



Bengalla Mining Company Pty Limited

Blast Management Plan

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1.0 INTRODUCTION

This section provides an introduction to the Bengalla Mine and this Blast Management Plan.

1.1 Background

Bengalla Mining Company Pty Limited (BMC) operates the Bengalla Mine (Bengalla), which is located approximately 130 kilometres (km) north-west of Newcastle and 4 km west of Muswellbrook in the Upper Hunter Valley, New South Wales (NSW). Bengalla is generally bound by Wybong Road to the north, Overton Road to the east, the Muswellbrook-Ulan Rail Line to the south and Roxburgh Road to the west (see **Figure 1**).

Bengalla is owned by the Bengalla Joint Venture (BJV) comprising New Hope Bengalla Pty Limited as to 80% and Taipower Bengalla Pty Limited as to 20%. BMC is the appointed operating company of Bengalla on behalf of the BJV.

BMC was granted Development Consent for State Significant Development (SSD) 5170 on 3 March 2015 by the Secretary of the Department of Planning and Environment (DPE) (formerly known as the DP&E) for the Continuation of Bengalla. SSD-5170 (as modified) enables BMC to continue open cut coal mining up to 15 Million tonnes per annum (Mtpa) of run of mine (ROM) coal until 2039.

This Blast Management Plan (BMP) has been developed in accordance with the requirements of Schedule 3, Condition 15 of SSD-5170 (as modified) to provide a framework for the management of blasting at Bengalla.

1.2 History of Operations

1.2.1 Introduction

BMC was originally granted Development Consent Development Application (DA) 211/93 in 1996 to construct and operate an open cut coal mine and associated activities in accordance with the supporting document *Bengalla Mine Environmental Impact Statement* (HLA Envirosiences, 1993). Mining operations at Bengalla commenced in 1998. DA 211/93 was surrendered following the grant of State Significant Development (SSD) 5170 for the Bengalla Continuation of Mining Project on 3 March 2015.

1.2.2 State Significant Development 5170

In September 2013, BMC sought a new development consent under Division 4.1 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to enable mining operations to continue at Bengalla. The application was supported by the '*Continuation of Bengalla Mine Environmental Impact Statement*' (Bengalla EIS) (Hansen Bailey, 2013) as modified by the '*Continuation of Bengalla Mine Response to Submissions*' (RTS) (Hansen Bailey, 2014).

On 3 March 2015, the Secretary of DPE as delegate of the Minister for Planning granted SSD-5170 (as modified) which permits the following activities at Bengalla:

- Open cut mining towards the west at a rate of up to 15 Mtpa ROM coal until 2039;
- Continued use of the existing dragline, truck fleet and excavators;
- An out of pit Overburden Emplacement Area (OEA) to the west of Dry Creek which may be utilised for excess spoil material until it is intercepted by mining;
- Various upgrades, relocations or additional new infrastructure to support the Project;
- Processing, handling and transportation of coal via the (upgraded) Coal Handling and Preparation Plant (CHPP) and rail loop for export and domestic sale;
- Continued rejects and tailings co-disposal in the Main OEA and temporary in pit 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 Hunter River Raw Water Dam); and
- A workforce of approximately 900 full time equivalent personnel (plus contractors) at peak production.

The approved operations' layout is presented in **Figure 2**.

1.2.3 SSD-5170 Modification 1

SSD-5170 was modified on 16 December 2015 (MOD1) by the Executive Director – Resource Assessments and Compliance for the DPE as delegate of the Minister for Planning for the activities described in the '*Bengalla Mine Development Consent Modification Statement of Environmental Effects*' (Hansen Bailey, 2015a) (MOD1 SEE) including the '*Bengalla Mine Development Consent Modification Response to Submissions*' (Hansen Bailey, 2015b).

The MOD1 SEE provides approval for the following:

- Alterations to various water management infrastructure components:
 - Utilisation of the Satellite Pit as a temporary mine water catchment dam;
 - Relocation of the Staged Discharge Dam and the Hunter River Salinity Trading Scheme 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 Raw Water Dam and Washery Dam;
- Additional locations for the siting of the Explosives Storage Facility; and
- The placement of fill from the excavation of the Dry Creek Clean Water Dam (CW1) adjacent to it.

1.2.4 SSD-5170 Modification 2

SSD-5170 was modified on 1 July 2016 by the Director – Resource Assessments for the DPE (as delegate of the Minister for Planning) for the activities largely described in the *'Bengalla Mine Development Consent Modification 2 Statement of Environmental Effects'* (Hansen Bailey, 2016) (MOD 2 SEE). The MOD 2 SEE provides approval for the following:

- Alterations to the approved height of the Main OEA to improve visual amenity from primary viewing locations in and surrounding the township of Muswellbrook and Denman Road, in two selected locations (Visual Relief Areas):
 - The Northern Relief Area constructed to a maximum height of Reduced Level (RL) 300;
 - The Southern Relief Area constructed to a maximum height of RL 290; and
- Establishment of a new gravel access road from Wybong Road to the Dry Creek Diversion Project Construction Site Office being a former homestead (Homestead Access).

1.2.5 SSD-5170 – Modification 3

SSD-5170 was modified on 23 December 2016 (MOD 3) by the Director – Resource Assessments for the DPE as delegate of the Minister for Planning for the activities largely described in the *'Bengalla Mine Development Consent Modification 3 Statement of Environmental Effects'* (Hansen Bailey, 2016) (MOD 3 SEE).

The MOD 3 SEE provides approval for the repositioning of the following approved activities:

- The construction and operation of an explosives facility and reload facility, which may be relocated to other location(s) within the Approved Disturbance Boundary at a later time;
- The alignment of the Hunter River pipeline; and
- The emplacement and use of temporary topsoil stockpiles during the mining process.

1.2.6 SSD-5170 – Modification 4

SSD-5170 was modified on 19 December 2018 (MOD 4) by the Director – Resource Assessments as delegate of the Minister for Planning for the activities described in the *'Bengalla Mine Development*

Consent Modification 4 Statement of Environmental Effects' dated December 2017 and prepared by Hansen Bailey including the Response to Submissions document dated May 2018 and additional information provided in July 2018 and August 2018 (MOD 4 SEE). The MOD 4 SEE provides approval for the following:

- Changes to the approved water management system to reflect operations at Bengalla including proposed enlargement of the approved Staged Discharge Dam (SDD) (ED1), and construction and use of the Dry Creek East Dam;
- Temporary storage of approximately 2,500 m³ of excess materials from the construction of ED1;
- Increase in the capacity and additional locations of ROM coal stockpiles;
- Additional storage locations for temporary emplacement of coal processing reject material, prior to permanent emplacement; and
- Temporary clay emplacement within the Main OEA or to the west of this for later use in the reinstatement of Dry Creek.

1.2.7 SSD-5170 – Modification 5

SSD-5170 was modified by DPE as the delegate for the Minister for Planning for the activities in accordance with activities described in the '*Bengalla Mine Development Consent SSD-5170 Modification 5 Modification Report*' (James Bailey Associates, 2021), Submissions Response and '*Response to Request For Additional Information*' (James Bailey Associates, 2022) (MOD 5). The MOD 5 Report provides approval for the following:

- Operation of a mobile rock crushing facility and ancillary equipment, and the use of that crushed rock at Bengalla;
- Geotechnical investigations in connection with any activities approved under SSD-5170 from time to time;
- Prospecting operations (including exploration drilling) in accordance with BMC's mining leases issued under the *Mining Act 1992* (Mining Act);
- Realignment of the Western Diversion Levee within the approved Disturbance Boundary;
- Enlargement of the ROM coal stockpile located adjacent to the ROM dump hopper from 40 kt to 150 kt approximate maximum capacity;
- Upgrade/widening of an existing haul road (Southern Endwall Road) adjacent to the Southern visual bund, which may require removal of part of the visual bund (to be replaced by an equivalent measure);
- Disposal of tyres in pit; and
- Minor administrative changes to conditions of SSD-5170.

The development layout is presented in **Figure 2**.

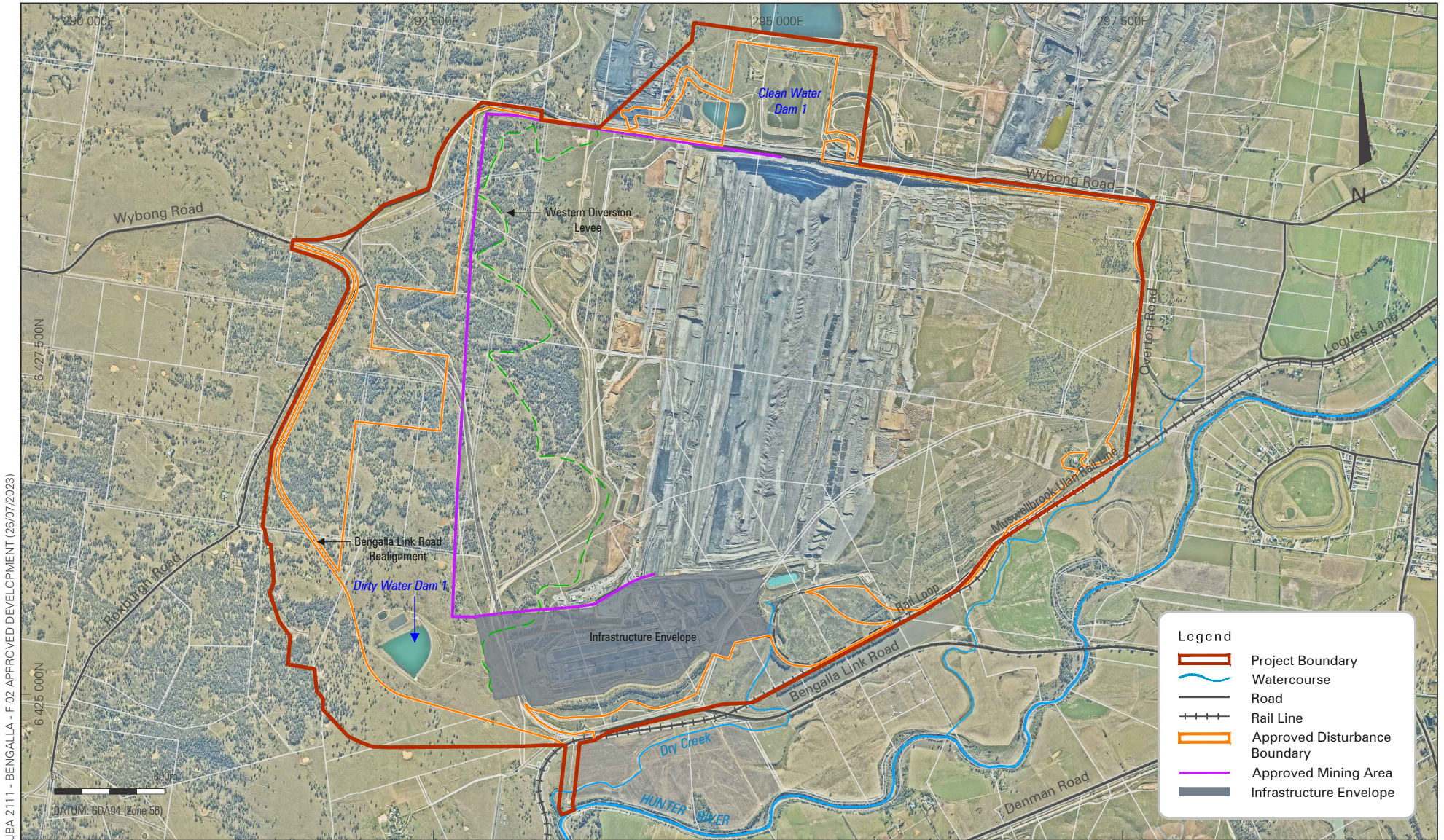


BENGALLA MINE

Regional Locality

FIGURE 1





BENGALLA MINE

Approved Development Layout

FIGURE 2



1.2.8 Prescribed Dams

The following dams at Bengalla are prescribed under the *Dams Safety Act 2015* (as shown on **Figure 2**):

- Dirty Water Dam 1 (DW1); and
- Clean Water Dam 1 (CW1).

The Dam Safety Committee (DSC) (now known as Dam Safety NSW (DSNSW)) approved mining activities within the Notification Areas of SSD and CW1 in correspondence dated 31 August 2015. In accordance with the recommendations of the Dam Safety Committee (DSC), BMC first prepared a DSC Management Plan (revised May 2016) in consideration of '*Mining Near Prescribed Dams Management and Monitoring Matters*' (DSC, 2010). BMC will undertake proper operation and maintenance of the prescribed dams, including blast monitoring and management of blast impacts.

DSNSW has not provided conditions for mining within DW1 notification area as yet.

1.3 Plan Objectives

This BMP sets out the procedures for the management of blasting within the Project Disturbance Boundary (as illustrated on **Figure 2**). This BMP has been developed in accordance with the relevant conditions of SSD-5170 (as modified) and the Bengalla EIS in relation to blasting. Specifically, the objectives of this BMP are to:

- Describe the measures that would be implemented to ensure compliance with blast criteria and operating conditions;
- Describe the proposed blasting management system;
- Includes a blast monitoring program that:
 - Uses real-time monitors to evaluate the performance of the development against the blasting criteria;
 - Evaluates and reports on:
 - The effectiveness of the blasting management system;
 - Compliance with the blasting operating conditions;
 - Defines what constitutes a blasting incident and includes a protocol for identifying and notifying DPE and relevant stakeholders of any blasting incidents; and
- Maintain an effective response mechanism for dealing with issues and complaints related to blasting.

1.4 Management Plan Statutory Requirements

1.4.1 SSD-5170 Performance Measures

Appendix A (Table A-1) outlines the blasting management performance measures in accordance with various conditions in SSD-5170 (as modified) and indicates where each is addressed in this BMP.

The specific requirements for this BMP are provided in Schedule 3, Condition 15 of SSD-5170 (as modified) and are listed in **Table 1**, and where each is addressed within this BMP.

1.4.2 EIS Commitments

Appendix A (Table A-2) lists the blasting commitments made in the Bengalla EIS and indicates where each is addressed in this BMP.

Table 1
Blast Management Plan Requirements

Ref	Requirement	BMP Section
Condition 15	The Applicant must prepare and implement a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:	This BMP
	(a) be prepared in consultation with the EPA and Council, and submitted to the Secretary for approval within 6 months of the date of this consent;	2.0
	(b) describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent;	4.0
	(c) propose and justify any alternative ground vibration limits for any public infrastructure in the vicinity of the site (if relevant); and	N/A
	(d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions.	3.0, 6.1 and 6.4.1
	The Applicant must implement the management plan as approved by the Secretary.	BMC operates in accordance with its approved strategies and plans

1.5 Document Structure

This BMP is structured as follows:

- **Section 1** provides background information on Bengalla and its history, outlines the objectives of this BMP and describes the environmental management regime for Bengalla;
- **Section 2** discusses stakeholder engagement in relation to blasting and blast management at Bengalla;
- **Section 3** outlines the blast monitoring program at Bengalla;
- **Section 4** outlines the blast management measures and controls at Bengalla;
- **Section 5** provides detail on the Bengalla Road Closure Management Plan;
- **Section 6** provides information on blasting reporting and auditing;
- **Section 7** outlines a summary of responsibilities as stipulated in the BMP; and
- **Section 8** provides references used throughout the BMP.

2.0 STAKEHOLDER ENGAGEMENT

This section provides a summary of regulatory consultation undertaken as part of the development of this BMP.

2.1 2015 BMP

Schedule 3, Condition 15 of SSD-5170 (as modified) requires that this BMP must be developed in consultation with the Environment Protection Authority (EPA) and Muswellbrook Shire Council (MSC) to the satisfaction of the Secretary of DPE. A discussion in relation to the consultation completed with each agency is provided below.

A copy of the draft BMP was provided to DPE, EPA and MSC on 3 September 2015 for review and comment. All regulatory correspondence is included in **Appendix B**.

2.1.1 Environment Protection Authority

The EPA provided correspondence on 9 October 2015 in relation to the draft 2015 BMP. The EPA advised they did not have any changes.

2.1.2 Muswellbrook Shire Council

No comments were received from MSC as at 18 July 2016.

2.1.3 Department of Planning and Environment

Comments on the draft 2015 BMP were received from DPE on 8 October 2015 and have been incorporated. The final 2015 BMP was approved by DPE.

2.1.4 Bengalla Community Consultative Committee

The Bengalla Community Consultative Committee (CCC) will continue to be consulted in accordance with the requirements of the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007) (or the latest version).

2.2 2016 BMP

Relevant to this BMP, SSD-5170 (as modified) Schedule 5, Condition 5 states:

- “5. *Within 3 months of submission of:*
- (d) *Any modification to the conditions of this consent (unless conditions require otherwise), the applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.*

Where this review leads to revisions of any such document, then within 4 weeks of the review, unless the Secretary agrees otherwise, the revised document must be submitted to the Secretary for approval.”

Correspondence was provided by the DPE on 24 May 2016 indicating that with consideration of BMC's recent modification application (i.e. MOD 2 SEE provided on 15 April 2016), the Water Management Plan and the Aboriginal Cultural Heritage Management Plan are required to be submitted prior to undertaking disturbance associated with the activities approved under MOD 1, where the activities are not shown in the approved plan. Remaining management plans associated with the update for the Bengalla MOD 1 SEE are required to be submitted *"...to the Department within one month of determination of the current Modification 2 application..."*.

A copy of the 2016 BMP was provided to DPE on 27 July 2016 for review and approval. As of 9 May 2017, no correspondence has been received from DPE with regards to that document.

A copy of all relevant regulatory correspondence associated with the preparation of the 2016 BMP is provided in **Appendix B**.

2.3 2017 BMP

The review was undertaken to address MOD 3 and to consider blast monitoring requirements for prescribed dams as outlined in the DSC Management Plan. **Appendix B** includes DPE correspondence including confirmation of a due date of 12 May 2017. A copy of the 2017 BMP was provided to DPE on 11 May 2017 for review and approval.

A copy of all relevant regulatory correspondence associated with the preparation of the 2017 BMP is provided in **Appendix B**.

2.4 2023 BMP

The review was undertaken to address MOD 5 and to consider updates to the blast monitoring program. Revisions to the BMP primarily focussed on the latest wording of relevant conditions from SSD 5170 (as modified), monitoring locations, updates to the landownership map and changes associated with the progression of mining.

A copy of all relevant regulatory correspondence associated with the preparation of this BMP is provided in **Appendix B**.

3.0 BLAST MONITORING

BMC is required to undertake a blast monitoring program to evaluate the performance of Bengalla blasting operations against relevant blast criteria. Blast monitoring is undertaken at 10 real time blast monitors as shown on **Figure 3** and **Table 2**.

The blast monitors record the following characteristics for each blast and relay the information live to an external website (or other equivalent supplier) and via SMS to BMC Environmental staff:

- Time and date;
- Peak vector sum (mm/s);
- Air blast overpressure peak (dBLin Peak); and
- Waveform trace, where applicable.

Calibration and maintenance of monitoring equipment is carried out by a specialised blast monitoring service provider. Instrumentation used to measure and record the blast vibration and overpressure levels meets the requirements of Australian Standard 2187.2:206 *Explosives – Storage and use – Use of explosives*.

Table 2
Fixed Blast Monitoring Locations

Site Reference	Site Location	Coordinates (MGA 2020, z56)	
		Easting	Northing
Non-Mine Owned Land			
MRE	Moore Residence	292481	6428928
Mine Owned Land			
CTR	Carter Residence	297834	6427761
COL	Collins Residence	291592	6425777
SCR	Scriven Residence	298787	6428475
BLK	Blake Residence	300100	6429733
WEB	Webber Residence	299730	6425159
BOY	Boyle Residence	298322	6426619
BHS	Bengalla Homestead	297125	6426713
EGL	Edinglassie Residence	296040	6424267
WAN	Wantana Area	296273	6425834

3.1 Monitoring of Historic Heritage Sites

In accordance with Schedule 3, Condition 32(b) of SSD - 5170, BMC is required to monitor, notify and manage the effects of blasting on historic heritage items.

Ground vibration and overpressure impacts were considered unlikely to exceed criteria at items of historic heritage significance as outlined in the Bengalla EIS. A brief description of historic heritage sites, their listed significance and monitoring undertaken is shown in **Table 3**.

It was noted in the Bengalla EIS that as mining progresses to the west, items of historic heritage will be further away from active mining and will be subject to lower vibration and overpressure levels than previously experienced.

Historic heritage blast monitoring locations are shown on **Figure 3** and listed in **Table 3**. Any impact to items of historic heritage including exceedance of blasting criteria will be reported in accordance with the protocol outlined in **Section 6.4.1**.

Table 3
Bengalla Historic Heritage Sites and Blast Monitoring

Site Name	Listed Significance	Within Disturbance Boundary	Site Description	Distance to Project (m)	Monitoring
Located within the Project Boundary					
Bengalla Homestead	Local	No	Homestead buildings: the 1877 building, 1895 extension and the 1960s additions combined with gardens, outbuildings, tennis court, farm sheds and archaeological sites	1,600	<ul style="list-style-type: none"> Blast monitoring at location BHS (refer to Figure 3) Annual dilapidation survey
House Site 1	Not Listed	Yes	The site consists of a flat area, a septic tank and above ground concrete tank	N/A	<ul style="list-style-type: none"> Directly impacted, no monitoring required
House Site 2	Not Listed	Yes	The site consists of a flat area scattered with bricks and timber	N/A	<ul style="list-style-type: none"> Directly impacted, no monitoring required

Site Name	Listed Significance	Within Disturbance Boundary	Site Description	Distance to Project (m)	Monitoring
Stockyard	Not Listed	Yes	The stockyard, constructed of post and rails, is centred on a long run, terminating in a loading ramp Probably constructed in the late 19th or early 20th century	N/A	Stockyard Archival Photographic Recording completed December 2016 (prior to impacts).
Located in the vicinity of the Project Boundary					
Keys Family Private Cemetery	Local and Regional	No	Contains ten funerary monuments (stone altar type markers, obelisks and marble headstones) enclosed by a fence constructed of timber and chicken wire, with a metal swinging gate	1,100	<ul style="list-style-type: none"> No blasting impacts predicted* due to distance Annual inspection to confirm no impact as predicted in the EIS
Dalama Stud (Old Bengalla)	Local	No	A stone and brick retaining wall in a state of ruin. The wall has been identified as the rear wall of a kitchen and bathroom complex dating from as early as the 1840s A timber, structure with a corrugated iron roof is also present and was possibly once the stable and coach house associated with Old Bengalla	1,100	<ul style="list-style-type: none"> No blasting impacts predicted* due to distance Annual inspection to confirm no impact as predicted in the EIS
Overdene	Local and National [^]	No	Overdene is a modest sized sandstone house in the classic Georgian style, with the curtilage defined by a fence	2, 150	<ul style="list-style-type: none"> Blast monitoring will be undertaken at location CTR (refer to Figure 3) Annual dilapidation survey

Site Name	Listed Significance	Within Disturbance Boundary	Site Description	Distance to Project (m)	Monitoring
Blunt's Butter Factory	Local	No	Concrete foundations, fragmentary portions of walls and rubble are all that remain of the Factory Some of the remaining concrete sections have glazed white tiles attached	2, 150	<ul style="list-style-type: none"> No blasting impacts* due to distance Annual inspection to confirm no impacts from blasting
Edinglassie Homestead **	State	No	Two storey sandstone house with hipped iron roof in simplified Italianate style with outbuildings (service wing/kitchen, stables, meat house, killing shed and dovecote). Construction was in two stages (c1880 and c1895) (Archaeology Australia, 2008)	1,900	<ul style="list-style-type: none"> Blast monitoring will be undertaken at location EGL (refer to Figure 3)
Rous Lench**	State	No	Low cottage homestead of rendered brick/sandstone and corrugated iron roof in Italianate style (Archaeology Australia, 2008)	2,100	<ul style="list-style-type: none"> Blast monitoring will be undertaken at location EGL (refer to Figure 3)

*As outlined in the Bengalla EIS

**MAC owned

4.0 BLAST MANAGEMENT MEASURES

BMC has a commitment to minimise potential environmental impacts from its operations, using proactive and reactive control measures and monitoring tools. Blast management practices at Bengalla are described below.

4.1 Blasting Criteria

SSD-5170 (as modified) Schedule 3, Condition 8 lists blasting criteria for overpressure and vibration at privately owned residences as reproduced in **Table 4**. These criteria do not apply if BMC has a written agreement with the relevant owner for higher levels, and BMC has advised DPE of the terms of this agreement.

The Bengalla EIS predicted that blast overpressure and vibration at relevant heritage items would not exceed the relevant criterion of 10 mm/s or 120 dBL from BMC’s blasting activities. The locations of mine-owned heritage sites (i.e. BMC owned Bengalla Homestead and Overdene Homestead and Mt Arthur Coal (MAC) owned Edinglassie Homestead and Rous Lench Homestead) are shown on **Figure 3**.

Table 4
Blasting Criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land ^a	115	5	5% of the total number of blasts over a period of 12 months*
	120	10	0%

** A blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.*

4.2 BMC Environmental Management System

BMC has an Environmental Management System (EMS) in place to fulfil its commitment to environmental management and community engagement. The EMS is comprised of environmental authorities, management plans and procedures for particular aspects and impacts of its operations. Procedures are reviewed as part of Bengalla’s continuous improvement and Bengalla adopts relevant industry best practice and technology.

BMC will continue to operate in accordance with relevant requirements during and following mine closure to ensure environmental (including monitoring and management) and social responsibilities are met.

4.3 Blast Hours and Frequency

Blasting activities are conducted in accordance with SSD-5170 (as modified) Schedule 3, Conditions 8-15 (see **Appendix A**). The following measures in relation to blast hours and frequency are implemented at BMC :

- Blasting is conducted on site between 7 am and 5 pm, Monday to Saturday inclusive. No blasting occurs on Sundays, public holidays, or at any other time without the written approval of the Secretary;
- Blasting frequency does not exceed a maximum of two blasts per day and six blasts per week when averaged over a calendar year (this does not include blasts that generate a ground vibration of 0.5 mm/s or less at any residence on privately owned land/or to blasts required to ensure the safety of the mine, its workers or the general public);
- A blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine. Should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast. In circumstances of recurring unfavourable weather conditions (following planned but not completed blast events), to avoid excess explosive sleep times and minimise any potential environmental impacts, BMC may seek agreement from the Secretary for additional blasts to be fired on a given day;
- Consideration is given to the frequency and duration of road closures and avoidance of road closures during peak traffic periods (including where practical, to occur at times which do not impede school bus operations); and
- Coordinate blast times with MAC and Mount Pleasant Project (when operating).

4.4 Blasting Notifications

Relevant stakeholders are notified of the blasting schedule via:

- The 'Blasting Hotline' (02 6542 9591) which provides the community with daily blast times and locations; and/or
- The blast SMS notification service which:
 - Provides details of the upcoming blast (including date and approximate time) and sends an update if a blast has been delayed or cancelled;
 - Is offered to all persons currently identified on the Blast Notification List and will be provided to any community member who registers for the service; and
 - Details of the blast SMS notification service will be communicated to the BMC CCC.

4.5 Blast Design

In accordance with SSD-5170 (as modified) Schedule 3, Condition 13, BMC will implement best management practice to:

- protect the safety of people and livestock in the surrounding area;
- protect public or private infrastructure/property in the surrounding area from any damage; and
- minimise the dust and fume emissions of any blasting.

Blasts are designed using best practice techniques to contain the blast and minimise overpressure, vibration and fume. Techniques utilised at BMC include:

- Identification of infrastructure within 500 metres of the blast;
- Maximum Instantaneous Charge contained to a level so that blasting that will comply with the criteria detailed in **Section 4.1**;
- Stemming, a delay detonation system and careful drilling and hole loading as per the blast design;
- Monitoring of airblast and ground vibration;
- Post blast review of monitoring results, where appropriate, and modification of future blast designs, if necessary;
- Periodic review of blast management practices to evaluate performance and identify responsive action or system improvements, if required; and
- Account for any adverse meteorological conditions that may be prevailing at the time of the blast and defer or modify the blast to accommodate those conditions where appropriate (as detailed in **Section 4.6**).

4.6 Weather Conditions

Blasting operations are assisted by the 'Blasting Permission System' which integrates real-time meteorological information (wind speed, inversion strength and wind direction). During blast scheduling, consideration is given to the size and design of the blast relative to extremities of the mining areas, neighbours, material type, expected dust and/or blast fume generation potential, sleep time and hot or reactive ground.

Prior to a scheduled blast, the Bengalla Environment staff check the daily weather forecast, which provides hourly predictions of meteorological conditions. Blasting should not be conducted if weather conditions are not within acceptable meteorological limits.

The following process is followed:

At least 1 hour prior to scheduled blast time:

- Meteorological information is checked for wind speed, wind direction and temperature inversion conditions before preparing to fire the blast. These conditions should be monitored if conditions are close to the risk limits set by the site.

Approximately two minutes prior to the scheduled blast time:

- Shotfirer to reconfirm meteorological conditions.

If a blast needs to be delayed:

- Notify relevant supervisor and Superintendent Dragline Drill and Blast; and
- If delay will extend beyond licence time limit, then procedures for postponing tied shots should be followed.

If a blast cannot be delayed due to sleep time duration or other factors:

- The relevant regulator will be notified of the circumstances of the blast.

If a blast will occur outside of the approved blast times:

- BMC will obtain regulatory approval from DPE prior to any blasting outside of the approved hours under SSD-5170 (as modified).

4.7 Blasting within 500 m of Private Land

SSD-5170 (as modified) Schedule 3, Condition 14(c) states that no blasting will be undertaken within 500 m of any land outside the site that is not owned by BMC unless:

- A written agreement is in place which allows blasting to be carried out closer to the land and DPE has been advised in writing; or
- BMC has demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock, or damaging buildings and/or structures; and
- Updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land.

4.8 Other Mine Owned Land

SSD-5170 (as modified) Schedule 3, Condition 14(c) states that no blasting will be undertaken within 500 m of any land outside the site that is not owned by BMC unless:

- A written agreement is in place which allows blasting to be carried out closer to the land and DP&E has been advised in writing; or
- BMC has demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the land without compromising the safety of people or livestock, or damaging buildings and/or structures; and
- Updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land.

BMC and MACH Energy have entered into an agreement titled *Blasting Protocol (Reference: BEN718-00525)* which permits blasting to be carried out closer to MACH Energy land than the prescribed 500 meters. Specific measures have been specified to ensure blasting will not compromising the safety of people or livestock, or damaging buildings and/or structures.

4.9 Muswellbrook-Ulan Rail Line Closure

SSD-5170 (as modified) Schedule 3, Condition 14(b) states that no blasting will be undertaken within 500 m of the Ulan-Muswellbrook Rail Line unless a written agreement is in place which allows blasting to be carried out closer to the infrastructure and DPE has been advised in writing. BMC currently has a Blasting Deed dated 6 April 2009 in place with the Australian Rail Track Corporation that facilitates blasting within 500 m of the Muswellbrook-Ulan Rail Line, which will be updated as required.

5.0 ROAD CLOSURE MANAGEMENT PLAN

This section outlines the roads potentially affected by blasting at Bengalla, and details on the Bengalla Road Closure Management Plan.

Public roads within 500 m of blast sites will be closed during the blast and until they are clear of dust and fumes in accordance with the Road Closure Management Plan.

BMC will continue to implement the existing Road Closure Management Plan as described below. This document describes the procedures for the closure of any public road situated within 500 m of blasting as required under SSD-5170 (as modified) Schedule 3, Condition 14(a).

Public roads potentially within 500 m of blasting operations include Bengalla Link Road and Wybong Road. Public road closures will be conducted in accordance with BMC's *Closure of Public Roads for Blasting (PRO-0001)*, which is subject to revisions from time to time as operations progress to the West. Key actions associated with the road closure procedure are presented in **Table 5**.

Table 5
Road Closure Actions and Schedule

When	Action	Responsibility
In the week prior to blasting	Notification of the time and date for the scheduled blast requiring public road closure(s) will be provided to MSC via their website.	Blasting Coordinator
	Emergency services including Muswellbrook Fire Brigade, Rural Fire Service, Ambulance Service, Police and State Emergency Service will also be advised of planned road closures.	
One working day prior to blasting	Confirm the scheduled time and date for the blast on the MSC website.	Blasting Coordinator
	Time signs will be posted facing both directions along the public road scheduled to be closed, displaying the planned closure date and time for the next blast (see Plate 1).	Blasting Coordinator
The day of blasting	Confirm the scheduled date and time of the blast with personnel identified on the Blast Notification Form and update the MSC website (if required).	Blasting Coordinator
	30 minutes prior to blasting, all temporary traffic control signposting will be in place (see Figure 2 and Figure 3 of BMC internal Procedure <i>Closure of Public Roads For Blasting (Pro-0001)</i> *). Locations of signposts will be routinely adjusted to reflect the progression of mining.	Blasting Coordinator
	Blasting will not take place at times when adverse environmental conditions would make road closure hazardous including heavy rain, fog, smoke etc. A decision in relation to the environmental conditions will be made prior to closure of any public road.	Blasting Coordinator
	At least 10 minutes prior to blasting, sentries will be positioned along the public roads (see Plate 2). Sentries will ensure that vehicle stop points are manned to prevent traffic entering the blast exclusion zone until after the blast has been fired and the area deemed safe by the Blasting Coordinator.	Blasting Coordinator
	Two minutes prior to blasting, when confirmation has been received from the Blasting Coordinator that the blasting area within the sentries is all clear, the	Shotfirer

When	Action	Responsibility
	Shotfirer will initiate the two minute warning at the commencement of normal blasting procedures.	
	One minute after blasting, the Shotfirer will instruct the sentries to inspect the public road for any post blast fumes, dust, debris or damage.	Shotfirer and Blasting Coordinator
	If there is no evidence of post blasting fumes, dust, debris or damage the Blasting Coordinator will notify the Shotfirer who will then give permission to re-open the public road.	Shotfirer and Blasting Coordinator
	If there is evidence of post blast fumes or dust that is predicted to impact on queued traffic, then the Blasting Coordinator will advise the closest sentry to divert traffic or reopen the road to ensure there are no unnecessary impacts.	Blast Coordinator
	If there is evidence of debris or damage then the Blasting Coordinator will notify the Shotfirer of such debris or damage. The sentries on the public road will hold the 'stop' position and delay through traffic until such stage as the debris is removed, damage is repaired or controlled traffic conditions put in place. Not until this has been completed will the Shotfirer give permission to re-open the public road. MSC will be notified if damage to the road is confirmed to be as a direct result of damage arising from blasting activities at Bengalla.	Shotfirer and Blasting Coordinator
	Once the road inspection has been completed and has been deemed safe to reopen the temporary barriers will be removed from across the public road, and the sentries will remain in position with the "SLOW" sign displayed.	Blasting Coordinator

**BMC internal Procedure Closure of Public Roads for Blasting (Pro-0001) subject to revision from time to time as operations progress to the West.*

Plate 1
Road Closure Sign



Plate 2
Traffic Control Sentry



6.0 REPORTING & AUDITING

This section outlines reporting and complaints management relevant to this BMP. This section also describes the auditing requirements at Bengalla.

6.1 Annual Review

By the end of March each year, BMC will provide an Annual Review to the Secretary of DPE, which will review the environmental performance of Bengalla for the previous calendar year. The Annual Review will include the presentation and analysis of monitoring results, complaints and any management actions implemented at Bengalla over the reporting period. This will include a summary of blast monitoring results and discussion on exceedances and subsequent year of operations.

The Annual Review will be made publicly available through placement on BMC's website and will be provided to the Bengalla CCC.

6.2 Auditing

Within one year of the commencement of development under SSD-5170 (as modified) (i.e. 1 October 2016) and every three years thereafter, unless the Secretary directs otherwise, BMC will commission and pay the full cost of an Independent Environmental Audit of Bengalla. The audit report will be made publicly available on BMC's website.

6.3 Blast Plan Review

SSD-5170 (as modified) Schedule 5, Condition 5 requires that within three months of the submission of the following documents, BMC must review, and if necessary, revise the BMP in consultation with the EPA and MSC to the satisfaction of the Secretary of DPE:

- Annual Review in accordance with Schedule 5, Condition 4;
- Incident report under Schedule 5, Condition 7;
- Audit report under Schedule 5, Condition 9; or
- Modification to the conditions of SSD-5170 (unless the conditions require otherwise).

When a BMC review leads to revision of the BMP, then within four weeks of the review, unless the Secretary agrees otherwise, the revised BMP must be submitted to the Secretary for approval.

This BMP may also be reviewed and, if necessary, revised to the satisfaction of the Secretary of DPE where there are changes to the monitoring program as a result in changes in mine development, blasting management practices or incident investigations.

6.4 Exceedance of Criteria

SSD-5170 (as modified) Schedule 5, Condition 3 requires BMC to prepare a protocol to manage and report exceedances of the blast criteria listed in this BMP to the relevant regulatory agencies. An exceedance in criteria will trigger the response plan and reporting outlined below.

6.4.1 Protocol for Determining Exceedances

Where monitoring results are below the blast criteria, no further action is required and results are reported with no additional analysis.

Where results are above the blast criterion, the following analysis will be used to determine if BMC's activities exceeded the criteria or contributed to an exceedance of the criteria:

- Confirm that the monitoring results are valid and attributable to a BMC blast;
- Investigate the meteorological data for the relevant period and the design of the blast; and
- Assessment of the blast in accordance with the incident reporting procedure in **Section 6.4.3**.

Any exceedances are recorded on the Bengalla Health, Safety & Environmental Incidents Register.

Preparation of an incident response plan may require the assistance of a specialist blasting consultant.

6.4.2 Contingency Plan

If recorded overpressure or vibration consistently approach or exceed the relevant blast criteria, additional blasting control measures may be investigated and implemented where required.

Although ground vibration and overpressure impacts are considered unlikely to exceed criteria at items of historic heritage significance, annual dilapidation surveys will be undertaken at the Bengalla and Overdene Homesteads, as required by the Conservation Management Plans. Any defects or damage caused through blasting will be rectified and reported in the Annual Review.

Blasting operations will be modified until a return to an acceptable range and/or the source of the exceedance is determined and managed.

6.4.3 Reporting

SSD 5170 (as modified) Schedule 5, Condition 7 requires BMC to report any incident that has caused, or threatens to cause, material harm to the environment; and/ or breaches or exceeds the blast criteria in the consent. After becoming aware of an incident the Bengalla Environment Superintendent or delegate will immediately report any Incident to DPE and any other relevant regulatory agencies.

Within seven days of becoming aware of a Non-compliance the Environment Superintendent or delegate will provide a written report to DPE via the Department's Major Projects Website.

The written report will describe the following:

- The nature of the non-compliance concern;
- The date and time of the incident;
- The likely cause of the incident;
- Actions that have been taken;
- Proposed measures to address the incident; and
- A review of existing measures and their effectiveness at preventing repeated incidents.

6.5 Complaints

BMC has a Community Complaints Procedure which details how to receive, respond to, record and address community complaints including blasting related issues. BMC will keep a record of all community complaints and subsequent actions. At least the following details are recorded:

- Complainant details (where provided);
- The nature of the complaint;
- How the complaint was made;
- Actions (if appropriate); and
- Consultation undertaken.

Complaints and enquiries regarding blasting issues and any other environmental matters should be directed to the 24 hour complaints hotline: 1800 178 984. A register of complaints will be published monthly on BMC's website in accordance with Schedule 5, Condition 11 of SSD-5170 (as modified).

6.6 Continuous Improvement

Environmental performance in relation to blast impacts is evaluated through:

- Review and investigation of any exceedances;
- Independent environmental audits;
- Feedback from stakeholder consultation or complaints; and
- Annual Review process.

BMC continually strives to improve Bengalla's environmental performance by applying the principles of reasonable and feasible new best practice technologies. These measures will be investigated and adopted where relevant and the effectiveness of blast management measures on site will continue to be monitored.

6.7 Public Access to Information

In accordance with SSD-5170 (as modified) Schedule 5, Conditions 8 and 11, BMC will regularly (in the form of the Annual Review) prepare a summary of monitoring results required by SSD-5170 (as modified) (including for blasting overpressure and vibration) and make these publicly available on the Bengalla website. This BMP will be made publicly available on the BMC website.

6.8 Property Inspections

Should BMC receive a written request from the owner of any privately owned land within 3 km of the approved open cut mining pit, or any other landowner where the Planning Secretary is satisfied an investigation is warranted, BMC will undertake a structural inspection of the land in accordance with the requirements of SSD-5170 (as modified) Schedule 3, Conditions 11-12.

7.0 RESPONSIBILITIES

Table 6 provides a summary of responsibilities as stipulated in this BMP.

Table 6
Blasting Responsibilities Summary

Ref	Task	Responsibility	Timing
1	Provide adequate resources to implement the commitments in this BMP.	BMC General Manager	Ongoing
2	Provide training to relevant personnel in accordance with this BMP.	BMC Environmental Superintendent	Ongoing
3	Maintain the blast monitoring program as described in Section 3.0 .	BMC Environmental Superintendent	Ongoing
4	Implement operational blast control measures as described in Section 4.0 to meet the blasting criteria in Section 4.1 .	BMC Environmental Superintendent	Ongoing
5	Undertake notifications to near neighbours as indicated in Section 4.4 .	BMC Environmental Superintendent	As required
6	Organise inspection of historic heritage items to confirm no impacts from blasting (as outlined in Section 3.1)	BMC Environmental Superintendent	Annually
7	Provide notification to other landholders in accordance with Section 4.4 .	BMC Environmental Superintendent	Ongoing
8	Undertake auditing and reporting (including complaints, exceedances and incidents) as per Section 6.0 .	BMC Environmental Superintendent	As required

8.0 REFERENCES

- Australian Explosives Industry and Safety Group Inc (2011). *Code of practice prevention and management of blast generated nox gases in surface blasting.*
- Department of Planning (2007). *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects.*
- Dam Safety Committee (2010). *Mining Near Prescribed Dams Management and Monitoring Matters.*
- Hansen Bailey (2017), *Bengalla Mine Development Consent Modification 4 Statement of Environmental Effects (SSD-5170 MOD 4).*
- Hansen Bailey (2016), *Bengalla Mine Development Consent Modification Statement of Environmental Effects (SSD-5170 MOD 3).*
- Hansen Bailey (2016), *Bengalla Mine Development Consent Modification Statement of Environmental Effects (SSD-5170 MOD 2).*
- Hansen Bailey (2015a), *Bengalla Mine Development Consent Modification Statement of Environmental Effects (SSD-5170 MOD 1).*
- Hansen Bailey (2015b), *Bengalla Mine Development Consent Modification Response to Submissions.*
- Hansen Bailey (2013), *Continuation of Bengalla Mine Environmental Impact Statement.*
- Hansen Bailey (2014), *Continuation of Bengalla Mine Response to Submissions.*
- HLA Envirosiences (1993). *Bengalla Mine Environmental Impact Statement.*
- James Bailey Associates (2021) *Bengalla Mine MOD 5 Modification Report.*
- James Bailey Associates (2022) *Bengalla Mine MOD 5 Submissions Report.*

APPENDIX A

**SSD-5170 BLASTING REQUIREMENTS &
BMC COMMITMENTS**

Table A1
Blast Management Performance Measures

Ref	Performance Measure	BMP Section											
Schedule 3, Condition 8	<p>Blasting Criteria</p> <p>The Applicant must ensure that blasting on the site does not cause exceedances of the criteria in Table 5.</p> <p><i>Table 5: Blasting criteria</i></p> <table border="1"> <thead> <tr> <th>Location</th> <th>Airblast overpressure (dB(Lin Peak))</th> <th>Ground vibration (mm/s)</th> <th>Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Residence on privately owned land^a</td> <td>120</td> <td>10</td> <td>0%</td> </tr> <tr> <td>115</td> <td>5</td> <td>5% of the total number of blasts over a period of 12 months</td> </tr> </tbody> </table> <p>However, these criteria do not apply if the Applicant has a written agreement with the relevant owner for higher levels and has advised the Department in writing of the terms of this agreement.</p>	Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance	Residence on privately owned land ^a	120	10	0%	115	5	5% of the total number of blasts over a period of 12 months	4.1
Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance										
Residence on privately owned land ^a	120	10	0%										
	115	5	5% of the total number of blasts over a period of 12 months										
Schedule 3, Condition 9	<p>Blasting Hours</p> <p>The Applicant must only carry out blasting on site between 7 am and 5 pm Monday to Saturday inclusive.</p> <p>No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.</p>	4.3											
Schedule 3, Condition 10	<p>Blasting Frequency</p> <p>The Applicant must carry out a maximum of:</p> <p>(a) 2 blasts a day; and</p> <p>(b) 6 blasts a week, averaged over a calendar year, on the site.</p> <p>This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, blast misfires or blasts required to ensure the safety of the mine, its workers or the general public.</p> <p><i>Notes:</i></p> <p><i>For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.</i></p> <p><i>For the avoidance of doubt, should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast.</i></p> <p><i>In circumstances of recurring unfavourable weather conditions (following planned but not completed blast events), to avoid excess explosive sleep times and minimise any potential environmental impacts, the Applicant may seek agreement from the Secretary for additional blasts to be fired on a given day.</i></p>	4.3											
Schedule 3, Condition 11	<p>Property Inspections</p> <p>If the Applicant receives a written request from the owner of any privately-owned land within 3 kilometres of the approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:</p>	6.8											

Ref	Performance Measure	BMP Section
	<ul style="list-style-type: none"> • establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and • identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and <p>(b) give the landowner a copy of the new or updated property inspection report. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.</p>	
Schedule 3, Condition 12	<p>Property Investigations</p> <p>If the Applicant receives a written request from the owner of any privately-owned land within 3 kilometres of the approved open cut mining area, or any other landowner where the Planning Secretary is satisfied an investigation is warranted, for a property investigation on the basis that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Applicant must:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and</p> <p>(b) give the landowner a copy of the property investigation report.</p> <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant must repair the damage to the satisfaction of the Secretary.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.</p>	6.8
Schedule 3, Condition 13	<p>Operating Conditions</p> <p>During mining operations on site, the Applicant must:</p> <p>(a) implement best management practice to:</p> <ul style="list-style-type: none"> • protect the safety of people and livestock in the surrounding area; • protect public or private infrastructure/property in the surrounding area from any damage; and • minimise the dust and fume emissions of any blasting; <p>(b) ensure that blasting on site does not damage historic heritage sites (see the figure in Appendix 6);</p> <p>(c) minimise the frequency and duration of any road closures, and avoid road closures for blasting during peak traffic periods;</p> <p>(d) operate a suitable system to enable the public and Council to get up-to-date information on the proposed blasting schedule on site and associated road closures;</p> <p>(e) co-ordinate the timing of blasting on site with the timing of blasting at the Mt Arthur and Mount Pleasant mines to minimise any cumulative blasting impacts; and</p>	4.0 and 6.0

Ref	Performance Measure	BMP Section
	(f) monitor and report on compliance with the relevant blasting conditions in this consent, to the satisfaction of the Secretary.	
Schedule 3, Condition 14	<p>The Applicant must not undertake blasting on site within 500 metres of:</p> <ul style="list-style-type: none"> (a) any public road; (b) the Ulan – Muswellbrook railway line; or (c) any land outside the site that is not owned by the Applicant, unless: <ul style="list-style-type: none"> • the Applicant has a written agreement with the applicable infrastructure authority or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Applicant has advised the Department in writing of the terms of this agreement; or • the Applicant has: <ul style="list-style-type: none"> ○ demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock, or damaging buildings and/or structures; and ○ updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the road or land. 	4.7, 4.8, 4.9 & 5.0
Schedule 3, Condition 15	<p>Blast Management Plan</p> <p>The Applicant must prepare and implement a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with the EPA and Council, and submitted to the Secretary for approval within 6 months of the date of this consent; (b) describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent; (c) propose and justify any alternative ground vibration limits for any public infrastructure in the vicinity of the site (if relevant); and (d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions. <p>The Applicant must implement the management plan as approved by the Secretary.</p>	<p>This BMP</p> <p>2.0</p> <p>4.0</p> <p>4.7, 4.8, 4.9</p> <p>3.0</p>
Schedule 3, Condition 32	<p>Historic Heritage Management Plan</p> <p>The Applicant must prepare and implement a Historic Heritage Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with the Heritage Branch and Council, and submitted to the Secretary for approval within 6 months of the date of this consent; (b) include the following for the management of other historic heritage on site: <ul style="list-style-type: none"> • conservation management plans for the Bengalla and Overdene homesteads; • measures to minimise the visual impacts of the development on the Edinglassie and Rous Lench Homesteads; and • a program/procedures for: <ul style="list-style-type: none"> ○ photographic and archival recording of potentially affected historic heritage items; ○ protection and monitoring of historic heritage items outside the project disturbance area; 	All addressed in HHMP (except as below)

Ref	Performance Measure	BMP Section
	<ul style="list-style-type: none"> ○ monitoring, notifying and managing the effects of blasting on potentially affected historic heritage items; and ○ additional archival recording of any significant historic heritage items requiring demolition (including the Stockyard). <p>The Applicant must implement the management plan as approved by the Secretary.</p>	3.1
Schedule 5, Condition 3	<p>Management Plan Requirements</p> <p>The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:</p>	This BMP
	(a) detailed baseline data;	1.2
	(b) a description of: <ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; 	1.4
	(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	4.0
	(d) a program to monitor and report on the: <ul style="list-style-type: none"> • impacts and environmental performance of the development; • effectiveness of any management measures (see c above); 	3.0 and 6.0
	(e) a contingency plan to manage any unpredicted impacts and their consequences;	6.4.2
	(f) a program to investigate and implement ways to improve the environmental performance of the development over time;	6.3
	(g) a protocol for managing and reporting any: <ul style="list-style-type: none"> • Incidents; • Complaints; • Non-compliances with statutory requirements; and • Exceedances of the impact assessment criteria and/or performance criteria; and 	6.4
	(h) a protocol for periodic review of the plan. <i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i>	6.3

Table A2
EIS Blast Management Commitments

Ref	Action	BMP Section
Mitigation & Monitoring Summary		
Section 8.4.4	<p>BMC's existing Blast Management Plan will be revised in consultation with the relevant regulators to include at least the following:</p> <ul style="list-style-type: none"> Maximum of 12 blast events per week during the hours of 7:00 am to 5:00 pm, Monday to Saturday; 	N/A see Schedule 5 Condition 5
	<ul style="list-style-type: none"> Commitment for a maximum of one blast event per day during the hours of 11:00 am to 3:00 pm on Sundays only for blasts scheduled within 500 m of the MIA as defined on Figure 17 (or the approved but not yet constructed Mount Pleasant Project infrastructure area); 	N/A (activity not approved)
	<ul style="list-style-type: none"> MSC along with all privately owned residents located within the Project noise management receptor zone (see Table 40 and Table 41) will be offered to be notified of a Sunday blast; 	N/A (activity not approved)
	<ul style="list-style-type: none"> Blast design procedures to be undertaken by appropriately qualified personnel to minimise the potential for overpressure, ground vibration and blast fume impacts to residential receptors, surrounding infrastructure and BMC employees; 	4.5
	<ul style="list-style-type: none"> Ongoing review of real-time meteorological monitoring information (wind speed, direction, inversion) before the firing of any blast; 	4.6
	<ul style="list-style-type: none"> The existing blast monitoring system will be regularly reviewed and implemented to ensure it is representative of the nearest sensitive receptors in consultation with relevant regulators; 	6.3
	<ul style="list-style-type: none"> Procedures for the notification of neighbours of upcoming blast events (timing and location) and maintenance of the BMC Blasting Hotline; 	4.4
	<ul style="list-style-type: none"> Management measures to close public roads, rail infrastructure and evacuate MIAs within 500 m of a blast site during the blast event and until potentially impacted areas are clear of dust and fumes; and 	5.0
	<ul style="list-style-type: none"> A summary of blast monitoring sites and procedures. 	3.0

APPENDIX B

REGULATORY CORRESPONDENCE



DOC23/558100-3

BENGALLA MINING COMPANY PTY LIMITED
ABN 32 053 909 470
Bengalla Road
MUSWELLBROOK NSW 2333

By email: craig.white@bengalla.com.au

7 July 2023

Dear Craig White

**No Comment – Bengalla Coal Mine – SSD-5170-PA-99
Bengalla Blast Management Plan and Noise Management Plan**

I am writing in reply to your invitation to the Environment Protection Authority (EPA) dated 27 June 2023 to provide advice on the Blast Management Plan for Bengalla Coal Mine in accordance with Planning Approval SSD-5170-PA-99.

The EPA has not reviewed the Plans and has no comments on the Plans. The EPA's role, as a regulatory authority, is to set environmental objectives rather than being involved in the development of strategies to achieve those objectives.

The development of such plans by proponents and licensees is encouraged by the EPA, to ensure they have determined how they will meet their statutory obligations and environmental objectives.

If you have any further questions about this issue, please contact Bree Turkington on (02) 8275 1550 or info@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'K. Gallagher', written over a white background.

KAREN GALLAGHER
Unit Head - Regulatory Operations

Phone 131 555
Phone 02 9995 5555
(from outside NSW)

TTY 133 677, then
ask for 131 555

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Enquiries
Please ask for Theresa Folpp
Direct 02 6549 3700
Our reference Bengalla Mine

11 July 2023

Craig White
Environmental Superintendent
Bengalla Mining Company Pty Ltd

Dear Mr White,

Muswellbrook Shire Council – Advice on Blast Management Plan

Reference is made to the '*Bengalla Mining Company Pty Limited Blast Management Plan v6*' (BMP), issued to Council for comment via the Major Projects Portal. Consultation with Council is required under Sch 3 Cond 15 of SSD 5170 (as modified). Council staff appreciates the opportunity to comment, and its response is provided below:

1. While Section 2.4 of the BMP provides a description of the reasons behind the recent update, it would be beneficial to include a summary of key changes. Specifically, in this update, it is understood that revisions primarily focused on property investigations. Including a brief overview of these updates will provide stakeholders with a clearer understanding of the specific areas that were addressed / updated.
2. It is understood that there are two prescribed dams located at Bengalla, and although Staff acknowledge that consultation has been conducted with Dams Safety NSW and a DSC Management Plan has been prepared to effectively manage mining and blasting activities within the notification areas, it would be beneficial to include a figure in the BMP illustrating the locations of the dams and notification areas. This will ensure transparency and enable the community to stay informed about Bengalla's operations in these specific areas and their adherence to the DSC Management Plan.
3. As stated in Section 5 of the BMP, 'public road closures will be conducted in accordance with BMC's *Closure of Public Roads for Blasting* (PRO-0001) (Blast Procedure), which is subject to revisions from time to time'.

The Blast Procedure was last approved by Council in June 2013 with a review date of 01 August 2014 (see copy of latest procedure attached). Staff have undertaken a cursory review of the procedure and identified several items to be updated including approvals reference (currently refers to DA211/93), impacted roads (currently refers to Skippens Lane) and location of mining / 500m impact zone.

Staff request that BMC update the Blast Procedure and submit a copy of the updated document to council@muswellbrook.nsw.gov.au. If necessary, the updated Blast Procedure will be subject to approval by the Traffic Committee and Council. Please include a clear description of the nature of the updates, specifying whether they are administrative in nature or involve material changes to assist the reviewing bodies in understanding the scope and impact of the updates made to the Blast Procedure.

Should you need to discuss the above, please contact the undersigned on 02 6549 3700 or email council@muswellbrook.nsw.gov.au.

Yours faithfully



Theresa Folpp
Development Compliance Officer