

18 Aboriginal heritage

18.1 Assessment objectives

The DGRs that relate specifically to Aboriginal heritage (including cultural and archaeological significance) are:

Heritage (Aboriginal):

A suitably qualified heritage consultant must demonstrate effective consultation with Aboriginal communities in determining and assessing impacts, and developing and selecting options and mitigation measures (including the final proposed measures). Where impacts on heritage are proposed, the EA must; outline proposed mitigation and management measures (including an evaluation of the effectiveness and reliability of the measures).

18.2 Assessment method

EMM prepared an Aboriginal heritage assessment for the Project (Appendix P); the results are summarised below. The assessment was in accordance with the draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (draft)* (DEC 2005a).

The main aims of the assessment were to:

- identify Aboriginal heritage items in the PAA associated with:
 - Aboriginal objects and sites;
 - Aboriginal socio-cultural values that may or may not be related to Aboriginal objects;
 - areas of archaeological sensitivity;
- assess the significance of Aboriginal objects, sites and places identified during the archaeological investigations or during Aboriginal community consultation;
- consult with the local Aboriginal community about cultural heritage values;
- assess the Project's impact on the identified Aboriginal cultural heritage values; and
- with input from the Aboriginal community, identify management measures to maintain Aboriginal cultural heritage values in the area based on the significance of the predicted impacts.

18.2.1 Fieldwork

Fieldwork was conducted in two broad phases by professional archaeologists and members of the Aboriginal community.

A field survey was conducted over 24 days in the summer months of 2009–2010. Due to extreme weather conditions, survey transects were limited to a maximum of 10 km. The survey covered all landform elements across the PAA, including watercourse, ridge tops, slopes, flats and gullies. A series of test excavations were also conducted under section 75U (4) of the EP&A Act. Participation and representation in the field survey was decided at a meeting of the Registered Aboriginal Parties (RAPs) listed in Section 18.2.2 on 19 October 2009.

Further field surveys were conducted in 2011 and 2012 over 12 days. They consisted of pedestrian field transects of defined landform types to further understand where sites may be located in the landscape. All mature trees along transects were inspected for scars of Aboriginal origin, sandstone areas were inspected for grooves and rock-shelters were inspected for the presence of Aboriginal objects. All identified Aboriginal objects were flagged and recorded during the field surveys. A meeting of the RAPs, EMM and CHC representatives at Dunedoo on 21 October 2011 agreed that one representative from each of the RAPs listed in Section 18.2.2 took part in the survey.

18.2.2 Consultation

Consultation during the Aboriginal heritage assessment followed the *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation Draft* (DEC 2005a) as prescribed by the DGRs. The procedures in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a) were also followed. The main stages of the Aboriginal cultural heritage consultation program are summarised in Table 18.1. As a result of the identification and registration process, the following Aboriginal parties formally registered an interest in being consulted about the Project in September and October 2009:

- Dubbo Local Aboriginal Land Council (DLALC);
- Mudgee Local Aboriginal Land Council (MLALC);
- Warrabinga Native Title Claimants Aboriginal Corporation (WNTCAC);
- North-East Wiradjuri Corporation Ltd (NEWCO);
- Wirrimbah Direct Descendants (WDD);
- Murong Gialinga Aboriginal & Torres Strait Islander Corporation (MGATSIC);
- Gallangabang Aboriginal Corporation (GAC); and
- Mingaan Aboriginal Corporation (MAC).

The following Aboriginal parties registered an interest in being consulted following a second round of notifications in October 2011:

- Jenny Williams (an individual);
- Dorothy Stewart (trading as Binjang Wiradjuri Aboriginal Heritage Surveys); and
- Wellington Valley Wiradjuri Aboriginal Corporation (WVW — which was a new corporation established to replace GAC).

The following NSW government agencies also requested that they be consulted:

- NSW Department of Aboriginal Affairs – Dubbo Office; and
- Central West Catchment Management Authority.

Table 18.1 Summary of the Aboriginal cultural heritage consultation program

Date	Consultation
September 2009	Letters requesting advice on which Aboriginal parties to invite for consultation and all known heritage matters to be considered posted to OEH, MLALC, DLALC, the Registrar of the <i>Aboriginal Land Rights Act 1983</i> , Native Title Services Corporation, Mid-Western Regional Council, Warrumbungle Shire Council and Wellington Council.
September 2009	Newspaper advertisements placed in the <i>Dubbo Daily Liberal</i> , <i>Mudgee Guardian</i> and <i>Koori Mail</i> .
September 2009	Letters or emails sent to the Aboriginal parties whose names were provided by government agencies. The letters (or emails) formally requested their registration for the Project.
October 2009	Details of the Project and proposed Aboriginal heritage assessment method sent to registered Aboriginal parties (RAPs).
October 2009	RAPs invited to a community meeting to discuss the Project and the proposed Aboriginal heritage assessment methods.
February 2010	RAPs invited to a meeting held in Dunedoo on 8 February 2010 to discuss the results of November 2009 fieldwork and the initial archaeological assessment, to obtain feedback on Aboriginal socio-cultural values and discuss Aboriginal community requirements to mitigate impacts to Aboriginal heritage.
October 2011	A second request for advice on which Aboriginal parties to invite for consultation and all known heritage matters to be considered posted to OEH, MLALC, DLALC, the Registrar of the Aboriginal Land Rights Act, Native Title Services Corporation, Mid-Western Regional Council, Warrumbungle Shire Council, Wellington Council, National Native Title Tribunal and the Central West Catchment Management Authority.
October 2011	An additional newspaper advertisement placed in the <i>Mudgee Guardian</i> .
October 2011	Letters or emails sent to the Aboriginal parties whose names were provided by government agencies. The letters (or emails) formally requested their registration for the Project. Three additional parties registered and were included in the consultation thereafter.
October 2011	Details of the Project and proposed Aboriginal heritage assessment method sent to RAPs.
October 2011	RAPs invited to a meeting held in Dunedoo on 21 October 2011 to discuss the revised Project and the revised Aboriginal heritage assessment methods.
March 2012	RAPs invited to a meeting in Gulgong on 5 March 2012 to discuss the results of the October/November 2011 field survey and presented with a draft significance assessment and draft management measures.
March 2012	The draft Aboriginal heritage assessment report issued to the RAPs for feedback.
April/May 2012	The four weeks for feedback on the draft <i>Aboriginal Heritage Assessment</i> report extended by a week. The report was updated with feedback and finalised.
May 2012	Senior members of RAPs invited to a bus tour of the mine site on 10 May 2012.

i Aboriginal stakeholder meetings

Meetings provided opportunities for stakeholders, archaeologists and CHC to discuss fieldwork methodology and arrangements, the results of site surveys and management measures and mitigation options. The following provides a brief discussion of each of the meetings held during the consultation process to date.

a. 19 October 2009

An open invitation was issued to each RAP to bring any members of their community attend a community meeting. The meeting was held in the Dunedoo Jubilee Hall on 19 October 2009. It introduced the Project and discussed the proposed heritage survey methodology. A second session, where only the RAPs attended, discussed fieldwork representation. RAP attendees included representatives from DLALC, MLALC, WNTCAC, NEW, WDD, MGATSIC and GAC.

b. 8 February 2010

An open invitation was sent to all members of the RAPs to attend a meeting in Dunedoo Jubilee Hall on 8 February 2010. The meeting provided RAPs with the results of survey, presented the initial archaeological significance assessment for the sites identified, requested feedback about Aboriginal socio-cultural values across the Project area, and discussed mitigation requirements. Representatives from DLALC, MLALC, WNTCAC, NEWCO, WDD, MGATSIC and GAC attended. A separate meeting was held with OEH on 11 February 2010 to provide all results as presented at the stakeholder meeting.

c. 21 October 2011

All previously registered Aboriginal parties were invited by letter to a meeting at Dunedoo Jubilee Hall on 21 October 2011. Invitations were followed up with phone calls to encourage attendance. The meeting outlined the recent Project design changes that had avoided previously recorded sites and the requirement for a supplementary survey. The survey methodology was discussed and all representatives offered support. Representatives of all previously registered Aboriginal parties attended as well as the newly registered Binjang (Dorothy Stewart).

All RAPs and interested government agencies were invited to a meeting at the Gulgong RSL on 5 March 2012. Invitations were followed up with phone calls to encourage attendance. The meeting presented information on the Aboriginal sites identified during field survey and the draft significance assessment and management recommendations. RAP attendees included DLALC, WDD, MLALC, WNTCAC, NEWCO, MGATSIC and Jenny Williams. An apology was received from WVV. Tony Fuller and Rebecca Suckling of Aboriginal Affairs (Dubbo office) attended.

d. 12 April 2012

In response to requests raised at the meeting on 5 March 2012, a meeting was held for the RAPs to discuss the draft report. Attendees included WNTCAC, NEWCO, MLALC, MGATSIC, WDD and DLALC. EMM was also present to offer information and answer questions as required.

e. 10 May 2012

In response to direct requests from RAPs, a bus tour of the mine site was held on 10 May 2012 to familiarise senior members of the RAPs, who may not have been present for the duration of fieldwork, with the Project area. A number of areas were visited, which offered a representative sample of the landscapes of the Project area and the Aboriginal sites identified during fieldwork. Attendees included WVV, MGATSIC, WNTCAC, MLALC and NEWCO.

Consultation with the RAPs will continue during the development of the Aboriginal heritage management plan (AHMP) and throughout the Project.

18.3 Existing environment

18.3.1 Previously recorded sites

The Aboriginal Heritage Information Management System (AHIMS) was searched to find out about the PAA and nearby areas.

Of the 279 recorded Aboriginal sites in the region surrounding the PAA listed on AHIMS before the field surveys for the Project, 86% contained more than one stone artefact (14% were isolated finds) and 9% were modified trees. Only six grinding groove sites were recorded in the region. Three sites with art, a waterhole/well site, a fish trap site and a quarry site were also recorded.

Before the field surveys for the Project, only 14 Aboriginal sites had been registered as occurring within the PAA: nine open stone artefact sites and five scarred tree sites.

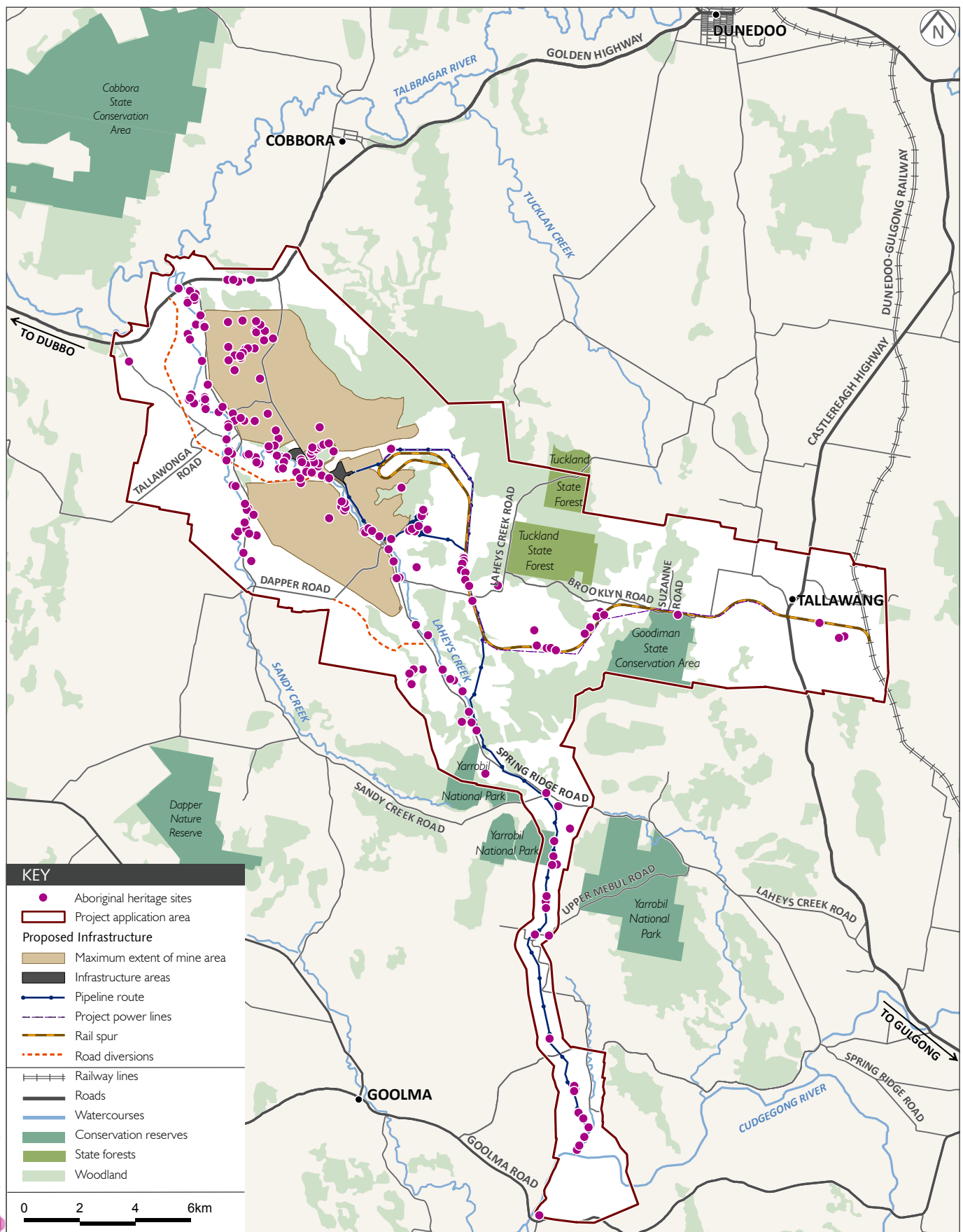
18.3.2 Previous reports

There are no previous archaeological reports available that specifically address land solely within the PAA or the local area. The following reports were made in the region of the PAA:

- *Aboriginal Archaeology and European Heritage Assessment, Proposed AGL Natural Gas Pipeline, Dubbo–Tamworth (and Gunnedah), NSW* (JMCHM 1998 and 1999). Detail Aboriginal sites along the proposed pipeline route that passes through the north-west corner of the PAA.
- *Seen Through Different Eyes: Changing Land Use and Settlement Patterns in the Upper Macquarie River Region NSW from Prehistoric Times to 1860* (Pearson 1981). Describes Aboriginal settlement in the Cudgegong Valley and notes the common occurrence of Aboriginal stone artefact sites along the major creeks.
- *Aboriginal Sites in the Dubbo City Area* (Koetigg 1986). This report describes the association of watercourses with Aboriginal sites, identifying a trend already well established in regional studies of the Hunter Valley and Cumberland Plain.
- *Brigalow Belt South Stage 2: Aboriginal Cultural Heritage Assessment – Dubbo Local Aboriginal Land Council* (NPWS 2002). Describes the results of an Aboriginal heritage survey within the Goonoo and Pilliga State Forests and discusses the low potential for Aboriginal sites to occur on rocky elevated ground.

18.3.3 Field survey results

A total of 229 individual sites were recorded in the PAA during the field surveys (Table 18.2). Most sites occur within 300 m of Sandy Creek or Laheys Creek. All Aboriginal sites recorded in the PAA are shown in Figure 18.1. Open stone artefacts or stone artefact concentrations were the most common type of Aboriginal archaeology found within the PAA.



All Recorded Aboriginal Sites in PAA

Cobora Coal Project - Environmental Assessment

Figure 18.1

Table 18.2 **Aboriginal site type frequency within the PAA**

Site Type	Number	Notes
Open stone artefact or stone artefact concentration	164	-
Scarred tree	25	-
Grinding grooves	18	-
Hearth	15	Several hearths occur within open artefact site boundaries
Rock-shelter with potential archaeological deposits	6	-
Rock-shelter with artefact	1	Rock-shelter with associated Aboriginal stone artefact
Total	229	-

18.3.4 Significance

Cultural heritage values are an important consideration in determining how to manage a heritage site, object or place.

Aboriginal sites, objects and places have a range of cultural heritage values. They may be based on social, educational, ancestral, environmental or traditional associations. Aboriginal sites containing archaeological material are all of value to the Aboriginal community through the connection that they represent with pre-European Aboriginal land use.

In response to requests for information about cultural heritage values during the consultation and EA process, the RAPs have not indicated there are areas of cultural heritage value outside of the recorded Aboriginal sites. No cultural heritage values were identified through archival research. No Aboriginal people that have traditional knowledge specific to the PAA have been identified in consultation with the RAPs. Therefore no one has been identified who can provide an oral history or participate in cultural mapping of the PAA.

The assessment of significance for recorded sites is therefore based on their scientific value. The scientific value of sites was determined based on the following criteria:

- research potential, which considers the contribution a heritage site can make to the present understanding of human society and the human past;
- rarity and representativeness, which considers if a site is 'one of a kind', unusual in the region, or contains unique artefacts;
- integrity, which considers the level of site disturbance and how the disturbance will affect the information that can be gained from a site;
- research themes, which consider if a site can help to answer key research issues for a region; and
- educational value, which relates to the capacity of a site to portray more easily recognisable archaeological features.

Each recorded site has been assigned a significance level: high, moderate or low.

A site has 'high significance' if its removal, in the absence of mitigation measures, could result in a loss to future generations that cannot be met by other existing local sites. If a high significance site cannot be avoided, measures are required to preserve the value of the site. A site has 'medium significance' if it may contribute important knowledge of the values in an area but it is not rare or unique. A sample of these sites should be salvaged if disturbed. A site has 'low significance' if it does not contribute to the understanding of the area. Low significance sites still hold inherent significance as a representation of Aboriginal life, which is important to Aboriginal people.

The site types and their significance level in the PAA are summarised in Table 18.3.

Table 18.3 Site type and significance level

Site type	Significance level			
	High	Moderate	Low	Total
Aboriginal rock-shelter	0	1	0	1
Rock-shelter with potential archaeological deposits	0	5	1	6
Open stone artefact	13	59	92	164
Scarred tree	0	13	12	25
Grinding grooves	2	13	3	18
Hearth	0	15	0	15
Total	15	106	108	229

18.4 Environmental management

Aboriginal heritage management measures will be based on the predicted impacts of the Project and the significance levels of the identified Aboriginal sites.

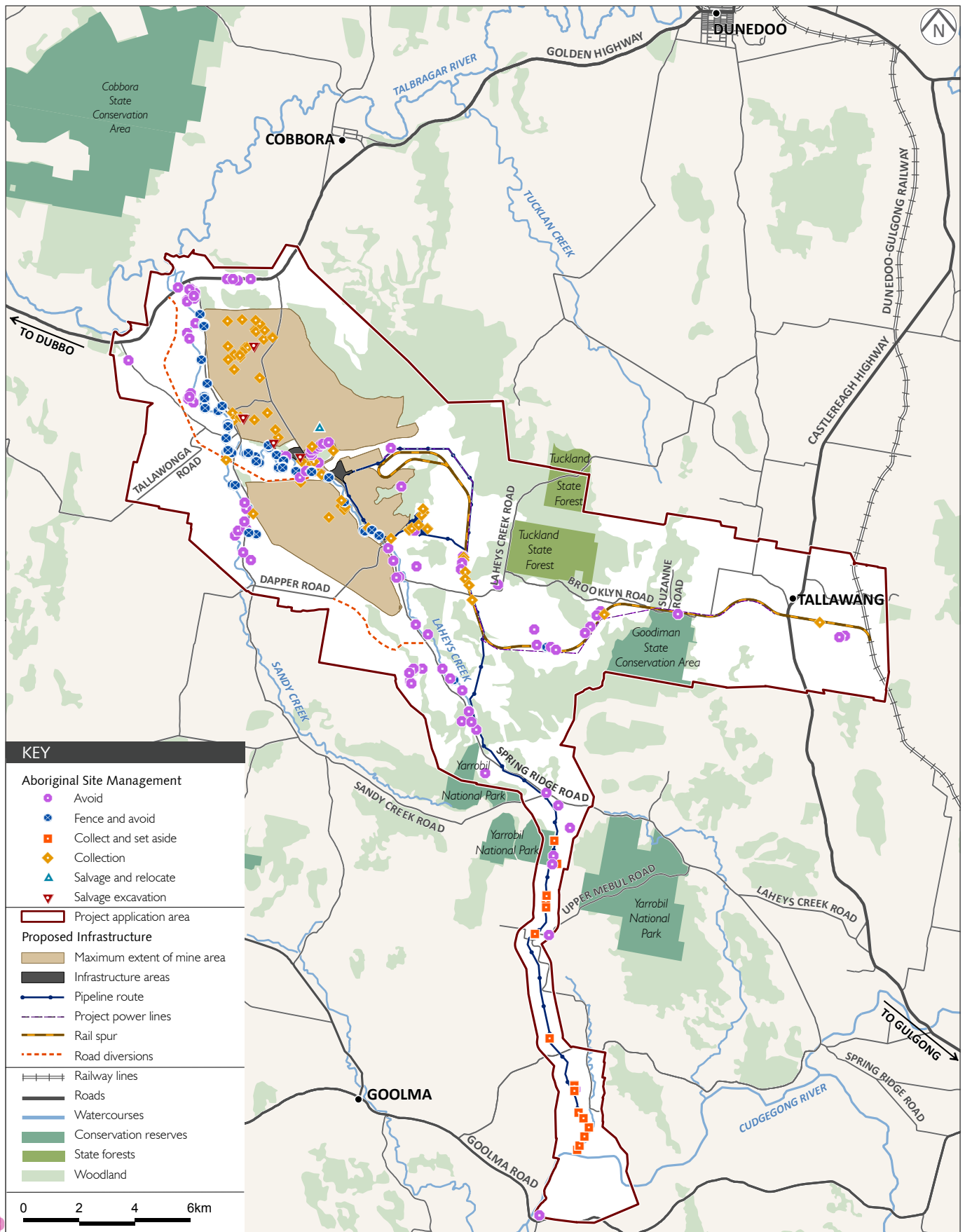
The mine footprint has been reduced and modified to avoid the majority of Aboriginal sites of high significance, including no diversions of Sandy Creek or Laheys Creek. However, some disturbance to Aboriginal sites and objects will occur (see Section 18.5). An Aboriginal heritage management plan (AHMP) will be prepared in consultation with the RAPs. It will detail procedures for the active management of Aboriginal sites, the management of areas of archaeological sensitivity and will include protocols to recover and preserve Aboriginal objects. The Aboriginal community will be active participants in heritage management. The AHMP will be periodically reviewed in consultation with RAPs and OEH. Other key management measures are described below.

Mitigation measures to minimise impacts to Aboriginal heritage will include:

- passive management: avoidance – Aboriginal sites in the PAA more than 100 m from the mine operations area will be subject to passive management and will be avoided by mine activities;
- active management: fence and avoid – Aboriginal sites and archaeologically sensitive areas within 100 m of the mine operations area will be actively protected using fencing and signs for the duration of mining;
- collect: Aboriginal sites within the disturbance area will be salvaged through collection and, for select sites, excavation, the results of which will be compiled in a salvage report;

- collect and set aside: Aboriginal objects occurring in areas of disturbance during construction will be moved out of the path of construction impacts and left close to their original location and their AHIMS records will be updated with a record of the action;
- salvage and relocate: Aboriginal objects, such as grinding grooves, which are within the disturbance area, will be removed and relocated to a keeping place;
- salvage excavation: Aboriginal sites with the potential to provide valuable information about past Aboriginal life that will be removed will be subject to detailed archaeological excavation to recover and record all components and obtain suitable samples for radiometric or luminescence dating;
- with the agreement of the RAPs, CHC will establish a dedicated storage facility as part of the on-site offices as a keeping place to care for all collected and excavated Aboriginal objects and facilitate access to associated reports and records;
- the following procedure will be followed if new Aboriginal sites are discovered outside the areas of high archaeological sensitivity:
 - work will halt in an area of 10 m around the potential site or as determined in the AHMP;
 - an archaeologist and members of the RAPs will be contacted to determine the significance of the object(s);
 - any new sites will be registered in the AHIMS database; and
 - sites of moderate to high significance will be managed in a manner consistent with the management measures outlined above, including appropriate forms of salvage for objects of moderate to high significance;
- the following procedure will be followed if known or suspected Aboriginal skeletal remains are encountered:
 - all work in the area will cease immediately and 10 m radius area around the find will be cordoned off;
 - the find will be immediately reported to the work supervisor who will immediately advise the CHC Environment Manager or other nominated senior staff member;
 - CHC will promptly notify the police (as required for all human remains discoveries);
 - CHC will contact OEH for advice on identification and management of the skeletal material; and
 - if the remains are Aboriginal ancestral remains, the RAPs will be contacted within two working days and consultative arrangements will be made to discuss ongoing care of the remains.

The numbers of sites where each management measure will be applied are provided in Table 18.4. The sites and management measures are shown in Figure 18.2.



Aboriginal Site Management

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Figure 18.2

Table 18.4 **Aboriginal sites addressed by each management measure**

Management	Number of Aboriginal sites
Passive management: avoid	104
Active management: fence and avoid	46
Collect and set aside	15
Collect	58
Salvage and relocate	1
Salvage excavation	5
Total	229

18.5 Impacts

Out of a total of 229 Aboriginal sites recorded within the PAA, 151 (66%) will remain undisturbed.

The Project will result in impacts to:

- 55 sites that will be removed;
- eight that will be partially removed;
- one that will be disturbed; and
- 15 that will be partially disturbed.

‘Removed’ is defined as total removal of a site’s elements and the information they contain. ‘Partially removed’ entails the removal of a part of a site. ‘Disturbed’ means Aboriginal sites and objects will be disrupted and moved a short distance through displacement of ground and results in removal of some site context and spatial patterning. ‘Partial disturbance’ involves disturbance to a part of the site and the partial removal of site elements.

Of the sites that will be impacted, four are of high significance, 34 are of moderate significance and 40 are of low significance. All sites, their impacts and management are shown in Table 18.5.

Table 18.5 Impacts on Aboriginal objects

Site Type	Site name	Scientific significance	Project impact	Management
Aboriginal Rock-shelter	CBR-RSH-01	Moderate	Mining Area A	Salvage excavation
Grinding grooves	CBR-GG-01	Moderate	None	Fence and avoid
	CBR-GG-02	Moderate	Mining Area C	Salvage and relocate
	Grinding Groove 01	Moderate	None	Fence and avoid
	Grinding Groove 02	Moderate	None	Fence and avoid
	Grinding Groove 03	Moderate	None	Fence and avoid
	Grinding Groove 04	Moderate	None	No action
	Grinding Groove 05	Moderate	None	Fence and avoid
	Grinding Groove 06	Moderate	None	No action
	Grinding Groove 07	Moderate	None	No action
	Grinding Groove 08	High	None	Fence and avoid
	Grinding Groove 09	Moderate	None	No action
	Grinding Groove 10	Low	None	No action
	Grinding Groove 11	Moderate	None	No action
	Grinding Groove 12	Moderate	None	No action
	Grinding Groove 13	Moderate	None	No action
	Grinding Groove 14	High	None	Fence and avoid
	Grinding Groove 15	Low	None	Fence and avoid
	Grinding Groove 16	Low	None	No action
Hearth	Hearth 01	Moderate	None	No action
	Hearth 02	Moderate	None	No action
	Hearth 03	Moderate	None	No action
	Hearth 04	Moderate	Mining Area A	Salvage excavation
	Hearth 05	Moderate	Mining Area A	Salvage excavation
	Hearth 06	Moderate	None	No action
	Hearth 07	Moderate	None	No action
	Hearth 08	Moderate	None	No action
	Hearth 09	Moderate	None	No action
	Hearth 10	Moderate	None	Fence and avoid
	Hearth 11	Moderate	None	Fence and avoid
	Hearth 12	Moderate	None	Fence and avoid
	Hearth 13	Moderate	None	No action
	Hearth 14	Moderate	None	No action
	Hearth 15	Moderate	None	No action

Table 18.5 **Impacts on Aboriginal objects (Cont'd)**

Site Type	Site name	Scientific significance	Project impact	Management
Open stone artefact scatter	BBS Dubbo LALC Spring Ridge Rd	No record	None	No action
	BBS Dubbo LALC Travelling Stock Route	No record	None	No action
	CBR-IF-01	Low	Haul road/emplacement	Collection
	CBR-IF-02	Moderate	Mining Area A	Collection
	CBR-IF-03	Moderate	Mining Area A	Collection
	CBR-IF-04	Moderate	Mining Area B	Collection
	CBR-IF-05	Low	Infrastructure	Collection
	CBR-IF-06a	Low	Rail spur	Collection
	CBR-IF-06b	Low	None	No action
	CBR-IF-07	Low	Rail spur	Collection
	CBR-IF-08	Low	None	No action
	CBR-OS-01	Moderate	Mining Area A	Collection
	CBR-OS-02	Moderate	Mining Area A	Collection
	CBR-OS-03	Moderate	Mining Area A	Collection
	CBR-OS-04	High	Mining Area A	Collection
	CBR-OS-05a	High	Mining Area A	Collection
	CBR-OS-05b	Moderate	Mining Area A	Collection
	CBR-OS-06	Low	Haul road/emplacement	Collection
	CBR-OS-07	Moderate	Haul road/emplacement	Collection
	CBR-OS-08	Moderate	Haul road/emplacement	Collection
	CBR-OS-09 'Big Scald'	High	Mining Area A	Collection
	CBR-OS-10	Moderate	Mining Area A	Collection
	CBR-OS-11	Moderate	Mining Area A	Collection
	CBR-OS-11a	Low	Mining Area A	Collection
	CBR-OS-12 'Waterhole'	High	Haul road/emplacement	Salvage excavation
	CBR-OS-13a	Low	Haul road/emplacement	Collection
	CBR-OS-13b	Low	Haul road/emplacement	Collection
	CBR-OS-14	Moderate	Haul road/emplacement	Collection
	CBR-OS-15	Low	Haul road/emplacement	Collection
	CBR-OS-16	Low	None	No action
	CBR-OS-17	Low	None	Fence and avoid
	CBR-OS-18	Moderate	None	No action
	CBR-OS-18a	Low	None	Fence and avoid
	CBR-OS-18b	Low	None	No action

Table 18.5 **Impacts on Aboriginal objects (Cont'd)**

Site Type	Site name	Scientific significance	Project impact	Management
	CBR-OS-19	Moderate	Haul road/emplacment	Collection
	CBR-OS-20	Low	Haul road/emplacment	Collection
	CBR-OS-21	Moderate	Mining Area B	Collection
	CBR-OS-22	Low	Water pipeline	Collect and set aside
	CBR-OS-23	Low	Water pipeline	Collect and set aside
	CBR-OS-24	Low	Water pipeline	Collect and set aside
	CBR-OS-25	Low	Water pipeline	Collect and set aside
	CBR-OS-29a	Moderate	Haul road/emplacment	Collection
	CBR-OS-29b	Moderate	None	No action
	CBR-OS-29c	Moderate	Haul road/emplacment	Collection
	CBR-OS-29d	Moderate	None	No action
	CBR-OS-29e	Moderate	None	No action
	CBR-OS-29f	Moderate	None	No action
	CBR-OS-29g	Moderate	None	No action
	CBR-OS-29h	Moderate	None	No action
	CBR-OS-29i	Moderate	None	No action
	CBR-OS-29j	Moderate	None	No action
	CBR-OS-29k	Moderate	None	No action
	CBR-OS-29l	Moderate	Haul road/emplacment	Collection
	CBR-OS-30	Moderate	Haul road/emplacment	Collection
	CBR-OS-31a	Moderate	Haul road/emplacment	Collection
	CBR-OS-31b	Low	Haul road/emplacment	Collection
	CBR-OS-31c	Moderate	Haul road/emplacment	Collection
	CBR-OS-31d	Moderate	None	Fence and avoid
	CBR-OS-31e	Low	Haul Road/emplacment	Collection
	CBR-OS-32	Low	None	No action
	CBR-OS-33a	Low	Haul road/emplacment	Collection
	CBR-OS-33b	Low	Haul road/emplacment	Collection
	CBR-OS-34a	Moderate	Water pipeline	Collection
	CBR-OS-34b	Low	None	Fence and avoid
	CBR-OS-35	Moderate	None	Fence and avoid
	CBR-OS-36	Low	Water pipeline	Collection
	CBR-OS-37a	Low	None	No action

Table 18.5 **Impacts on Aboriginal objects (Cont'd)**

Site Type	Site name	Scientific significance	Project impact	Management
	CBR-OS-37b	Low	None	No action
	CBR-OS-37c	Low	None	No action
	CBR-OS-38a	Low	Raw water dam	Collection
	CBR-OS-38b	Low	Raw water dam	Collection
	CBR-OS-39a	Low	Raw water dam	Collection
	CBR-OS-39b	Low	Raw water dam	Collection
	CBR-OS-39c	Low	Raw water dam	Collection
	CBR-OS-40	Low	Raw water dam	Collection
	CBR-OS-41	Low	Raw water dam	Collection
	CBR-OS-42	Low	None	No action
	CBR-OS-43	Moderate	Rail spur	Collection
	CBR-OS-44a	Moderate	Rail spur	Collection
	CBR-OS-44b	Low	None	No action
	CBR-OS-45	Low	Transmission lines	Collection
	CBR-OS-46a	Low	Rail spur	Collection
	CBR-OS-46b	Low	Rail spur	Collection
	CBR-OS-47a	Moderate	None	Fence and avoid
	CBR-OS-47b	Moderate	None	No action
	CBR-OS-48	Low	None	No action
	CBR-OS-49	Low	Rail spur	Collection
	DTG/OC21 – Medway 2	No record	None	No action
	DTG/OC22 – Sandy Creek	No record	None	No action
	Fords Creek; Cobbora;	No record	None	No action
	IF 01 – Glass Flake	Low	None	Fence and avoid
	IF 02 – Brown Silcrete Core	Low	None	Fence and avoid
	IF 03 – Pounding Stone	Low	None	Fence and avoid
	IF 05 – Ground Edge Axe	High	None	No action
	IF 06 – Grinding Bowl	Low	None	No action
	IF 07 – Hammer Stone	Low	None	Fence and avoid
	IF 08 – Anvil	Low	None	No action
	IF 09 – Grinding Bowl	High	None	No action
	IF 10 – Grinding Bowl	High	None	No action
	IF 11 – Grinding Bowl	Low	None	No action
	IF 12 – Small Hammer Stone	Low	None	Fence and avoid
	IF 14	Low	None	No action
	IF 15	Low	None	Collect and set aside
	IF 16	Low	None	Collect and set aside
	IF 17	Low	Water pipeline	Collect and set aside

Table 18.5 **Impacts on Aboriginal objects (Cont'd)**

Site Type	Site name	Scientific significance	Project impact	Management
	IF 18	Low	None	No action
	IF O4 – Knife Sharpening Stone	Low	None	No action
	SAC 01	Moderate	None	No action
	SAC 02	Low	None	No action
	SAC 03	Low	None	No action
	SAC 04	Low	None	No action
	SAC 05	Low	None	No action
	SAC 06	High	None	No action
	SAC 07	Moderate	None	No action
	SAC 08	Low	None	Fence and avoid
	SAC 09	Moderate	None	No action
	SAC 10	Low	None	No action
	SAC 11	Low	Mining Area A	Collection
	SAC 12	Moderate	Mining Area A	Collection
	SAC 13	Low	Mining Area A	Collection
	SAC 14	Low	None	Fence and avoid
	SAC 15	Low	None	Fence and avoid
	SAC 16	Low	None	Fence and avoid
	SAC 17	Low	None	No action
	SAC 18	High	None	No action
	SAC 19	Low	None	No action
	SAC 20	Low	None	Fence and avoid
	SAC 21	Low	None	Fence and avoid
	SAC 22	High	None	Fence and avoid
	SAC 23	High	None	Fence and avoid
	SAC 24	Moderate	Infrastructure	Salvage excavation
	SAC 25	Moderate	Infrastructure	Collection
	SAC 26	Low	None	Fence and avoid
	SAC 27	Low	None	Fence and avoid
	SAC 28	Moderate	Road diversion	Collection
	SAC 29	Moderate	None	Fence and avoid
	SAC 30	Low	None	No action
	SAC 31	High	None	No action
	SAC 32	Moderate	None	No action
	SAC 33	Moderate	None	No action
	SAC 34	High	None	No action
	SAC 35	Low	None	Fence and avoid
	SAC 36	Moderate	Road diversion	Collection
	SAC 37	Low	Mining Area B	Collection
	SAC 38	Low	None	Fence and avoid
	SAC 39	Low	None	No action
	SAC 40	Low	None	No action

Table 18.5 **Impacts on Aboriginal objects (Cont'd)**

Site Type	Site name	Scientific significance	Project impact	Management
	SAC 41	Low	Water pipeline	Collect and set aside
	SAC 42	Moderate	Water pipeline	Collect and set aside
	SAC 43	Low	Water pipeline	Collect and set aside
	SAC 44	Low	Water pipeline	Collect and set aside
	SAC 45	Low	Water pipeline	Collect and set aside
	SAC 46	Moderate	Water pipeline	Collect and set aside
	SAC 47	Low	Water pipeline	Collect and set aside
	SAC 48	Low	Water pipeline	Collect and set aside
	SAC 59	Low	None	No action
	SAC 60	Low	None	No action
	SAC 61	Low	None	No action
	SAC 62	Low	None	No action
	SAC 63	Low	None	No action
	Sandy Creek; Cobbora;	No record	None	No action
	The Gap; Cobbora;	No record	None	No action
	The Gap; Cobbora;	No record	None	No action
	YBCR-OS2 with PAD	No record	None	No action
	Shelter 01	Low	None	No action
	Shelter 02	Moderate	None	Fence and avoid
	Shelter 03	Moderate	None	No action
Aboriginal rock-shelter with potential archaeological deposit	Shelter 04	Moderate	None	No action
	Shelter 05	Moderate	None	No action
	Shelter 08	Moderate	None	No action
Scarred tree	BBS; Dubbo LALC; Road Reserve 2	No record	None	No action
	DR-ST2	No record	None	No action
	DR-ST3	No record	None	No action
	DR-ST4	No record	None	No action
	DR-ST5	No record	None	No action
	TRE 01	Low	None	No action
	TRE 02	Low	None	No action
	TRE 03	Low	None	No action
	TRE 04	Moderate	None	No action
	TRE 05	Moderate	None	No action
	TRE 06	Low	None	No action
	TRE 07	Moderate	None	Fence and avoid
	TRE 08	Moderate	None	Fence and avoid
	TRE 09	Moderate	None	Fence and avoid
	TRE 10	Low	None	Fence and avoid
	TRE 11	Low	None	Fence and avoid
	TRE 12	Low	None	Fence and avoid
	TRE 13	Moderate	None	No action

Table 18.5 **Impacts on Aboriginal objects (Cont'd)**

Site Type	Site name	Scientific significance	Project impact	Management
	TRE 14	Low	None	Fence and avoid
	TRE 15	Low	None	Fence and avoid
	TRE 16	Low	None	Fence and avoid
	TRE 17	Low	None	Fence and avoid
	TRE 18	Moderate	None	No action
	TRE 19	Moderate	None	No action
	TRE 20	Low	None	No action

All of the four sites of high significance that will be removed are within 1.5 km of each other within Mining Area A and associated emplacement areas:

- CBR-OS-12 'Waterhole site' – a large stone-artefact site located along an unnamed ephemeral watercourse;
- CBR-OS-09 'Big Scald site' – a large stone-artefact site located along the same unnamed ephemeral watercourse;
- CBR-OS-04 – an artefact site on the ridge top north of the unnamed west flowing watercourse; and
- CBR-OS-05 – an artefact site in a similar area to CBR-OS-04.

Eleven sites of high significance will be preserved along Sandy and Laheys Creek. These sites will remain as a valuable assemblage with excellent research potential.

Three sites of moderate significance will be partially disturbed, five sites partially lost and 26 sites of moderate significance removed. The 34 sites include open stone artefact sites, one grinding groove site, a rockshelter, and two hearths. The artefacts in these sites are well represented in the other sites of moderate and high significance that the Project will avoid. The Project will avoid 72 sites of moderate significance. These include 13 scarred trees, five rockshelters, 29 open stone artefact sites, 13 hearths and 12 grinding groove sites.

The 40 sites of low significance to be impacted include open sites and isolated finds. Fourteen sites will be partially removed and 24 sites will be removed. These sites do not contribute to the understanding of the area due to their sparse contents or because they are not good representative examples of Aboriginal sites. The Project will avoid 68 sites of low significance.

Although the Project will impact 79 sites, the measures to offset these impacts through salvage analysis and long-term curation of Aboriginal objects will result in a level of impact that will not significantly diminish the local archaeological record of Aboriginal occupation.

The 151 sites that will remain undisturbed consist of sites of high significance (11), moderate significance (72) and low significance (68), and represent a wide variety of Aboriginal site types and objects. They will remain as a substantial and valuable record of Aboriginal occupation in the area.

18.5.1 Aboriginal heritage outcomes

The field surveys identified 229 Aboriginal heritage sites and areas of archaeological sensitivity associated with major creeks. Aboriginal sites containing archaeological material are all of value to the Aboriginal community through the connection that they represent with pre-European Aboriginal land use. However, no specific cultural heritage values relating to the Project area were identified through archival research or community consultation.

The majority of Aboriginal heritage in the PAA will be unaffected by Project activities. The mine footprint has been reduced and modified to avoid Aboriginal sites of high significance, including no diversions of Sandy Creek or Laheys Creek.

An AHMP will be prepared in consultation with the RAPs. It will provide detailed procedures for the active management of Aboriginal sites and management of areas of archaeological sensitivity and include protocols to recover and preserve Aboriginal objects such as fencing, collection and excavation. Aboriginal sites which will be impacted by the Project will be subject to collection and recording and a keeping place within the on-site offices of the Project will be established. A salvage report will be compiled to preserve the information in these sites for future generations.

Out of the 229 Aboriginal sites recorded in the PAA, 150 (66%) will remain undisturbed. Although 79 recorded sites will be impacted by the Project, only four are of high significance. The measures to offset these impacts through salvage, analysis and long-term curation of Aboriginal objects will result in a level of impact that will not significantly diminish the local archaeological record of Aboriginal occupation. These measures will be undertaken in consultation and participation with the Registered Aboriginal Parties.

18.6 Monitoring

Sites close to the mine will be regularly monitored to evaluate the effectiveness and reliability of the management measures. The process and frequency of monitoring will be detailed in the AHMP. The AHMP will be periodically reviewed in consultation with RAPs and OEH.

The management and mitigation measures proposed will ensure the level of impact to Aboriginal heritage will not significantly diminish the local archaeological record of Aboriginal occupation.

