiradjuri Aboriginal Corporation and Warrabinga Native Title Claimants Aboriginal Corporation are the primary parties to be consulted with in relation to fieldwork relevant to this HMP. On this basis, all references to RAPs involved in fieldwork refer to these five Aboriginal stakeholders only.

The following process will be undertaken for the involvement of the RAPs in fieldwork at the Moolarben Coal Complex:

- MCO will engage representatives of the RAPs (where available[3]) to carry out field activities (post, current and future) generally according to any commercial agreements they have entered into with MCO to participate in archaeological survey, collection, excavation and monitoring required under this HMP.
- MCO may engage RAPs through a competitive selection process (as per the NSW Department of Environment and Conservation [2004] guideline *Interim Community Consultation Requirements for Applicants*) involving criteria such as demonstrated qualifications in cultural heritage, skills or experience in the conduct of heritage studies in the local area, specific cultural knowledge of the Moolarben Coal Complex area and/or ability to report the results to the broader Aboriginal community[4].
- Where the methodology is consistent with that already approved by the RAPs for the Moolarben Coal Complex or in the HMP MCO will provide the RAPs engaged for any field investigation with a minimum of three business days notice of the date of commencement of the field investigation, unless a shorter period is agreed to by the engaged stakeholders. MCO will provide safe access to the investigation area and induct representatives to an appropriate level for Workplace Health and Safety purposes.
- Where that methodology is different from that already approved by the RAPs for the Moolarben Coal Complex or in the HMP MCO will provide the RAPs with a copy of the Proposed Methodology for any forthcoming archaeological salvage collection or excavation and allow a minimum of 21 days for the RAPs to provide comment, including identification of issues or areas of cultural significance that might affect, inform or allow refinement of the methodology. The Proposed Methodology will include relevant mapping and figures.
- MCO will document and consider all comments received from the RAPs in the finalisation of the methodology.

[3] Subject to suitable notification requirements being met by MCO, the fieldwork/salvage (and/or other heritage management works required by this HMP) may commence to avoid unnecessary delays to mining operations at the Moolarben Coal Complex.

[4] It is intended for this process to only be used if a significant number of Aboriginal stakeholders register their interest in the Moolarben Coal Complex and it therefore becomes impractical to involve all stakeholders in all fieldwork.

- The RAPs will provide suitably qualified and/or experienced representatives[5] to participate in archaeological survey, collection, excavation or monitoring required under this HMP. The representatives will comply with all requirements of MCO at all times when at the Moolarben Coal Complex.
- All reports produced in regard to surface collection, test excavation and/or analysis will include comments provided by the attending RAPs in regard to cultural significance, values or features of the sites and/or area. These reports will also include a consideration of the outcomes of previous results and investigations to ensure that past, current and future analyses contribute to the local and regional knowledge of the area.
- MCO will provide the RAPs with final copies of all heritage reports produced under this HMP.
- After the salvage of Aboriginal objects from any Aboriginal archaeological sites at the Moolarben Coal Complex, MCO and the RAPs will discuss the curation of the Aboriginal objects and seek to reach agreement on the permanent curation of those objects at the Keeping Place (Section 5.13). If an agreement between MCO and the RAPs cannot be reached, then MCO will determine the curation following receipt of advice from an appropriately qualified expert in the physical conservation of artefacts and/or advice from ~~OEH~~BCD.

The Moolarben Coal Complex Workplace Health and Safety and insurance requirements are subject to periodic review and update by MCO outside the requirement for this HMP to be revised. All contractors, including participating archaeologists and RAPs, will be notified of any relevant changes to fieldwork requirements.

5.2 ABORIGINAL HERITAGE CONSERVATION STRATEGY AND CONSERVATION AREAS

5.2.1 Long Term Security of Heritage Conservation Areas

A total of 91 sites (including 8 sites of high scientific significance and 17 of moderate scientific significance) will be protected in perpetuity as part of designated heritage conservation areas, as noted in Condition 45 of Schedule 3 of the Stage 2 Project Approval (08_0135):

> *45. Within 18 months of approval of the Heritage Management Plan, unless the Secretary agrees otherwise, the Proponent shall make suitable arrangements to protect the heritage conservation areas in Table 16 in perpetuity to the satisfaction of the Secretary.*

The three areas listed in Table 16 of the Stage 2 Project Approval (08_0135) (i.e. Murragamba Creek Management Area, Powers Conservation Area and Red Hills Conservation Area) for conservation management are listed in Table 5 and presented on Figure 3.

[5] Although it is recognised that opportunities may arise for less experienced or trainee representatives to participate.

Table 5: Heritage Conservation Areas

Area	Sites	Minimum Size (ha)
Murragamba Creek Management Area	37 sites (significance = 5 high; 5 moderate; and 28 low)*	154
Powers Property Conservation Area	15 sites (significance = 2 high; 4 moderate; and 9 low)	63
Red Hills Conservation Area	38 sites (significance = 3 high; 8 moderate; and 27 low)	107

Note: ha = hectares.
* In addition, a portion of sites S2MC073 and S2MC075 extend into the Murragamba Creek Management Area (refer to Appendix D).

In addition to the above, MCO has identified two additional management areas (including one site of high scientific significance and three sites[6] of low scientific significance) as follows (Figure 3):

- Underground 2 Rock Shelter Management Area – located above Underground 2 (UG2) and designed to protect site S2MC236 (rock shelter with art and artefacts) through monitoring of potential indirect impacts of blasting and vibration.
- Bora Creek Management Area – established along the north side of Bora Creek to the west of the rail loop.

Although the fencing of sites is generally the preferred method of physical protection this HMP recognises that the use of fences in some environments (e.g. a publicly accessible location) may actually encourage damage through vandalism. MCO will seek to minimise the risk of damage to Aboriginal archaeological sites across the Moolarben Coal Complex by promoting an awareness of heritage conservation areas via the induction process combined with restricting access to the heritage conservation areas.

Hence, individual sites within the heritage conservation areas will not be fenced (apart from those sites specifically listed in Appendix D). Instead of fencing, all relevant databases for cultural heritage and environmental value at the Moolarben Coal Complex will make appropriate note of the boundaries of the heritage conservation areas including:

- geospatial coordinates and shape files; and
- clear statement of heritage significance based on this HMP.

[6] Including a portion of site S1MC305 (refer to Appendix D).

Management of the heritage conservation areas will include:

- Erection of signs in the vicinity of each heritage conservation area that states that the area is sensitive and that unauthorised access is prohibited.
- Access to each heritage conservation area will be restricted by appropriate means (e.g. access will be required to be authorised by the Environment and Community Manager or delegate).
- The prohibition of unauthorised entry (e.g. entry will be allowed for actions described in this HMP and for works associated with the management of the biodiversity offsets).
- The prohibition of all ground disturbance without consultation of this HMP.
- The inclusion of heritage conservation areas within the cultural awareness training and site inductions.
- Ongoing consultation with the RAPs in the conservation and management of Aboriginal cultural heritage within the heritage conservation areas.

5.3 ADDITIONAL SURVEY REQUIREMENTS

This section describes the additional survey requirements associated with major surface development areas and underground areas. Section 5.8 describes the survey requirements associated with ancillary infrastructure. For the purpose of this HMP, the surface components shown on Figure 2 are herein referred to as the Major Surface Development Areas. This excludes any ancillary infrastructure approved for Stage 1 or Stage 2 at the Moolarben Coal Complex but not previously surveyed (Section 5.8).

The survey methodology that will be employed for the additional survey requirements at the Moolarben Coal Complex is based on the ~~OEH~~BCD policy *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b). Hence, additional survey will be based on a landform sampling approach, where each landform scheduled to be impacted will be sampled, if not already sufficiently done so. Where there is more than one instance of similar or the same landforms that have the potential to be impacted, example(s) of the landform will be sampled. Proportional emphasis will be placed on those landforms deemed to hold a higher potential for Aboriginal archaeological sites. Landforms deemed to hold a low potential for sites, based on results of an updated ~~OEH~~BCD Aboriginal Heritage Information Management System (AHIMS) search and previous archaeological surveys, will be sampled to a relatively lesser degree.

Landforms likely to hold higher potential for Aboriginal archaeological sites at the Moolarben Coal Complex are considered to be:

- Within 100 metres (m) either side of Murragamba Creek and Eastern Creek (relevant to Section 5.3.1).
- Raised ridgelines located within the Moolarben Coal Complex and with potential impacts from the Project (i.e. including all ridges, steep slopes [i.e. rock shelter and grinding groove potential]) and creek lines with exposed rock (i.e. grinding groove potential) (relevant to Section 5.3.2).

The survey work undertaken will include a consideration of any potential limitations (e.g. poor visibility) and will be undertaken in a manner deemed appropriate by an appropriately qualified and experienced archaeologist[7] (e.g. focussing on areas of greater exposure).

5.3.1 Survey of Major Surface Development Areas Not Previously Surveyed

Prior to surface disturbance, MCO will engage an appropriately qualified and experienced archaeologist to conduct archaeological survey and recording, in consultation with the RAPs of select areas not previously surveyed. The additional surveys will be focussed on surface impact areas that have not been previously surveyed and which are likely to contain either rock shelters and/or grinding groove sites (raised ridgelines, steep slopes and creeklines with exposed rock) or open sites with a high artefact density (i.e. all land within 100 m of Murragamba Creek and Eastern Creek). This will allow any additional sites of potentially higher significance to be identified and appropriately managed.

Should new rock shelter or grinding groove sites of moderate-high or high scientific significance be recorded by the surveys, test excavation will be considered by MCO in consultation with the RAPs and based on advice from an appropriately qualified and experienced archaeologist.

5.3.2 Survey of Underground Areas Not Previously Surveyed

Prior to secondary workings within underground mining areas (i.e. longwall panel), staged archaeological surveys will be undertaken of areas not previously surveyed. The additional survey will be conducted by an appropriately qualified and experienced archaeologist, in consultation with the RAPs, in order to identify and manage the nature and extent of Aboriginal heritage that may be susceptible to subsidence impacts. Surveys will be designed to focus on site types more susceptible to subsidence impacts (i.e. rock shelter and grinding groove sites).

All new rock shelter or grinding groove sites of moderate-high or high scientific significance recorded in the underground mining areas will be subject to monitoring (Section 5.9). Should monitoring indicate that the site is likely to be impacted by subsidence (i.e. there is a real risk of collapse), test excavation will be undertaken in consultation with the RAPs and based on advice from an appropriately qualified and experienced archaeologist and an appropriately qualified subsidence expert.

[7] All references to a 'suitably qualified archaeologist' in this HMP are taken to be references made in accordance with the OEH policy Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010b). That is, to an appropriately skilled and experienced person with a minimum of a bachelor's degree with honours in archaeology or relevant experience in the field of Aboriginal cultural heritage management, and the equivalent of two years full-time experience in Aboriginal archaeological investigation (including involvement in a project of similar scope) and a demonstrated ability to conduct a project of the scope required through inclusion as an attributed author on a report of similar scope.

5.4 SUMMARY OF MANAGEMENT MEASURES FOR ABORIGINAL ARCHAEOLOGICAL SITES

It is a fundamental principle of heritage conservation that the nature and level of a site's scientific significance will determine the appropriate management response. Since all sites are considered by the RAPs to be of high cultural significance (see Section 3.2), the scientific significance of Aboriginal archaeological sites has been used to determine these responses.

Sites of higher scientific significance generally require a more stringent management regime than sites of lower scientific significance. Similarly, the reasons for a site's scientific significance are relevant to its management. For example, a site that is significant for its archaeological value is likely to require a different management strategy to a site considered significant for its aesthetic or spiritual values. Generally, sites that are significant solely for their archaeological values will usually be considered to be appropriately conserved when their research value has been met (e.g. through excavation and documentation).

This section summarises the management measures for the Aboriginal archaeological sites at the Moolarben Coal Complex in order to fulfil the above management principles.

In order to provide an appropriate strategy for managing archaeological sites, the scientific significance of each site must be considered. This HMP has relied upon past assessments of scientific significance for the majority of Aboriginal archaeological sites at the Moolarben Coal Complex. Despite best efforts to understand the nature of each site, the scientific significance of some has remained unclear or unknown, and this has been noted and presented in the management response.

When a site with an unclear significance rating is scheduled for impact, the management response is to recommend that further work be undertaken in consultation with RAPs to better understand the nature of the site and determine the scientific significance, which will in turn guide management principles.

In order to appreciate the management of Aboriginal archaeological sites, the Moolarben Coal Complex has been divided into several cultural heritage management zones. Each zone is linked to a proposed development type (e.g. open cut mine, underground mine, potential ancillary disturbance, heritage conservation area) and the expected impacts of that proposed development type. The management response for the sites in each zone is also arranged according to site type. For example, the management response for an impacted isolated find is different to the management response for an impacted rock shelter or PAD.

The categories of impact considered in this HMP are:

- direct impact;
- indirect impact (e.g. sites may be potentially subject to subsidence and/or blasting impacts);
- no scheduled impact (although potentially subject to ancillary works); and
- conservation (protected from impact)[8].

It is important to note that only certain site types are considered susceptible to indirect impacts. The heritage values of surface artefacts, for instance, are unlikely to be significantly affected by subsidence and/or blasting impacts. Rock shelters, however, may be susceptible to subsidence and/or blasting impacts. For this reason, when an isolated find, artefact scatter and/or PAD are located within an area with potential indirect impacts, these site types are presented in the HMP as requiring no management response.

The full management response for all 423 known Aboriginal archaeological sites at the Moolarben Coal Complex is presented in Appendix D. A concise summary of management categories used is presented in Table 6 below.

Table 6: Summary of the Management Response for Aboriginal Archaeological Sites at the Moolarben Coal Complex

Management Category[1]	Moolarben Coal Complex Area	Proposed Impact	Management Response
1INFimp	Stage 1 Infrastructure	Direct impact	Surface collection of artefacts (Section 5.5.3)
BCMA	Bora Creek Management Area	No scheduled impact	Restrict access to conservation area maintained by fencing, locks, signage and site communication protocols (Section 5.2.1) Fence monitoring (Section 5.8.4)
AIZ	Moolarben Coal Complex Ancillary Infrastructure zone	No scheduled impact	Ground Disturbance Permit Process (Section 5.8.2)
AIZblast	Moolarben Coal Complex Ancillary Infrastructure zone	Potential indirect impact from subsidence and/or blasting	Rock shelter sites with potential for subsidence will be subject to a comprehensive monitoring regime (Section 5.9.1) Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6)
AIZfence	Moolarben Coal Complex Ancillary Infrastructure zone	No scheduled impact with previous commitment to fence	Fence monitoring (Section 5.8.4)
AIZcons	Moolarben Coal Complex Ancillary Infrastructure zone	No scheduled impact	*In situ* conservation

8 In the context of this HMP, the term conservation refers to avoidance of impacts, rather than active management of the site (unless where specifically required by this HMP).

Management Category[1]	Moolarben Coal Complex Area	Proposed Impact	Management Response
MCMA	Murragamba Creek Management Area	No scheduled impact	Restrict access to conservation area (Section 5.2.1) Fence monitoring (Section 5.8.4)
OC1imp	Open Cut 1	Direct impact	Surface collection of artefacts (Section 5.5.3)
OC3imp	Open Cut 3	Direct impact	Surface collection of artefacts (Section 5.5.3)
OC3test	Open Cut 3	Direct impact	Surface collection of artefacts (Section 5.5.3) Initial subsurface testing to determine nature, extent and scientific significance of sites (Section 5.6.1) If assessed as high scientific significance, controlled salvage excavation will be undertaken (Section 5.6.2)
OC4imp	Open Cut 4	Direct impact	Surface collection of artefacts (Section 5.5.3)
OC4test	Open Cut 4	Direct impact	Surface collection of artefacts (Section 5.5.3) Initial subsurface testing to determine nature, extent and scientific significance of sites (Section 5.6.1) If assessed as high scientific significance, controlled salvage excavation will be undertaken (Section 5.6.2)
PCA	Powers Conservation Area	Conservation	Restrict access to conservation area (Section 5.2.1) Fence monitoring (Section 5.8.4)
RHCA	Red Hills Conservation Area	Conservation	Restrict access to conservation area (Section 5.2.1) Fence monitoring (Section 5.8.4)
RSMA	Underground 2 Rock shelter Management Area (Site S2MC236)	Potential indirect impacts from subsidence and/or blasting.	Rock shelter will be subject to a comprehensive subsidence monitoring regime (Section 5.9.1) and blast vibration monitoring (Section 5.9.2)
UG1ind	Underground 1	Potential indirect impacts from subsidence and/or blasting.	~~Rock shelter sites with potential for subsidence will be subject to a comprehensive monitoring regime (Section 5.9.1)~~ ~~Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6~~) Monitoring and management in accordance with the MCO Longwall 101-105 Extraction Plan Heritage Management Plan.
UG2ind	Underground 2	Potential indirect impacts from subsidence and/or blasting.	Rock shelter sites with potential for subsidence will be subject to a comprehensive monitoring regime (Section 5.9.1) Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6)
UG4ind	Underground 4	Potential indirect impacts from subsidence and/or blasting.	Rock shelter sites with potential for subsidence will be subject to monitoring (Section 5.9.1) Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6)

[1] Each abbreviated management category is explained in the footnotes of Appendix D.

It is noted that changes to the management of the known Aboriginal archaeological sites listed in Appendix D may be required as a result of progressive updates to the Moolarben Coal Complex Aboriginal Archaeological Sites Database. For example, an increase to the spatial extent of a site may result in a change in the level or type of impact, and hence require an update to the proposed management of the site. Any changes to the management proposed for any of the sites described in Appendix D will be undertaken based on advice from a suitably qualified and experienced archaeologist and in consultation with the RAPs.

5.5 RECORDING AND SURFACE COLLECTION

5.5.1 Procedures for Site Recording

Where not already undertaken, sites scheduled for surface collection and/or test excavation will be subject to recording according to archaeological best practice, as outlined in the ~~OEH~~BCD policy *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) and the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011). Recording will be undertaken:

- by an appropriately qualified archaeologist experienced in detailed recording of the relevant site type; and
- in consultation with RAPs.

Upon conclusion of the detailed recording:

- All data collected will be submitted to the ~~OEH~~BCD for inclusion in the relevant AHIMS site record.
- A reassessment of the site's significance will be undertaken if warranted.
- The Moolarben Coal Complex Aboriginal Archaeological Sites Database will be updated as required.

5.5.2 Procedures for the Detailed Recording of Rock Art

Due to the potentially high scientific significance of rock art, the detailed recording of this site type will follow the procedure outlined in the ~~OEH~~BCD policy *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b) and Section 5.5.1, with the addition of:

- mapping of the rock shelter and art; and
- compilation of a photographic archive by an archaeologist who is appropriately qualified or experienced in rock art recording.

5.5.3 Protocols for Surface Collection

The potential significance of a site guides the surface collection methodology described below. The objective of the surface collection component of the salvage program is to record and recover a representative sample of visible surface artefacts within open artefact sites. Should a previously recorded site not be able to be relocated after a reasonable search (to be determined by the archaeologist in consultation with the attending RAPs) then the site will be considered as having been sufficiently salvaged.

Surface collection will be undertaken by a combined team of archaeologist(s) and RAPs and will involve:

1. the flagging of all visible artefacts within each site;
2. the recording of individual artefact locations using a GPS;
3. site photography; and
4. bagging of identified artefacts with assigned Unique Reference Number (URN).

Written notification of sites cleared for ground disturbance works will be provided by the attending archaeologist to MCO on a progressive basis as sites are salvaged. All surface collected artefacts will be assigned an URN for accessioning and data analysis purposes. Analysis of surface artefacts will be conducted off site on a progressive basis (Section 5.7).

5.6 ARCHAEOLOGICAL EXCAVATION

Aboriginal archaeological sites that are considered to hold research potential and are scheduled to be impacted will undergo a two-phase program of archaeological excavation. This program will include an initial exploratory phase followed, when warranted, by a more targeted investigation of the site's research potential as follows:

1. initial subsurface testing using one or more linear transects of hand excavated, regularly-spaced shovel test pits (Section 5.6.1); and
2. controlled salvage excavation of areas with high research potential as identified through Phase 1 (the initial subsurface testing) (Section 5.6.2).

If the initial program of shovel test pits determines that the site does not hold high scientific significance in accordance with the Burra Charter (Australia ICOMOS, 1999) and the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011), then the second phase of investigation (i.e. open area excavation) will not be undertaken. For instance, if initial subsurface testing revealed evidence of poor spatial integrity at the site (e.g. ground disturbance, sheet erosion) or few subsurface artefacts, there will remain little value in a more detailed scientific investigation of the site through controlled salvage excavation.

5.6.1 Initial Subsurface Testing

The objective of the initial phase of the archaeological excavation program is to determine the nature, extent and composition of each site. Data collected during this phase will be used to inform the need for a further controlled salvage excavation phase (where required), which is designed to target *in situ* concentrations of sub-surface cultural deposits.

Following the initial subsurface testing (shovel test pits), any sites that reveal poor spatial integrity, significant ground disturbance, shallow soil profiles and/or few subsurface cultural material, will not be subject to further subsurface investigation (i.e. the second phase of more detailed investigation and controlled salvage excavation will not occur).

Initial subsurface testing will be undertaken as follows:

- One or more transects of shovel test pits spaced no more than 20 m apart will be excavated along the length and/or width of the site (as determined from surface expression of artefacts). Areas of grossly modified terrain (e.g. dams) will be excluded from the sampling process.
- Approximately 0.5 m x 0.5 m (0.25 square metres [m^2]) test pits will be dug by hand (shovel) at each designated shovel test pit point (approximately 20 m apart along the length of the transect).
- For the initial subsurface testing, all excavated material will be sieved through 5 millimetre (mm) aperture screens.
- The number of transects and shovel test pits may be reduced depending on the nature and scale of the site being assessed, subject to advice from a suitably qualified and experienced archaeologist and in consultation with the attending RAPs.

- The spacing of transects and shovel test pits may be reduced depending on the nature and scale of the site being assessed, subject to advice from a suitably qualified and experienced archaeologist and in consultation with the attending RAPs. For example, when undertaking test pits within a rock shelter, testing will be undertaken in closer proximity.

5.6.2 Controlled Salvage Excavation

Where controlled salvage excavation is determined to be warranted in consultation with a suitably qualified and experienced archaeologist and the attending RAPs, the following process will be generally implemented at a level appropriate to the extent and nature of the site:

- Controlled salvage excavation will be undertaken by a suitably qualified archaeologist(s), with assistance provided by the RAPs.
- All excavation will be carried out manually using trowels, shovels and mattocks (where appropriate).
- Open area excavation will proceed in 1 m^2 units.
- All excavation units (i.e. shovel test pits and open area 1 x 1 m^2 squares) will be assigned an alpha-numeric identifier.
- The first excavation unit will be excavated and documented in 5 centimetre (cm) spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) may then be implemented.
- Excavation will cease at culturally sterile units or bedrock in all instances – the identification of sterile stratigraphic units will draw upon a geomorphological understanding of the wider Moolarben Coal Complex.
- Photographic and/or scale-drawn records of exposed soil profiles in open area excavations will be made.
- If specific archaeological features (e.g. hearths) are identified, the entire feature will be excavated and recorded prior to the continuation of excavation. Features will be photographed and scale plans drawn.
- All excavated soils will be wet or dry-sieved (dependent on composition) through 5 mm and/or 3 mm sieves, as deemed appropriate by a qualified archaeologist, and in accordance with the ~~OEH~~BCD policy *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b).
- All material remaining in the sieve will be sorted by a qualified archaeologist to identify and retain all cultural items. All remaining non-cultural material will be discarded.
- Artefacts recovered from sieving will be retained in plastic zip-lock bags and labelled with appropriate provenance data and assigned an URN.

- Radiometric (or Accelerated Mass Spectrometry [AMS]) dating samples will be collected and processed when appropriate samples are identified. As opportunities emerge during salvage excavation, dating samples will be collected from archaeological deposits where the contents and stratigraphic structure are suitable for dating analysis (e.g. *in situ* charcoal or other organic material). This analysis will only be undertaken when it will add significantly to an understanding of the site's stratigraphy.
- A standard site recording form will be used for each 1 x 1 m² excavation unit and will include (as a minimum) site name, date, recorder, square identifier, and number of spits.
- Upon completion of excavation, the location of all excavation units will be incorporated into the topographic survey plan for the site.
- All excavation units will be backfilled upon conclusion of excavations at the site.

The above requirements may be modified if suitable based on advice by a suitably qualified archaeologist and in consultation with attending RAPs.

5.7 ARTEFACT ANALYSIS

Post-salvage analyses for surface collected and excavated sites may include:

- The analysis and cataloguing of a representative sample of recovered Aboriginal objects (e.g. stone artefacts, hearth stones) by a suitably qualified person or persons. Excavated and surface collected stone artefacts will be considered by a qualified archaeologist for detailed technological analysis by a lithic specialist and a representative sample of collected material analysed.
- The submission, where available and deemed appropriate by a suitably qualified and experienced archaeologist, of excavated charcoal samples for conventional or AMS radiocarbon dating.
- The submission of excavated sediment samples for optically stimulated luminescence (OSL) dating.
- The submission, where deemed appropriate by a qualified archaeologist, of a selection of stone artefacts for functional use-wear/residue analysis.

Post-excavation analyses will not delay mining (or associated) activities within the boundaries of any salvaged sites.

Consistent with the ~~OEH~~BCD policy *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b), analysis of collected and salvaged artefacts will seek to further the knowledge of past human behaviours in the Moolarben area. If the analysis will not significantly further this knowledge, then it is not warranted.

5.8 MANAGEMENT OF SITES OUTSIDE MAJOR SURFACE DEVELOPMENT AREAS

5.8.1 Ancillary Infrastructure Impacts

The specific cultural heritage management requirements presented in this HMP are made with direct reference to known Aboriginal archaeological sites. Although the nature and general location of the proposed activity is known, the specific design and placement of ancillary facilities is determined progressively over the life of the Moolarben Coal Complex. Hence, it is important that all future surface activities outside of the major surface development areas be assessed according to the Moolarben Coal Complex Aboriginal Archaeological Sites Database and subsequently subject to (where appropriate) archaeological survey, assessment and application of appropriate management.

In addition to the proposed major surface disturbance works at the Moolarben Coal Complex (e.g. open cut pits, waste emplacements, major surface facilities, major water management structures) ancillary infrastructure may also be required, outside the areas shown on Figure 2.

Ancillary infrastructure includes, for example:

- firebreaks;
- water diversion structures;
- minor contour banks;
- tracks;
- tracks along pipelines;
- explosives storage facilities;
- powerlines;
- fences;
- exploration sites; and
- sediment and erosion control structures.

The location and design of ancillary infrastructure will be flexible and will be located in an attempt to avoid known Aboriginal archaeological sites as far as practicable. While the design and location of the ancillary infrastructure is somewhat flexible, some Aboriginal archaeological sites may not be able to be avoided completely. Where this occurs, appropriate management measures will be implemented including salvage activities where necessary.

The scheme for managing potential impacts of ground disturbance works associated with ancillary infrastructure will be similar to that described for other surface disturbance works (Section 5.3), albeit with some additional avoidance constraints.

Proposed ancillary surface infrastructure areas will be subject to the MCO Ground Disturbance Permit Process (Section 5.8.2), which includes a survey (if not already sufficiently undertaken) by a qualified archaeologist and RAP representatives. Any Aboriginal archaeological sites that are identified during this process will be assessed for scientific research potential (significance), and an appropriate management response will be recommended by the attending archaeologist in consultation with the attending RAPs. The management response will be directly dependent upon the type, condition and significance of the site and may include one or a combination of surface collection, subsurface testing, salvage excavation and/or avoidance. Following archaeological assessment, the design of ancillary infrastructure will generally seek to avoid recorded sites.

All confirmed rock shelter sites, grinding grooves, scarred trees and PADs will be avoided where practicable. For sites where harm cannot be avoided the need for archaeological salvage via surface collection and/or excavation will be considered by a qualified and experienced archaeologist and, if deemed necessary, will be conducted consistent with procedures described in this plan, in consultation with the RAPs.

All open artefact sites (including both artefact scatters and isolated finds) will also be avoided where practicable. For sites where harm cannot be avoided the need for archaeological salvage via surface collection will be considered by a qualified and experience archaeologist and, if deemed necessary, will be conducted consistent with procedures described in this plan, in consultation with the RAPs.

5.8.2 Ground Disturbance Permit Process

The MCO Ground Disturbance Permit process will apply to all surface disturbance works. A copy of the Ground Disturbance Permit is provided in Appendix G. The Ground Disturbance Permit process is as follows:

- Prior to any direct ground disturbance activities commencing in a proposed work area the project manager or relevant site personnel will prepare a MCO Ground Disturbance Permit for approval by the Environment and Community Manager. Approval of the Ground Disturbance Permit must be obtained prior to the commencement of direct ground disturbance activities.
- MCO will identify whether the proposed impact areas have been subject to cultural heritage survey sampling consistent with OEH standards at the time of the original assessment.
- MCO will determine whether any known Aboriginal archaeological sites or areas of cultural heritage sensitivity, as identified by a qualified archaeologist, may be subject to impacts (by checking the Moolarben Coal Complex Aboriginal Archaeological Sites Database, and where the subject land is not owned or directly controlled by MCO, by undertaking an updated search of the AHIMS register).

- In consideration of the nature of the scheduled impacts and extent of previous archaeological survey, the following protocols will apply:
  - In locations where an archaeological survey has been undertaken and has identified no Aboriginal archaeological sites or areas of cultural heritage sensitivity (e.g. landforms likely to hold higher potential for Aboriginal archaeological sites [Section 5.3]), the proposed works can progress with no additional action required.
  - In locations with Aboriginal heritage potential where impacts are proposed that may involve *significant* ground disturbance (e.g. access roads, haul roads), but heritage survey sampling has not occurred to a level consistent with the ~~OEH~~BCD requirements, MCO will engage an appropriately qualified and experienced archaeologist to conduct a detailed archaeological survey and recording of those locations, in consultation with the RAPs, prior to any impacts occurring.
  - In locations with Aboriginal heritage potential where impacts are proposed that may involve *minimal* ground disturbance (e.g. exploratory drilling, subsidence repair works to surface infrastructure, and other minor works involving ground disturbance such as fence lines, vegetation removal, vegetation planting, contour banks [water diversion structures], or farm dams), but heritage survey sampling has not occurred to a level consistent with the ~~OEH~~BCD requirements, MCO will exercise due diligence (in accordance with the NSW Minerals Industry *Due Diligence Code of Practice for the protection of Aboriginal Objects* [NSW Minerals Council, 2010]) and ensure that the works proceed with minimal impact. Additional action is not required.
  - In locations where impacts are proposed and existing and/or newly identified Aboriginal archaeological sites cannot be avoided, these sites will be managed in a manner consistent with the management outlined in this HMP for sites of a similar type and significance, in consultation with the attending RAPs.
  - In locations where the proposed works will occur in close proximity to an identified Aboriginal archaeological site, but impacts to the site can be avoided, MCO will implement measures considered necessary to minimise the risk that inadvertent impacts occur to the relevant heritage evidence. These measures may include (but are not limited to) fencing and demarcation of relevant sites.
- Where required, the Moolarben Coal Complex Aboriginal Archaeological Sites Database will be updated as required (Section 5.12).
- Where required, updated site records will be lodged with the ~~OEH~~BCD (Section 5.10).

The roles and responsibilities in relation to the implementation of the Ground Disturbance Permit process are as follows:

- The Environment and Community Manager is responsible for the implementation of the Ground Disturbance Permit process and approval of the Ground Disturbance Permit.

- The Environment and Community Coordinators are responsible for ensuring the Ground Disturbance Permits are effectively completed by relevant site personnel or contractors and approved by the Environment and Community Manager prior to surface disturbance.
- The Project Manager is responsible for complying with the requirements of the Ground Disturbance Permit.

5.8.3 Blasting Impacts

Rock Shelter Sites S1MC055 and S1MC056

Blast vibration monitoring will be undertaken when open cut blasting is within 230 m of rock shelter sites known as S1MC055 and S1MC056.

Rock Shelter Sites S2MC232 and S2MC233

Condition 14(b), Schedule 3 of the Project Approval (08_0135) requires MCO to ensure that blasting on the site does not damage Aboriginal rock shelter sites S2MC232 or S2MC233.

As mining at the Moolarben Coal Complex progresses, MCO will engage a suitably qualified expert (e.g. geotechnical engineer) to determine appropriate blast vibration limits to avoid damage at sites S2MC232 and S2MC233.

Blast vibration monitoring of the rock shelter sites will be undertaken to ensure that the relevant blast vibration limits are not exceeded. This will occur on a progressive basis and at least prior to blasting within 230 m of the particular sites (Section 5.9.2).

5.8.4 Fence Monitoring

Fencing of relevant Aboriginal archaeological sites (Appendix D, refer to management response category 'AIZfence") will (at a minimum) involve star pickets with high visibility flagging tape. This fencing will be undertaken when surface disturbance activities are within 100 m of the relevant Aboriginal archaeological sites.

Annual inspection of heritage conservation areas and select archaeological sites (as indicated in Appendix D) will be undertaken as part of the Moolarben Coal Complex compliance auditing program. Inspections will involve at a minimum, recording of the following:

- Condition assessment of fencing.
- Evidence of nearby disturbance that has the potential to impact the fenced site.

The monitoring results where relevant will be presented within the Annual Review for the Moolarben Coal Complex.

5.9 MONITORING OF ABORIGINAL ARCHAEOLOGICAL SITES

5.9.1 Subsidence Monitoring

Monitoring of potential subsidence impacts will be undertaken for a number of rock shelter and open grinding groove sites (unless previously salvaged), in order to identify and document whether any subsidence impacts have arisen from mining. Monitoring of the above sites will involve the following:

- MCO will engage an appropriately qualified expert to monitor the Aboriginal archaeological sites described as requiring monitoring in Appendix D. This may include the establishment of a percentage estimate of the likelihood of subsidence occurring in sensitive areas.
- Where insufficient pre-existing information is available for any of the specific Aboriginal archaeological sites to permit comparison with the condition post-mining, more detailed recording will occur prior to undermining.
- Monitoring will involve inspecting and recording the condition of these specific Aboriginal archaeological sites within three to six months after undermining has occurred. Each inspection will involve recording of data on environmental conditions, pre-existing human and natural impacts, heritage evidence present and any identified changes to these environmental and heritage conditions compared with previous inspections. The potential cause (subsidence or other impacts) of changes to the condition of individual sites will be assessed.
- Monitoring will be focussed on the features of the site that make it significant (e.g. grooves, art, artefacts and/or PAD).
- A report documenting the results of monitoring will be prepared that details the methodology of the inspections, conditions of the environment and Aboriginal heritage evidence at the relevant sites, comparisons with previously reported conditions at each site, identification of any natural and/or human impacts during the intervening period, identification of any implications for the ongoing management and protection of Aboriginal heritage evidence at the Moolarben Coal Complex, and documentation of the actual impacts of operations on the Aboriginal archaeological sites.
- Copies of this report will be distributed to the RAPs, ~~OEH~~BCD and the ~~DP&E~~DPIE and a summary included in the Annual Review.

5.9.2 Blast Vibration Monitoring

Monitoring of potential blasting impacts (vibration) will be undertaken for rock shelter sites S1MC055, S1MC056, S2MC232 and S2MC233, as specified in Section 5.8.3, in order to confirm that blast vibration has not impacted them.

Engineering studies have been conducted for the Moolarben Coal Complex to determine appropriate vibration levels for management of rock formations adjacent to open cut mining areas that have been identified as potential rock shelter features (Terrock Consulting Engineers, 2014 & 2015). These studies conservatively determined a conservative safe vibration limit for these features of 50 mm/s. This equates to a conservatively safe blasting distance of 230 m.

Where blasting is proposed closer than 230 m to an identified potential rock shelter, MCO will engage suitable specialists to either:

- determine a vibration limit specific to maintaining the integrity of the particular feature; and
- manage and monitor blasting to maintain vibration limits below that limit; or
- advise on and implement (as necessary) an appropriate test excavation and salvage program.

Where salvage has been implemented no further vibration monitoring or blast management will be required for the feature.

Further discussion on blast monitoring at Aboriginal heritage sites is provided in the Blast Management Plan.

5.10 PROTOCOL FOR THE MANAGEMENT OF PREVIOUSLY UNRECORDED ABORIGINAL ARCHAEOLOGICAL SITES

In the event that previously unidentified Aboriginal objects[9] and/or sites are discovered throughout the life of the Moolarben Coal Complex, the following procedure is to be adopted:

1. All works must cease immediately in the area to prevent any further impacts to the object(s).
2. The MCO Environment and Community Manager and the Native Title Aboriginal Heritage Liaison Officer are to be notified immediately. The MCO Environment and Community Manager will assess whether works can continue in the surrounding areas with safeguards in place.
3. A qualified archaeologist will be engaged to determine the nature, extent and scientific significance of the object(s) in consultation with attending RAPs (i.e. the RAPs involved in the additional surveys described in Section~~s 5.2.2 and~~ 5.3).
4. The qualified archaeologist will determine the extent of the newly identified site and the site will be temporarily fenced off with an appropriate buffer in order to avoid further disturbance. Work will be able to resume in the vicinity of the newly identified site, after the site has been demarcated.

[9] Other than new evidence identified during heritage mitigation works in a location where evidence has previously been recorded (for example, new stone artefacts identified during the surface collection or excavation of a known site).

5. If the site is determined to be of 'high scientific significance' by the qualified archaeologist, proposed management actions will be discussed with the RAPs. Following these discussions, management actions will be implemented (e.g. salvage, excavation, subsidence monitoring and blast vibration monitoring) in accordance with the procedures outlined in this HMP appropriate for the type of site.
6. If the site is determined to be of 'low or moderate scientific significance', the qualified archaeologist will propose appropriate management of the newly identified site in accordance with the procedures outlined in this HMP, at which time a salvage team will be organised. MCO may utilise a salvage team that is already onsite to complete the salvage works depending on the priority of the work area in relation to the construction program.
7. All salvaged material will be given a URN for accessioning and data analysis purposes. All salvaged artefacts will then be deposited in the Keeping Place (Section 5.13).
8. An AHIMS site card will be completed and submitted to ~~OEH~~BCD in compliance with section 89A of the NSW *National Parks and Wildlife Act, 1974* (NP&W Act).
9. The Moolarben Coal Complex Aboriginal Archaeological Sites Database will be updated with the relevant information (Section 5.12).

5.11 PROTOCOL FOR THE DISCOVERY OF HUMAN REMAINS

In the event that human remains (skeletal material) are discovered, the following procedure is to be followed:

1. When suspected human remains are exposed, all work is to cease immediately in the near vicinity of the find location.
2. The MCO Environment and Community Manager is to be notified immediately.
3. The MCO Environment and Community Manager is to notify the Police immediately.
4. The MCO Environment and Community Manager is to contact ~~OEH~~BCD's Environment line on 131 555 and the ~~DP&E~~DPIE to identify that possible skeletal remains have been discovered and that the police have been notified. ~~OEH~~BCD will provide details on the current processes involved in best dealing with archaeological skeletal remains (whether Aboriginal or historic).
5. An area (to be determined following advice from the ~~OEH~~BCD and the Police) is to be cordoned off by temporary fencing around the exposed suspected human remains site - work can continue outside of this area as long as there is no risk of interference to the human remains or the assessment of human remains.
6. If the remains are determined to be Aboriginal remains, then under the advice of ~~OEH~~BCD, consult with the RAPs.
7. Do not recommence work at the location until all legal requirements and the reasonable requirements of ~~OEH~~BCD and the RAPs (where relevant) have been adequately addressed.

5.12 MANAGEMENT OF ABORIGINAL ARCHAEOLOGICAL SITES DATABASE

A comprehensive Aboriginal Archaeological Sites Database, which contains the name, AHIMS number, site type, scientific significance, MGA coordinates and status of Aboriginal cultural heritage sites located at the Moolarben Coal Complex and immediate environs has been established and maintained.

The information within this database will be saved in both tabular and GIS formats and will be made available to all relevant MCO staff and contractors when developing maps/drawings/figures to ensure that any disturbance works consider the location of known Aboriginal cultural heritage sites.

MCO will inform the ~~OEH~~BCD in the manner prescribed under the NP&W Act of any previously unrecorded Aboriginal heritage evidence that is identified at the Moolarben Coal Complex, or any modifications to any Aboriginal archaeological sites already registered with the ~~OEH~~BCD (for example, after salvage has occurred) (Section 5.10).

MCO will rectify any inconsistencies in the Aboriginal Archaeological Sites Database and will contact the ~~OEH~~BCD to rectify errors in the ~~OEH~~BCD AHIMS register where discrepancies are identified.

MCO will update the Aboriginal Archaeological Sites Database after becoming aware of the identification of any previously unrecorded Aboriginal heritage evidence at the Moolarben Coal Complex (other than additional evidence at an already known site location). Updates to the Aboriginal Archaeological Sites Database will be undertaken as required.

It is noted that changes to the management of the known Aboriginal archaeological sites listed in Appendix D may be required as a result of progressive updates to the Moolarben Coal Complex Aboriginal Archaeological Sites Database (Section 5.4). For example, an increase to the spatial extent of a site may result in a change in the level or type of impact, and hence require an update to the proposed management of the site. Any changes to the management proposed for any of the sites described in Appendix D will be undertaken based on advice from a suitably qualified and experienced archaeologist and in consultation with the RAPs.

5.13 ABORIGINAL KEEPING PLACE

A Keeping Place for Aboriginal objects salvaged across the Moolarben Coal Complex has been established by MCO at a property owned by MCO on Ulan Road.

As part of the curation program, MCO and the RAPs will discuss the curation of the Aboriginal objects and seek to reach an agreement on the permanent curation of those objects at the Keeping Place. These discussions will occur following the conclusion of each separate salvage campaign. If an agreement between MCO, the RAPs and the Native Title Aboriginal Heritage Liaison Officer cannot be reached then MCO will determine the curation following receipt of advice from an appropriately qualified heritage expert (e.g. a physical conservator) and/or advice from the ~~OEH~~BCD.

Any Aboriginal objects salvaged under the HMP may be temporarily stored at the office of the MCO Aboriginal heritage consultant or laboratory during analysis and recording. Such objects will be stored in a secure location and returned to MCO as soon as practical after analysis and recording is completed. Any Aboriginal objects salvaged under the HMP may be temporarily stored in a secure facility at the MCO office, prior to transfer to their final destination.

The management of sites in the Keeping Place following completion of mining activities at the Moolarben Coal Complex will be determined in consultation with the RAPs. This may include (but is not limited to) the permanent transferral of Aboriginal objects to a RAP, transferral to another party for storage and/or display (such as a local museum, historical society or educational institution) and/or the relocation of the objects on the rehabilitated land.

5.14 PROTOCOL FOR DAMAGE TO A KNOWN ABORIGINAL ARCHAEOLOGICAL SITE

Where a known Aboriginal site located outside an approved disturbance area (including ancillary works) is unintentionally damaged, the following procedure will apply:

- Work will stop immediately in the immediate vicinity of the Aboriginal archaeological site, and the incident will be reported to Environment and Community Manager. The Environment and Community Manager will report the incident to the ~~DP&E~~DPIE and ~~OEH~~BCD as soon as practicable.
- In consultation with the RAPs, a management strategy will be developed to ensure the site is secured against any further damage.
- If an agreement between MCO and the RAPs cannot be reached then MCO will determine the appropriate management following receipt of advice from an appropriately qualified heritage expert (e.g. a physical conservator) and/or advice from the ~~OEH~~BCD.
- MCO will report the incident and the implementation of the agreed management measure(s) as a component of the Annual Review (Section 10).

5.15 ARTEFACT MANAGEMENT

Artefacts collected during surface salvage activities or excavation, shall be managed consistent with the methods described in the ~~OEH~~ BCD policy Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010b), including the following:

- Attributes as per the AHIMS site card will be recorded (Sections 5.5.1 and 5.5.2).
- Artefacts will, initially, be bagged in excavation units.
- Following surface collection, artefacts will be bagged and assigned an URN. The location of collection will be recorded in GDA by handheld GPS (Section 5.5.3).
- Any Aboriginal objects salvaged under the HMP may be temporarily stored at the office of the MCO Aboriginal heritage consultant or laboratory during analysis and recording. A chain of custody will be used to record the location of any assemblage that leaves site for further analysis. (Sections 5.3 and 5.7).

- Any Aboriginal objects salvaged under the HMP may be temporarily stored in a secure facility at the MCO office, prior to transfer to their final destination (Section 5.13).

Further details of the analysis context of the artefacts and long term management of the artefacts are described in Sections 5.7 and 5.13.

5.16 ABORIGINAL COMMUNITY ACCESS

Throughout the operational life of the Moolarben Coal Complex, RAPs may wish to access sites and/or areas at the Moolarben Coal Complex for cultural purposes (e.g. education, ceremony). MCO is committed to facilitating reasonable access consistent with personnel Workplace Health and Safety requirements.

RAPs wishing to access the Moolarben Coal Complex area should contact the MCO Environment and Community Manager in writing at Locked Bag 2003, Mudgee, NSW 2850.

A minimum of five working days written notice is required and access will be permitted by MCO once an agreement has been reached between the RAP representatives and MCO regarding the conditions of access. Access, in all instances, will be subject to relevant operational and safety considerations and cannot be guaranteed. There will be no unauthorised access to the Moolarben Coal Complex. Access to some sites and areas will be restricted during periods of mining.

5.17 ASSESSMENT OF ANY FUTURE MINE PLAN ALTERATIONS

Prior to any significant alterations or modifications to the mine plan or approved Moolarben Coal Complex a risk assessment will be undertaken in conjunction with appropriate due diligence detailed in this section to assess the potential impacts of any change on Aboriginal heritage:

- Where future alterations are proposed to the underground mine plan, open cut mine plan or approved Moolarben Coal Complex, the potential impacts of any changes on the identified and potential Aboriginal heritage resource will be assessed.
- Where alteration to the underground mine plan is proposed in areas already subject to heritage survey sampling consistent with the ~~OEH~~BCD requirements, this will involve an assessment of potential subsidence impacts by a qualified subsidence expert and reconsideration of the management strategies for relevant identified sites by an appropriately qualified and experienced archaeologist, in consultation with the RAPs.
- Where alterations to the underground mine plan or open cut mine plan are proposed in areas that have not been subject to heritage survey sampling consistent with the ~~OEH~~BCD requirements, the procedures outlined in Section 5.3 of this HMP will be implemented. In addition, with respect to broad-scale surface impacts, the assessment will also address the possible impacts on major open artefact sites and/or PADs in open contexts.

- A report will be prepared with reference to contemporary ~~OEH~~BCD reporting assessment guidelines and the requirements of this HMP, documenting the results of any heritage assessment of future proposed alterations to the underground mine plan or open cut mine plan or the Moolarben Coal Complex. Any draft reports will be distributed to the RAPs for review, with a minimum 21 days allowed for comment. Final heritage reports will be prepared that consider and incorporate (where relevant) any input received within the specified timeframe from the RAPs. Copies of any final reports will be distributed to the RAPs following completion.

6.0 MANAGEMENT OF HISTORIC HERITAGE

6.1 SUMMARY OF MANAGEMENT MEASURES FOR HISTORIC HERITAGE

Table 7 reproduces the management actions required by the Stage 1 and Stage 2 Project Approvals. These management actions have been identified through a series of reports that (a) identified heritage sites at the Moolarben Coal Complex, (b) identified the nature of any adverse heritage impacts, and (c) recommended certain actions in mitigation of the identified adverse heritage impacts.

Table 7 describes the particular heritage values embodied by individual sites at the Moolarben Coal Complex. It is these values that the management actions are seeking to conserve. It is important to understand the identified heritage values so that the recommended management actions can be undertaken to best effect.

Table 7: Site Specific Historic Heritage Values and Corresponding Management Actions

Site Number	Site Name	Historic Potential#	Management Action	HMP Section Reference
2	Farm Site	Potential to yield information about the local area through archaeological remains and surviving fabric. Future actions should not compromise this potential.	No further action required. *In situ* conservation[1, 4].	Section 6.6
3	Burial Site – Roberts Family	Potential to yield information about the local area through archaeological relics. Also a strong social/spiritual association with the Roberts family. Future actions should seek to ensure that the archaeological/scientific potential is met, while also responding to the reasonable wishes of the surviving relatives.	Archival recording. Exhumation if impacts unavoidable. Fenced boundary to mitigate site disturbance. Discussion to be held with related families if exhumation to occur[1].	Section 6.3, 6.6 and 6.7

Site Number	Site Name	Historic Potential[#]	Management Action	HMP Section Reference
4	House and Burial Site	Potential to yield information about the local area through archaeological remains of the burial site. Future actions should seek to meet the archaeological/scientific potential of the site, while also responding to the reasonable wishes of the surviving relatives.	Archival recording. Exhumation if impacts unavoidable. Fenced boundary to mitigate site disturbance. Discussion to be held with related families if exhumation to occur[1].	Section 6.3, 6.6 and 6.7
15	Moolarben Dam	Embodies a kind of 'industrial' aesthetic, and reflects a technical achievement.	*In situ* conservation[1].	Section 6.6
18	Carr's Gap Road[3]	Contributes to a kind of aesthetic, as part of a rural cultural landscape. Constitutes a technical achievement. Before it is impacted by Moolarben Coal Complex works, its principal characteristics should be recorded and the record made publicly accessible, contextualised within a researched history.	Historical research. Archival record[2]. In situ conservation. If impacted recovery works to be recommended[5].	Section 6.2 Section 6.3
19	Farm Site – 'Glen Moor'	Potential to yield information about the local area through archaeological remains and surviving fabric. Future actions should not disturb the potential archaeological resource. Also embodies a particular 'rural' aesthetic. 'Tells the story' of farming in the local area during its period of use. Those aspects that best tell this story and embody that aesthetic should be recorded, and that record made publicly accessible.	Archival recording. *In situ* conservation[1].	Section 6.3 Section 6.6

Site Number	Site Name	Historic Potential#	Management Action	HMP Section Reference
20	Grave and Memorial Garden	The location is valued by members of the local community. Measures should be put in place to ensure that it is properly cared for.	Area to be maintained[1].	Section 6.6
22	Stockyards	'Tells the story' of pastoralism and farming in the local area during its period of use. Those aspects that best tell this story should be recorded, and that record made publicly accessible. Steps should be put in place to ensure that the location suffers no damage or deterioration beyond reasonable wear and tear.	Archival recording. *In situ* conservation[1].	Section 6.3 Section 6.6
23	Natural Environment – 'The Drip'	The site is a local natural landmark, valued by the community as a picnic spot. Moolarben Coal Complex operations should not prevent the local community from accessing this location.	Ensure public access is maintained[1].	-
31	House Site	'Tells the story' of farming and the rural way of life in the local area during its period of use. Those aspects that best tell this story should be recorded, and that record made publicly accessible. Steps should be put in place to ensure that the location suffers no damage or deterioration beyond reasonable wear and tear.	Archival recording. *In situ* conservation[1].	Section 6.3 Section 6.6

Site Number	Site Name	Historic Potential[#]	Management Action	HMP Section Reference
33	Recreation Ground	'Tells the story' of a feature of the rural way of life in the local area (sport and leisure) during its period of use. Those aspects that best tell this story should be recorded, and that record made publicly accessible. Steps should be put in place to ensure that the location suffers no damage or deterioration beyond reasonable wear and tear.	Archival recording. *In situ* conservation[1].	Section 6.3 Section 6.6
57	Feed Trough	'Tells the story' of farming and the rural way of life in the local area during its period of use. The artefact should be retrieved, conserved to manage potential deterioration, stored in an appropriate location, and consideration should be given to ways in which it might be used in future heritage 'interpretation' e.g. placed on display as a means of 'telling the story' of the local area's past.	Historical research. Archival record. *Ex situ* conservation[2].	Section 6.2 Section 6.3 Section 6.5

[#] Based on the consideration of the site at the time of initial recording.

[1] Summary recommendation in accordance with Stage 1 Project Approval (05_0117).

[2] Summary recommendation in accordance with Stage 2 Project Approval (08_0135).

[3] Note that this site is also referred to as the "Carr's Gap Road Stone Wall" in the Stage 2 Project Approval (08_0135).

[4] Note that MCO has erected fencing and signage at this site to delineate the *in situ* conservation area.

[5] No further action is required unless the site will be impacted by future works, when recovery works will be undertaken.

6.2 HISTORICAL RESEARCH

The Stage 1 and Stage 2 Project Approvals require 'Historical Research' for the following sites (Table 7):

- Site 57[10].
- Site 18[12].

Initial historical research has already been undertaken at a number of historic heritage sites as part of the heritage reports listed in Section 4.1. The objectives of the additional historical research required by the Stage 1 and Stage 2 Project Approvals are:

- To provide additional historical context for the sites that also require archival recording (see Section 6.3). The NSW guideline document entitled 'How to Prepare Archival Records of Heritage Items' recommends the inclusion of an 'Outline History' of the site being recorded, which might include such things as personal or business records of the site's occupants, historical photographs of the same site, references to the site in archived editions of the local newspapers, early maps and survey plans of the site.
- To inform the archaeological assessments of those sites also requiring archaeological assessment. This matter is discussed further in Section 6.4.
- Historical research should confirm the anecdotal information provided with respect to other grave sites (Sites 3, 4 and 20).

6.3 ARCHIVAL RECORDING

The Stage 1 and Stage 2 Project Approvals require 'archival recording' for the following sites (Table 7):

- Site 3.
- Site 4.
- Site 18[12].
- Site 19[11].
- Site 22[11].
- Site 31[11].
- Site 33[11].
- Site 57[10].

The former NSW Heritage Office has prepared detailed guideline documents entitled:

- 'How to Prepare Archival Records of Heritage Items'.
- 'Photographic Recording of Heritage Items Using Film or Digital Capture'.

[10] Historical research of this site was completed in 2015.

[11] Archival recording of this site was completed in September 2009.

[12] Historical research and archival recording of this site was completed in September 2009.

The archival recording required by the Project Approvals must observe the procedures contained within these documents (or contemporary equivalent). They are accessible online at:

http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/infoarchivalrecords.pdf

http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/infophotographicrecording2006.pdf

For the purposes of archival recording it is appropriate to use colour digital photography, supplemented with hard copy prints on archival paper.

The guideline documents also recommend the preparation of measured drawings (e.g. plans and elevations) for some kinds of heritage places. These will not be required, rather a photographic archival record of the sites is considered sufficient.

In the event that future detailed archival recording is required at the Moolarben Coal Complex, the following principles will guide the recording:

- The heritage places identified at the Moolarben Coal Complex 'tell the story' of the settlement and development of the local area, and the activities that historically took place there. The objective of archival recording is to document the sites so that this story can be told for future generations. This will help to define the scope of the archival recording work.
- Archival records will be publicly accessible so that this story is most effectively communicated to both the general public and to specialists, including historians and researchers. This can be achieved by providing a copy of the record to the local historical society (or equivalent).
- The archival record will involve an appropriate mix of general images (to spatially contextualise the heritage item) and 'detail' images that capture finer details of the structure's construction (e.g. paint colours, surface coverings, joinery, etc.) and ongoing alterations and additions.
- In order to contextualise the heritage items, it may be necessary to record appropriate spatial data using a GPS unit, and in some cases, formal survey.

  Archival recording will occur as soon as practical and prior to any activity taking place at the Moolarben Coal Complex that may cause further damage or disturbance to the respective heritage site (i.e. recording of the above listed sites will occur prior to surface disturbance activities at the relevant site).

6.4 ARCHAEOLOGICAL ASSESSMENT

In previous heritage reports, a number of sites were preliminarily identified as being known or potential archaeological sites. A cautious approach has been taken with respect to the management of these sites in the Stage 1 and Stage 2 Project Approvals, which require further 'archaeological assessment' for those places. These sites[13] include:

- Site 8
- Site 11
- Site 36a
- Site 36b

The objective of the archaeological assessments required by the Stage 2 Project Approval (08_0135) is to:

- Establish the archaeological *potential* of the identified sites.
- Assess the scientific *significance* of any identified potential archaeological sites/relics. Archaeological sites of low scientific significance require a less rigorous management response than those of high scientific significance.

The archaeological assessments will commonly overlap with the historical research also required for some sites by the Stage 1 and Stage 2 Project Approvals. These assessments will be undertaken with reference to the NSW government guideline document entitled 'Assessing Significance for Historical Archaeological Sites and Relics' (NSW Department of Planning and Heritage Council of New South Wales) (or contemporary equivalent), available online at: http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/ArchSignificance.pdf

The archaeological assessments will be concerned principally with the ability of the sites to answer research questions, with reference to the following three questions:

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge that no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

[13] Archaeological assessment of sites was completed in 2015.

6.5 EX SITU CONSERVATION

Site 57 (a wooden feed trough) requires '*ex situ* conservation' (Table 7). Previous assessments have identified this object as 'an item of interest', rather than as part of a site of local heritage significance or as a heritage item in its own right. *Ex situ* conservation requires that the item be retrieved from its present location in a manner that does no damage to it, and relocated to a place where future MCO activities will not damage it (e.g. one of the heritage conservation areas described in this HMP). This will be undertaken after the archival recording and historical research described in Sections 6.2 and 6.3 have been completed, and prior to surface disturbance activities at the relevant site.

As an alternative option to placing the item in one of the heritage conservation areas, it will be appropriate for MCO to donate the item to a local museum or, if wished, to retain it for use as a display piece.

Should future archaeological excavation take place at the Moolarben Coal Complex, any artefacts recovered from the excavation will need to be conserved and stored *ex situ*. Recommendations in this regard will form a part of the archaeological assessments described in Section 6.4.

6.6 IN SITU CONSERVATION

The Stage 1 Project Approval (05_0117) requires the *in situ* conservation of the following sites (Table 7):

- Site 2.
- Site 15.
- Site 18.
- Site 19.
- Site 22.
- Site 31.
- Site 33.

Additionally, it requires that Site 20 'be maintained', and Sites 3 and 4 to undergo archival recording (with exhumation to be undertaken if impacts unavoidable).

Where a site is owned by MCO, its *in situ* conservation objectives generally include that it be:

- Kept reasonably secure against vandalism and storm damage.
- Protected from accidental damage arising out of Moolarben Coal Complex activities (e.g. the movement of heavy machinery, new construction, etc.). This may include measures such as fencing and the maintenance of the Historic Heritage Sites Database.

MCO's responsibilities in relation to the *in situ* conservation of sites are limited to sites in its direct care and control (e.g. through ownership or lease of the land).

Where a site is not in the care or control of MCO, *in situ* conservation requires that MCO do nothing to impede those who have care and control of the site from putting reasonable conservation measures in place.

Where one or more of the above sites passes into the care and control of MCO at a future date, it will be appropriate for previous heritage assessments to be updated based on (for example) the altered condition or other circumstances of the heritage place that has occurred since recording. If this were to occur, recommendations for appropriate heritage management actions will form part of the revised heritage assessment, and will be incorporated into a revised HMP.

In any event, the *in situ* conservation responsibilities of MCO cease upon the cessation of MCO activities covered by the Stage 1 and Stage 2 Project Approvals, or at a time when *in situ* conservation is no longer feasible having regard to the physical condition of the site and health and safety requirements.

Some specific recommendations in relation to the above sites are as follows:

- Sites 2, 18 and 22 – It is appropriate for these sites to be exposed to the elements and for them to experience the natural wear and tear associated with their existence in an exposed outdoor environment. It is not necessary for these sites to be conserved in the manner of a museum piece.
- Sites 3 (burial site) and 4 (house and burial site) – MCO will undertake archival recording (Section 6.3). Exhumation of the burial sites will be undertaken if impacts are unavoidable in accordance with Section 6.7. MCO will hold discussions with the related families if exhumation is to occur.
- Site 15 (Moolarben Dam) – MCO will not impede the relevant landowner's reasonable efforts to conserve the site. Works will not be undertaken by MCO that may accelerate the deterioration of this structure. However, it is appropriate for the structure to experience the reasonable wear and tear expected of a large piece of infrastructure located in an exposed environment. It is not required that it be maintained in working order.
- Site 19 (Glen Moor Homestead) –The site has been subject to a revised heritage assessment. Based on the results of this revised heritage assessment it is recommended that:
    - Moolarben Coal engage a structural engineer with experience with built heritage to undertake a condition assessment of the main house and its outbuildings.

  If the condition assessment concludes that the *in situ* conservation of the property is feasible, MCO will take reasonable steps to secure the site against vandalism and storm damage and monitor the site's condition and take reasonable steps to prevent the ingress of water by, for example, patching holes in the roof and window spaces, using reversible measures.
- Site 20 (grave and memorial garden) – The condition of the site will be monitored (e.g. through annual inspection), and appropriate steps taken to manage the growth of weeds. It is not MCO's responsibility to replace existing trees as they become senescent. MCO will facilitate access to this location by the family associated with the grave here (if requested to do so by the family), insofar as health and safety considerations within an operational mining facility allow. It will be appropriate to limit access to this site by members of the public who are not related to the deceased at this site.
- Site 31 (timber structure) – It is not necessary to make this structure secure (e.g. through the introduction of new roof, doors or windows). This will require an inappropriate level of physical intervention. It is appropriate to allow this structure to remain in a ruined state, exposed to the elements, provided it is the subject of the archival recording described above. However, reasonable steps will be taken to avoid the accelerated deterioration of the structure due to the activities of MCO (i.e. do not intentionally disturb the site). MCO's conservation responsibilities in relation to this structure come to an end should it be assessed by an appropriately qualified engineer or builder to have become structurally unsound, and a threat to health and safety, at which time its demolition will be appropriate, if considered necessary for health and safety reasons.

- Site 33 (recreation ground) – MCO will liaise with the present landowner to ensure that MCO's operations do not impede that landowner's reasonable efforts to conserve the site. If the site were to pass into the care and control of MCO in the future, the site will be subject to a revised heritage assessment having regard to the site's condition and any changed circumstances. It will be appropriate to revise the heritage management recommendations provided in the HMP at this time as necessary. If the revised heritage assessment were to conclude that the site's heritage significance remains unchanged, MCO will monitor the site's condition and take reasonable steps to prevent any accelerated deterioration caused by MCO's activities. MCO will avoid activities in this location likely to accelerate its deterioration beyond the reasonable wear and tear to be expected of an exposed outdoor recreation site.

All relevant Moolarben Coal Complex databases must be updated to include a reference to these sites, including their location, heritage status, and the requirement that they experience no damage or disturbance as a result of Moolarben Coal Complex activities. They will be included in the heritage inductions described in Section 7.0.

Fencing is not required for these sites, on the principle that this is likely to draw unwanted attention to them and actually increase the risk of vandalism. However, in the case of Site 19 particular care should be taken to ensure it is securely locked (e.g. to minimise the risk of squatters and vandalism). It will be regularly monitored for damage and the activities of vandals, at least on a 6-monthly basis.

A program of monitoring of the condition of the other sites is appropriate. 'Monitoring' will involve a site visit coordinated by the Environment and Community Manager (or delegate) at appropriate intervals, to be determined on a case-by-case basis (on a minimum annual basis). A succinct record, including photographs, will be made of each site at the time of each site visit so that a record can be kept of changes that may be occurring. MCO will respond appropriately to the needs of these sites, informed by the results of this monitoring program, and based on the above principles.

6.7 EXHUMATION AND UNEXPECTED NON-ABORIGINAL HUMAN REMAINS

If non-Aboriginal human remains are unexpectedly identified within the Moolarben Coal Complex, or the exhumation of known graves is required, this should be managed generally in accordance with the protocols contained within:

- *Skeletal remains: Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977* (NSW Heritage Office, 1998).
- NSW Public Health Regulations 2012.
- *NSW Infection Control Policy* (NSW Department of Health, 2007).
- *Australian Guidelines for the Prevention and Control of Infection in Healthcare* (Commonwealth National Health and Medical Research Council, 2010).
- *NSW Department of Health 2013 Policy Directive: Exhumation of Human Remains* (NSW Department of Health, 2013).
- Other relevant legislation and guidelines current at the time of exhumation.

6.8 SUBSIDENCE MONITORING

Subsidence monitoring of historic heritage sites will be undertaken to satisfy the requirements of the performance measures described in Section 8. Further detail will be provided in the relevant Extraction Plan.

6.9 MANAGEMENT OF HISTORIC HERITAGE SITES DATABASE

A comprehensive Historic Heritage Sites Database, which contains the name, site description, MGA co-ordinates and status of historic heritage sites located at the Moolarben Coal Complex and immediate environs has been established and maintained.

The information within this database will be saved in both tabular and GIS formats and will be made available to all relevant MCO staff and contractors when developing maps/drawings/figures to ensure that any disturbance works consider the location of known historic heritage sites.

Updates to the Historic Heritage Sites Database will be undertaken as required.

7.0 HERITAGE INDUCTIONS AND TRAINING

7.1 MOOLARBEN COAL COMPLEX SITE INDUCTION

All MCO site specific employee and contractor inductions will include a heritage component. This will outline current protocols and responsibilities with respect to the management of historic heritage and Aboriginal cultural heritage for the Moolarben Coal Complex, including the heritage conservation areas. It will also provide an overview of the site types present and procedures for reporting the identification of Aboriginal archaeological sites and items of historic heritage. The induction process also includes a description of the MCO Ground Disturbance Permit process and relevant protocols prior to any surface disturbance activities. MCO will maintain an accurate record of all employee and contractor inductions in accordance with Condition 39(d), Schedule 3 of the Stage 1 Project Approval (05_0117) and Condition 46(d), Schedule 3 of the Stage 2 Project Approval (08_0135). Section 5.6 of the Environmental Management Strategy provides details on training records.

7.2 ABORIGINAL CULTURAL HERITAGE AWARENESS TRAINING PROGRAM

In addition, an Aboriginal cultural heritage awareness training program has been prepared by MCO in consultation with the RAPs. The Aboriginal cultural heritage awareness training will be mandatory for all employee roles that may reasonably bring them into contact with Aboriginal archaeological sites and/or involve consultation with local Aboriginal community members. Training will also be offered on a voluntary basis to all other employees and contractors.

8.0 PERFORMANCE MEASURES

Condition 3 of Schedule 5 of the Stage 1 Project Approval (05_0117) and Condition 3 of Schedule 6 of the Stage 2 Project Approval (08_0135) require all management plans to include relevant limits or performance measures/criteria and the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures.

Schedule 3 of the Stage 1 Project Approval (05_0117) and Schedule 4 of the Stage 2 Project Approval (08_0135) provide a number of subsidence impact performance measures where relevant for Aboriginal heritage and historic heritage sites. These performance measures are presented in Table 8 below.

Table 8: Aboriginal Heritage and Historic Heritage Performance Measures

Feature	Performance Measure[1]
Aboriginal sites 264, 282, 283, 286, 287[2]	Reduce the likelihood of subsidence damage to low[1]
Aboriginal site 280[3]	Reduce the likelihood of subsidence damage to moderate[1]
Historic heritage sites	No greater subsidence impact or environmental consequences than predicted in the EA[1,4]
Aboriginal heritage site S2MC236 (AHIMS 36-3-0016 and 36-3-0134)	Negligible subsidence impacts or environmental consequences[4]

Note: EA refers to the Stage 1 Moolarben Coal Complex Environmental Assessment Report (Wells Environmental Services, 2006) as modified by the subsequent assessments listed in the "Definitions" section of the Stage 1 Project Approval (05_0117) and the Stage 2 Moolarben Coal Project Environmental Assessment Report (MCM, 2009) as modified by the subsequent assessments listed in the "Definitions" section of the Stage 2 Project Approval (08_0135).

1 Consistent with Stage 1 Project Approval (05_0117).

2 These sites are referred to in this HMP as S1MC264, S1MC282, S1MC283, S1MC286 and S1MC287.

3 This site is referred to in the HMP as Site S1MC280.

4 Consistent with Stage 2 Project Approval (08_0135).

Relevant Extraction Plans for underground mining operations will describe how the performance measures listed in Table 8 will be met.

9.0 CONTINGENCY PLAN

In the event a performance measure detailed in Section 8 is considered to have been exceeded, MCO will implement the following Contingency Plan:

- The Environment and Community Manager will report the exceedance to the General Manager within 24 hours of assessment completion.
- In the event that the incident has caused, or threatens to cause, material harm to the environment, MCO will report the exceedance of the performance to the ~~DP&E~~DPIE and ~~OEH~~BCD immediately. All other incidents will be reported to the ~~DP&E~~DPIE and ~~OEH~~BCD as soon as practicable after MCO becomes aware of the incident.
- MCO will identify an appropriate course of action with respect to the identified impact(s), in consultation with specialists, RAPs (in relation to Aboriginal archaeological sites) and relevant agencies, as necessary. For example, identification of proposed contingency measure(s) and a program to review the effectiveness of the contingency measures. Contingency measures will be developed in consideration of the specific circumstances of the exceedance and the assessment of environmental consequences.
- MCO will, on request, submit the proposed course of action to the ~~DP&E~~DPIE for approval.
- MCO will implement the approved course of action to the satisfaction of the ~~DP&E~~DPIE.
- MCO will provide a detailed report on the exceedance of the performance measures to the ~~DP&E~~DPIE and ~~OEH~~BCD within 7 days of the date of becoming aware of the exceedance.
- MCO will report the exceedance of the performance measure and the success of the approved course of action as a component of the Annual Review (Section 10).

10.0 ANNUAL REVIEW AND IMPROVEMENT OF HERITAGE MANAGEMENT PLAN

10.1 ANNUAL REVIEW

In accordance with Condition 4, Schedule 5 and Condition 4, Schedule 6 of the Project Approvals (05_0117 and 08_0135, respectively) MCO will conduct an Annual Review of MCO operations prior to 31 March each year.

This Annual Review will specifically address the following aspects of Condition 4, which directly relate to both Aboriginal heritage and historic heritage:

- Include a comprehensive review of the monitoring results and complaints records of MCO operations over the previous calendar year, which includes a comparison of these results against the:
  - relevant statutory requirements, limits or performance measures/criteria;
  - monitoring results of previous years; and
  - relevant predictions in the EA.
- Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance.
- Identify any trends in the monitoring data over the life of the project.
- Identify any discrepancies between the predicted and actual impacts of MCO operations, and analyse the potential cause of any significant discrepancies.

The Annual Review will be made publicly available on the Moolarben Coal website in accordance with Condition 11, Schedule 5 and Condition 11, Schedule 6 of the Project Approvals (05_0117 and 08_0135, respectively).

10.2 HERITAGE MANAGEMENT PLAN REVIEW

In accordance with Condition 5, Schedule 5 and Condition 5, Schedule 6 of the Project Approvals (05_0117 and 08_0135, respectively) this HMP will be reviewed, and if necessary revised to the satisfaction of the Secretary, within 3 months of the submission of:

5. Within 3 months of the submission of:
(a) the submission of annual review under condition 4 above;
(b) the submission of an incident report under condition 7 below;
(c) the submission of an audit under condition 9 below; or
(d) any modification to the conditions of this approval or MP 05_0117 (unless the conditions require otherwise),
the Proponent shall review and, if necessary, revise the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Secretary for approval.

This HMP will be made publicly available on the Moolarben Coal website, in accordance with Condition 11, Schedule 5 and Condition 11, Schedule 6 of the Project Approvals (05_0117 and 08_0135, respectively).

11.0 REPORTING SYSTEMS

In accordance with Condition 3, Schedule 5 and Condition 3, Schedule 6 of the NSW Project Approvals (05_0117 and 08_0135, respectively), MCO has developed protocols for managing and reporting:

- incidents;
- complaints;
- non-compliances with statutory requirements; and
- exceedances of the impact assessment criteria and/or performance criteria.

These protocols are described in detail in the Environmental Management Strategy.

A summary of the relevant reporting requirements described in this HMP is provided in Table 9 below.

Table 9: Summary of Heritage Reporting Requirements

Reporting Requirement	Frequency	Distribution	Section Reference
Aboriginal Heritage Reporting Requirements			
RAP Consultation meetings	At least annually	RAPs	Section 5.1.3
Proposed Methodology for archaeological salvage collection or excavation[1]	As necessary	RAPs	Section 5.1.4
Final copies of all heritage reports produced under this HMP	Following completion of relevant archaeological salvage collection or excavation works	RAPs	Section 5.1.4
Amendments to workplace health and safety and insurance requirements	As necessary	RAPs and archaeologists.	Section 5.1.4
Detailed investigation into the Aboriginal cultural heritage values of the southern portion of the Dun Dun East biodiversity offset area	Prior to 30 June 2016	RAPs	Condition satisfied[2]
Archaeological survey of the unsurveyed portion of the Powers Conservation Area	Prior to 30 December 2017	RAPs	Condition satisfied[2]
Report on archaeological excavation of S2MC231 and any post-excavation analysis	Following completion of archaeological excavation and any analysis of S2MC231	RAPs with a final report to be submitted to OEH within one year of the cessation of all analysis related to the site	Condition satisfied[2]
Fence monitoring results	Annually	Results presented in the Annual Review	Section 5.8.4
Subsidence monitoring report	Following monitoring, required within three to six months of undermining	RAPs, ~~OEH~~BCD and ~~DP&E~~DPIE, with a summary included in the Annual Review	Section 5.9.1

Reporting Requirement	Frequency	Distribution	Section Reference
Blast monitoring results	Annually	Results presented in the Annual Review	Section 5.9.2
Heritage reports prepared for future mine plan alterations	As required	RAPs	Section 5.17~~5~~
Historic Heritage Reporting Requirements			
Historical research (sites 18 and 57)	One only[3]	Results will be made publicly accessible on request	Section 6.2.
Archival recording (sites 3, 4, 18, 19, 22, 31, 33, 57)	Once only. As soon as practical and prior to any disturbance activities	Results will be made publicly accessible (e.g. providing a copy to a local historical society)	Section 6.3 Condition satisfied for sites 18, 19, 22, 31, 33 and 57.
Archaeological assessment report (sites 8, 11, 36a and 36b)	Once only. Prior to any disturbance activities	A copy of any post-excavation reports will be provided to the NSW Heritage Branch	Section 6.4
Monitoring of relevant historic heritage sites	As required (on a minimum annual basis)	Internal use only	Section 6.6
Additional Heritage Management Plan Reporting Requirements			
Performance measure exceedance	As required	~~OEH~~BCD and ~~DP&E~~DPIE, with the exceedance also reported in the Annual Review	Section 9

Note: Blast monitoring results are also required to be reported in the Annual Review.

1 Where this methodology is different from that already approved for the Moolarben Coal Complex.

2 Refer to Appendix A.

3 Will form a component of the archival recording prepared for the relevant sites.

12.0 KEY ROLES AND RESPONSIBILITIES

Table 10 below describes the key roles and responsibilities of this HMP.

Table 10: Key Roles and Responsibilities

Responsibility	Task
General Manager	• Ensure resources are available to MCO personnel to facilitate the completion of responsibilities under this HMP.
Environment and Community Manager	• Ensure monitoring and reporting required under this HMP are carried out within specified timeframes. • Ensure that heritage is considered in the approval of Ground Disturbance Permits. • Liaise with relevant stakeholders regarding heritage impacts. • Coordinate incident investigation processes and ensure incident reports required under this HMP are prepared within specified timeframes and to the required standard. • Undertake implementation of management measures for Aboriginal and historic heritage sites in accordance with this HMP.
Senior Environment and Community Coordinator	• Liaise with relevant stakeholders regarding heritage impacts. • Undertake implementation of management measures for Aboriginal and historic heritage sites in accordance with this HMP. • Manage the site database.
All Employees and Contractors	• Comply with the requirements of this HMP with respect to their work activities and areas. • Ensure any potential or actual heritage issues, including environmental incidents, are reported to the, Supervisor (or relevant equivalent) or Environment and Community Department immediately.
Registered Aboriginal Parties	• Provide MCO with up to date contact details.

13.0 REFERENCES

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Bickford, A and S, Sullivan (1984) 'Assessing the Research Significance of Historic Sites', in Sullivan S. and S. Bowdler (eds), *Site Surveys and Significance Assessment in Australian Archaeology* (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24.

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New South Wales Heritage Council (2001) *New South Wales Historical Themes*.

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Wells Environmental Services (2006) *Moolarben Coal Project Environmental Assessment Report*.

APPENDIX A: PROJECT APPROVAL RECONCILIATION

Table A-1: Stage 1 Project Approval (05_0117) Requirements

NSW Project Approval Condition	HMP Section
Protection of Aboriginal Heritage Items *38. Unless otherwise authorised under the NP&W Act, the Proponent shall ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project.*	Section 5
Heritage Management Plan *39. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary within six (6) months from the date of approval for MOD 9. This plan must:*	
(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;	Section 1.2~~3~~
(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);	Section 1.4~~5~~
(c) include results of further archaeological survey of the 10 hectares of land (as identified on Figure 10 of Appendix F of the EA) that has not been surveyed, and any land adjacent to the open cut mines that has not been surveyed and may be subject to blasting impacts;	Tables 2 and 6, Appendices C and D
(d) include the following for the management of Aboriginal Heritage: • *a detailed archaeological test excavation and potential salvage program for site S1MC331;*	Condition Satisfied[1]
• *a detailed archaeological test excavation and potential salvage program for sites S1MC343 and S1MC344, if it is determined by a qualified archaeologist that these sites may be subject to impacts associated with blasting;*	Condition Satisfied[1]
• *a description of the measures that would be implemented for:* - *protecting, monitoring and/or managing the heritage sites/items identified in the EA and any sites identified during the surveys required in (c) above;*	Section 5
- *conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence and/or blasting;*	Section 5.2, Table 6 and Appendix D
- *managing the discovery of any human remains or previously unidentified Aboriginal objects on site;*	Sections 5.10 and 5.11
- *maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site;*	Section 5.16
- *ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and*	Sections 1.4~~5~~ and 5.1
- *ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;*	Section 7
• *a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;*	Section 5.13
(e) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 9, including archival recording, historical research and archaeological assessment prior to any disturbance.	~~Section 6~~Section 6

<table>
<tr><th>NSW Project Approval Condition</th><th>HMP Section</th></tr>
<tr><td>

SUBSIDENCE

Performance Measures – Natural and Heritage Features

73. The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 14, to the satisfaction of the Secretary.

Table 14: Subsidence Impact Performance Measures

...

<table>
<tr><td colspan="2">Heritage Sites</td></tr>
<tr><td>Aboriginal heritage sites 264, 282, 283, 286 and 287 (see Appendix 7)</td><td>Reduce the likelihood of subsidence damage to low.</td></tr>
<tr><td>Aboriginal heritage site 280 (see Appendix 7)</td><td>Reduce the likelihood of subsidence damage to moderate.</td></tr>
<tr><td>Historic heritage sites</td><td>No greater subsidence impact or environmental consequences than predicted in the EA</td></tr>
</table>

Notes:

- *The locations of the features referred to in Table 14 are shown in Appendix 7.*
- *The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval.*
- *Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.*
- *The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of this approval.*

</td><td>Section 8</td></tr>
<tr><td>

Appendix 3 – Statement of Commitments

Cultural heritage

- *Cultural heritage sites will be monitored and managed according to the measures described in an approved Heritage Management Plan.*

</td><td>Section 5 and Appendix D</td></tr>
<tr><td>

- *Cultural heritage sites adjacent to and outside construction, mining and general disturbance areas will have appropriate controls in place to prevent potential disturbance.*

</td><td>Section 5 and Appendix D</td></tr>
<tr><td>

- *Cultural heritage monitoring and salvage will be undertaken by a qualified archaeologist and members of the Aboriginal Stakeholder community groups (Mudgee Local Aboriginal Land Council based in Mudgee; North-East Wiradjuri Pty Ltd, based in Ulan; Murong Gialinga Aboriginal and Torres Strait Islander Corporation, based in Mudgee; and Warrabinga Native Title Claimants Aboriginal Corporation, based in Kandos).*

</td><td>Section 5.1.4</td></tr>
<tr><td>

- *Where additional cultural heritage sites are identified, these sites will be managed in accordance with the measures described in the Heritage Management Plan.*

</td><td>Section 5.10</td></tr>
<tr><td>

- *Local Aboriginal community representatives will be involved in the recording, salvaging and storing of cultural heritage objects impacted by site works.*

</td><td>Sections 5.16 and 5.5</td></tr>
<tr><td>

- *The Heritage Management Plan will be updated to include:*
  - *Additional registered parties as necessary.*
  - *Sub-surface testing and potential salvage of S1MC343-345 and S1MC352 where blasting is assessed to adversely impact these sites.*
  - *Test excavation and potential salvage of S1MC331.*

</td><td>Section 5.1

Condition Satisfied [1,2]

Condition Satisfied[1]</td></tr>
</table>

1 In accordance with Stage 1 Project Approval (05_0117), sites S1MC343 have been subject to detailed test excavation and salvage.

2 In accordance with Stage 1 Project Approval (05_0117), salvage and test excavation was attempted at sites S1MC345 and S1MC352 however it was determined by a suitably qualified archaeologist that there was no suitable deposit to test, and the sites were considered unlikely to contact in-tact and in situ deposits (AECOM, 2015). This condition is considered to be satisfied.

Table A-2: Stage 2 Project Approval (08_0135) Requirements

<table>
<tr><th>NSW Project Approval Condition</th><th>HMP Section</th></tr>
<tr><td>Protection of Aboriginal Heritage Items

41. Unless otherwise authorised under the NP&W Act, the Proponent shall ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project.</td><td>Section 5</td></tr>
<tr><td>Heritage Conservation Areas

44. The Proponent shall implement the heritage conservation strategy described in the EA, summarised in Table 16, to the satisfaction of the Secretary.

Table 16: Summary of the Heritage Conservation Strategy
<table>
<tr><th>Area</th><th>Sites</th><th>Minimum Site hectares (ha)</th></tr>
<tr><td>Murragamba Creek Management Area</td><td>40 sites - 5 of high significance, 6 of medium and 29 of low</td><td>154</td></tr>
<tr><td>Powers Conservation Area</td><td>10 sites – 1 of high significance, 2 of medium and 7 of low significance</td><td>63</td></tr>
<tr><td>Red Hills Conservation Area</td><td>42 sites – 2 of high significance, 9 of medium and 31 of low significance</td><td>107</td></tr>
</table></td><td>Section 5.2.1</td></tr>
<tr><td>Long Term Security of the Heritage Conservation Areas

45. Within 18 months of approval of the Heritage Management Plan, unless the Secretary agrees otherwise, the Proponent shall make suitable arrangements to protect the heritage conservation areas in Table 16 in perpetuity to the satisfaction of the Secretary.

Notes:
• The protection of the Aboriginal heritage conservation area/s may be combined with the protection of the biodiversity offset areas required under condition 30 of this approval.</td><td>Section 5.2.1</td></tr>
<tr><td>Heritage Management Plan

46. The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:

(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</td><td>Section 1.23</td></tr>
<tr><td>(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);</td><td>Section 1.45</td></tr>
<tr><td>(c) be submitted to and approved by the Secretary prior to construction, unless the Secretary agrees otherwise;</td><td>Section 1.45</td></tr>
<tr><td>(d) include a description of the measures that would be implemented for:
• managing the discovery of human remains or previously unidentified heritage items on site; and</td><td>Sections 5.10 and 5.11</td></tr>
<tr><td>• ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;</td><td>Section 7</td></tr>
<tr><td>(e) include the following for the management of Aboriginal Heritage:
• a detailed plan of management for the Murragamba Creek, Red Hills and Powers conservation areas;</td><td>Section 5.2.1</td></tr>
<tr><td>• a description of the measures that would be implemented for:
- protecting, monitoring and/or managing (including any proposed archaeological</td><td>Section 5 and Appendix D</td></tr>
</table>

<table>
<tr><th>NSW Project Approval Condition</th><th>HMP Section</th></tr>
<tr><td>- investigations and/or salvage measures) the heritage items identified in the tables in the EA;</td><td></td></tr>
<tr><td>- managing the discovery of previously unidentified Aboriginal items on site;</td><td>Section 5.10</td></tr>
<tr><td>- conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence;</td><td>Section 5 and Appendix D</td></tr>
<tr><td>- maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site and within any Aboriginal heritage conservation areas;</td><td>Section 5.16</td></tr>
<tr><td>- ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and</td><td>Sections 1.4 and 5.1</td></tr>
<tr><td>• a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term;</td><td>Section 5.13</td></tr>
<tr><td>(f) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 8, including archival recording, historical research and archaeological assessment prior to any disturbance.</td><td>Section 6</td></tr>
<tr><td>SUBSIDENCE
Performance Measures – Natural and Heritage Features
1. The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 18, to the satisfaction of the Secretary.
Table 18: Subsidence Impact Performance Measures
....
<table>
<tr><td colspan="2">Heritage Sites</td></tr>
<tr><td>Aboriginal heritage site S2MC 236 (AHIMS ~~No.s~~No's 36-3-0016 and 36-3-0134)</td><td>Negligible subsidence impacts or environmental consequences</td></tr>
<tr><td>Historic heritage sites</td><td>No greater subsidence impact or environmental consequences than predicted in the EA</td></tr>
</table>
Notes:
• The locations of the features referred to in Table 18 are shown in Appendix 4.
• The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval.
• Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.
The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of this approval.</td><td>Section 8</td></tr>
<tr><td>Appendix 3 – Statement of Commitments
Aboriginal Archaeology and Cultural Heritage
33. The salvage and the protection of all known Aboriginal objects within the Project Boundary will be managed in accordance with the measures described in the PPR, subsequent supporting documents and an approved Aboriginal Cultural Heritage Management Plan for the MCC which has been prepared in consultation with local Aboriginal community stakeholders and the OEH.
Prior to finalisation and approval of the Aboriginal Cultural Heritage Management Plan, the description of significance, development area, potential impacts, management strategies and current management status for all sites in the Stage 2 area will be reviewed by a suitably experienced and qualified archaeologist.</td><td>Section 5 and Appendix D</td></tr>
</table>

NSW Project Approval Condition	HMP Section
34. Unsurveyed areas such as the Powers Management Area will be assessed and managed in accordance with the procedures agreed to with local Aboriginal community stakeholders and approved in the Aboriginal Cultural Heritage Management Plan for the MCC.	Section 5.2~~.2~~
35. MCM will manage the Aboriginal conservation zones as outlined in the PPR and subsequent supporting documents in consultation with local Aboriginal community stakeholders.	Section 5.2~~.2~~
BLASTING ***Operating Conditions*** *14. The Proponent shall:* *...* *b) ensure that blasting on the site does not damage Aboriginal rock shelter sites S2MC232 (AHIMS No. 36-3-1379) or S2MC233 (AHIMS No. 36-3- 1380);*	Section 5.8.3 and Appendix D

1 The detailed investigation into the Aboriginal cultural heritage values of the southern portion of the Dun Dun East biodiversity offset area was completed by a suitably qualified and experienced archaeologist. The investigation was undertaken in consultation with the OEH and RAPs, and the findings were distributed to all RAPs.

APPENDIX B: GLOSSARY OF TERMS AND ABBREVIATIONS

Glossary of Terms

Aboriginal Object	Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales (NSW), being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, including Aboriginal remains (NSW *National Parks and Wildlife Act, 1974* section 5[1]).
Aboriginal Archaeological Site	Location of evidence of Aboriginal occupation (typically, Aboriginal objects, but also places of traditional or historical cultural value for which no Aboriginal objects exist).
Heritage item	An item defined under the NSW *Heritage Act, 1977* and/or an Aboriginal Object or Aboriginal Place as defined under the *National Parks and Wildlife Act, 1974*.
PAD	Potential Archaeological Deposit, archaeological evidence (typically stone artefacts buried within the upper soil unit of rock shelters or in open contexts) predicted to occur in a specific place through application of a predictive model of site location.

Abbreviations

AHIMS	The ~~OEH~~BCD Aboriginal Heritage Information Management System
AMS	Accelerated Mass Spectrometry
AS	Artefact Scatter
BCD	Biodiversity and Conservation Division (Formerly NSW Office of Environment and Heritage)
~~DP&E~~DPIE	NSW Department of Planning Industry and Environment
DGPS	Differential Global Positioning System
HMP	Heritage Management Plan
IF	Isolated Find (Isolated Artefact)
MCO	Moolarben Coal Operations Pty Limited
NP&W	National Parks and Wildlife
OEH	NSW Office of Environment and Heritage (Now BCD)
OSL	Optically Stimulated Luminescence
PAD	Potential Archaeological Deposit
URN	Unique Record Number

APPENDIX C: SUMMARY OF ARCHAEOLOGICAL INVESTIGATIONS AT THE MOOLARBEN COAL COMPLEX

Table C-1: Summary of Archaeological Investigations

Author	Year	Type	Details	Report Title
Hamm	2006a	Survey / EA Assessment	Survey and assessment for MCP Stage 1. 302 Aboriginal sites reported, comprising 219 isolated artefacts, 63 artefact scatters, 18 rock shelters with artefacts and/or art, one scarred tree and one grinding groove site, along with 14 PADs.	*Moolarben Coal Project - Aboriginal Cultural Heritage Assessment Report*
Hamm	2006b	EA Assessment Response	Response to issues raised in relation to the Stage 1 EA Aboriginal heritage assessment.	*Responses to Issues Raised in Respect of the Moolarben Coal Project Aboriginal Cultural Heritage Assessment Report*
Hamm	2008a	Survey / EA Assessment	Survey and assessment for MCP Stage 2. 258 Aboriginal sites (in addition to several previously recorded sites) reported, comprising 102 isolated artefacts and 150 artefact scatters, five rock shelters with artefacts and one grinding groove site, along with 33 PADs.	*Moolarben Coal Project - Aboriginal Cultural Heritage Assessment Report Stage 2*
Hamm	2008b	Management Plan	Aboriginal Heritage Management Plan prepared, only applicable to the Stage 1 Open Cut 1 and Main Infrastructure Area.	*Aboriginal Heritage Plan for MCP Stage 1 Development Areas: Open Cut 1 and Main Infrastructure Area*
Urban Tree Management Australia	2008	Assessment Report on Scarred Tree	Arboricultural assessment of scarred tree S1MC1. Scar determined to be of non- Aboriginal origin.	*Report: Arboricultural Assessment of Scarred Tree ref. (36-3-0798: S1MC1) at Ulan, New South Wales for Moolarben Coal Project Stage 1*
Hamm	2009a	Survey for Modification	Survey and assessment for MCP Stage 1 modification, involving infrastructure area and proposed water-sharing pipeline.	*Aboriginal Cultural Heritage & Archaeological Assessment for Moolarben Coal Project Stage 1* *Infrastructure Area & Proposed Water Sharing Pipeline Modification Project in Support of a Section 75w (2) Approval*
Hamm	2009b	Survey for Modification	Survey and assessment for MCP Stage 1 Northern Borefield Area. Twelve Aboriginal sites were recorded, consisting of three artefact scatters (two with PADs) and seven isolated finds concentrated along a broad spur.	*Aboriginal Cultural Heritage & Archaeological Assessment for Moolarben Coal Project Stage 1 Northern Borefield Area*

Author	Year	Type	Details	Report Title
Hamm	2009c	Summary Report	Executive summary report for Stages 1 and 2.	*Moolarben Coal Project Executive Summary Report*
Coffey Natural Systems	2009	EA Assessment Response	Response to issues raised in relation to the Stage 2 EA Aboriginal heritage assessment.	*Response to Submissions Report - Part A Moolarben Coal Project - Stage 2*
Hamm	2010	Investigation Report	Advice on sites along Murragamba Road in Stage 2, potentially affected by grading works.	*Disturbance Report for Moolarben Coal Project Stage 2*
Hamm and Foley	2010	Salvage Report	Report documenting all the salvage measures undertaken for the Stage 1 OC1 and MIA under the approved AHMP.	*Cultural Heritage Management Report on Moolarben Coal Project Stage 1: Open Cut 1 & Main Infrastructure Area*
Kuskie	2010	Investigation Report	Advice on sites along Murragamba Road in Stage 2, potentially affected by grading works.	*Moolarben Coal Project Stage 2: Aboriginal Heritage Advice on Potential Impacts to Aboriginal Sites*
AECOM	2011a	Preferred Project Report	Reassessment of heritage mitigation and management measures for Stage 2 in relation to modifications to the Stage 2 project design.	*Moolarben Preferred Project Report: Aboriginal Archaeological and Cultural Heritage Addendum*
AECOM	2011b	Collection	Collection of artefacts under Modification 7 to Stage 1 project in preparation for construction of the Northern Borefield.	*Archaeological Collection & Excavation: Northern Borefield, Moolarben Coal Operations, Ulan, NSW*
AECOM	2011c	Due Diligence Assessment	Due diligence assessment, including field inspection, of several proposed exploration boreholes in EL6288.	*Due Diligence Assessment of Proposed Exploration Drill Sites EL6288*
AECOM	2012	Due Diligence Assessment	Due diligence assessment, including field inspection, of several proposed exploration boreholes in EL6288.	*Due Diligence Assessment of Proposed Exploration Drill Sites EL6288*
Hansen Bailey	2012	EA Assessment Response	Response to issues raised in relation to the Stage 2 EA Aboriginal heritage assessment Preferred Project Report.	*Moolarben Coal Project Stage 2 Preferred Project Report Response to Submissions*
Kuskie	2012a	Due Diligence Assessment	Due diligence assessment, including field inspection, of several proposed geotechnical investigation areas in Stage 2 project area.	*Moolarben Coal Project Stage 2 - Preliminary Report on Aboriginal Heritage Survey of Geotechnical Investigation Areas*
Kuskie	2012b	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed realignment of Ulan - Wollar Road and Country Energy powerline in Stage 2 project area.	*Moolarben Coal Project Stage 2 - Preliminary Report on Aboriginal Heritage Survey of Proposed Ulan - Wollar Road and Country Energy 66 kV Powerline Realignment*
Kuskie	2012c	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed Temporary Workers Accommodation facility.	*Moolarben Coal Project: Preliminary Aboriginal Heritage Assessment of Proposed Temporary Workers Accommodation near Ulan, Central Tablelands of New South Wales*

Author	Year	Type	Details	Report Title
Kuskie	2013a	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed drilling areas within Stage 1 Open Cut 2.	*Moolarben Coal Project Stage 1 – Preliminary Report on Aboriginal Heritage Survey of Open Cut 2 Drilling Areas*
Kuskie	2013b	EA Modification Assessment	Survey and assessment for Stage 1 Optimisation Modification.	*Moolarben Coal Project – Stage 1 Optimisation Modification, Near Ulan, Central Tablelands of New South Wales: Aboriginal Cultural Heritage Assessment*
Kuskie	2013c	Investigation Report	Report to support Section 90 application for proposed realignment of Ulan – Wollar Road and Country Energy powerline in Stage 2 project area.	*Moolarben Coal Project Stage 2: Aboriginal Heritage Assessment of Proposed Ulan – Wollar Road and Essential Energy Powerline realignments, Near Ulan, Central Tablelands of New South Wales*
Niche Environment and Heritage	2014a	Proposed EA Modification Assessment	Proposed Modification relating to OC4 South-West Haul Road.	*Moolarben Coal Mine OC4 South-West Modification Aboriginal Cultural Heritage Assessment*
Niche Environment and Heritage	2014b	Proposed EA Modification Assessment	Proposed Modification relating to the optimisation of underground mine 1 operation.	*Moolarben Coal Complex UG1 Optimisation Modification Aboriginal Cultural Heritage Assessment*
AECOM	2014	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed UG4 drill sites.	*Aboriginal archaeological due diligence assessment for Underground 4 (UG4) south drilling works*
AECOM	2015a	Surveys	Survey and assessment of the land adjacent to Open Cut 1 and Open Cut 2 in accordance with Condition 39(c) of the Stage 1 Project Approval (05_0117).	*Aboriginal archaeological due diligence assessment for Moolarben Coal Project Stage 1 Modification 9 Project Approval*
AECOM	2015b	Surveys	Survey and assessment of the land in the vicinity of the proposed Stage 1 ROM Coal Facilities and the northern section of the proposed haul road in accordance with Condition 39(c) of the Stage 1 Project Approval (05_0117).	*Aboriginal archaeological due diligence assessment for Moolarben Coal Project Stage 2 Project Approval*
AECOM	2015c	Investigation Report	Assessment of potential Aboriginal rock shelter sites S1MC345 and S1MC352.	*Assessment of potential Aboriginal rock shelter sites S1MC345 and S1MC352*
Niche Environment and Heritage	2015	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed OC4 Drill sites.	*Paleo A, Paleo B, Paleo C, NW01 and NW02 Exploration Boreholes Aboriginal Objects Due Diligence Assessment*
Kuskie	2015a	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed Murragamba road realignment.	*Preliminary report on Aboriginal heritage survey of proposed Murragamba road realignment*
AECOM	2015d	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed UG1 drill sites.	*Aboriginal archaeological due diligence assessment for the Southern RIM Area drilling program*

Author	Year	Type	Details	Report Title
AECOM	2015e	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed OC4 drill sites.	*Aboriginal archaeological due diligence assessment for six boreholes and associated access tracks in Open Cut 4 (OC4)*
AECOM	2015f	Due Diligence Assessment	Due diligence assessment, including field inspection, of the approved stage 2 conveyor trace.	*Aboriginal archaeological due diligence assessment for the proposed Stage 2 coal conveyor*
AECOM	2015d	Due Diligence Assessment	Due diligence assessment, including field inspection, of proposed UG1 drill sites.	*Aboriginal archaeological due diligence assessment for the Northern RIM Area drilling program*
Kuskie	2015b	Salvage Report	Report documenting all the salvage measures undertaken for the Stage 1 OC2 under the approved AHMP.	*Stage 1 Open Cut 2 – Report on additional Aboriginal heritage survey and salvage*
Niche Environment and Heritage	2016a	Due Diligence Assessment	Survey and assessment of the land in accordance with condition 43, Schedule 3 of the Stage 2 Project Approval (08_0135).	*Dun Dun East Biodiversity Offset Area, Hargraves, NSW Aboriginal Cultural Heritage Values Assessment*
Niche Environment and Heritage	2016b	Due Diligence Assessment	Due diligence assessment, including field inspection, of fire trail near UG4.	*Moolarben Coal Complex – Fire Trail Aboriginal objects due diligence assessment*
Niche Environment and Heritage	2016c	Due Diligence Assessment	Due diligence assessment, including field inspection, for the proposed relocation of Telstra services.	*Moolarben Coal Complex – Relocation of Telstra services Aboriginal heritage pre-surface disturbance survey*
Niche Environment and Heritage	2016d	Annual audit	Due diligence assessment, including field inspection, for the fencing of the Aboriginal cultural heritage conservation area.	*Aboriginal Cultural Heritage Conservation Fence Aboriginal Heritage Survey and Assessment March 2016*
Niche Environment and Heritage	2016e	Surveys	Survey and assessment of land above the approved UG1 Longwalls 101 to 103 as part of the preparation of the UG1 Longwalls 101 to 103 Extraction Plan.	*Moolarben Coal Complex Longwalls 101 – 103 Aboriginal Heritage Survey Report June 2016*
Niche Environment and Heritage	2016f	Due Diligence Assessment	Due diligence assessment, including field inspections of proposed OC3 drill sites.	*Moolarben Coal Complex – Open Cut 3, Mining Lease Drilling Programme, Aboriginal Cultural Heritage Survey July 2016*
Niche Environment and Heritage	2016g	Due Diligence Assessment	Due diligence assessment, including field inspections of proposed OC4 drill sites.	*Moolarben Coal Complex – Open Cut 4 Mining Lease Drilling Programme, Aboriginal Cultural Heritage Survey Assessment July 2016*
Niche Environment and Heritage	2016h	Due Diligence Assessment	Due diligence assessment, including field inspections of proposed UG4 drill sites.	*Moolarben Coal Complex – Under Ground 4 Drilling Programme, Aboriginal Cultural Heritage Survey Assessment September 2016*

Niche Environment and Heritage	2016i	Due Diligence Assessment	Due diligence assessment, including field inspections of proposed OC3 drill sites.	*Moolarben Coal Complex – Open Cut 3 Exploration Lease Drilling Programme, Aboriginal Cultural Heritage Survey Assessment October 2016*
Niche Environment and Heritage	2017a	Extraction Plan Assessment	Describes the management for Aboriginal Cultural Heritage sites during the secondary extraction from UG1 Longwalls 101 to 103.	*Moolarben Coal UG1 Longwalls 101-103 Extraction Plan Aboriginal Cultural Heritage Technical Report*
Niche Environment and Heritage	2017b	Due Diligence Assessment	Due diligence work, including field inspections, for OC3 LOX lines and additional access lines.	*OC3 LOX Lines and Access Tracks, Extra Access Lines Aboriginal Heritage Assessment October 2017.*
Niche Environment and Heritage	2017c	Due Diligence Assessment	Due diligence work, including field inspections drill sites.	*Moolarben Coal Complex – Exploration Drilling Programme, Aboriginal Cultural Heritage Due Diligence Survey February 2017*
Niche Environment and Heritage	2017d	Proposed EA Modification Assessment	Proposed Modification in relation to the optimisation of open cuts operations.	*Moolarben Coal Complex Open Cut Optimisation Modification Aboriginal Cultural Heritage Assessment*
Niche Environment and Heritage	2017e	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in ML1715.	*Moolarben Coal Complex – Exploration Drilling Program ML1715, Aboriginal Cultural Heritage Survey Assessment October 2017*
Niche Environment and Heritage	2017f	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in EL6288 East.	*Moolarben Coal Complex – Exploration Drilling Program EL6288 East, Aboriginal Cultural Heritage Survey Assessment October 2017*
Niche Environment and Heritage	2017g	Salvage Report	Report documenting the salvage of site S1MC254	*Moolarben Coal Complex – Salvage of Aboriginal site S1MC254 (AHIMS ID 3-3-1069), Northern Borefields Area of Stage 1.*
Niche Environment and Heritage	2018a	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in ML 1715.	*Moolarben Coal Complex – Exploration Drilling Program ML 1751, Aboriginal Cultural Heritage Survey Assessment January 2018*
Niche Environment and Heritage	2018b	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in ML 1691.	*Moolarben Coal Complex – Exploration Drilling Program ML 1691, Aboriginal Cultural Heritage Survey Assessment February 2018*
Niche Environment and Heritage	2018c	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in EL6288.	*Moolarben Coal Complex – Exploration Drilling Program EL 6288, Aboriginal Cultural Heritage Survey Assessment February 2018*

Niche Environment and Heritage	2018d	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in EL7073.	*Moolarben Coal Complex – Exploration Drilling Program EL 7073, Aboriginal Cultural Heritage Survey Assessment February 2018*
Niche Environment and Heritage	2018e	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in EL6288.	*Moolarben Coal Complex – Exploration Drilling Program EL6288, Aboriginal Cultural Heritage Survey Assessment May 2018*
Niche Environment and Heritage	2018f	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in ML 1715.	*Moolarben Coal Complex – Exploration Drilling Program ML 1751, Aboriginal Cultural Heritage Survey Assessment May 2018*
Niche Environment and Heritage	2018g	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in UG2 ML 1691 and ML 1715.	*Moolarben Coal Complex – Exploration Drilling Program UG2 ML 1691 and ML 1715., Aboriginal Cultural Heritage Survey Assessment May 2018*
Niche Environment and Heritage	2018h	Due Diligence Assessment	Due diligence work, including field inspections, drill sites in ML 1691.	*Moolarben Coal Complex – Exploration Drilling Program ML 1691, Aboriginal Cultural Heritage Survey Assessment June 2018*
Niche Environment and Heritage	2018i	Survey	Survey and assessment of lands associated with disturbance for OC4	*Moolarben Coal Complex – Open Cut 4 additional survey of unsurveyed areas – Clearance Report September 2018*

APPENDIX D: SUMMARY OF MANAGEMENT COMMITMENTS FOR ABORIGINAL ARCHAEOLOGICAL SITES AT THE MOOLARBEN COAL COMPLEX

Table D-1: Summary of Management Commitments for Aboriginal Archaeological Sites at the Moolarben Coal Complex Sorted by Location and Proposed Impact

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
1INFimp	Stage 1 Infrastructure	Surface Collection of Artefacts (Section 5.5.3)	Direct impact	36-3-1142	S1MC305++	Artefact Scatter	Low
				36-3-1480	Ulan ID #87	Open Artefact Site	Low
AIZ	Moolarben Coal Complex Ancillary Infrastructure Zone	Ground Disturbance Permit Process (Section 5.8.2)	No scheduled impact	36-3-0691	CE-15-IF	Isolated Find	Low
				36-3-0695	CE-19-OS	Open Artefact Site	Low
				36-3-0353	Evaporation Pond 2	Artefact Scatter	
				36-3-0863	S1MC058	Artefact Scatter	Low
				36-3-0865	S1MC060	Artefact Scatter	Low
				36-3-0866	S1MC061	Isolated Find	Low
				36-3-0867	S1MC062	Isolated Find	Low
				36-3-0868	S1MC063	Isolated Find	Low
				36-3-0869	S1MC064	Isolated Find	Low
				36-3-0870	S1MC065	Isolated Find	Low
				36-3-0871	S1MC066	Artefact Scatter	Low
				36-3-0872	S1MC067	Artefact Scatter	Moderate
				36-3-0879	S1MC074	Isolated Find	Low
				36-3-0880	S1MC075	Isolated Find	Low
				36-3-0881	S1MC076	Isolated Find	Low
				36-3-0882	S1MC077	Isolated Find	Low
				36-3-0939	S1MC130	Artefact Scatter	Low
				36-3-0940	S1MC131	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-0945	S1MC136	Artefact Scatter	Low
				36-3-0946	S1MC137	Isolated Find	Low
				36-3-0947	S1MC138	Isolated Find	Low
				36-3-1146	S1MC309	Isolated Find	Low
				36-3-1137	S1MC310	Isolated Find	
				36-3-3304	S1MC356b	Isolated Find	
				36-3-2985	S1MC386	PAD	Uncertain
				36-3-2987	S1MC388	Artefact Scatter	
				36-3-2988	S1MC389	Artefact Scatter	
				36-3-3302	S1MC406^	Open Artefact Site	Low
				36-3-3300	S1MC407^	Open Artefact Site	Low
				36-3-3301	S1MC408^	Rockshelter with PAD	Low
				36-3-3129	S1MC410	Open Site/Isolated Find	Low
				36-3-3277	S1MC415	Open Artefact Site and PAD	Low
				36-3-3140	S1MC416	Isolated Find	Low
				36-3-3139	S1MC417	Isolated Find	Low
				36-3-3138	S1MC418	Isolated Find	Low
				36-3-3137	S1MC419	Open Artefact Site	Low
				36-3-3278	S1MC420	Isolated Find	Low
				36-3-3279	S1MC421	Open Artefact Site	Low
				36-3-3280	S1MC422	Rockshelter with Artefacts and PAD	Moderate
				36-3-3264	S1MC423	Open Artefact Site	Low
				36-3-3125	S1MC424	Artefact scatter	Low
				36-3-3124	S1MC425	Artefact scatter	Low
				36-3-3123	S1MC426	Isolated find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-3216	S1MC428	Artefact Scatter (100+)	Moderate
				36-3-3217	S1MC429	Isolated Find	Low
				36-3-3213	S1MC430	Artefact Scatter (18)	Moderate
				36-3-3212	S1MC431	Isolated Find	Low
				Pending	S1MC438	Isolated find	Low
				Pending	S1MC439	Artefact Scatter	Low
				Pending	S1MC440	Artefact Scatter	Low
				Pending	S1MC441	Artefact Scatter	Low
				Pending	S1MC457	Artefact scatter	Low
				Pending	S1MC458	Artefact scatter	Low
				Pending	S1MC459	Isolated find	Low
				36-3-1152	S2MC003	Artefact Scatter	Low
				36-3-1153	S2MC004	Isolated Find	Low
				36-3-1156	S2MC007	Isolated Find	Low
				36-3-1157	S2MC008	Isolated Find	Low
				36-3-1158	S2MC009	Isolated Find	Low
				36-3-1159	S2MC010	Artefact Scatter	Low
				36-3-1160	S2MC011	Isolated Find	Low
				36-3-1161	S2MC012	Isolated Find	Low
				36-3-1163	S2MC014	Artefact Scatter	Moderate
				36-3-1164	S2MC015	Artefact Scatter	Moderate
				36-3-1220+++	S2MC073	Isolated Find	Low
				36-3-1221+++	S2MC075	Isolated Find	Low
				36-3-1223	S2MC077	Artefact Scatter	Low
				36-3-1235	S2MC089	Artefact Scatter	Moderate

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1243	S2MC097	Artefact Scatter	Low
				36-3-1246	S2MC100	Artefact Scatter	Low
				36-3-1261	S2MC115	Isolated Find	Low
				36-3-1262	S2MC116	Artefact Scatter	Low
				36-3-1316	S2MC170	Artefact Scatter	Low
				36-3-1321	S2MC175	Isolated Find	Low
				36-3-1375	S2MC228	Artefact Scatter	Low
				36-3-1381	S2MC234	Artefact Scatter	Low
				36-3-1382	S2MC237	Isolated Find	Low
				36-3-1383	S2MC238	Artefact Scatter	High
				36-3-1384	S2MC239	Artefact Scatter	Low
				36-3-1391	S2MC246	Isolated Find	Low
				36-3-1392	S2MC247	Artefact Scatter	Low
				36-3-1393	S2MC248	Artefact Scatter	Low
				36-3-1394	S2MC249	Artefact Scatter	Low
				36-3-1395	S2MC250	Artefact Scatter and PAD	Moderate
				36-3-1396	S2MC251	Artefact Scatter and PAD	Moderate
				36-3-1397	S2MC252	Isolated Find	Low
				36-3-1398	S2MC253	Isolated Find	Low
				36-3-1399	S2MC254	Isolated Find	Low
				36-3-1400	S2MC255	Isolated Find	Low
				36-3-2603	S2MC263	Artefact Scatter	Uncertain
				36-3-3058	S2MC319	Isolated find	
				36-3-3041	S2MC324	Isolated Find	
				36-3-3038	S2MC325	Isolated Find	

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-3027	S2MC347	Rockshelter with Artefact Scatter and PAD	Low
				36-3-3028	S2MC348	Rockshelter with PAD	
				36-3-3029	S2MC349	Rockshelter with PAD	
				36-3-3030	S2MC350	Rockshelter with PAD	
				36-3-3031	S2MC351	Rockshelter with Isolated Artefact	Low
				36-3-3043	S2MC353	Isolated Artefact	Low
				36-3-3040	S2MC356	Artefact Scatter	Low
				36-3-3215	S2MC398	Artefact Scatter (3)	Low
				36-3-3225	S2MC401	Artefact Scatter (10)	Low
				36-3-3221	S2MC405	Artefact Scatter (5)	Low
				36-3-3220	S2MC406	Isolated Find	Low
				36-3-3219	S2MC407	Artefact Scatter (2)	Low
				36-3-3218	S2MC408	Rock Shelter with PAD	Low
				36-3-0063	Ulan Creek Site 21	Artefact Scatter	Uncertain
				36-3-1479	Ulan ID #86	Open Artefact Site	Low
				36-3-1481	Ulan ID #88	Isolated Find	Uncertain
				36-3-2506	Ulan ID#1405 (Moolarben Ck 1)	Artefact Scatter	Uncertain
				36-3-2507	Ulan ID#1406 (Moolarben Ck 2)	Artefact Scatter	Uncertain
				36-3-2519	Ulan ID#1407 (Moolarben Ck 3)	Artefact Scatter	Uncertain
				36-3-0658	WC OS 17 with PAD	Open Artefact Site	Moderate
				36-3-0657	WC OS 18	Open Artefact Site	Low
				36-3-1136	WC OS 21 (Wollar)	Open Artefact Site	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1415	S1MC321 (NB9)	Open Artefact Site with or without PAD	
AIZblast	Moolarben Coal Complex Ancillary Infrastructure Zone	Rock shelter sites with potential for subsidence will be subject to a comprehensive monitoring regime (Section 5.9.1) Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6)	Potential indirect impact from subsidence and/or blasting	36-3-1380	S2MC233	Rock Shelter with Artefacts	Low
AIZcons	Moolarben Coal Complex Ancillary Infrastructure Zone	In situ conservation	In situ conservation	36-3-0113	PAD 7 Moolarben Coal	PAD	
				36-3-0815	S1MC018	Isolated Find	Low
				36-3-0816	S1MC019	Isolated Find	Low
				36-3-0817	S1MC020	Isolated Find	Low
				36-3-0818	S1MC021	Isolated Find	Low
				36-3-0819	S1MC022	Isolated Find	Low
				36-3-0820	S1MC023	Isolated Find	Low
				36-3-0823	S1MC026	Isolated Find	Low
				36-3-0824	S1MC027	Isolated Find	Low
				36-3-0825	S1MC028	Isolated Find	Low
				36-3-0826	S1MC029	Isolated Find	Low
				36-3-0873	S1MC068	Isolated Find	Low
				36-3-0874	S1MC069	Isolated Find	Low
				36-3-0875	S1MC070	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-0876	S1MC071	Isolated Find	Low
				36-3-0877	S1MC072	Isolated Find	Low
				36-3-0878	S1MC073	Isolated Find	Low
				36-3-0912	S1MC103	Artefact Scatter	High
				36-3-0913	S1MC104	Artefact Scatter	Low
				36-3-0914	S1MC105	Isolated Find	Low
				36-3-0915	S1MC106	Isolated Find	Low
				36-3-0916	S1MC107	Isolated Find	Low
				36-3-0917	S1MC108	Isolated Find	Low
				36-3-0918	S1MC109	Isolated Find	Low
				36-3-0919	S1MC110	Isolated Find	Low
				36-3-0920	S1MC111	Isolated Find	Low
				36-3-0921	S1MC112	Isolated Find	Low
				36-3-0922	S1MC113	Isolated Find	Low
				36-3-0923	S1MC114	Isolated Find	Low
				36-3-0924	S1MC115	Isolated Find	Low
				36-3-0925	S1MC116	Isolated Find	Low
				36-3-0926	S1MC117	Isolated Find	Low
				36-3-0927	S1MC118	Isolated Find	Low
				36-3-0928	S1MC119	Isolated Find	Low
				36-3-0929	S1MC120	Isolated Find	Low
				36-3-0930	S1MC121	Isolated Find	Low
				36-3-0931	S1MC122	Isolated Find	Low
				36-3-0932	S1MC123	Isolated Find	Low
				36-3-0933	S1MC124	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-0934	S1MC125	Isolated Find	Low
				36-3-0935	S1MC126	Isolated Find	Low
				36-3-0936	S1MC127	Isolated Find	Low
				36-3-0937	S1MC128	Isolated Find	Low
				36-3-0938	S1MC129	Isolated Find	Low
				36-3-0941	S1MC132	Artefact Scatter	Low
				36-3-0942	S1MC133	Artefact Scatter	Low
				36-3-0943	S1MC134	Isolated Find	Low
				36-3-0944	S1MC135	Artefact Scatter	Low
				36-3-1029	S1MC213	Isolated Find	Low
				36-3-1072	S1MC257	Artefact Scatter	Low
				36-3-1073	S1MC258	Artefact Scatter	Low
				36-3-1074	S1MC259	Isolated Find	Low
				36-3-1075	S1MC260	Isolated Find	Low
				36-3-1077	S1MC262	Isolated Find	Low
				36-3-1078	S1MC263	Isolated Find	Low
				36-3-1080	S1MC265	Artefact Scatter	Low
				36-3-1081	S1MC266	Isolated Find	Low
				36-3-1083	S1MC268	Isolated Find	Low
				36-3-1084	S1MC269	Isolated Find	Low
				36-3-1087	S1MC272	Artefact Scatter	Low
				36-3-1088	S1MC273	Isolated Find	Low
				36-3-1089	S1MC274	Isolated Find	Low
				36-3-1090	S1MC275	Isolated Find	Low
				36-3-1091	S1MC276	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1092	S1MC277	Isolated Find	Low
				36-3-1093	S1MC278	Isolated Find	Low
				36-3-1094	S1MC279	Isolated Find	Low
				36-3-1416	S1MC322 (NB10)	Artefact Scatter and PAD	Moderate
				36-3-1401	S2MC256	Artefact Scatter	Low
				36-3-1402	S2MC257	Isolated Find	Low
				36-3-1403	S2MC258	Artefact Scatter and PAD	Moderate
				36-3-1404	S2MC259	Isolated Find	Low
AIZFence	Moolarben Coal Complex Ancillary Infrastructure Zone	Fencing monitoring (Section 5.8.4)	No scheduled impact with previous commitment to fence	36-3-0693	CE-17-OS	Open Artefact Site	Low
				36-3-0694	CE-18-OS	Open Artefact Site	Low
				36-3-0696	CE-20-OS	Open Artefact Site	Low
				36-3-0697	CE-21-OS	Open Artefact Site	Low
				36-3-0698	CE-22-OS	Open Artefact Site	Low
BCMA	Bora Creek Management Area	Restrict access to conservation area maintained by fencing, locks, signage and site communication protocols (Section 5.2.1) Fence monitoring (Section 5.8.4)	No scheduled impact	36-3-1140	S1MC303	Artefact Scatter	Low
				36-3-1141	S1MC304	Artefact Scatter	Low
MCMA	Murragamba Creek Management Area	Restrict access to conservation area (Section 5.2.1) Fence monitoring (Section 5.8.4)	No scheduled impact	36-3-0237	MC11	Open Artefact Site	Moderate
				36-3-1199	S2MC054	Artefact Scatter	High
				36-3-1200	S2MC055	Artefact Scatter	Low
				36-3-1201	S2MC056	Artefact Scatter	Moderate

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1202	S2MC057	Artefact Scatter	Moderate
				36-3-1203	S2MC058	Artefact Scatter	Moderate
				36-3-1204	S2MC059	Artefact Scatter	Low
				36-3-1206	S2MC059b	Isolated Find	Low
				36-3-1207	S2MC060	Isolated Find	Low
				36-3-1208	S2MC061	Artefact Scatter	Moderate
				36-3-1209	S2MC062	Artefact Scatter	High
				36-3-1210	S2MC063	Artefact Scatter	High
				36-3-1211	S2MC064	Artefact Scatter	High
				36-3-1212	S2MC065	Artefact Scatter	Low
				36-3-1213	S2MC066	Isolated Find	Low
				36-3-1214	S2MC067	Artefact Scatter	Low
				36-3-1215	S2MC068	Isolated Find	Low
				36-3-1216	S2MC069	Isolated Find	Low
				36-3-1217	S2MC070	Artefact Scatter	Low
				36-3-1218	S2MC071	Artefact Scatter	Low
				36-3-1228	S2MC082	Artefact Scatter	Low
				36-3-1229	S2MC083	Isolated Find	Low
				36-3-1230	S2MC084	Isolated Find	Low
				36-3-1231	S2MC085	Isolated Find	Low
				36-3-1232	S2MC086	Artefact Scatter	Low
				36-3-1233	S2MC087	Artefact Scatter	Low
				36-3-1234	S2MC088	Artefact Scatter	Low
				36-3-1244	S2MC098	Isolated Find	Low
				36-3-1245	S2MC099	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1247	S2MC101	Artefact Scatter	Low
				36-3-1248	S2MC102	Isolated Find	Low
				36-3-1249	S2MC103	Isolated Find	Low
				36-3-1250	S2MC104	Artefact Scatter	Low
				36-3-1251	S2MC105	Isolated Find	Low
				36-3-1252	S2MC106	Isolated Find	Low
				36-3-1379	S2MC232	Rock Shelter with Artefacts	Low
				36-3-1406	S2MC261a	Grinding Grooves and Isolated Find	High
				36-3-3318	S2MC262b	Isolated Find	Low
OC1imp	Open Cut 1	Surface collection of artefacts (Section 5.5.3)	Direct impact	36-3-2974	S1MC375	Artefact Scatter	Low
OC3imp	Open Cut 3	Surface collection of artefacts (Section 5.5.3)	Direct impact	36-3-0903	S1MC095	Isolated Find	Low
				36-3-0904	S1MC096	Isolated Find	Low
				36-3-0905	S1MC097	Isolated Find	Low
				36-3-0906	S1MC098	Isolated Find	Low
				36-3-0907	S1MC099	Isolated Find	Low
				36-3-0908	S1MC100	Isolated Find	Low
				36-3-0909	S1MC101	Isolated Find	Low
				36-3-0911	S1MC103a	Artefact Scatter	Low
				36-3-3282	S1MC412	Isolated Find	Low
				36-3-3315	S1MC435	Isolated Find	Low
				Pending	S1MC449	Artefact scatter	Low
OC4imp	Open Cut 4		Direct impact	36-3-0690	CE-14-OS	Open Artefact Site	Low
				36-3-1263	S2MC117	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
		Surface collection of artefacts (Section 5.5.3)		36-3-1264	S2MC118	Isolated Find	Low
				36-3-1266	S2MC120	Isolated Find	Low
				36-3-1267	S2MC121	Isolated Find	Low
				36-3-1271	S2MC125	Artefact Scatter	Moderate
				36-3-1274	S2MC128	Artefact Scatter	Low
				36-3-1275	S2MC129	Artefact Scatter	Low
				36-3-1276	S2MC130	Artefact Scatter	Low
				36-3-1277	S2MC131	Isolated Find	Low
				36-3-1278	S2MC132	Artefact Scatter	Low
				36-3-1279	S2MC133	Artefact Scatter	Low
				36-3-1280	S2MC134	Artefact Scatter	Low
				36-3-1281	S2MC135	Artefact Scatter	Low
				36-3-1282	S2MC136	Isolated Find	Low
				36-3-1283	S2MC137	Isolated Find	Low
				36-3-1284	S2MC138	Isolated Find	Low
				36-3-1285	S2MC139	Isolated Find	Low
				36-3-1286	S2MC140	Artefact Scatter	Low
				36-3-1287	S2MC141	Artefact Scatter	Low
				36-3-1288	S2MC142	Isolated Find	Low
				36-3-1289	S2MC143	Isolated Find	Low
				36-3-1290	S2MC144	Isolated Find	Low
				36-3-1291	S2MC145	Artefact Scatter	Low
				36-3-1292	S2MC146	Artefact Scatter	Low
				36-3-1293	S2MC147	Isolated Find	Low
				36-3-1306	S2MC160	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1307	S2MC161	Artefact Scatter	Low
				36-3-1308	S2MC162	Artefact Scatter	Low
				36-3-1309	S2MC163	Artefact Scatter	Low
				36-3-1310	S2MC164	Isolated Find	Low
				36-3-1311	S2MC165	Artefact Scatter	Low
				36-3-1312	S2MC166	Isolated Find	Low
				36-3-1313	S2MC167	Isolated Find	Low
				36-3-1314	S2MC168	Artefact Scatter	Low
				36-3-1315	S2MC169	Isolated Find	Low
				36-3-1317	S2MC171	Artefact Scatter	Low
				36-3-1318	S2MC172	Artefact Scatter	Low
				36-3-1319	S2MC173	Isolated Find	Low
				36-3-1320	S2MC174	Isolated Find	Low
				36-3-2655	S2MC268	Isolated Find	Uncertain
				36-3-3266	S2MC278	Artefact Scatter	Low
				36-3-3267	S2MC279	Artefact Scatter	Low
				36-3-3037	S2MC352	Artefact Scatter	Low
				36-3-3214	S2MC399	Artefact Scatter (5)	Low
				36-3-3307	S2MC409	Artefact Scatter	Low
				36-3-3308	S2MC410	Isolated Find	Low
				36-3-3418	S2MC423	Isolated Find	Low
				36-3-3420	S2MC424	Isolated Find	Low
				36-3-3421	S2MC425	Artefact Scatter (4)	Low
				36-3-3419	S2MC426	Isolated Find	Low
				36-3-3422	S2MC427	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-3423	S2MC428	Isolated Find	Low
				36-3-3424	S2MC429	Isolated find	Low
				36-3-3427	S2MC430	Isolated find	Low
				36-3-3425	S2MC431	Artefact Scatter (2)	Low
				36-3-3426	S2MC432	Artefact Scatter (7)	Low
OC4test	Open Cut 4	Surface collection of artefacts (Section 5.5.3) Initial subsurface testing to determine nature, extent and scientific significance of sites (Section 5.6.1) If assessed as high scientific significance, controlled salvage excavation will be undertaken (Section 5.6.2)	Direct impact	36-3-1265	S2MC119	Artefact Scatter	Low
				36-3-1268	S2MC122	Artefact Scatter	Low
				36-3-1269	S2MC123	Artefact Scatter	High
				36-3-1270	S2MC124	Artefact Scatter	High
				36-3-1272	S2MC126	Artefact Scatter	Low
				36-3-1304	S2MC158	Artefact Scatter	Low
				36-3-1305	S2MC159	Artefact Scatter	Low
PCA	Power Conservation Area	Restrict access to conservation area (Section 5.2.1) Fence monitoring (Section 5.8.4)	Conservation	36-3-1294	S2MC148	Artefact Scatter	Low
				36-3-1295	S2MC149	Isolated Find	Low
				36-3-1296	S2MC150	Artefact Scatter	Moderate
				36-3-1297	S2MC151	Grinding Grooves and Artefact Scatter	High
				36-3-1298	S2MC152	Artefact Scatter	Low
				36-3-1299	S2MC153	Artefact Scatter	Low
				36-3-1300	S2MC154	Artefact Scatter	Moderate
				36-3-1301	S2MC155	Isolated Find	Low
				36-3-1302	S2MC156	Artefact Scatter	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1303	S2MC157	Artefact Scatter	Low
				36-3-3098	S2MC358	Grinding Grooves	Moderate
				36-3-3097	S2MC359	Artefact Scatter	Low
				36-3-3096	S2MC360	Isolated find	Low
				36-3-3094	S2MC361	Shelter with PAD and artefact scatter	High
				36-3-3095	S2MC362	Shelter with PAD	Moderate
RHCA	Red Hills Conservation Area	Restrict access to conservation area (Section 5.2.1) Fence monitoring (Section 5.8.4)	Conservation	36-3-3128	S1MC411	Open Site/Isolated Find	Low
				36-3-1341	S2MC195	Artefact Scatter	Low
				36-3-1342	S2MC196	Artefact Scatter	Low
				36-3-1343	S2MC197	Artefact Scatter	Low
				36-3-1344	S2MC198	Artefact Scatter	Low
				36-3-1345	S2MC199	Artefact Scatter	Low
				36-3-1346	S2MC200	Artefact Scatter	High
				36-3-1347, 36-3-1348	S2MC201	Artefact Scatter	High
				36-3-1349	S2MC202	Artefact Scatter	Low
				36-3-1350	S2MC203	Artefact Scatter	Low
				36-3-1351	S2MC204	Artefact Scatter	Low
				36-3-1352	S2MC205	Artefact Scatter	Low
				36-3-1353	S2MC206	Artefact Scatter	Low
				36-3-1354	S2MC207	Artefact Scatter	High
				36-3-1355	S2MC208	Artefact Scatter	Moderate
				36-3-1356	S2MC209	Artefact Scatter	Moderate
				36-3-1357	S2MC210	Artefact Scatter	Low
				36-3-1358	S2MC211	Isolated Find	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1359	S2MC212	Artefact Scatter	Low
				36-3-1360	S2MC213	Isolated Find	Low
				36-3-1361	S2MC214	Isolated Find	Low
				36-3-1362	S2MC215	Artefact Scatter	Low
				36-3-1363	S2MC216	Artefact Scatter	Moderate
				36-3-1364	S2MC217	Artefact Scatter	Low
				36-3-1368	S2MC221	Isolated Find	Low
				36-3-1369	S2MC222	Artefact Scatter	Moderate
				36-3-1370	S2MC223	Isolated Find	Low
				36-3-1371	S2MC224	Isolated Find	Low
				36-3-1372	S2MC225	Artefact Scatter	Low
				36-3-1373	S2MC226	Artefact Scatter	Moderate
				36-3-1374	S2MC227	Artefact Scatter	Moderate
				36-3-1385	S2MC240	Artefact Scatter	Low
				36-3-1386	S2MC241	Artefact Scatter	Low
				36-3-1387	S2MC242	Isolated Find	Low
				36-3-1388	S2MC243	Isolated Find	Low
				36-3-1389	S2MC244	Isolated Find	Low
				36-3-1390	S2MC245	Isolated Find	Low
				36-3-0720; 36-3-0287	WC1 - Wilpinjong Creek 1	Open Artefact Site	Moderate

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
RSMA	Underground 2 Rock shelter Management Area	Rock shelter will be subject to a comprehensive subsidence monitoring regime (Section 5.9.1) Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6)	Potential indirect impacts from subsidence and/or blasting.	36-3-0016 & 36-3-0134	S2MC236	Rock Shelters with Art and Artefacts	High
UG1ind	Underground 1	Monitoring and management in accordance with the Longwall 101-105 Extraction Plan Heritage Management Plan.	Potential indirect impacts from subsidence and/or blasting.	36-3-1154	S2MC005	Artefact Scatter	Low
				36-3-0837	PAD 1 Moolarben Coal	Rock Shelter and PAD	Low
				36-3-0838	PAD 2 Moolarben Coal	Artefact Scatter and PAD	Low
				36-3-TBA	S2MC433	Shelter with PAD	Low
				36-3-0839	PAD 3 Moolarben Coal	Artefact Scatter and PAD	Low
				36-3-TBA	S2MC434	Shelter with Artefact	Low
				36-3-TBA	S2MC435	Shelter with Artefacts	Medium
UG2ind	Underground 2	Rock shelter sites and PAD sites with potential for subsidence impacts will be subject to a comprehensive monitoring regime (Section 5.9.1) Determine likely impact of subsidence (Section 5.9.1) and, if required, undertaken	Potential indirect impacts from subsidence and/or blasting.	36-3-0956	PAD 10 Moolarben Coal	PAD	Low
				36-3-0957	PAD 11 Moolarben Coal	PAD	Low
				36-3-0883	PAD 4 Moolarben Coal	PAD	Low
				36-3-0884	PAD 5 Moolarben Coal	PAD	Low
				36-3-0954	PAD 8 Moolarben Coal	Artefact Scatter and PAD	Low
				36-3-0955	PAD 9 Moolarben Coal	PAD	Low
				36-3-0859	S1MC054	Artefact Scatter	Low
				36-3-0860	S1MC055	Rock Shelter with Artefacts	Low
				36-3-0861	S1MC056	Rock Shelter with Artefacts	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
		test excavation (Section 5.6) Determine likely impact of blasting (Section 5.8.3) and, if required, undertake archaeological excavation (Section 5.6)		36-3-0862	S1MC057	Artefact Scatter	Low
				36-3-0864	S1MC059	Artefact Scatter	Low
				36-3-3309	S1MC409	Rockshelter with PAD	Low
				Pending	S2MC411	Artefact Scatter (11)	Low
				Pending	S2MC412	Isolated Find	Low
				Pending	S2MC413	Isolated Find	Low
				Pending	S2MC414	Isolated Find	Low
				Pending	S2MC415	Isolated Find	Low
				Pending	S2MC416	Artefact Scatter (3)	Low
				Pending	S2MC417	Artefact Scatter (26)	Low
				Pending	S2MC418	Isolated Find	Low
				Pending	S2MC419	Artefact Scatter (2)	Low
				Pending	S2MC420	Artefact Scatter (6)	Low
UG4ind	Underground 4	Rock shelter sites with potential for subsidence will be subject to monitoring (Section 5.9.1)	Potential indirect impacts from subsidence and/or blasting.	36-3-0068	Bobadeen	Rock Shelter with Art	
				36-3-0008	Curra Creek; Goulburn River	Grinding Grooves	
				36-3-1071	S1MC256	Artefact Scatter	Low
				36-3-1076	S1MC261	Rock Shelter with Artefacts	Moderate - High
				36-3-1079	S1MC264	Grinding Grooves and Artefact Scatter	High
				36-3-1082	S1MC267	Rock Shelter with Artefacts	Moderate
				36-3-1085	S1MC270	Isolated Find	Low
				36-3-1086	S1MC271	Rock Shelter with Artefacts	Moderate
				36-3-0042	S1MC280; Ulan Creek 2	Rock Shelter with Artefacts and Grinding Grooves	High
				36-3-1095	S1MC281	Artefact Scatter	Low

Category**	Moolarben Coal Complex Area	Management Response	Proposed Impact	AHIMS	Site Name	Site Type	Significance
				36-3-1096	S1MC282	Artefact Scatter	High
				36-3-0098	S1MC283	Rock Shelter with Artefacts	High
				36-3-1098	S1MC284	Rock Shelter with Artefacts	Moderate
				36-3-1099	S1MC285	Rock Shelter with Artefacts	Low
				36-3-1100	S1MC286	Rock Shelter with Artefacts	High
				36-3-1101	S1MC287	Rock Shelter with Artefacts	High
				36-3-1102	S1MC288	Rock Shelter with Artefacts	Low
				36-3-1103	S1MC289	Rock Shelter with Artefacts	Low
				36-3-1104	S1MC290	Rock Shelter with Artefacts	Low
				36-3-1105	S1MC291	Isolated Find	Low
				36-3-1106	S1MC292	Isolated Find	Low
				36-3-1107	S1MC293	Isolated Find	Low
				36-3-1108	S1MC294	Rock Shelter with Artefacts	Low
				36-3-1109	S1MC295	Isolated Find	Low
				36-3-1110	S1MC296	Rock Shelter with Artefacts	Low
				36-3-1111	S1MC297	Rock Shelter with Artefacts	Low
				36-3-2662	S1MC357	Artefact Scatter	Low
				36-3-3305	S1MC358b	Rock shelter with PAD	
				36-3-3236	S1MC432	Open Artefact Site	Low
				36-3-3306	S1MC433	Isolated Find	Low
				36-3-3316	S1MC434	Isolated Find	Low

++ Although this site is located outside of the Bora Creek Management Area, a portion of the site extends into the conservation area. Accordingly, the portion of this site within the Bora Creek Management Area should remain in situ and should not be subject to surface collection.

+++ Although this site is located outside of the Murragamba Creek Management Area, a portion of the site extends into the conservation area. Accordingly, the portion of this site within the Murragamba Creek Management Area should remain in situ and should not be subject to surface collection.

^ This site was recorded during further archaeological survey work undertaken in land adjacent to the open cut mines that had not been previously subject to survey and that may be potentially subject to blasting impacts in accordance with Condition 39(c), Schedule 3 of the Stage 1 Project Approval (05_0117).

** The abbreviated management categories are as follows:

1INFimp - Stage 1 infrastructure area subject to direct impact;

AIZ - Moolarben Coal Complex Ancillary Infrastructure zone with no scheduled impact;

AIZblast - Moolarben Coal Complex Ancillary Infrastructure zone with potential indirect impact from subsidence and/or blasting;

AIZcons – Moolarben Coal Complex Ancillary Infrastructure zone with requirement for in situ conservation;

AIZfence - Moolarben Coal Complex Ancillary Infrastructure zone with no scheduled impact with previous commitment to fence;

BCMA - Bora Creek Management Area;

MCMA - Murragamba Creek Management Area;

OC1imp - Open Cut 1 area subject to direct impact;

OC3imp – Open Cut 3 area subject to direct impact;

OC4imp – Open Cut 4 area subject to direct impact;

OC4test - Open Cut 4 area subject to direct impact where test excavation is proposed;

PCA - Powers Conservation Area;

RHCA - Red Hills Conservation Area;

RSMA - Underground 2 Rock shelter Management Area;

UG1ind – Underground 1 area with potential indirect impacts from subsidence and/or blasting;

UG2ind - Underground 2 area with potential indirect impacts from subsidence and/or blasting;

UG4ind - Underground 4 area with potential indirect impacts from subsidence and/or blasting; and

Note: changes to the management of the known Aboriginal archaeological sites listed in Appendix D may be required as a result of progressive updates to the Moolarben Coal Complex Aboriginal Archaeological Sites Database. For example, an increase to the spatial extent of a site may result in a change in the level or type of impact, and hence require an update to the proposed management of the site. Any changes to the management proposed for any of the sites described in Appendix D will be undertaken based on advice from a suitably qualified and experienced archaeologist and in consultation with the RAPs.

APPENDIX E: PREVIOUSLY MANAGED ABORIGINAL ARCHAEOLOGICAL SITES AT THE MOOLARBEN COAL COMPLEX

Table E-1: Previously Managed Aboriginal Archaeological Sites at the Moolarben Coal Complex

AHIMS	Site Name	Site Type
36-3-0692	CE-16-IF	Isolated Find
36-3-0223	MC2	Open Artefact Site
36-3-0241	MC4	Open Artefact Site
36-3-0240	MC6	Artefact Scatter
36-3-0337	MC7	Open Artefact Site
36-3-0239	MC8	Open Artefact Site
36-3-0222	Moolarben Creek MC1	Artefact Scatter
36-3-3144	MUG1-Mod 1	Isolated Find
36-3-3145	MUG1-Mod 2	Isolated Find
36-3-3143	MUG1-Mod 3	Artefact Scatter
36-3-0958	PAD 12 Moolarben Coal*	PAD and Rockshelter
36-3-0885	PAD 6 Moolarben Coal*	PAD
36-3-0798	S1MC001++	Scarred Tree
36-3-0799	S1MC002	Artefact Scatter
36-3-0800	S1MC003	Isolated Find
36-3-0801	S1MC004	Isolated Find
36-3-0802	S1MC005	Artefact Scatter
36-3-0803	S1MC006	Isolated Find
36-3-0804	S1MC007	Isolated Find
36-3-0805	S1MC008	Isolated Find
36-3-0806	S1MC009	Isolated Find
36-3-0807	S1MC010	Isolated Find
36-3-0808	S1MC011	Artefact Scatter
36-3-0809	S1MC012	Isolated Find
36-3-0810	S1MC013	Isolated Find
36-3-0811	S1MC014	Isolated Find
36-3-0812	S1MC015	Isolated Find
36-3-0813	S1MC016	Isolated Find
36-3-0814	S1MC017	Isolated Find
36-3-0821	S1MC024	Isolated Find
36-3-0822	S1MC025	Isolated Find
36-3-0827	S1MC030	Isolated Find
36-3-0828	S1MC031	Isolated Find
36-3-0829	S1MC032	Isolated Find
36-3-0830	S1MC033	Isolated Find
36-3-0831	S1MC034	Isolated Find
36-3-0832	S1MC035	Isolated Find

AHIMS	Site Name	Site Type
36-3-0833	S1MC036	Isolated Find
36-3-0834	S1MC037	Isolated Find
36-3-0835	S1MC038	Isolated Find
36-3-0836	S1MC039	Isolated Find
36-3-0845	S1MC040	Artefact Scatter
36-3-0846	S1MC041	Isolated Find
36-3-0847	S1MC042	Isolated Find
36-3-0848	S1MC043	Artefact Scatter
36-3-0849	S1MC044	Isolated Find
36-3-0850	S1MC045	Isolated Find
36-3-0851	S1MC046	Isolated Find
36-3-0852	S1MC047	Isolated Find
36-3-0853	S1MC048	Isolated Find
36-3-0854	S1MC049	Isolated Find
36-3-0855	S1MC050	Isolated Find
36-3-0856	S1MC051	Isolated Find
36-3-0857	S1MC052	Isolated Find
36-3-0858	S1MC053	Artefact Scatter
36-3-0886	S1MC078	Artefact Scatter
36-3-0887	S1MC079	Isolated Find
36-3-0888	S1MC080	Isolated Find
36-3-0889	S1MC081	Isolated Find
36-3-0890	S1MC082	Isolated Find
36-3-0891	S1MC083	Isolated Find
36-3-0892	S1MC084	Artefact Scatter
36-3-0893	S1MC085	Isolated Find
36-3-0894	S1MC086	Isolated Find
36-3-0895	S1MC087	Isolated Find
36-3-0896	S1MC088	Isolated Find
36-3-0897	S1MC089	Isolated Find
36-3-0898	S1MC090	Isolated Find
36-3-0899	S1MC091	Isolated Find
36-3-0900	S1MC092	Isolated Find
36-3-0901	S1MC093	Isolated Find
36-3-0902	S1MC094	Artefact Scatter
36-3-0910	S1MC102	Artefact Scatter
36-3-0948	S1MC139	Artefact Scatter
36-3-0949	S1MC140	Artefact Scatter
36-3-0950	S1MC141	Isolated Find
36-3-0951	S1MC142	Artefact Scatter
36-3-0952	S1MC143	Artefact Scatter
36-3-0953	S1MC144	Isolated Find

AHIMS	Site Name	Site Type
36-3-1041	S1MC225	Isolated Find
36-3-1042	S1MC226	Isolated Find
36-3-1043	S1MC227	Isolated Find
36-3-1044	S1MC228	Artefact scatter
36-3-1045	S1MC229	Isolated Find
36-3-1046	S1MC230	Artefact Scatter
36-3-1047	S1MC231	Isolated Find
36-3-1048	S1MC232	Isolated Find
36-3-1049	S1MC233	Artefact Scatter
36-3-1050	S1MC234	Isolated Find
36-3-1051	S1MC235	Isolated Find
36-3-1052	S1MC236	Artefact Scatter
36-3-1053	S1MC237	Isolated Find
36-3-1054	S1MC238	Isolated Find
36-3-1055	S1MC239	Isolated Find
36-3-1056	S1MC240	Artefact Scatter
36-3-1057	S1MC241	Artefact Scatter
36-3-1058	S1MC242	Isolated Find
36-3-1059	S1MC243	Isolated Find
36-3-1060	S1MC244	Artefact Scatter
36-3-1113	S1MC244a	Artefact Scatter
36-3-1061	S1MC245	Isolated Find
36-3-1062	S1MC246	Isolated Find
36-3-1063	S1MC247	Isolated Find
36-3-1064	S1MC248	Isolated Find
36-3-1065	S1MC249	Isolated Find
36-3-1066	S1MC250	Isolated Find
36-3-1067	S1MC252	Isolated Find
36-3-1068	S1MC253	Isolated Find
36-3-1069	S1MC254	Artefact Scatter
36-3-1070	S1MC255***	Artefact Scatter and PAD
36-3-0840	S1MC298	Artefact Scatter
36-3-0841	S1MC299	Isolated Find
36-3-0842	S1MC300	Artefact Scatter
36-3-0843	S1MC301	Artefact Scatter
36-3-0844	S1MC302	Artefact Scatter
36-3-1143	S1MC306	Isolated Find
36-3-1144	S1MC307	Isolated Find
36-3-1145	S1MC308	Artefact Scatter and PAD
36-3-1138	S1MC311	Isolated Find
36-3-1149	S1MC312	Isolated Find
36-3-1407	S1MC313 (NB1)	Artefact Scatter

AHIMS	Site Name	Site Type
36-3-1408	S1MC314 (NB2)	Artefact Scatter and PAD
36-3-1409	S1MC315 (NB3)	Isolated Find
36-3-1410	S1MC316 (NB4)	Artefact Scatter
36-3-1411	S1MC317 (NB5)	Isolated Find
36-3-1412	S1MC318 (NB6)	Isolated Find
36-3-1413	S1MC319 (NB7)	Isolated Find
36-3-1414	S1MC320 (NB8)	Isolated Find
36-3-1417	S1MC323 (NB11)	Isolated Find
36-3-2597	S1MC324 (NB12)	Isolated Find
36-3-2607	S1MC325	Isolated Find
36-3-2608	S1MC326	Rock shelter with PAD
36-3-2609	S1MC327	Rock shelter with PAD
36-3-2610	S1MC328	Isolated Find
36-3-2611	S1MC329	Rock shelter with PAD
36-3-2612	S1MC330	Rock shelter with PAD
36-3-2613	S1MC331	Rock shelter with artefacts
36-3-2614	S1MC332	Rock shelter with PAD
36-3-2615	S1MC333	Rock shelter with PAD
36-3-2616	S1MC334	Rock shelter with PAD
36-3-2617	S1MC335	Rock shelter with PAD
36-3-2618	S1MC336	Rock shelter with PAD
36-3-2619	S1MC337	Rock shelter with PAD
36-3-2620	S1MC338	Rock shelter with PAD
36-3-2621	S1MC339	Rock shelter with PAD
36-3-2622	S1MC340	Rock shelter with PAD
36-3-2623	S1MC341	Rock shelter with PAD
36-3-2624	S1MC342	Rock shelter with PAD
36-3-2625	S1MC343	Rock shelter with PAD
36-3-2626	S1MC344	Rock shelter with artefacts
36-3-2627	S1MC345	Rock shelter with PAD
36-3-2628	S1MC346	Rock shelter with PAD
36-3-2629	S1MC347	Rock shelter with PAD
36-3-2630	S1MC348	Rock shelter with PAD
36-3-2631	S1MC349	Rock shelter with PAD
36-3-2632	S1MC350	Rock shelter with PAD
36-3-2633	S1MC351	Rock shelter with PAD
36-3-2634	S1MC352	Rock shelter with PAD
36-3-2635	S1MC353	Rock shelter with PAD
36-3-2636	S1MC354	Rock shelter with PAD
36-3-2660	S1MC355	Artefact Scatter
36-3-2661	S1MC356	Isolated Find
36-3-2997	S1MC358	Artefact Scatter

AHIMS	Site Name	Site Type
36-3-2958	S1MC359	Grinding Grooves and Artefact Scatter
36-3-2959	S1MC360	Isolated Find
36-3-2960	S1MC361	Isolated Find
36-3-2961	S1MC362	Artefact Scatter
36-3-2962	S1MC363	Artefact Scatter
36-3-2963	S1MC364	Isolated Find
36-3-2964	S1MC365	Artefact Scatter
36-3-2965	S1MC366	Isolated Find
36-3-2966	S1MC367	Isolated Find
36-3-2967	S1MC368	Artefact Scatter
36-3-2968	S1MC369	Isolated Find
36-3-2969	S1MC370	Isolated Find
36-3-2970	S1MC371	Isolated Find
36-3-2971	S1MC372	Artefact Scatter
36-3-2972	S1MC373	Artefact Scatter
36-3-2973	S1MC374	Isolated Find
36-3-2975	S1MC376	Isolated Find
36-3-2976	S1MC377	Isolated Find
36-3-2977	S1MC378	Artefact Scatter
36-3-2978	S1MC379	Isolated Find
36-3-2979	S1MC380	Artefact Scatter
36-3-2980	S1MC381	Artefact Scatter
36-3-2981	S1MC382	Artefact Scatter
36-3-2982	S1MC383	Isolated Find
36-3-2983	S1MC384	Artefact Scatter
36-3-2984	S1MC385	Isolated Find
36-3-2986	S1MC387	PAD
36-3-2989	S1MC390	Isolated Find
36-3-2990	S1MC391	Artefact Scatter
36-3-2991	S1MC392	Artefact Scatter
36-3-2992	S1MC393	Artefact Scatter
36-3-2993	S1MC394	Artefact Scatter
36-3-2994	S1MC395	Artefact Scatter
36-3-2790	S1MC396	Isolated Find
36-3-3141	S1MC414	Open Artefact Site
36-3-3281	S1MC427	Artefacts (2)
Pending	S1MC442	Artefact Scatter (2)
Pending	S1MC443	Isolated Find
Pending	S1MC444	Isolated find
Pending	S1MC445	Isolated find
Pending	S1MC446	Isolated find

AHIMS	Site Name	Site Type
Pending	S1MC447	Isolated find
Pending	S1MC448	Isolated find
36-3-1150	S2MC001	Isolated Find
36-3-1151	S2MC002****	Isolated Find
36-3-1155	S2MC006	Artefact Scatter
36-3-1162	S2MC013#	Isolated Find
36-3-1165	S2MC016	Artefact Scatter
36-3-1166	S2MC017	Artefact Scatter
36-3-1167	S2MC018~	Artefact Scatter and PAD
36-3-1168	S2MC019	Isolated Find
36-3-1169	S2MC020	Artefact Scatter
36-3-1170	S2MC021	Isolated Find
36-3-1171	S2MC022	Artefact Scatter
36-3-1172	S2MC023	Isolated Find
36-3-1173	S2MC024	Isolated Find
36-3-1174	S2MC025	Isolated Find
36-3-0238	S2MC028, MC10	Open Artefact Site
36-3-1175	S2MC029	Artefact Scatter
36-3-1176	S2MC030	Artefact Scatter
36-3-1177	S2MC031	Isolated Find
36-3-1178	S2MC032	Artefact Scatter
36-3-1179	S2MC033	Artefact Scatter
36-3-1180	S2MC034	Isolated Find
36-3-1181	S2MC035	Isolated Find
36-3-1182	S2MC036	Isolated Find
36-3-1183	S2MC037	Isolated Find
36-3-1184	S2MC038	Artefact Scatter
36-3-1185	S2MC039	Artefact Scatter
36-3-1186	S2MC040	Artefact Scatter
36-3-1186b	S2MC041	Isolated Find
36-3-1187	S2MC042	Artefact Scatter
36-3-1188	S2MC043	Artefact Scatter
36-3-1189	S2MC044	Artefact Scatter
36-3-1190	S2MC045	Artefact Scatter
36-3-1191	S2MC046	Artefact Scatter
36-3-1192	S2MC047	Artefact Scatter
36-3-1193	S2MC048	Artefact Scatter
36-3-1194	S2MC049	Isolated Find
36-3-1195	S2MC050	Artefact Scatter
36-3-1196	S2MC051	Artefact Scatter
36-3-1197	S2MC052	Isolated Find
36-3-1198	S2MC053	Artefact Scatter

AHIMS	Site Name	Site Type
36-3-1219	S2MC072	Artefact Scatter
36-3-2581	S2MC074	Artefact Scatter
36-3-1222	S2MC076	Artefact Scatter
36-3-1224	S2MC078	Artefact Scatter
36-3-1225	S2MC079	Isolated Find
36-3-1226	S2MC080	Artefact Scatter
36-3-1227	S2MC081	Artefact Scatter
36-3-1236	S2MC090	Isolated Find
36-3-1237	S2MC091	Isolated Find
36-3-1238	S2MC092	Isolated Find
36-3-1239	S2MC093	Artefact Scatter
36-3-1240	S2MC094	Isolated Find
36-3-1241	S2MC095	Isolated Find
36-3-1242	S2MC096	Artefact Scatter
36-3-1253	S2MC107	Isolated Find
36-3-1254	S2MC108	Artefact Scatter
36-3-1255	S2MC109	Artefact Scatter
36-3-1256	S2MC110	Isolated Find
36-3-1257	S2MC111	Artefact Scatter
36-3-1258	S2MC112	Artefact Scatter
36-3-1259	S2MC113	Isolated Find
36-3-1260	S2MC114	Artefact Scatter
36-3-1273	S2MC127	Isolated Find
36-3-1322	S2MC176	Artefact Scatter
36-3-1323	S2MC177	Artefact Scatter
36-3-1324	S2MC178	Artefact Scatter
36-3-1325	S2MC179	Artefact Scatter
36-3-1326	S2MC180	Artefact Scatter
36-3-1327	S2MC181	Artefact Scatter
36-3-1328	S2MC182	Isolated Find
36-3-1329	S2MC183	Artefact Scatter
36-3-1330	S2MC184	Isolated Find
36-3-1331	S2MC185	Isolated Find
36-3-1332	S2MC186	Artefact Scatter
36-3-1333	S2MC187	Isolated Find
36-3-1334	S2MC188	Artefact Scatter
36-3-1335	S2MC189	Isolated Find
36-3-1336	S2MC190	Isolated Find
36-3-1337	S2MC191	Artefact Scatter
36-3-1338	S2MC192	Isolated Find
36-3-1339	S2MC193	Artefact Scatter
36-3-1340	S2MC194	Artefact Scatter

AHIMS	Site Name	Site Type
36-3-1376	S2MC229	Rock Shelter with Artefacts
36-3-1377	S2MC230	Isolated Find
36-3-1378	S2MC231	Rock Shelter with Artefacts
36-3-1405	S2MC260	Isolated Find
36-3-1406	S2MC261b	Artefact Scatter
36-3-2602	S2MC262	Artefact Scatter
36-3-2659	S2MC264	Artefact Scatter
36-3-2658	S2MC265	Artefact Scatter
36-3-2657	S2MC266	Artefact Scatter
36-3-2656	S2MC267	Isolated Find
36-3-2654	S2MC269	Isolated Find
36-3-2653	S2MC270	Isolated Find
36-3-3003	S2MC271	Isolated Find
36-3-3004	S2MC272	Isolated Find
36-3-3005	S2MC273	Isolated Find
36-3-3006	S2MC274	Isolated Find
36-3-3007	S2MC275	Artefact Scatter
36-3-3008	S2MC276	Artefact Scatter
36-3-3265	S2MC277+	Open Artefact Site
36-3-3270	S2MC280	Artefact Scatter
36-3-3271	S2MC281	Artefact Scatter
36-3-3269	S2MC282	Isolated Artefact
36-3-3268	S2MC283	Artefact scatter
36-3-3272	S2MC284	Artefact Scatter
36-3-3273	S2MC285	Artefact Scatter
36-3-3132	S2MC286	Artefact scatter
36-3-3274	S2MC287	Isolated find
36-3-3275	S2MC288	Isolated find
36-3-3287	S2MC289	Isolated find
36-3-3276	S2MC290	Isolated find
36-3-3090	S2MC291	Isolated find
36-3-3089	S2MC292	Isolated find
36-3-3088	S2MC293	Artefact scatter
36-3-3087	S2MC294	Artefact scatter
36-3-3083	S2MC295	Isolated find
36-3-3084	S2MC296	Isolated find
36-3-3288	S2MC297	Isolated find
36-3-3080	S2MC298	Isolated find
36-3-3081	S2MC299	Artefact scatter
36-3-3082	S2MC300	Artefact scatter
36-3-3067	S2MC301	Artefact scatter

AHIMS	Site Name	Site Type
36-3-3289	S2MC302	Artefact scatter
36-3-3070	S2MC303	Isolated find
36-3-3069	S2MC304 & 305	Artefact scatter, flaking floor
36-3-3071	S2MC306	Isolated find
36-3-3086	S2MC307	Isolated find
36-3-3085	S2MC308	Isolated find
36-3-3072	S2MC309	Artefact scatter
36-3-3073	S2MC310	Isolated find
36-3-3066	S2MC311	Isolated find
36-3-3065	S2MC312	Isolated find
36-3-3074	S2MC313	Isolated find
36-3-3076	S2MC314	Isolated find
36-3-3077	S2MC315	Artefact scatter
36-3-3075	S2MC316	Isolated find
36-3-3078	S2MC317	Isolated find
36-3-3079	S2MC318	Isolated find
**	S2MC320	Rock Shelter**
36-3-3059	S2MC321	Isolated find
36-3-3060	S2MC322	Artefact scatter
36-3-3061	S2MC323	Artefact scatter
36-3-3062	S2MC326	Isolated find
36-3-3284	S2MC327	Isolated find
36-3-3063	S2MC328	Isolated find
36-3-3057	S2MC329	Isolated find
36-3-3056	S2MC330	Isolated find
36-3-3055	S2MC331	Artefact scatter
36-3-3054	S2MC332	Artefact scatter
36-3-3068	S2MC333	Artefact scatter
36-3-3053	S2MC334	Isolated find
36-3-3052	S2MC335	Isolated find
36-3-3283	S2MC336	Isolated find
36-3-3064	S2MC337	Isolated find
36-3-3050	S2MC338	Artefact scatter
36-3-3051	S2MC339	Artefact scatter
36-1-0689	S2MC340	Artefact scatter
36-3-3049	S2MC341	Artefact scatter
S2MC333 duplicate	S2MC342	Artefact scatter
36-3-3136	S2MC343	Artefact scatter
36-3-3135	S2MC344	Artefact scatter
36-3-3134	S2MC345	Isolated find
36-3-3132	S2MC346	Isolated find
36-3-3042	S2MC354	Artefact Scatter

AHIMS	Site Name	Site Type
36-3-3039	S2MC355	Artefact Scatter
36-3-3142	S2MC357	Isolated find
36-3-3093	S2MC363	Artefact Scatter
36-3-3099	S2MC364	Isolated Find
36-3-3092	S2MC365	Artefact Scatter
36-3-3100	S2MC366	Artefact Scatter
36-3-3107	S2MC367	Artefact Scatter
36-3-3108	S2MC368	Artefact Scatter
36-3-3109	S2MC369	Artefact Scatter
36-3-3110	S2MC370	Artefact Scatter
36-3-3106	S2MC371	Artefact Scatter
36-3-3131	S2MC372	Artefact Scatter
36-3-3105	S2MC373	Artefact Scatter
36-3-3104	S2MC374	Artefact Scatter
36-3-3103	S2MC375	Isolated Find
36-3-3102	S2MC376	Artefact Scatter
36-3-3101	S2MC377	Artefact Scatter
36-3-3122	S2MC378	Isolated Find
36-3-3114	S2MC379	Artefact Scatter
36-3-3115	S2MC380	Artefact Scatter
36-3-3116	S2MC381	Artefact Scatter
36-3-3101	S2MC382	Artefact Scatter
36-3-3113	S2MC383	Artefact Scatter
36-3-3112	S2MC384	Artefact Scatter
36-3-3118	S2MC385	Artefact Scatter
36-3-3146	S2MC386	Artefact Scatter
36-3-3130	S2MC387	Artefact Scatter
36-3-3111	S2MC388	Artefact Scatter
36-3-3117	S2MC389	Artefact Scatter
36-3-3285	S2MC390	Artefact Scatter
36-3-3121	S2MC391	Isolated find
36-3-3120	S2MC392	Artefact Scatter
36-3-3119	S2MC393	Artefact Scatter
36-3-3127	S2MC395	Isolated find
36-3-3286	S2MC396	Artefact Scatter
36-3-3126	S2MC397	Artefact Scatter
36-3-3226	S2MC400	Artefact Scatter (2)
36-3-3224	S2MC402	Isolated Find
36-3-3223	S2MC403	Isolated Find
36-3-3222	S2MC404	Artefact Scatter (11)
36-3-0059	Ulan Creek Site 17[1]	Scarred Tree and Artefact Scatter
Pending	S2MC422	Isolated Find

AHIMS	Site Name	Site Type
36-3-1478	Ulan ID #85	Open Artefact Site

Note: Sites listed in Table E-1 have had their management requirements fulfilled. Impacts can now proceed unmitigated (if they have not already).

* Previously recorded by Hamm (2006) as a PAD, however further investigation by South East Archaeology (2013) has confirmed that this site is a rock shelter with PAD.

** Rock shelter, however no art, artefact or PAD were identified at this site.

*** This site has previously been referred to S1MC255b also, however both are same the site and hence the record has been amalgamated.

AECOM (2011) recommended the "site to be intensively recorded and salvaged in accordance with the methodology to be included in Aboriginal Heritage Management Plan". This site is an isolated find and therefore the management undertaken for this site was limited to surface collection.

~ This site has been previously described as an ochre quarry. However, the site card for this site records the site as an artefact scatter with a PAD.

\+ This site was recorded during further archaeological survey work in the vicinity of the Stage 2 ROM coal facilities and the northern section of the proposed Haul Road.

++ This site was subject to further archaeological assessment by Urban Tree Management, including a latex peel to confirm the origin of the observed scarring. This site was confirmed to be of non-Aboriginal origin.

**** Although this site will be avoided (i.e. no impact) as a result of the OC4 South-West Modification, it had already been salvaged as the site would have been impacted by the originally approved Stage 2 haul road.

[1] MCO understands that this site has been managed by Ulan Coal Pty Ltd.

APPENDIX F: PREVIOUSLY MANAGED HISTORIC HERITAGE SITES AT THE MOOLARBEN COAL COMPLEX

Table F-1: Previously Managed Historic Heritage Sites at the Moolarben Coal Complex

Site Number	Site Name	Site Description	Significance	Project Approval Management Action
8	Murragamba School Site	Remains of bed logs, an adzed post, render from a galvanised tank and a few bricks. There is a depression in the ground approximately 50 metres (m) south that may have been the site of a pit toilet[3].	Local – moderate[4]	Archival recording and archaeological assessment of this site was completed in 2015.
9	Farm Site	House that was originally built in two sections. Number of outbuildings and exotic plants[3].	Local – high	Historical research and archival recording of this site was completed in 2015.
11	Farm Site	Number of buildings and outbuildings including an early slab structure. Present house clad in fibro[3].	Local – moderate[4]	Historical research, archival recording and archaeological assessment of this site was completed in 2015.
14	House Site	Selected by Henry Archer in 1899. Exotic trees and posts[1].	Local – moderate[2]	Archival recording of this site was completed in September 2009.
29	House Site	Selected by Andrew Delaney in 1896. Shearing shed, base of chimney and exotic trees[1].	Local – moderate[2]	Archival recording of this site was completed in 2015.
30	School Site	Dedicated 18 September 1897. Exotic plants[1].	Local – moderate[2]	Archival recording of this site was completed in 2015.
32	House Site	Selected by John Smith in 1879. Base of fireplace, fence posts, well and exotic trees[1].	Local – moderate[2]	Archival recording of this site was completed in 2015.
35	House Site	Modified house, remains of orchard, well, shearing shed, concrete and stone remains of a fireplace[3].	Local – intrusive[4]	No further action.
36a	House Site	Well, stone base of a fireplace, partly dressed timber and exotic trees[3].	Local – high[4]	Historical research, archival recording and archaeological assessment of this site was completed in 2015.
36b	Burial	Enclosed area of 2.5 m x 5 m defined by timber posts, rails and wire[3].	Local – high[4]	Historical research, archival recording and archaeological assessment (including exhumation) of this site was completed in 2015.

Site Number	Site Name	Site Description	Significance	Project Approval Management Action
37	House Site	Remains of four chimneys, concrete slab, area of brick and timber piers, remains of a well and/or water trough and exotic trees[3].	Local - moderate	Historical research and archival recording of this site was completed in 2015.
55	Water Trough and Spring Fed Well	6 foot x 6 foot timber lined well which delivers water via a metal trough to a hollowed timber log water trough[3].	Item of Interest[4]	Archival recording of this site was completed in 2015.
56	Water Trough and Spring Fed Well	Well, with the opening covered with sheets or corrugated metal[3].	Item of Interest[4]	Archival recording of this site was completed in 2015.

Note: Sites listed in Table F-1 have had their management requirements fulfilled. Impacts can now proceed unmitigated (if they have not already).

1 Source: Veritas Archaeology and History Service (2005).

2 As stated in Stage 1 Project Approval (05_0117).

3 Source: Heritas Architecture (2008).

4 As stated in Stage 2 Project Approval (08_0135).

APPENDIX G: MOOLARBEN COAL COMPLEX GROUND DISTURBANCE PERMIT

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ENV GDP.	-
Version No.	

Ground Disturbance Permit

This Permit applies to all ground disturbing works of vegetated areas undertaken by, or on behalf of MCO.
A separate Excavation Permit is required for approval to disturb UG services/power/communication lines etc.
This GDP must be completed & approved by the Environment & Community Delegate prior to any disturbance works taking place.

Section 1- Project Description *(Project Manager to complete)*

Project Manager: (Name and Role)	**Phone #**	
Brief description of works required and location (the Project):		
Estimated Project Dates Start:		End:

Has the Project Manager been trained in the GDP Procedure?	Yes	No	
Have the below been provided to E&C Dep't?			
Area of proposed disturbance (dxf, shp, tab, KML, GPX file)	Yes	No	Na
Progressive Works Schedule (sequence and extent of disturbance)	Yes	No	Na
Proposed location for storage of topsoil and cleared vegetation	Yes	No	Na
Erosion and Sediment Control Plan	Yes	No	Na
Has the area been clearly delineated (fenced, pegged or marked with tape)? *Work cannot commence until the approved area has been clearly delineated*	Yes	No	Na
Details (Name/Date)			

Section 2 - Assessments (Attach Reports if required) *(E&C to complete)*

Has a Preclearance Survey been carried out?	Yes	No	Na
Name/Date/Report			
Has an archaeological survey in accordance with section 5.8.2 of the HMP been carried out?	Yes	No	Na
Name/Date/Report			

Section 3 - Supporting Information (Attach Plans if required) *(E&C to complete)*

	Checked?	Date	Initial
Area of proposed disturbance			
Project Approval/ Disturbance Limit/MOP/ML/EL/BOA/Land Ownership boundaries			
Current land ownership (MCO, private, Crown, Easements, National Parks etc.)			
Location of any endangered species & protected vegetation communities (EEC)			
Location of heritage sites and management status (Archaeological & European)			
Location of any creeks or water bodies			

Section 4 - Approval Checklist *(E&C to complete)*

Are the proposed works within land owned or managed by MCO? *If No, attach Landowner Access Agreement*	Yes	No	
Does any agency or member of the public need to be considered or contacted?	Yes	No	N/A
Are the works within the Project Approval, EPL12932, ML, Approved MOP or EL boundary or Biodiversity Offset Area? *Circle each as relevant*	Yes	No	N/A
Approval Name/Date:			

Section 4 - Approval Checklist (Cont'd) *(E&C to complete)*

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Are the proposed works to be undertaken in accordance with an additional regulatory approval? *E.g. ESF4, Construction, Water Licence, MWRC approval*	Yes	No	
Approval Name/Date:			
Has a site inspection been completed by the E&C Department?	Yes	No	N/A
Name:	Date:		
Findings:			
Will the proposed works impact any of the following?: *(If yes, attach approval or management controls)*			
• Threatened species, endangered populations or an EEC	Yes	No	
• A regulated exclusion or buffer zone? E.g. National Park, Crown Land, infrastructure easements, rural licence etc.	Yes	No	
• Aboriginal Archaeological sites	Yes	No	
• European Heritage sites	Yes	No	
• Creeks or water bodies	Yes	No	
• MCO Biodiversity Offset or Conservation areas.	Yes	No	
• Potentially Contaminated Sites	Yes	No	
• Environmental monitoring sites	Yes	No	
• Rehabilitation	Yes	No	
• Other	Yes	No	
Comments:			

Section 5 - Disturbance Control Requirements *(E&C to complete)*

Erosion and Sediment Controls to be installed prior to disturbance?	Yes	No	N/A
Vegetation clearing to be undertaken in accordance with VCLMP/BioMP?	Yes	No	N/A
Works to be cleared progressively. Disturbance area to be minimised where possible?	Yes	No	N/A
Is removal of habitat trees and presence of a fauna-catcher required?	Yes	No	N/A
Tree hollows, woody debris and rock to be retained where possible?	Yes	No	N/A
Topsoil to be removed?	Yes	No	N/A
Topsoil Type 1: _____, Depth to remove: _____ mm, Stockpile Location: _____ Topsoil Type 2: _____, Depth to remove: _____ mm, Stockpile Location: _____			
Buffers required (E.g. heritage sites fenced)?	Yes	No	N/A
Rehabilitation works required? *(Detail type and timing below)*	Yes	No	N/A
Proposed Rehabilitation Completion Date:	__/__/____		N/A
Other Controls:			

NOTE 1: No heritage sites are to be disturbed. If Archaeological site(s) are discovered (Aboriginal or European) stop all works **immediately** and notify the Environment and Community Manager.

NOTE 2: If injured Fauna is discovered stop all works **immediately** and notify the E&C Coordinator.

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Section 6 - Approval *(Environment & Community Manager or Delegate to complete)*				
Version:	**Position:**	**Name:**	**Signature:**	**Date:**
1				
Section 7- Acceptance *(Project Manager to complete)*				
Version:	**Position:**	**Name:**	**Signature:**	**Date:**
1	**Project Manager**			

By signing the Acceptance, you will implement all conditions outlined in this GDP. Works outside the scope of this GDP require approval from the E&C delegate. The original GDP should be provided to the E&C Department on signing.

Section 8 - Variation Approval *(Environment & Community Manager or Delegate to complete)*				
Version:	**Variation Description:**	**Approved By:**	**Signature:**	**Date:**
2				
3				
4				
Section 9 - Variation Acceptance *(Project Manager to complete)*				
Version:	**Position:**	**Name:**	**Signature:**	**Date:**
2	**Project Manager**			
3				
4				

A copy of this GDP must be available on the job site at all times. All personnel involved in the job must be familiar with the GDP and attachments. An electronic, signed copy of the GDP is held on the Common Drive (U:).

Section 10 - Closure *(Project Manager to complete)*					
Version:	**GDP Inspection?**	**E&C Delegate:**	**Date:**	**Project Manager:**	**Date:**
ALL					

APPENDIX H: ABORIGINAL ARCHAEOLOGICAL SITES LOCATED OUTSIDE OF PROJECT BOUNDARY BUT WITHIN IMMEDIATE SURROUNDS

Table H-1: Aboriginal Archaeological Sites Located Outside of Project Boundary but within Immediate Surrounds

AHIMS	Site Name	Site Type
36-3-0959	PAD 13 Moolarbeen Coal	Open site
36-3-0960	PAD 14 Moolarbeen Coal	Open site
36-3-0961	S1MC145	Artefact Scatter
36-3-0962	S1MC146	Isolated Find
36-3-0963	S1MC147	Isolated Find
36-3-0964	S1MC148	Isolated Find
36-3-0965	S1MC149	Isolated Find
36-3-0966	S1MC150	Isolated Find
36-3-0967	S1MC151	Isolated Find
36-3-0968	S1MC152	Rock Shelter & Artefact Scatter
36-3-0969	S1MC153	Isolated Find
36-3-0970	S1MC154	Isolated Find
36-3-0971	S1MC155	Artefact Scatter
36-3-0972	S1MC156	Isolated Find
36-3-0973	S1MC157	Artefact Scatter
36-3-0974	S1MC158	Isolated Find
36-3-0975	S1MC159	Isolated Find
36-3-0976	S1MC160	Isolated Find
36-3-0977	S1MC161	Isolated Find
36-3-0978	S1MC162	Isolated Find
36-3-0979	S1MC163	Isolated Find
36-3-0980	S1MC164	Isolated Find
36-3-0981	S1MC165	Artefact Scatter
36-3-0982	S1MC166	Isolated Find
36-3-0983	S1MC167	Isolated Find
36-3-0984	S1MC168	Artefact Scatter
36-3-0985	S1MC169	Isolated Find
36-3-0986	S1MC170	Isolated Find
36-3-0987	S1MC171	Isolated Find
36-3-0988	S1MC172	Isolated Find
36-3-0989	S1MC173	Artefact Scatter
36-3-0990	S1MC174	Isolated Find
36-3-0991	S1MC175	Artefact Scatter
36-3-0992	S1MC176	Isolated Find
36-3-0993	S1MC177	Isolated Find
36-3-0994	S1MC178	Isolated Find

AHIMS	Site Name	Site Type
36-3-0995	S1MC179	Isolated Find
36-3-0996	S1MC180	Isolated Find
36-3-0997	S1MC181	Isolated Find
36-3-0998	S1MC182	Isolated Find
36-3-0999	S1MC183	Isolated Find
36-3-1000	S1MC184	Isolated Find
36-3-1001	S1MC185	Isolated Find
36-3-1003	S1MC186	Isolated Find
36-3-1002	S1MC186a	Isolated Find
36-3-1004	S1MC187	Isolated Find
36-3-1005	S1MC189	Isolated Find
36-3-1006	S1MC190	Isolated Find
36-3-1007	S1MC191	Isolated Find
36-3-1008	S1MC192	Isolated Find
36-3-1009	S1MC193	Isolated Find
36-3-1010	S1MC194	Artefact Scatter
36-3-1011	S1MC195	Isolated Find
36-3-1012	S1MC196	Isolated Find
36-3-1013	S1MC197	Isolated Find
36-3-1014	S1MC198	Isolated Find
36-3-1015	S1MC199	Artefact Scatter
36-3-1016	S1MC200	Isolated Find
36-3-1017	S1MC201	Isolated Find
36-3-1018	S1MC202	Isolated Find
36-3-1019	S1MC203	Artefact Scatter
36-3-1020	S1MC204	Isolated Find
36-3-1021	S1MC205	Isolated Find
36-3-1022	S1MC206	Isolated Find
36-3-1023	S1MC207	Artefact Scatter
36-3-1024	S1MC208	Isolated Find
36-3-1025	S1MC209	Isolated Find
36-3-1026	S1MC210	Artefact Scatter
36-3-1027	S1MC211	Isolated Find
36-3-1028	S1MC212	Isolated Find
36-3-1030	S1MC214	Isolated Find
36-3-1031	S1MC215	Isolated Find
36-3-1032	S1MC216	Isolated Find
36-3-1033	S1MC217	Artefact Scatter
36-3-1034	S1MC218	Isolated Find
36-3-1035	S1MC219	Isolated Find
36-3-1036	S1MC220	Artefact Scatter

AHIMS	Site Name	Site Type
36-3-1037	S1MC221	Isolated Find
36-3-1038	S1MC222	Isolated Find
36-3-1039	S1MC223	Artefact Scatter
36-3-1040	S1MC224	Artefact Scatter
36-3-2995	S1MC397	Artefact Scatter
36-3-2996	S1MC398	Isolated Find
36-3-2997	S1MC399	Artefact Scatter
36-3-2998	S1MC400	Artefact Scatter
36-3-2999	S1MC401	Artefact Scatter
36-3-3000	S1MC402	Artefact Scatter
36-3-3001	S1MC403	Rock shelter with artefacts
36-3-3299	S1MC404	Artefact Scatter
36-3-3001	S1MC405	Artefact Scatter
36-3-3314	S1MC436	Isolated Find
36-3-3317	S1MC437	Grinding Groove, Isolated Find
Pending	S1MC450	Artefact scatter
Pending	S1MC451	Artefact scatter
Pending	S1MC452	Isolated find
Pending	S1MC453	Isolated find
Pending	S1MC454	Artefact scatter
Pending	S1MC455	Artefact scatter
Pending	S1MC456	Artefact scatter
36-3-1365	S2MC218	Artefact Scatter
36-3-1366	S2MC219	Artefact Scatter
36-3-1367	S2MC220	Artefact Scatter

Note: Sites listed in the above table are located outside of the Moolarben Coal Complex project boundary and hence are considered to be outside of the scope of the HMP. Notwithstanding, these sites have been included in this table for completeness, due to their proximity to the Moolarben Coal Complex.