

## 4 REGULATORY FRAMEWORK

*This section briefly describes the regulatory framework under which Bengalla Mine is approved to operate as relevant to the Modification. It discusses the ability of the Minister for Planning and Infrastructure to modify SSD-5170 under section 96(2) of the EP&A Act and the approvals process.*

### 4.1 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

#### 4.1.1 Existing Development Consent

On 3 March 2015, the Secretary for the DP&E as delegate of the Minister for Planning granted SSD-5170 for the Bengalla Continuation Project under section 89E of the EP&A Act. The supporting document for SSD-5170 is the Bengalla EIS (Hansen Bailey, 2013).

#### 4.1.2 Power to Modify

Section 96 of the EP&A Act allows for a Development Consent to be modified by the authority to which the original application was made. In this instance the Minister for Planning. Section 96(2) (a) of the EP&A Act states:

*96 (2) "A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*

- (a) It is satisfied that the development to which the consent as modified relates is substantially the same as the development for which consent was originally granted and before that consent was originally granted was modified (if at all)".*

Under Section 96(2) the consent authority must be satisfied that what is proposed is no more than to "modify" (i.e. alter without radical transformation) the proposed development (including the Modification and any previous modifications) such that it remains '*substantially the same development*' as the originally approved development.

#### ***Bengalla as Originally Approved***

BMC was granted SSD-5170 under the EP&A Act for the '*Bengalla Continuation Project*' on 3 March 2015. Bengalla as originally approved in SSD-5170 had the following features:

- Open cut mining west at a rate of up to 15 Mtpa ROM coal for 24 years to a total of 316 Mt;
- Continued use of the existing dragline, truck fleet and excavator fleet (with progressive replacement or substitution with equivalent);
- An out of mining area OEA to the west of Dry Creek, which may be utilised for excess overburden material until it is intercepted by mining;
- Continued use, extension or relocation to existing and new infrastructure, including administration and parking facilities, in-mining area facilities (including dragline shut down and erection pad), helipad, tyre laydown area, explosives and reload storage facility, core shed workshop, roads, reject bin, ROM hopper, stockpiles, conveyors, water management infrastructure, bioremediation area, supporting power infrastructure, rail and rail loading infrastructure and ancillary infrastructure;
- Construction and use of various items of new infrastructure (including radio tower, extensions to the MIA, additional raw coal stockpile and upgrade to the ROM coal stockpile (along with associated conveyor network) generally as shown on the infrastructure plans and construction of the Mount Pleasant Staged Discharge Dam and associated water reticulation infrastructure;
- Processing, handling and transportation of coal via the (upgraded) CHPP and rail loop for export and domestic sale;
- Continued rejects and tailings co-disposal in the Main OEA and in the temporary in-mining area reject emplacement;

- Relocation of a 6 km section of Bengalla Link Road at approximately Year 15 near the existing mine access road to facilitate coal extraction;
- The diversion of Dry Creek via dams and pipe work with a later permanent alignment of Dry Creek through rehabilitation areas when emplacement areas are suitably advanced;
- Relocation of water storage infrastructure as mining progresses through existing dams (including the Staged Discharge Dam and raw water dam); and
- A workforce of up to 900 full time equivalent personnel (plus contractors) at peak production.

### ***Bengalla as Modified***

If this Modification is approved, Bengalla as modified will have the following features as compared to the originally approved development:

- Alterations to various water management infrastructure components including:
  - Utilisation of the Satellite Pit as a temporary dirty water catchment dam;
  - Relocation of the Staged Discharge Dam Hunter River Salinity Trading Scheme (HRSTS) staged discharge release point;
  - Construction of clean water diversion levees in locations other than those already approved; and
  - Revised locations for the proposed relocation of the Hunter River and Washery Dams.
- Additional locations for the siting of the Explosives Storage Facility; and
- The placement of fill from the excavation of CW1 adjacent to it.

### ***Substantially the Same Development***

The proposed repositioning of various water and other infrastructure elements approved under SSD-5170 are very minor in nature and will not result in any substantive changes to the development.

The alterations to the development will not have a significant impact on the *Threatened Species Conservation Act 1995* (TSC Act) or EPBC Act listed flora or fauna species.

The Modification will not result in any change to the core elements of SSD-5170 such as:

- Total coal production rates or duration of mining;
- Existing method of mining or destination of ROM and product coal;
- The character of the currently approved infrastructure components; and
- Existing manning levels or operational hours.

Mining operations will occur within the existing Mining Leases, and those currently being sought to facilitate SSD-5170, utilising the approved open-cut coal mining methods and similar equipment fleet to that proposed in the Bengalla EIS. Additional discussion comparing the approved operations with the Modification is provided in **Section 3** and summarised in **Table 2**.

Limited environmental impacts have been predicted as a result of the Modification as discussed further in **Section 6** of this SEE.

It is concluded that it is open to the Minister to be satisfied that the modified development will be substantially the same as the development for which SSD-5170 was originally granted. It is therefore available for the Minister (or his delegate) to determine the application for Modification to the Development Consent as sought.

#### 4.1.3 Need for a Statement of Environmental Effects

Clause 115 of the *Environmental Planning and Assessment Regulation 2000* NSW (EP&A Regs) sets out the information which is required to accompany any application for modification of a development consent. That information is set out **Table 3** below.

**Table 3**  
**Statement of Environmental Effects Requirements**

Clause of Regulation	Information Required	Where it is provided in this SEE
115(1)	An application for modification of a development consent under section 96 (1), (1A) or (2) or 96AA (1) of the Act must contain the following information:	
(a)	the name and address of the applicant,	<b>Section 1.3</b>
(b)	a description of the development to be carried out under the consent (as previously modified),	<b>Section 2.1</b>
(c)	the address, and formal particulars of title, of the land on which the development is to be carried out,	<b>Appendix A</b>
(d)	a description of the proposed modification to the development consent,	<b>Section 3.0</b>
(e)	a statement that indicates either:	N/A
	(i) that the modification is merely intended to correct a minor error, misdescription or miscalculation, or	
	(ii) that the modification is intended to have some other effect, as specified in the statement	<b>Section 4.1.2</b>
(f)	a description of the expected impacts of the modification,	<b>Section 6.0</b>
(g)	an undertaking to the effect that the development (as to be modified) will remain substantially the same as the development that was originally approved,	<b>Section 4.1.2</b>
(h)	if the applicant is not the owner of the land, a statement signed by the owner of the land to the effect that the owner consents to the making of the application (except where the application for the consent the subject of the modification was made, or could have been made, without the consent of the owner),	Landowner consent not required
(i)	a statement as to whether the application is being made to the Court (under section 96) or to the consent authority (under section 96AA), and, if the consent authority so requires, must be in the form approved by that authority.	<b>Section 4.1.2</b>

#### 4.1.4 Matters for Consideration in Determining Modification Application

Section 96(3) of the EP&A Act provides:

- (b) *"In determining an application for modification of a consent under this section, the consent authority must take into consideration such of the matters referred to in section 79C (1) as are of relevance to the development the subject of the application."*

The matters referred to in section 79C (1) relevant to the application for Modification to SSD-5170 are:

- The provisions of any environmental planning instrument that applies to the land the subject of the Modification being:
  - *Muswellbrook Local Environmental Plan (LEP) 2009 (Muswellbrook LEP);*
  - *Hunter Regional Environmental Plan (REP) 1989 (Hunter REP); and*
  - *SEPP Mining.*
- Any Development Control Plan;
- Any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F;
- The regulations that apply to the land to which the development application relates;
- The likely impacts of the development including environmental impacts on both the natural and built environments, and social environmental impacts on the locality;
- The suitability of the site for the development;
- Any submissions made in accordance with the EP&A Act or the regulations; and
- The public interest.

## 4.2 RELEVANT PLANNING INSTRUMENTS

### 4.2.1 Muswellbrook LEP (2009)

All of the elements of the Modification are located entirely within the Muswellbrook LGA on land zoned as "RU1 Primary Production" and as "E3 Environmental Management" under the Muswellbrook Local Environment Plan 2009 (Muswellbrook LEP).

The land use table in the Muswellbrook LEP states that mining is prohibited within Zone E3. However, the permissibility of mining developments is also governed by the Mining SEPP. Clause 7(1) of the Mining SEPP provides:

#### ***"7 Development permissible with consent***

##### ***(1) Mining***

*Development for any of the following purposes may be carried out only with development consent: ...*

##### ***(b) mining carried out:***

- (i) on land where development for the purposes of agriculture or industry may be carried out (with or without development consent), or***
- (ii) on land that is, immediately before the commencement of this clause, the subject of a mining lease under the Mining Act 1992 or a mining licence under the Offshore Minerals Act 1999."***

The Muswellbrook LEP provides that development for the purposes of '*extensive agriculture*' is permissible within zone E3. By virtue of clause 7(1)(b)(i) of the Mining SEPP, mining is also permissible within zone E3. This is inconsistent with the land use table in the Muswellbrook LEP. Clause 5 of the Mining SEPP states that where there is an inconsistency between the SEPP and another Environmental Planning Instrument (EPI), the SEPP will prevail to the extent of the inconsistency. Therefore, the Mining SEPP overrides the Muswellbrook LEP, resulting in mining being permissible in Zone E3 with Development Consent.

#### 4.2.2 Hunter Regional Environment Plan 1989

The *Hunter Regional Environmental Plan 1989 (Heritage)* (Hunter REP) aims to conserve the environmental heritage of the Hunter Region. Items of state, regional and local heritage significance are listed under schedules 1, 2 and 3 of the Hunter REP. None of these heritage items are located in proximity to any element of the Modification.

The Hunter REP applies to the land within the DA Boundary and provides objectives to ensure balanced development within the Hunter Region. Clause 39 of the Hunter REP pertains to Mineral Resources and Extractive Industries within the Hunter Region and outlines clear objectives for coal mining in the Hunter with the primary objective to ensure mining is conducted where adverse impacts on the environment and community are minimised.

Clause 48 of the Hunter REP describes policies and objectives for pollution control in the Hunter Region. This includes ensuring adverse impacts associated with potential air quality, noise and water impacts of mining are minimised on the environment and community.

This SEE addresses the above objectives and concludes that the Modification of SSD-5170 will continue to meet the objectives of the Hunter REP.

#### 4.2.3 SEPP (Mining, Petroleum Production and Extractive Industries) 2007

Under clause 7 of *State Environmental Planning Policy Mining, Petroleum Production and Extractive Industries) 2007* (SEPP Mining) the proposed development modification is permissible with consent under the EP&A Act.

The matters for consideration in development applications (and modifications) are set out in Part 3.

#### 4.2.4 SEPP 33 - Hazardous & Offensive Development

*SEPP 33 (Hazardous & Offensive Development)* (SEPP 33) prescribes matters for consideration by the consent authority in determining a development application for development that is a potentially hazardous or offensive industry. This Modification will result in the approval of an alternative locations for the Explosives Storage Facility which was approved to be constructed in SSD-5170.

Clause 12 of SEPP 33 requires a preliminary hazard analysis to be prepared in accordance with current circulars or guidelines. A preliminary hazard analysis completed for the Modification is discussed in **Section 6.7**.

Clause 13 of SEPP 33 requires the consent authority to consider the following:

- “(a) current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development and*
- (b) whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply and*
- (c) in the case of development for the purpose of a potentially hazardous industry – a preliminary hazard analysis prepared by or on behalf of the applicant and*
- (d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives*

*for the location of the development and the reasons for choosing the location the subject of the application) and*

*(e) any likely future use of the land surrounding the development."*

#### **4.2.5 Gateway Process**

Clause 119A of the EP&A Regs requires that a modification application that relates to "mining or petroleum development" on certain land is required to be accompanied by either a Gateway Certificate or a Site Verification Certificate.

The term "mining or petroleum development" is defined in clause 17A of SEPP Mining. The definition excludes:

- (1) development for which a mining lease is not required to be issued to enable the development to be carried out; and
- (2) "development carried out on land that is outside the mining area of a proposed mining lease".

None of the elements of the development proposed by this Modification are within the definition of "mining or petroleum development" because of either or both of the above exclusions. Accordingly, neither a Site Verification Certificate or a Gateway Certificate is required to accompany this application.

### **4.3 OTHER APPROVALS UNDER OTHER NSW LEGISLATION**

#### **4.3.1 Protection of the Environment Operations Act 1997**

Section 48 of the *Protection of the Environment Operations Act 1997* (POEO Act) provides that an EPL is required in respect of premises at which any "... *scheduled activity is carried on ...*". BMC holds EPL 6538 in respect to its currently approved mining operations for DA 211/93 (as modified) and is currently seeking a variation to EPL 6538 relevant to SSD-5170.

The POEO Act provides for licensing of pollution by the NSW Environment Protection Authority (EPA) which administers the POEO Act. Should the Minister for Planning consider it appropriate to grant approval for this Modification, a variation to the EPL 6538 will be sought under the POEO Act prior to the relocation of the HRSTS staged discharge location.

#### **4.3.2 Mining Act 1992**

Applications for mining leases have been lodged in respect of all areas where mining or section 6 mining purposes (which require mining leases) are proposed.

This application does not relate to any new mining or changes to mining operations.

#### **4.3.3 Native Vegetation Act 2003**

Section 89J of the EP&A Act lists the approvals that are not required for approved developments under Division 4.1 of Part 4. Section 89J provides that an authorisation under section 12 of the Native Vegetation Act is "... *not required for State significant development that is authorised by a development consent ...*".

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

Relevantly section 89J provides that an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the *National Parks and Wildlife Act 1974* (NPW Act) is not required for any SSD that has been granted Development Consent. Therefore, an AHIP will not be required in connection with the activities authorised by the development consent if this Modification is approved.

Aboriginal archaeological surveys completed for the Modification have determined that one previously identified and two new Aboriginal artefacts will be impacted.

Aboriginal heritage is to be managed in accordance with the conditions stipulated as part of SSD-5170. SSD-5170 Schedule 3, Condition 31 requires the preparation and implementation of an Aboriginal Archaeological and Cultural Heritage Management Plan (ACHMP) to manage all Aboriginal Heritage items within the DA Boundary. All Aboriginal artefacts predicted to be impacted by the Modification will be managed in accordance with the approved ACHMP (BMC, 2015).

#### 4.3.5 Water Management Act 2000 and Water Act 1912

The licensing and approvals provisions of the *Water Management Act 2000* (WM Act) apply (in general terms) to water sources that are subject to a Water Sharing Plan (WSP). Parts 2 and 5 of the *Water Act 1912* continue to apply to water sources that are not subject to a WSP.

No water sources regulated under the Water Act 1912 will be affected by the proposed activities.

The Modification will not result in an increase of the maximum approved water take from water sources regulated under the WM Act and therefore no additional water access licences will be required. BMC will continue to hold all relevant licences, share component and allocation required to comply with the WM Act and Water Act at all times water is taken, whether during or after the life of the Project.

#### 4.3.6 Dams Safety Act 1978

The *Dams Safety Act 1978* (Dams Safety Act) requires the NSW Dams Safety Committee (DSC) to “*formulate measures to ensure the safety of dams*” and to “*maintain a surveillance of prescribed dams*”. A “prescribed dam” is any dam listed under Schedule 1 of the Dams Safety Act.

BMC’s existing Staged Discharge Dam is listed as a Prescribed Dam under the Dams Safety Act. In addition, it is anticipated that CW1 (to be constructed) will also be listed as a Prescribed Dam following final confirmation with the DSC.

All prescribed dams at Bengalla will be operated under a safety management system which complies with the requirements of the DSC.

The Modification will not result in the construction of any other dams that will require regulation under the Dams Safety Act by the DSC.

### 4.4 COMMONWEALTH LEGISLATION

#### 4.4.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

If a proposed action is likely to have a significant effect on one or more ‘*Matters of National Environmental Significance*’ (MNES), the action is deemed to be a ‘*controlled action*’. The approval of the Commonwealth Minister for the Environment must be obtained before a controlled action can be carried out.

The Project was referred to the Minister for the Environment on 30 April 2012 and was subsequently determined to be a controlled action on 7 June 2012 as it was considered that it was likely to have a significant effect on “*Listed threatened species and communities*” (sections 18 & 18A). On 24 September 2013, BMC was further notified by the Minister for the Environment that the additional controlling provisions in accordance with section 24D and 24E associated with significant impacts to a water resource would also apply to Bengalla.

On 27 May 2015, BMC was granted EPBC Act Approval 2012/6378 for the proposed action to:

- (c) “*To continue open cut coal mining operations at the Bengalla Mine, approximately 4 km west of Muswellbrook in the Upper Hunter Valley, NSW for a further 24 years (See EPBC Act Referral 2012/6378), including the variation to the action as approved on 18 January 2013 to realign the southern section of the project boundary and expand a portion of the disturbance boundary*”.

This Modification will result in the disturbance of up to an additional 9.1 ha of vegetation located outside the Disturbance Boundary. Of this area 6.1 ha contains vegetation communities conforming to the Box Gum Woodland and Derived Native Grassland community listed as Critically Endangered Ecological Community (CEEC) under the EPBC Act.

The Ecological Assessment completed for this SEE (see **Section 6.1**) has determined that due to the degraded nature of the CEEC to be disturbed and the relatively small area of disturbance proposed, providing that the management and mitigation measures described in this SEE are carefully implemented, this Modification will not result in a significant impact to EPBC listed communities.

This Modification has also considered the potential impacts on water resources in relation to the Federal Guidelines: *Matters of National Environmental Significance Significant Impact Guidelines 1.1* and the *Significant Impact Guidelines 1.3; Coal seam gas and large coal mining developments – impacts on water resources* (EPBC Water Guidelines). Section 1.1.2 of the EPBC Water Guidelines state:

*"The core purpose of these guidelines is to assist any person who proposes to take an action which involves a ... large coal mining development to decide whether the action has or is likely to have a significant impact on a water resource."*

A "large coal mining development" is defined under the EPBC Act (section 528) as:

*"any coal mining activity that has, or is likely to have, a significant impact on water resources (including any impacts of associated salt production and/or salinity):*

*(a) in its own right; or*

*(b) when considered with other developments, whether past, present or reasonably foreseeable developments."*

The following extracts from the EPBC Water Guidelines are also relevant to the Modification:

*"3.6 An expansion or modification to existing facilities may be within the definition of ... 'large coal mining development' if the expansion or modification involves extractive ... coal mining activities which are likely to have a significant impact on a water resource."*

And

*"4.2.1 If a referral for a proposed expansion or modification to a project does not involve extraction of ... coal, then it will not be within the definition of ... 'large coal mining development', and the water trigger will not apply ...."*

And

*"3.4. Extraction of CSG or coal*

*The definitions of ... 'large coal mining development' relate to impacts on a water resource of activities that form part of the process of extracting coal .... The development of associated infrastructure that is not part of the extraction process is not included in the definitions of ... large coal mining development.*

*Extraction of ... coal must form part of the activity and not merely be associated with it. Where referred along with new or modified extraction of ... coal, the following activities will form part of the extractive process:*

- water supply for use in the extraction of ... coal*
- management of water generated as a result of extraction of ... coal, such as holding dams or water treatment facilities*
- management of waste generated as a result of extraction of ... coal, such as spoil heaps.*



*However, these activities will not independently be ... coal mining development where there is no new or modified extraction of ... coal...."*

### *"3.5. Associated infrastructure*

*The development of associated infrastructure that is not part of the extraction process is not included in the definitions of... 'large coal mining development'. This may include:*

- transport infrastructure, such as pipelines, road or rail infrastructure*
- office/housing and amenity construction*
- environment protection, monitoring and associated land management activities..."*

The activities, the subject of this Modification, do not include an extraction of coal. They relate purely to "*associated infrastructure that is not part of the extraction process*" (the extraction process itself was all assessed and approved under EPBC 2012/6378).

The area to be cleared in association with the Modification activities has been assessed as not having a significant impact on any MNES.

It has been determined the Modification will not constitute a '*controlled action*' for any impacts to MNES and there is no need to refer the Action under Section 68 of the EPBC Act to the Federal Minister for the Environment for an approval under Part 9 of the EPBC Act.

## 5 RISK ASSESSMENT

A risk assessment was completed to identify potential environmental and socio-economic issues associated with the Modification. The primary purpose of the risk assessment process was to prioritise and focus the required environmental and socio-economic impact studies required for the SEE.

Each of the potential environmental issues was ranked in accordance with the RTCA HSEQ Risk Classification Matrix (see **Appendix B**) as being of low, moderate, significant, high or critical risk. The risk rating allocated to an impact is dependent upon the probability of the impact occurring and the potential consequences should the impact materialise.

Each of the environmental and social-economic issues has been assessed and where appropriate, management and mitigation options developed.

Due to the minor nature of the Modification no environmental aspects provided a critical or high risk. Ecology and surface water impacts were determined to be of moderate risk with all remaining environmental issues deemed to be low risk. **Table 4** summarises findings from the risk assessment.

**Table 4**  
**Environmental and Socio-Economic Risk Rating**

Critical	High	Moderate	Low
None	None	Ecology	Air Quality
		Surface Water	Acoustics
			Aboriginal Archaeology
			Visual
			Hazard Analysis
			Non-Aboriginal Heritage

## 6 IMPACTS, MANAGEMENT AND MITIGATION

*The potential environmental impacts of the Modification has been assessed as part of this SEE. The findings of this assessment as well as a description of the measures that will be implemented to manage and mitigate potential impacts are presented below.*

### 6.1 ECOLOGY

#### 6.1.1 Impact Assessment

An Ecological Assessment was completed by Cumberland Ecology for this Modification and is presented in **Appendix C**. Specifically the Ecological Assessment focused on the following objectives:

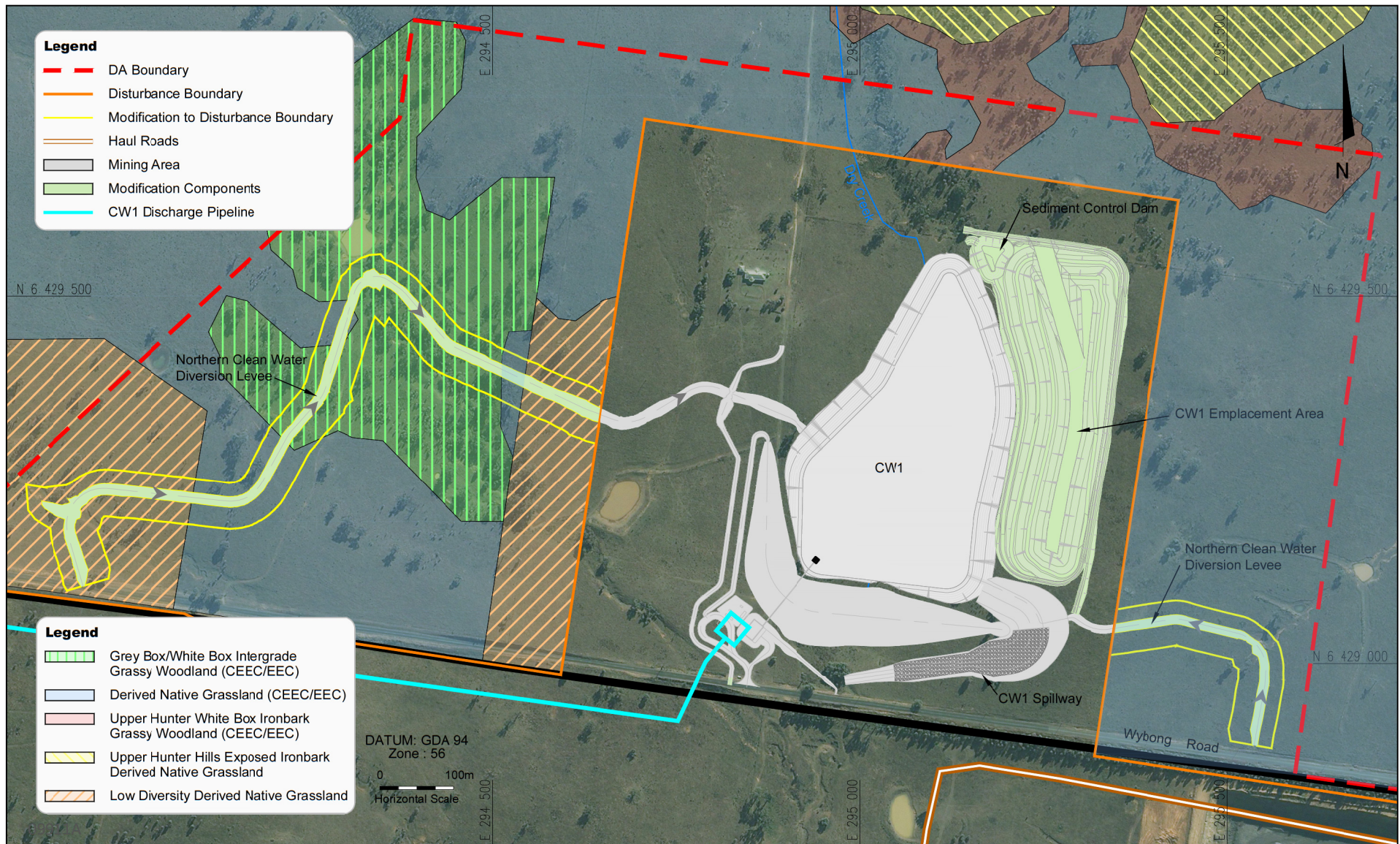
- Describe and map vegetation communities within the Modification to Disturbance Boundary area, identifying threatened ecological communities (TECs) listed under the NSW TSC Act and/or the Commonwealth EPBC Act;
- Assess the likelihood as to whether threatened flora and fauna species could occur within the Modification to Disturbance Boundary area;
- Describe the types and extent of potential impacts arising from this Modification; and
- Describe any avoidance and mitigation measures proposed to manage impacts on threatened species and areas of high conservation value.

The original character of the land within the Modification to Disturbance Boundary area has been greatly altered as a result of historical and current land uses. Prior to European settlement, the vegetation in the Modification to Disturbance Boundary area and surrounds would have been dominated by open grassy forest and woodland communities. Following European settlement, the majority of the forest and woodland in the area was cleared to provide grasslands for livestock. The resultant mosaic of grassland and modified woodland patches in the Modification to Disturbance Boundary area is typical of the Muswellbrook locality and has been influenced by a long history of agricultural land use. Vegetation communities present within and adjacent to the Modification to Disturbance Boundary area is provided on **Figure 7**.

The majority of the vegetation species recorded within the Modification to Disturbance Boundary area consist of ground layer species. The dominant plant families in the canopy and shrub layer are *Myrtaceae* and *Chenopodiaceae*, represented mostly by the genera of *Eucalyptus* and *Maireana*.

The Modification to Disturbance Boundary area is not considered to support a high diversity of fauna species, mostly due to the simplified and highly modified habitat present. The majority of the species known to occur in the surrounding areas have been recorded from the more intact areas of forest and woodland in locations outside the Modification to Disturbance Boundary area. A large proportion of recorded species are represented by birds and microchiropteran bats, which are highly mobile species. Reptiles, arboreal mammals and terrestrial mammals, which are less mobile, are not as well represented.

The native and semi-cleared vegetation within the Modification to Disturbance Boundary area provides limited habitat for native flora and fauna; including some species that are listed as threatened or migratory under the TSC Act and/or EPBC Act. However, no threatened flora or fauna species have been recorded within the Modification to Disturbance Boundary area.



BENGALLA MINE

Vegetation Communities

**FIGURE 7**



The Modification to Disturbance Boundary area is a total of 9.07 ha in size, comprising 6.1 ha of native vegetation and 2.97 ha of Low Diversity Derived Native Grassland/Exotic Pasture. **Table 5** lists the vegetation communities occurring within the Modification to Disturbance Boundary area.

The Modification to Disturbance Boundary area contains a total of 6.1 ha of vegetation which conforms to the Grey Box/White Box Intergrade Grassy Woodland and Derived Native Grassland (Box Gum Woodland and Derived Native Grassland), listed as an EEC and CEEC under both the TSC Act and EPBC Act respectively. The Modification will result in the disturbance of up to 2.79 ha of Box Gum Woodland habitat and 3.31 ha of Derived Native Grassland habitat within the Modification to Disturbance area.

Of the vegetation to be impacted, 5.56 ha will be a temporary impacted and will be regenerated back to its original condition following completion of rehabilitation for this Modification. Permanent vegetation loss as a result of the Modification (the Northern Clean Water Diversion Levee) consists of 1.24 ha of Box Gum Woodland and Derived Native Grassland along with 2.28 ha of Low Diversity Derived Native Grassland/Exotic Pasture. **Table 5** shows the total disturbed vegetation, temporarily disturbed vegetation and the area of vegetation that will be permanently removed within the Modification to Disturbance Boundary area.

The woodland remnants occurring within the Modification to Disturbance Boundary area are fragmented from other more intact patches of woodland and forest. The condition and nature of the woodland habitats have been greatly altered by existing and historical land uses. The Modification will result in the direct loss of 1.24 ha of Box Gum Woodland and Derived Native Grassland. The extent of the community to be removed exists in a modified form within a fragmented landscape between existing mining approvals. This Modification is not considered to result in a significant impact to Box Gum Woodland and Derived Native Grassland. A complete assessment of significance against TSC Act and EPBC Act requirements is presented in **Appendix C**.

**Table 5**  
**Vegetation Communities Present within the Modification to Disturbance Boundary Area**

Vegetation Community	TSC Act Status	EPBC Act Status	Permanently Removed (Levee) (ha)	Temporarily Disturbed (Buffer) (ha)	Modification to Disturbance Boundary Area (ha)
Grey Box/White Box Intergrade Grassy Woodland (Box Gum Woodland)	EEC	CEEC	0.59	2.2	2.79
Derived Native Grassland (Box Gum Woodland)	EEC	CEEC	0.65	2.66	3.31
Low Diversity Derived Native Grassland/Exotic Pasture	-	-	2.28	0.69	2.97
<b>Total</b>			<b>3.52</b>	<b>5.56</b>	<b>9.07</b>

### 6.1.2 Mitigation and Management

In order to further ensure impacts are minimised the following general mitigation measures will be implemented for the Modification to avoid significant disturbance to native vegetation and fauna habitat, as follows:

- Impacts to mature trees will be avoided where possible;
- To avoid unnecessary removal or damage to Box Gum Woodland and Derived Native Grassland the clearing area will be clearly demarcated and sign posted where appropriate;
- Following completion of works, the vegetation communities not directly associated with the levee will be rehabilitated back to their previous condition using locally endemic groundcover species from the Box Gum Woodland and Derived Native Grassland community and fenced to prevent cattle entering until the vegetation communities recover;
- Pre-clearance and clearance surveys will be conducted in accordance with the Biodiversity Management Plan;
- All disturbance will be rehabilitated in accordance with the BMC Rehabilitation Management Plan and Ground Disturbance Permit requirements; and
- The above measures will be communicated to all contractors and ensure that they are observed.

## 6.2 SURFACE WATER

### 6.2.1 Impact Assessment

A Surface Water Assessment was completed by WRM Water & Environment for the Modification and is presented in **Appendix D**. Specifically the Surface Water Assessment identified the impacts as a result of the Modification on the Bengalla water management system and in particular the potential impacts to local surface hydrology.

BMC's water management system provides an effective and pro-active management tool to ensure best-practice management of all water on site. Surface water management at Bengalla is based on the following key principles:

- Minimise use of fresh water from external sources (Bengalla has a current allocation from the Hunter River);
- Diversion of clean surface water runoff away from areas disturbed by mining activities where possible;
- Collection of surface water runoff from areas disturbed by mining activities in catch drains and direction of this to sediment traps;
- Collection of runoff from industrial areas in catch drains and direction, via an oil and grease separator, to the Bengalla Waste Water Treatment Plant (WWTP) for treatment and return to storage dams for reuse as mine water supply;
- Transfer of open cut pit water to storage dams for reuse as mine water supply; and
- Minimal discharge of surplus mine water off-site (i.e. promote recycling of captured water).

The water balance modelling completed for the Bengalla EIS Surface Water Impact Assessment (WRM, 2013) was the basis adopted for the Modification assessment. The computer based OPSIM model has been used to simulate and assess the dynamics of the site water balance at Bengalla Mine (incorporating this Modification) under varying climatic sequences across five representative mine stages previously utilised for the Bengalla EIS. The model simulates the operations of all major components of the proposed water management system on a daily basis using different historical sequences of recorded rainfall data. The inflows and outflows for the water management system are outlined in **Table 6**.

**Table 6**  
**Simulated Inflows and Outflows for the Water Management System**

Inflows	Outflows
Direct rainfall onto water surface of storage	Evaporation from water surface of storages
Catchment Runoff	Water demands (CHPP, dust suppression, vehicle wash down)
Groundwater Inflows	Overflows from storages
Raw water extracted from the Hunter River	Controlled releases under the HRSTS
	Clean water pumped from clean water dams

Rainfall data records for the region commencing in 1893 were divided into 93 different climatic sequences, referred to as "realisations". Each realisation represents a different 24 year sequential period within the historical rainfall data. The first realisation consists of rainfall data from 1893 to 1916. The second realisation is based on data from 1894 to 1917, with every subsequent realisation being offset by one year. The OPSIM model performed a simulation for each of the 93 realisations, with each simulation reflecting the Project life. This approach provides the widest possible range of climate scenarios covering the full range of climatic conditions represented in the historical rainfall record.

The water balance modelling provides an assessment of surface water impacts under the full range of wet and dry conditions that have historically been experienced in the region. The model results are presented as a statistical summary of the results from different realisations, represented as percentiles. For example, the 50th percentile value represents the median of all realisations. The 10<sup>th</sup> percentile value represents the result that is exceeded in 90 percent of the model realisations.

Five different stages of the Project life were considered in the modelling (Years 1 (existing), 4, 8, 15 and 24). Although the catchment areas will continually change as mining progresses, these modelled years will provide a good representation of conditions over the 24 year Project life. The surface water runoff volumes used in the water balance model were estimated using the Australian Water Balance Model (Boughton, 1993).

The results of the site water balance modelling show that the mine water management system can be operated in accordance with BMCs existing EPL 6538 conditions. The model results indicate that there is:

- No uncontrolled release of mine affected water from the existing Staged Discharge Dam or Bengalla Discharge Dam over the Project life;
- No uncontrolled releases of mine affected water from Wantana West Dam during Years 1 to 3 prior to it being converted to a sediment dam. and
- Less than a 1% annual risk of discharge from the East and West Facilities Dam;

There is one modelled discharge from the East and West Facilities Dam, which is associated with the extreme flood event that occurred between 24 and 29 February 1955, where over 250 mm of rainfall fell over a 72 hour period. This event exceeded the 100 year ARI rainfall intensity for a 72 hour storm duration in the vicinity of the Project.

Controlled offsite discharges refers to water discharged under the HRSTS directly from the Staged Discharge Dam/Bengalla Relocated Discharge Dam to Dry Creek. The results from the assessment indicate the following:

- The 50<sup>th</sup> percentile annual discharge shows that no discharges are required under the HRSTS;
- The 90<sup>th</sup> percentile annual discharge shows that up to approximately 750 ML/a are discharged under the HRSTS;
- The 99<sup>th</sup> percentile annual discharge shows that up to approximately 1,550 ML/a are discharged under the HRSTS; and
- There is risk of potential discharge in Year 8 of Project life, likely associated with the large increase in catchment area reporting to the mine water system.

**Appendix D** presents the total annual modelled demand for water from an external source over the Project period. A summary of these results indicates the following:

- There is an increase in raw water requirement in Year 4 of the Project life likely due to the increase in CHPP throughput and increased haul road dust suppression requirements;
- The median (50<sup>th</sup> percentile) raw water requirement from an external source is between 1,140 and 1,530 ML/a during Years 5 to 24; and
- The 99<sup>th</sup> percentile raw water requirement from an external source is between 1,770 and 1,920 ML/a during Years 5 to 24.

The raw water source for the site demands is via an existing allocation from the Hunter Regulated River Water Source, which is pumped to the Raw Water Dam for use when required. Raw water is used as a last priority to meet site demands, with the exception of the vehicle wash demand which ranges between 97 and 132 ML/a.

The median (50<sup>th</sup> percentile) inventories of Main Pit and Satellite Pit show that the pits are generally maintained dry with no long term build up. The 90<sup>th</sup> percentile inventory in Main Pit and the Satellite Pit reaches 240 ML and 450 ML respectively.

BMC hold WALs with sufficient share component totalling 6,017 units (comprising 1,455 high security units and 4,562 general security units) to account for the maximum predicted take for the life of Bengalla based on predicted demands from the Hunter Regulated River Water Source (Management Zone 1A). BMC maintains exclusive rights for the dedicated use of at least 2,534 units (comprising 1,449 high security units and 1,085 general security units) under these WALs. The remaining units of the WALs (comprising 2,702 units) are currently subject to use by licensees of BMC owned land for agricultural purposes.

### 6.2.2 Mitigation and Management

Following approval of this Modification BMC will update the existing Water Management Plan (WMP) (BMC, 2015) to include the commitments in this SEE to the satisfaction of the relevant regulators. The revised water management system described in **Section 6.2.1** and assessed in the water balance model will be included in the revised WMP.

BMC will ensure that appropriate erosion and sediment control measures as described in the WMP are in place to facilitate the Modification. Surface runoff water from any disturbed areas is considered dirty water and is separated from clean area runoff and will be managed in the mine water management system.

Erosion and sediment control devices will be designed and constructed according to the guidelines *Managing Urban Stormwater: Soils and Construction* (NSW Department of Housing, 1998), as well as recommendations from the *Draft Guidelines for Establishing Stable Drainage Lines on Rehabilitated Minesites* (Department of Land and Water Conservation, 1999).



BMC will hold all relevant licences, share component and allocation required to comply with the WM Act and Water Act at all times water is taken, whether during or after the life of the Project.

### 6.3 AIR QUALITY

#### 6.3.1 Impact Assessment

An Air Quality Assessment was completed by Todoroski Air Sciences for the Modification and is presented in **Appendix E**. Specifically the Air Quality Assessment provided a qualitative assessment of the potential change in air quality associated with the Modification. The Air Quality Assessment primarily focused on the activity associated with the development and placement of excavated material from the CW1 adjacent to the dam, all other features associated with this Modification are by comparison unlikely to generate a significant amount of dust emissions and therefore were not subject of the assessment.

SSD-5170 provides that the excavated material removed would be transported using appropriate mining equipment across Wybong Road for emplacement within either the main overburden emplacement area (Main OEA) or in the western out of pit emplacement area (Western OEA). Further, any material emplaced within the Western OEA would later be required to be rehandled as operations progress west to the Main OEA. A comparison of the estimated total dust emissions for the approved activity associated with the construction of CW1 and emplacement of CW1 materials is summarised in **Table 7**.

The results in **Table 7** indicate that the estimated change in potential dust emissions associated with the emplacement of excavated material immediately adjacent to the CW1 would see a decrease in dust emissions from the development. A detailed emissions inventory is provided in **Appendix E**.

By emplacing the excavated material adjacent to the CW1, the required haulage distance will be reduced significantly when compared to the distance required for transporting material to the Western OEA or Main OEA and therefore the amount of dust generated will be significantly lower.

A comparison of the amount of estimated dust emissions for the Modification with the estimated emissions presented in the Bengalla EIS (Year 1) *Air Quality and Greenhouse Gas Impact Assessment* (Todoroski Air Sciences, 2013), indicates that the quantity of dust will equate to approximately 1.3 % of the total dust generated by the entire operation. The placement of materials within the CW1 Emplacement Area will result in a 16 % reduction in air quality emissions when compared to the approved CW1 construction program through reduced haulage distances. This translates to a reduction of 0.3 % of the total emissions. This change is considered minor and is unlikely to be discernible relative to the existing contribution from the site.

This Modification will result in a minor improvement in air quality compared to approved operations. As a result, this Modification is unlikely to cause any discernible negative impact at any surrounding sensitive receptor locations. Further it is anticipated that the dust emissions resulting from the activities to be conducted as part of the Modification will remain within air quality emissions criteria presented in SSD-5170.

**Table 7**  
**Comparison of Estimated TSP Emissions (kg/year)**

CW1 Construction Activity	Approved Operations	Modification	% Change
Stripping topsoil material	1,339	1,339	-
Excavator loading topsoil material to haul truck	69	69	-
Hauling topsoil material to stockpile area	1,000	246	-75%
Emplacing topsoil at stockpile area	69	69	-
Excavator loading excavated material to haul truck	1,216	1,216	-
Hauling excavated material to overburden emplacement area	17,711	4,350	-75%
Emplacing excavated material at overburden emplacement area	1,216	1,216	-
Dozer activity	8,368	8,368	-
Wind erosion from active exposed areas	56,249	56,249	-
<b>Total TSP emissions (kg/year)</b>	<b>87,236</b>	<b>73,120</b>	<b>-16%</b>

### 6.3.2 Mitigation and Management

Existing BMC dust management techniques consistent with Bengalla Air Quality and Greenhouse Gas Management Plan will be applied to the Modification including but not limited to:

- Job-site induction;
- Completion of relevant internal BMC documentation including; Risk Assessments and Ground Disturbance Permit;
- To ensure dust emissions from the development of CW1 are minimised where possible, appropriate operational and physical dust mitigation measures should be implemented such as maintaining sufficient levels of moisture on the surface of trafficked surfaces and limiting vehicle speeds.
- A water cart (or similar) will wet down the relevant area when required;
- Site access points and access tracks will be situated away from residential receivers and where reasonable and feasible; and
- Rehabilitation will commence as soon as practicable following completion of the CW1 Emplacement Area.

## 6.4 ACOUSTICS

### 6.4.1 Impact Assessment

An Acoustic Assessment was completed by Bridges Acoustics for the Modification and is presented in **Appendix F**. Specifically the Acoustic Assessment provided a qualitative assessment of the potential change in construction and operational noise associated with the Modification in comparison to those presented in the Bengalla EIS Acoustic Impact Assessment (Bridges Acoustics, 2013).

This assessment indicates the Modification would produce a minor and insignificant change to short term construction noise levels at all receptors, with no appreciable change to operational noise levels or to other acoustic issues such as low frequency noise or sleep disturbance.

The Modification construction and operational noise levels are expected to remain similar to and consistent with the noise levels reported in the Bengalla EIS. Based on the results of this assessment, the Modification is unlikely to have a significant effect on noise levels and impacts are anticipated to remain within criteria presented in SSD-5170.

#### 6.4.2 Mitigation and Management

Existing BMC noise management techniques consistent with Bengalla Noise Management Plan will be applied to the Modification including but not limited to:

- Job-site induction;
- The Modification construction works audible to sensitive receptors will only occur between the hours of 7:00 am to 6 pm on Monday to Friday and 8 am to 1 pm on Saturdays. No construction works will occur on Sundays or Public Holidays;
- All equipment used on site will be maintained in good working order;
- Pre-start inspections will be made on all equipment;
- The use of exhaust brakes will be eliminated, where practical; and
- Where practical, machines will be switched off when not being used, rather than left idling for prolonged periods.

#### 6.5 ABORIGINAL ARCHAEOLOGY

##### 6.5.1 Impact Assessment

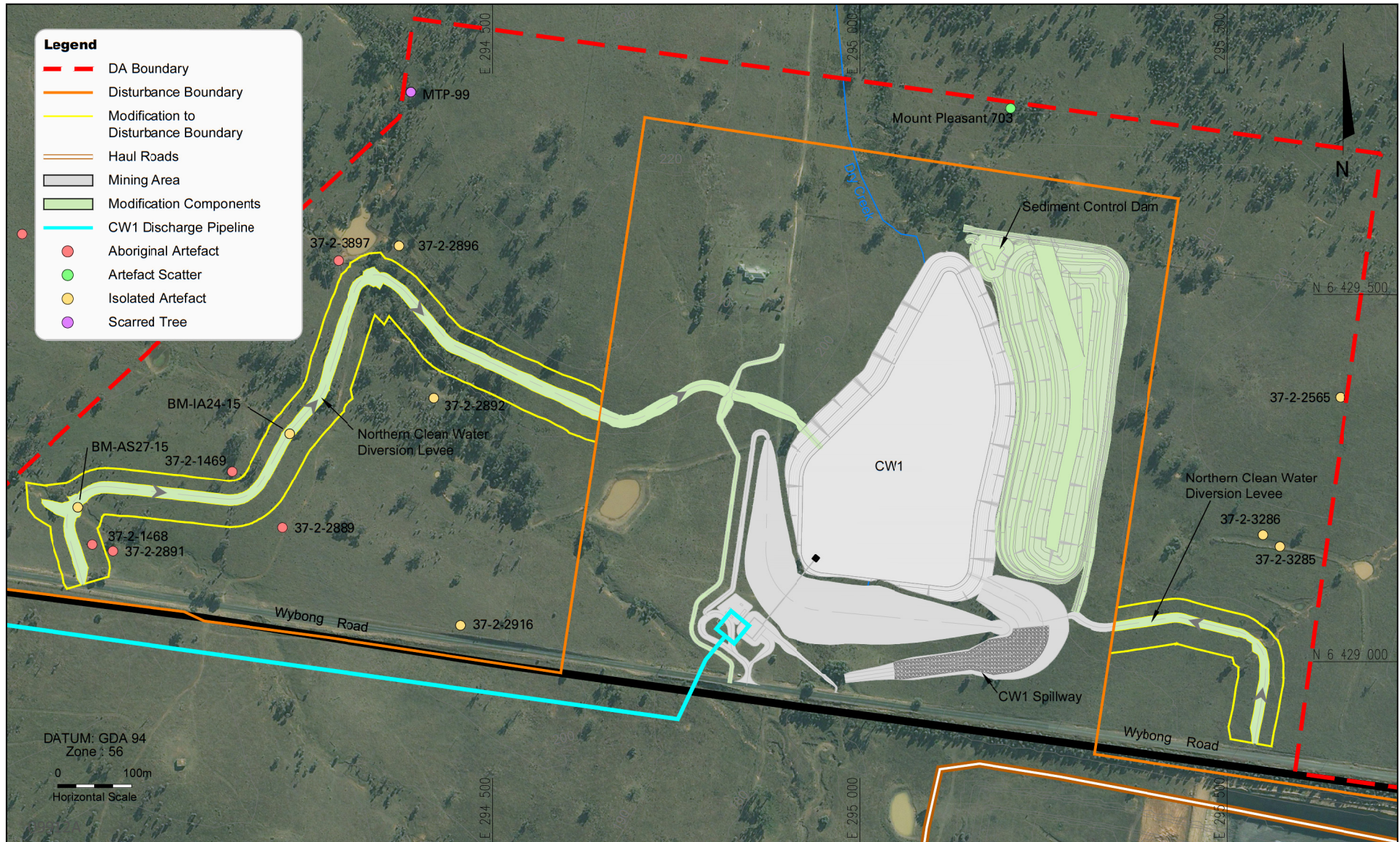
An Aboriginal Archaeology Due Diligence Assessment was completed by AECOM for the Modification and is presented in **Appendix G**. The Aboriginal Archaeology Due Diligence Assessment focused on the additional area outside the Disturbance Boundary delineated in SSD-5170. All previously identified sites within the SSD-5170 Disturbance Boundary will be managed in Accordance with the approved Bengalla ACHMP (BMC, 2015).

Information regarding the known and potential Aboriginal archaeological resource of the area was obtained from:

- A review of the landscape context of the DA Boundary and surrounds;
- A review of existing Aboriginal Heritage Information Management System (AHIMS) data for all land within the DA Boundary obtained from OEH on 5 June 2015 (AHIMS ID #176180);
- A review of Bengalla Mine Aboriginal sites data held by AECOM as resulting from the completion of the Bengalla EIS *Aboriginal Archaeological and Cultural Heritage Impact Assessment* (AECOM 2013a);
- A review of the findings of past Aboriginal archaeological investigations for Bengalla Mine and adjacent operations; and
- A site inspection of the Modification area by a combined field team consisting of AECOM archaeologists and representatives from the Aboriginal community.

A review of existing AHIMS data sites indicates that one site is located directly within the Modification to Disturbance Boundary – open artefact site A7-A8 (AHIMS#37-2-1468) (see **Figure 8**). In addition, the search indicated that four sites are located within 50 m of the Modification to Disturbance Boundary including open artefact sites AHIMS#37-2-1469, 37-2-2891, 37-2-2896, and 37-2-2897.

The site inspection identified a further two sites located within the Modification to Disturbance Boundary that would be impacted as a result of the Modification consisting of artefact scatter BM-AS27-15 and isolated artefact site BM-IA24-15 (see **Figure 8**).



BENGALLA MINE

Aboriginal Cultural Heritage Sites

**FIGURE 8**



## 6.5.2 Mitigation and Management

Impacts as a result of the Modification will be managed in accordance with the existing Bengalla ACHMP. In addition the following specific mitigation measures for the Modification will be implemented:

- AHIMS sites 37-2-1469, 37-2-2891, 37-2-2896, and 37-2-2897 will be temporarily fenced and appropriately signposted during construction of the Northern Clean Water Diversion Levees. A suitable buffer where reasonable and feasible will be established as part of the temporary fencing to exclude the sites from potential impact;
- Impacts to previously recorded AHIMS site 37-2-1468 (A7-A8) and newly recorded Aboriginal sites BM-AS27-15 and BM-IA24-15 will be salvaged in accordance with BMC's existing ACHMP following approval of the Modification; and
- AHIMS site cards for Aboriginal sites BM-AS27-15 and BM-IA24-15 will be submitted to the AHIMS register.

## 6.6 VISUAL ASSESSMENT

### 6.6.1 Impact Assessment

Consideration of visual impacts associated with the Modification was provided in relation to the existing surrounding visual landscape and those activities approved in SSD-5170. The Visual Impact Assessment (JVP Planning and Design, 2013) undertaken for the Bengalla EIS characterised the local visual landscape within the vicinity of Bengalla as being that of a rural setting dominated by mining activities along with agricultural activities associated with the Hunter River Floodplain.

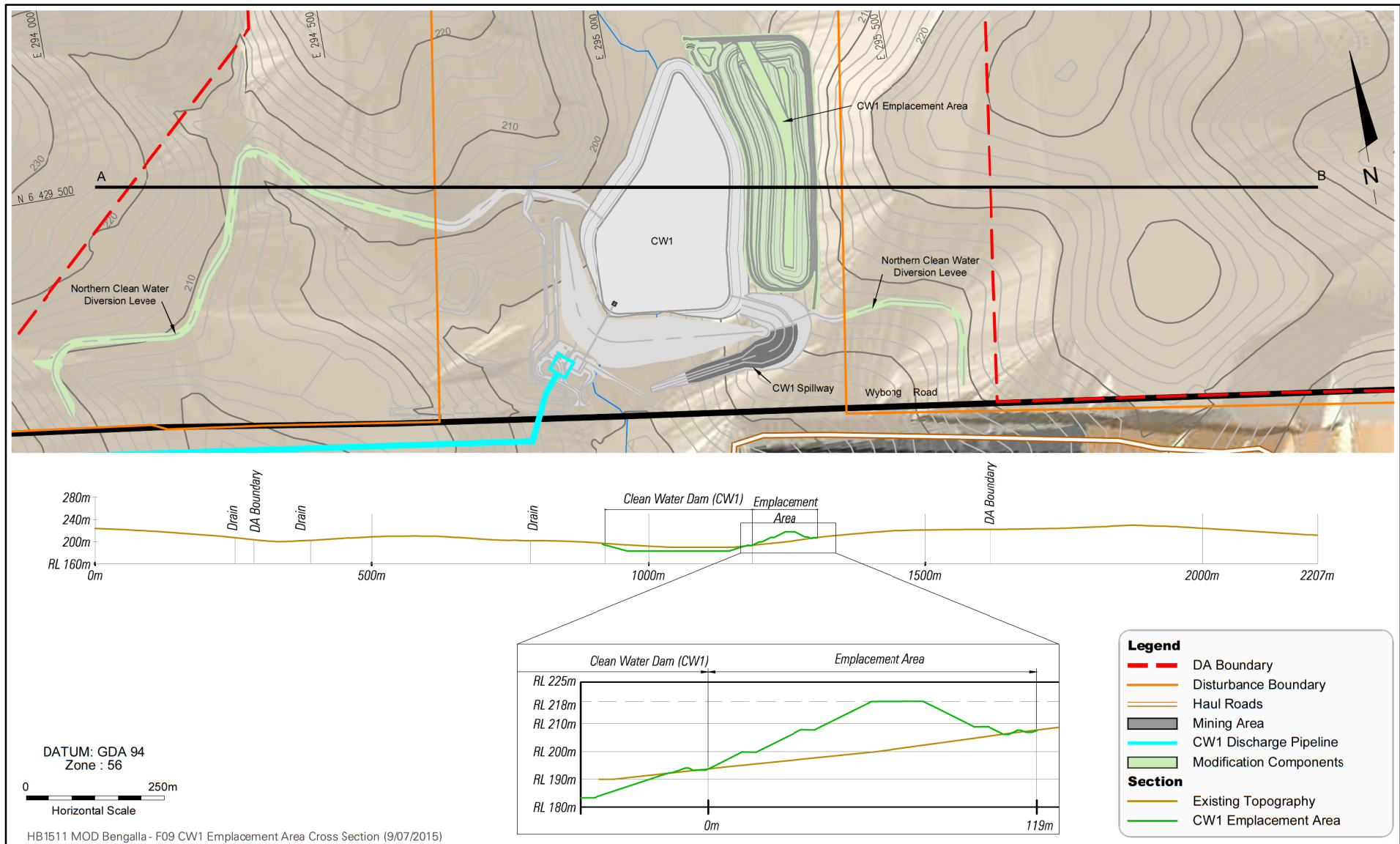
The CW1 Emplacement Area is located immediately north of Wybong Road and has been determined to represent the only change to the visual character when the Modification is compared to Bengalla's approved operations. **Figure 9** presents a cross section associated with the CW1 Emplacement Area and indicates that the maximum height will be approximately RL 218 m. This maximum height is approximately 18 m higher than the natural topography in its centre and does not represent a dominant landform when compared to the local visual landscape.

The CW1 Emplacement Area sits adjacent to Dry Creek in a natural basin providing shielding from the majority of public vantage locations. The natural topography surrounding the CW1 Emplacement Area combined with the well-established Main OEA associated with BMC's approved operations (up to RL 270 m) will result in views of CW1 Emplacement Area limited to those experienced from Wybong Road. Views from Wybong Road of the CW1 Emplacement Area will be possible however will only be experienced for a limited time.

The construction of the approved CW1 embankment will be located immediately adjacent to the CW1 Emplacement Area. Due to its proximity and positioning being further south this will assist in reducing visual impacts from Wybong Road.

### 6.6.2 Mitigation and Management

In order to further mitigate the minimal impacts arising from the construction of the CW1 Emplacement Area BMC will commence rehabilitation as soon as practicable.



HB1511 MOD Bengalla - F09 CW1 Emplacement Area Cross Section (9/07/2015)



BENGALLA MINE  
CW1 Emplacement Area  
Cross Section

**FIGURE 9**

## 6.7 HAZARD ANALYSIS

### 6.7.1 Impact Assessment

A review of the *Preliminary Hazard Analysis* (Hansen Bailey, 2013) developed for the Bengalla EIS was completed for the Modification. This qualitative review aimed to identify any potential changes arising from the Modification to previously identified hazards and develop possible management and control procedures as specified in the relevant legislation. The inclusion of the Explosives Storage Facility Envelope is the only hazardous activity proposed by the Modification and is discussed further below.

The *Preliminary Hazard Analysis* (Hansen Bailey, 2013) was undertaken in accordance with *SEPP 33 – Hazardous and Offensive Development Application Guidelines* (DUAP, 1994). The *Hazardous Industry Planning Advisory Papers* (HIPAPs) developed under SEPP 33 were also considered throughout the assessment. HIPAPs of particular relevance to the Modification included the:

- 'Hazardous Industry Planning Advisory Paper No 3 – Risk Assessment' (DOP 2011a);
- 'Hazardous Industry Planning Advisory Paper No 4 – Risk Criteria for Land Use Planning' (DOP, 2011b); and
- 'Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis' (DOP, 2011c).

The key hazardous materials relevant for review include explosives, hydrocarbons and other hazardous chemicals. The key hazardous chemicals are predicted to include, however are not limited to, fuels such as diesel and petrol, degreaser, kerosene, oils, greases and explosives. The key potential hazards associated with explosives include onsite storage location, proximity to fuel and workshop and possible explosions as a result of mixed materials. The Modification will continue to require the use of explosives and other related materials to support ongoing mining operations.

As noted in **Section 3.3**, the Modification will involve the possible relocation of an explosives storage facility from its currently approved location on the Main OEA to the Explosives Storage Facility Envelope in approximately 2016 (see **Figure 5**). The Explosives Storage Facility Envelope is situated in the central portion of the Disturbance Boundary and is approximately 1 km from its existing position. The Explosives Storage Facility Envelope will provide more efficient and safe access by light and heavy vehicles by not having to traverse the active open cut mining area and Main OEA. The Modification will not require any other changes to the approved storage capacity, type or use of explosives. All other Modification components are not considered hazardous.

Potential hazards to the surrounding environment during the transport, storage and use of explosives at Bengalla will continue to be managed in accordance with the *AS 2187.1 – 1998: Explosives – Storage, Transport and Use – Storage*, the *Australian Explosives Industry and Safety Group Code of Practice – Precursors for Explosives* (AEISG, 1999) and the relevant BMC management plans and procedures.

BMC currently holds two licences to store explosives and associated materials, issued under the OH&S Act, 07-100151-001 and XSTR100151 for the existing Bengalla explosive precursor storage facility and Explosives Storage Facility. BMC will ensure the relocated Explosives Storage Facility is secure and the products stored at these facilities will continue to be stored and handled in accordance with '*AS2187.2-2006 – Explosives – Storage, Transport and Use, Part 2: Use of Explosives*'.

BMC holds an 'Acknowledgement of Notification of Dangerous Goods on Premises' 35/033746 for the diesel currently stored on site.

### 6.7.2 Mitigation and Management

The Modification is not considered hazardous or offensive and no offsite impacts are predicted as a result of the revised positioning of the Explosives Storage Facility. Management procedures will be implemented to ensure that all potential hazards are minimised and their likelihood of occurrence decreased by ensuring compliance with relevant legislation, regulations and guidelines. All storage facilities at BMC will continue to satisfy the following requirements:

- Facilities will be designed, constructed, inspected and maintained in accordance with the requirements of the Dangerous Goods Act and the relevant Australian Standards;
- Explosives will continue to be transported and utilised in accordance with site procedures and the requirements of *AS/NZS 2187 – 1998: Explosives – Storage, Transport and Use* (Standards Australia, 1998), the *Explosive Act 2003*, the *Explosive Regulations 2005*, the *Coal Mines Health and Safety Act 2002* (CMH&S), the *CMH&S Regulations 2006* and other relevant codes;
- All facilities will be secure;
- Designs will ensure easy access for fire fighting should a fire occur; and
- All substances shall be stored in the areas or facilities provided.

## 6.8 NON-ABORIGINAL HERITAGE

### 6.8.1 Impact Assessment

An analysis of the Non-Aboriginal Heritage items previously identified in the Bengalla EIS *Historic Heritage Impact Assessment* (AECOM, 2013b) was completed for the Modification. A total of four previously recorded Historic Heritage Sites was identified within 1 km of the Modification components.

### 6.8.2 Mitigation and Management

None of the previously recorded sites will be impacted by the Modification and as a result no additional mitigation measures are proposed.



## 7 STATEMENT OF COMMITMENTS

*This section provides a summary of the environmental mitigation measures arising from the Modification.*

### 7.1 SUMMARY OF MITIGATION MEASURES

Further to the conditions of SSD-5170, the statement of commitments in **Table 8** summarises the key management and mitigation measures proposed in this SEE.

The aim of the statement of commitments is to ensure that the Modification's environmental and social impacts are minimised by implementing the appropriate management, monitoring and mitigation strategies.

**Table 8**  
**Statement of Commitments**

Ref	Description	Section(s)
1.	All construction activities potentially audible at sensitive receivers will be conducted between the hours of 7 am to 6 pm, Monday to Friday and 8 am to 1 pm on Saturdays. No construction works will occur on Sundays or Public Holidays.	3.6
2.	Disturbance associated with the construction of the Northern Clean Water Diversion Levees will be contained to the area as shown on <b>Figure 7</b> . Disturbance areas will be clearly demarcated and sign posted, where appropriate.	6.1.1
3.	Impacts to mature trees associated with the construction of the Northern Clean Water Diversion Levees will be avoided where possible which will be identified during the completion of pre-clearance and clearance surveys in accordance with the Biodiversity Management Plan or its latest version.	6.1.2
4.	Following completion of the Northern Clean Water Diversion Levees, the vegetation communities will be rehabilitated back to its previous condition using locally endemic groundcover species from the Box Gum Woodland and Derived Native Grassland community.	6.1.2
5.	To ensure dust emissions from the development of the CW1 Emplacement Area are minimised where possible, appropriate operational and physical dust mitigation measures will be implemented such as maintaining sufficient levels of moisture on the surface of trafficked surfaces and limiting vehicle speeds.	6.3.2
6.	Rehabilitation will commence as soon as practicable following completion of the CW1 Emplacement Area.	6.1.2 and 6.3.2
7.	AHIMS sites 37-2-1469, 37-2-2891, 37-2-2896, and 37-2-2897 will be temporarily fenced and signposted as appropriate during construction of the Northern Clean Water Diversion Levees.	6.5.2
8.	Impacts to previously recorded AHIMS site A7-A8 (#37-2-1468) and newly recorded Aboriginal sites BM-AS27-15 and BM-IA24-15 will be salvaged in accordance with BMC's existing ACHMP following approval of the Modification.	6.5.2
9.	AHIMS site cards for Aboriginal sites BM-AS27-15 and BM-IA24-15 will be submitted to the AHIMS register.	6.5.2
10.	BMC will update (at least) the SSD-5170 required Water Management Plan and Aboriginal Archaeology and Cultural Heritage Management Plan following approval of the Modification.	6.2.2 and 6.5.2

## 8 ABBREVIATIONS

Abbreviation	Description
ACHMP	Aboriginal Cultural Heritage Management Plan
ARI	Average Recurrence Interval
AHIP	Aboriginal Heritage Impact Permit
BMC	Bengalla Mining Company Pty Limited
Bengalla 2008 EA	Bengalla Mine Development Consent Modification Environmental Assessment (Hansen Bailey, 2008)
Bengalla 2010 EA	Bengalla Mine Development Consent Modification Environmental Assessment (Hansen Bailey, 2010)
Bengalla 2006 SEE	Bengalla Mining Company Modifications to Mining Operations Statement of Environmental Effects (Hansen Bailey, 2006)
Bengalla 1993 EIS	Environmental Impact Statement for the Bengalla Coal Mine (Envirosciences, 1993)
Bengalla 2013 EIS	Continuation of Bengalla Mine Environmental Impact Statement (Hansen Bailey, 2013)
BCMP	Bengalla Continuation of mining Project as described in the Bengalla 2013 EIS
BJV	Bengalla Joint Venture
CEEC	Critically Endangered Ecological Community
CHPP	Coal Handling and Preparation Plant
DA	Development Application
DBH	Diameter at Base Height
DP&E	NSW Department of Planning and Environment
DoE	Department of the Environment
DRE	Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy
EA	Environmental Assessment
EEC	Endangered Ecological Community
EMP	Environmental Monitoring Program
EMS	Environmental Management Strategy
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth)</i>
EPI	Environmental Planning Instrument
EPL	Environmental Protection Licence
ha	Hectare
Hansen Bailey	Hansen Bailey Environmental Consultants
LGA	Local Government Area
Mining Act	<i>Mining Act 1992</i>
ML	Mining Lease

Abbreviation	Description
WM Act	<i>Water Management Act 2000</i>
MNES	Matters of National Environmental Significance
MOP	Mining Operations Plan
Mtpa	Million tonnes per annum
Muswellbrook LEP	Muswellbrook Local Environment Plan 2009
NOW	NSW Office of Water
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NSW	New South Wales
NV Act	<i>Native Vegetation Act 2003</i>
OEA	Overburden Emplacement Area
OEH	Office of Environment and Heritage
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
ROM	Run of Mine
RL	Reduced Level
SEE	Statement of Environmental Effects
TSC Act	<i>Threatened Species Conservation Act 1995</i>
WAL	Water Access Licence
Water Act	<i>Water Act 1912</i>
WSP	Water Sharing Plan

## 9 REFERENCES

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