Tarrawonga Coal Mine Blast Management Plan

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Contents

1 Introduction

1.1 Overview of Approved operations

The Tarrawonga Coal Mine (TCM) is an open cut mining operation located approximately 15 kilometres north-east of Boggabri and 42 kilometres north-northwest of Gunnedah in New South Wales (Figure 1). The mine is owned and operated by Whitehaven Coal Mining Pty Ltd (Whitehaven).

The TCM commenced operations in 2006 and has approval to produce up to 3.5 million tonnes per annum of run-of-mine (ROM) coal via conventional open cut mining methods. Sized coal produced on-site is transported via road to the Whitehaven coal handling and preparation plant located to the north of Gunnedah prior to being railed to the port of Newcastle via the Werris Creek Mungindi Railway. The operation of a mine has potential to impact the environment and the surrounding community from blasting activities. Blasting has been approved which can result in ground vibration, overpressure and fly rock.

TCM operates under Project Approval (MP 11_0047) (granted 22 January 2013), inclusive of multiple modifications since this date. Further details on each modification can be found in the 'Definition' section of Project Approval (MP 11_0047).

A full project description, including history of operations, current operating approach and mining methods are outlined within the TCM Project Environmental Assessment and previous Annual Environmental Management Reports/Annual Reviews (AEMR/Annual Review) for the site. These documents can be found on the Whitehaven Coal website.

1.2 Baseline Data

Baseline data has been gathered on previous blasting activities at Tarrawonga Mine and is used to calibrate, refine and inform the blast design process and predictive modelling for blasting impacts.

1.3 Purpose

The purpose of this Blast Management Plan is to describe the measures that would be implemented to ensure that best management practice is employed and compliance with the blasting conditions of the Project Approval.

1.4 Scope

The scope of the Blast Management Plan applies to the relevant blasting and vibration impact assessment criteria, compliance procedures and operational controls relating to open cut blasting activities as described in the Tarrawonga Coal Mine – Modification 5 Environmental Assessment (Whitehaven Coal Ltd, 2017). It covers airblast overpressure, blast vibration, odour and nuisance blast noise impacts at privately-owned residences or other sensitive locations and public roads within 500 metres of blasting activities.

1.5 Management Systems

Tarrawonga; as a Whitehaven Coal operation, has well-established management systems that are aligned with the international management system standard ISO 14001. These management systems provide the framework to support the planning, implementation, monitoring and review to achieve continual improvement in blasting management. To minimise the blasting impacts of these activities a risk-based approach has been established, which includes mechanisms for predictive forecasting and blast monitoring, providing feedback on the effectiveness of controls and enabling adaptive management.

2 Legislative Requirements

2.1 Tarrawonga Coal Mine

Requirements and commitments associated with blasting are defined within the following approvals:

- Tarrawonga Coal Mine Project Approval (MP 11_0047 (including modifications)); and
- Environmental Protection Licence (EPL) 12365.

Standards, guidelines and additional legislation relevant to the preparation this BMP and the management of blasting from TCM are available in section 11.1 external documents.

In accordance with the Project Approval, this Blast Management Plan has been developed in accordance with Schedule 5, Condition 3 and complies with Schedule 3, Condition 21 and other relevant conditions, as provided Appendix 1, Table 4 and Table 5.

Pursuant to Condition 15 of Schedule 3 of the Project Approval, blasting shall only be carried out on the site between 9 am and 5 pm Monday to Saturday inclusive. No blasting is to occur on Sundays, public holidays, or at any other time without the written approval of the Secretary. In addition, pursuant to Condition 16 of Schedule 3 of the Project Approval, a maximum of 1 blast a day; unless an additional blast is required following a blast misfire; and 4 blasts a week, averaged over a calendar year, for the project. Conditions 15 and 16 do not apply to blasts that generate 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 or its workers. Table 1 includes a summary of the blasting assessment criteria from the Project Approval.

Table 1 Project approval assessment criteria[1]

Pollutant	Averaging period	Impact assessment	
		Criterion	Basis
Airblast overpressure **Residence on privately - owned land**	Every blast	>120 (dB(Lin Peak))	0% exceedance
	Every blast	>115 (dB(Lin Peak))	5% exceedance of the total number of blasts over a 12 month period
Ground vibration **Residence on privately-owned land**	Every blast	10 mm/s	0% exceedance
	Every blast	5 mm/s	5% exceedance of the total number of blasts over a 12 month period
Ground vibration **All public infrastructure**	-	50mm/s	Or a limit determined by the structural design methodology in AS 2187.2-2006, or its latest version, to the satisfaction of the Secretary. 0% exceedance
Blasting frequency	Every blast	a) 1 blast a day b) 4 blasts a week	a) Unless an additional blast is required following a misfire b) Averaged over a calendar year

[1] These criteria do not apply if TCM has a written agreement with the relevant owner or infrastructure provider/owner to exceed the limits and TCM has advised the Department in writing of the terms of this agreement.

Blast fume (NOx)	Every blast	a) 3C + rated fume event b) 4 or 5 rated fume event	a) Reportable exceedance if fume is to leave the Mining Lease b) Reportable exceedance at any time within the Mining Lease

2.2 BTM Complex Blast Management Strategy

The BTM Complex is an existing mine precinct located within and around the Leard State Forest, approximately 15 kilometres north-east of Boggabri. The BTM Complex monitors and collectively manages cumulative blasting impacts within the Complex which includes Boggabri-Tarrawonga-Maules Creek.TCM along with Boggabri Coal Mine and Maules Creek Coal Mine have developed the BTM Complex Blast Management Strategy in order to minimise cumulative blasting impacts. The Blast Strategy forms part of this management plan as required by Sch 3, Cn 21(h) of the Project Approval. The Strategy includes Complex wide blasting criteria, monitoring and management controls focusing on blast scheduling and communication. The most recent version of this strategy is available on the Tarrawonga Coal Mine website (Whitehaven Coal Pty Ltd, Idemitsu Australia Resources, 2024).

3 Consultation and Communication

The original Blast Management Plan was prepared in consultation with the NSW EPA (hereto referred to as the EPA) and Tarrawonga Community Consultative Committee (CCC).

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In addition, TCM has extensive consultation and communication processes, including but not limited to:

- A comprehensive community engagement program which includes a Community Consultative Committee (CCC);
- Monthly engagement via the Boggabri Tarrawonga Maules Creek (BTM) mine complex for co-ordination of blasting management at the respective mines and to discuss concerns relating to cumulative impacts;
- Ongoing consultation with relevant government agencies including SafeWork NSW and the Mines Inspector from the Resources Regulator;
- A community response line (1800 942 836) which enables members of the community to contact environment and community staff directly to discuss concerns with blasting;
- If blasting criteria is exceeded discussions are held within the BTM Complex and the agencies and affected landholders (refer to Section 5.2.9); and
- Publicly available project approvals, environmental and other related documentation (annual reports, complaints register, CCC minutes) via the Whitehaven Coal website.

On occasion, TCM may require a closure of the surrounding public roads including Goonbri Road and Dripping Rock Road. The WHC_TAR_Road Closure Management Plan provides the steps required to perform a road closure. See Section 9.1 for details on communication with interested parties.

4 Risk Management

TCM implements a comprehensive risk management system as documented in the Whitehaven Coal HSE Risk Management Standard (WHC-STD-HSE Risk Management) and the Whitehaven Coal HSE Risk Management Procedure (WHC-PRO-HSE Risk Management). Blasting risks and their associated control measures are documented in the Tarrawonga Broadbrush Risk Assessment; the control measures are summarised in of this Management Plan. Operational and project related changes that have the potential to materially alter the blasting profile are managed through the Whitehaven Coal Management of Change Standard (WHC-STD-Management of Change).

5 Control Measures

5.1 Overview of operation controls

The Project Approval requires TCM to implement reasonable and foreseeable avoidance and mitigation measures' regarding blasting. Key operational control measures are included in Table 2.

Table 2 Control measures if applicable

Risk	Source	Mitigation Measures	Responsibility	Timing
Blast design results in structural damage and human impacts from air blast overpressure, ground vibration, fly rock, fumes, dust, offensive odours and nuisance noise	Blasting to enable mining activities	Blast design will be developed in accordance with WHC-PRO-OC_BLAST PLANNING, DESIGN & RECORD KEEPING and WHC_PRO_TAR_BLAST FUME MANAGEMENT and WHC_PLN_TAR_ROAD CLOSURE MANAGEMENT PLAN. Each blast design is reviewed against criteria that influence control of the blast and avoids impacts beyond the blast zone (refer to Section 5.2.1).	Drill & Blast Superintendent	Ongoing
Execution of the blast design results in structural damage and human impacts from air blast overpressure, ground vibration, fly rock, fumes, dust, offensive odours and nuisance noise	Blasting to enable mining activities	Comply with WHC-PRO-OC-Blast Clearance and Firing the relevant TCM blasting procedures prior to the commencement of any blast (refer to section 5.2.2).	Drill & Blast Superintendent	Ongoing
		Comply with the Blast Design (refer to Section 5.2.1) and (where required) Road Closure Management Plan (refer to Section 5.2.7).	Drill & Blast Superintendent	Ongoing
		Undertake a pre-blast environmental assessment by completing a WHC_CHK_OC_TAR_ENVIRONMENTAL BLAST HAZARD ANALYSIS (for more details refer to Section 5.2.3). Additional controls will be implemented if the pre-blast assessment indicates an elevated risk of either fume generation, excessive dust, vibration/overpressure or nuisance noise exceedance at sensitive receptors.	Operations Manager	Ongoing
		Complete a WHC_CHK_ENVIRONEMNTAL BLAST CHECKLIST TARRAWONGA (refer to Section 5.2.6).	Environmental Superintendent	Ongoing
		No blasting shall be undertaken on-site within 500m of any land outside of the site not owned by TCM: • unless TCM has a written agreement with the relevant landowner to allow blasting to be carried out close to the land and TCM has advised the DPE in writing of the terms of the agreement; or • TCM can demonstrate that blasting can be carried out closer to the land without compromising the safety of people or livestock or damaging buildings and/or structures on the land and an updated BMP that includes the specific measures that would be implemented while blasting is being carried out within 500m of the land to the satisfaction of the Secretary of DPE is in place. • Where a known aboriginal or non-aboriginal artefact site could potentially be impacted lies within the 300m exclusion zone, an assessment of blast vibration will be undertaken as part of the environmental assessment and the sites will be the subject of regular inspections to verify blasting activities are not causing any damage, or impacting upon those artefact locations.	Drill & Blast Superintendent	Ongoing

Risk	Source	Mitigation Measures	Responsibility	Timing
		• Where livestock are identified as being within 500m of any land outside of the site not owned by the TCM the blast clearance zone, appropriate measures will be taken to relocate livestock from this location prior to blasts proceeding. • If structural damage criteria exceedances are predicted at the "Blair Athol" residence it will be vacated and a structural inspection will be undertaken prior to reoccupation if monitoring confirms that an exceedance in blast criteria occurred.		
Execution of the blast design results in structural damage and human impacts from air blast overpressure, ground vibration, fly rock, fumes, dust, offensive odours and nuisance noise	Blasting to enable mining activities	Comply with blast loading and pre blast designs, unless risks are determined by the Shot-Firer at the time of loading that may be mitigated through changes to design.	Drill & Blast Superintendent	Ongoing
		Ensure that blasts are fired during weather conditions that lower the potential for blast generated dust and/or fumes to be blown towards neighbouring properties by completing the WHC_CHK_ENVIRONMENTAL BLAST CHECKLIST and WHC-CHK-OC-TAR-ENVIRONMENTAL BLAST HAZARD ANALYSIS.	Drill & Blast Superintendent	Ongoing
		Where inversion stability categories F or G (EPA, 2014) are experienced and/or prevailing winds pose a risk to environmental compliance, blasting may be delayed. Conditions potentially delaying blasting may include: • Tarrawonga North (TN)– if winds are emanating from a Southerly direction and greater than 7m/s or predictive dust dispersion indicates potential dust impacts on Boggabri Coal Mine operations unless consent is given to fire by Boggabri Coal Mine (BCM) • Tarrawonga East (TE) Pit – if winds are emanating from the South or West/North West.	Drill & Blast Supervisor, Environment Advisor	Ongoing
		Ensure the minimum practicable weight of explosive detonates at an instant (i.e. minimising the MIC).	Drill & Blast Superintendent	Ongoing
		Ensure the maximum weight of explosive detonated in a given delay period (the Maximum Instantaneous Charge – MIC) is limited to conservative and proven levels based on historical blasting at Tarrawonga Coal Mine.	Drill & Blast Superintendent	Ongoing
		Minimising the potential for the delay in firing of shots which have been loaded, especially into wet holes, considering the restrictions of existing weather conditions.	Drill & Blast Superintendent	Ongoing

5.2 Operational Control Procedures

Key operational control procedures include;

5.2.1 WHC-PRO-OC-Blast Planning, Design and Record Keeping

This procedure guides planning and design process involved in safe blasting of overburden and coal while ensuring suitable fragmentation and muckpile profile to match the chosen digging equipment. It requires the review of existing conditions such as blast geometry, geology, sleep time, meteorological condition forecasting, historical monitoring data (to consider likely overpressure, vibration or fume level exceedance).

5.2.2 WHC-PRO-OC-Blast Clearance and Firing

This procedure identifies blasting hazards (including unauthorised entry to blasting area, flyrock and fume emissions) and controls for activities with WHC Open Cut mines (including Tarrawonga) including the establishment of a blast exclusion zone, sentry requirements, restrictions on time periods where blasts can take place, blasting protocols near public roads and post-blast inspection.

5.2.3 WHC_CHK_OC_TAR_Environmental Blast Hazard Analysis

This checklist provides guidance for determining the likely impacts of a blast on vibration, overpressure, fumes and dust. The checklist provides the Drill & Blast Engineer and the Environmental Officer with a standardised and repeatable process aimed at predicting the outcome of a blast. It is carried out prior to each blast.

5.2.4 WHC-PRO-TAR_Blast Fume Management

This procedure outlines the specific blast fume management actions to be implemented at Whitehaven Coal Mines in line with the strategies outlined in the Australian Explosives Industry Safety Group (AEISG) Code of Practice – Prevention and Management of Blast Generated NO_x Gases in Surface Blasting (2011) and WHC-OC-Explosives Control Plan. It applies to the purchasing of explosives, blast design, drilling, loading and firing of explosives. Blast design mitigations covered include:

- Reducing bench heights or ensuring adequate relief in deep holes;
- Selecting explosives products appropriate to the blast design and ground conditions;
- Following manufacturer's recommendations for priming, timing and sleep time of explosives;
- Increasing the level of control and QA/QC checks on deep shots;
- Providing appropriate separation of blast holes and explosive decks; and
- Reducing the power factor or modifying the timing, depth or size of a blast.

5.2.5 Pollution Incident Response Management Plan (PIRMP)

The PIRMP provides the process for managing a pollution incident in accordance with the Environmental Protection Licence (EPL). It covers both internal and external notification (including the community).

5.2.6 WHC_CHK_Environmental Blast Checklist Tarrawonga

This Checklist covers all aspects of a blast that could impact the surrounding areas and the controls needed to mitigate the impacts. It covers weather constraints (winds, inversions, rain etc), communication and warning of local landholders (and interested persons), the need for road closure, undertaking monitoring, blast scheduling, blast fume characteristics and outcomes of the blast (e.g. fume characteristics, monitoring results etc). The Environmental Blast Checklist includes a notification checklist, pre-blast weather conditions (such as cloud cover, wind speed and direction and the strength of temperature inversions) assessments every hour prior to the blast (commencing at 5 hours prior to the blast) and at the time of the blast and a post-blast assessment which includes fume rating.

5.2.7 WHC_PLN_TAR_Road Closure Management Plan

This Plan covers the safe management of temporary road closure when blasts are within 500m of a public road or when it is considered a blast may adversely affect that road.

5.2.8 WHC PLN TAR/ROC/VCM Traffic Management Plan

The Traffic Management Plan (TMP) has been prepared to manage potential impacts from mine related traffic, being road coal haulage and general vehicular movements. This TMP covers the need for road closure during blasting activities. It covers notification of neighbours and Narrabri Shire Council and the development and implementation of a Traffic Control Plan to manage traffic during a blast.

6 Monitoring

6.1 Parameters measured and monitoring frequency

Monitoring will be undertaken for each blast as specified in Table 3.

Table 3- Blast Monitoring Locations

Monitor	Easting	Northing	Residence/Property	Parameter	Frequency
Type 1 noise blast logger	235883	6605901	"Coomalgah"	Blast Noise/Overpressure	Every Blast
Geophone logger or similar	235883	6605901	"Coomalgah"	Blast Vibration	Every Blast
Type 1 noise blast logger	226672	6603754	"Tarrawonga"	Blast Noise/Overpressure	Every Blast
Geophone logger or similar	226672	6603754	"Tarrawonga"	Blast Vibration	Every Blast

6.2 Blast fume monitoring and reporting

The results of the blast are recorded and any incident of fume will undergo internal investigation and ranking. Reporting will comply with Part 5.7 of the Protection of the Environment Operations Act 1997 (NSW) (POEO Act). The Department of Planning and Environment (DPE) and the EPA will be notified of any level 3C fume event leaving the premises and any level 4 or 5 fume event. Fume is rated on the scale contained in the Australian Explosives Industry and Safety Group Inc. – Code of Good Practice: Prevention and Management of Blast Generated NOx Gases in Surface Blasting.

7 Responsibilities

Table 4- Roles and Responsibilities

Role	Responsibility
Environmental Superintendent, officer or delegate	Maintenance and update of this plan and Monitoring program implementation
Operations Manager, Statutory Open Cut Examiner (OCE), Production Superintendent, Drill & Blast Superintendent and Maintenance Manager	Implementation of operational controls listed in Table 2.
All employees	All employees at TCM share the responsibility of maintaining the Licence to Operate which includes

	the management of Air Quality and are referenced where applicable in operational control documentation.

8 Data Quality Assurance

- Monitoring equipment is maintained and calibrated in accordance with manufacturer's specifications and relevant standards.
- Random audits of operating responses to blast monitoring systems are undertaken as required.

9 Compliance Obligations

9.1 Inspections and Notifications

9.1.1 Pre- Blasting Inspections

WHC owns all the lands with buildings and/or structures within 2 kms radius south of the approved open-cut pit onsite therefore conditions 1, 17 and 18 of Schedule 3 do not apply.

9.1.2 Pre-Blasting Notification

Public Notification

TCM maintains a list of contact details of surrounding landholders and neighbours who have requested to be notified prior to each blast. TCM provides notification to any person who expresses an interest in being notified about the blasting schedule at the mine. Notification includes email, phone call or text message (depending on the individual's preference) generally 24 hours prior to the blast and/or on the day of the blast.

Notification to the general public about proposed blasting dates and times is provided via the blast notification sign at the entrance to the mine site. In addition, details about each upcoming blast (including date, time and road closure information) are provided under the "Community" tab on the Whitehaven Coal website.

Liaison with Adjacent Mines

TCM, Boggabri Coal Mine and Maules Creek Coal Mine have developed the BTM Blast Management Strategy which specifies that generally 24 hours' notice be provided prior to a proposed blast. Notification is in the form of an email or text message to relevant mine personnel. Where possible, TCM schedule blasts to initiate generally at, 12:00pm however weather condition depending, the blast can be brought forward or postponed.

Boggabri Coal schedules blasts to initiate at either 11.00am or 3pm (generally), and Maules Creek Coal schedules blasts to initiate at 1pm (generally). This ensures cumulative impacts are avoided if blasts are scheduled on the same day. Personnel from all three mines liaise accordingly (e.g. via email or phone) if blast times need to be altered.

9.2 Protocol for determining exceedances

Where monitoring results are above the blasting criteria listed in Table 1, an investigation will be conducted to validate the monitoring result in accordance with exceedance. An investigation will be conducted to validate the monitoring result for an exceedance and the recording of the reasonable and feasible mitigation measures implemented. Cumulative impacts are determined and addressed based on the BTM Blast Strategy (Whitehaven Coal Pty Ltd, Idemitsu Australia Resources, 2024).

An investigation will be undertaken to validate the result against the blast. If an incident is identified the reporting timeframes will be followed as per section 8.3, Incident Notification.

Affected landowners of an exceedance of the blasting criteria in Table 1 will be notified as soon as practical following receipt of results in accordance Schedule 4 Condition 4 MP 11_0047 with the process described within the Dust Management Procedure (WHC-PRD-OC-TAR-Dust Management).

9.3 Non-compliance Notification

A written report on a non-compliance with required contents will be provided to the DPE via the major projects website within 7 days of becoming aware of the non-compliance (or as otherwise directed by the DPE) as per Schedule 5 Condition 8A and 8B, MP 11_0047.

As required by Condition 3 of Schedule 4 of the Project Approval, where results obtained show an exceedance of blasting criteria, TCM will notify the affected landowners and tenants in writing of the exceedance as soon as practicable and provide regular monitoring results to each of these parties until the mine is complying with the relevant criteria.

9.4 Incident Notification

In accordance with Schedule 5 Condition 8 MP 11_0047 and under Section 148 of the Protection of the Environment Operations Act 1997 (POEO Act) the Secretary of DPE and representatives of all relevant regulatory agencies will be informed of any incident that;

- has caused, or threatens to cause, material harm to the environment; and
- breaches or exceeds the limits or performance measures/criteria in this approval.

A notification will be provided to the DPE immediately after becoming aware of an incident via the major project's website. A written report on the incident will be provided to the DPE via the major project's website within 7 days and a detailed report with 30 days of becoming aware of the incident (or as otherwise directed by the DPE) as per the requirements of Appendix 9, MP 11_0047. Reporting to additional regulatory authorities will be executed to meet legal obligations.

In the event a blast fume cloud is created and is travelling in the direction of local residences, the Pollution Incident Response Management Plan (PIRMP) will be activated. The fume cloud will be continually monitored and every endeavour will be made to contact nearby personnel and residents as soon as possible to inform them of any impending fume and provide advice to remain indoors until the fume has passed.

The DPE and the EPA will be notified of any level 3C fume event leaving the premises and any level 4 or 5 fume event. Fume is rated on the scale contained in the Australian Explosives Industry and Safety Group Inc. – Code of Good Practice: Prevention and Management of Blast Generated NOx Gases in Surface Blasting (AEISG, 2011).

9.5 Complaints

Whilst all endeavours will be made by TCM to avoid adverse blasting impacts on local landowners / residents, it is acknowledged that impacts may occur. In order to ensure an appropriate and consistent level of reporting, response and follow-up to any complaints is adopted by TCM, the following complaints management protocol will be followed:

- a publicly advertised telephone complaints line will be in place to receive complaints;
- initial response is provided where practical within 24 hours of receipt of a complaint;
- an investigation will be initiated as per for an exceedance (Section 9.1); and
- all details regarding the complaint including investigation outcomes and follow up actions will be documented in a Complaints Register.

A copy of the Complaints Register will be made available to the CCC and the complainant (on request) and updated monthly on the TCM's website. A summary of complaints received every 12 months will be included in the Annual Review.

10 Reporting and Review

10.1 Reporting

10.1.1 Regular monitoring reports on webpage

In accordance with Schedule 5, Condition 13 , the following reports are provided on the WHC website, including:

- Daily weather forecasts for the week;
- Operational responses to blasting; and
- Summary reports available on a monthly basis required under the EPL.

10.1.2 Compliance Reporting

An overview of any non-compliances or incidents received during the reporting year are included in TCM's annual review. Refer to section 9.1.2 for further detail on the annual review.

10.1.3 CCC Reporting

A Community Consultative Committee (CCC) has been established and will continue to be operated for the duration of operations on site. Regular briefings to the CCC will be provided, including a summary of results from the TCM blasting program.

10.1.4 Annual Review

By the end of March each year, TCPL will review the environmental performance of TCM (including blasting) for the previous calendar year. The blasting component of the Annual Review includes the required detail as per the DPE Annual Review Guideline (2015). The Annual Review will be sent to the relevant regulatory agencies for review and made publicly available on the WHC website.

10.2 Review

This Management Plan will be reviewed and evaluated to assess its adequacy and effectiveness, to the satisfaction of the Secretary (in consultation with relevant government agencies) in accordance with 3 of Schedule 5 of the Project Approval MP 11_0047. This requires that this is undertaken within 3 months of:

a) The submission of the annual review;

b) The submission of an incident report;

c) The submission of an audit; and

d) Any modifications to the conditions of the Project Approval.

If necessary, the Management Plan and the BTM Complex BMS will be revised to incorporate any recommended measures to improve the environmental performance of TCM resulting from audits, community complaints and incident investigation findings. In addition, the review process will include ongoing evaluation of operational modifications, alternative methodologies and new technologies that become available for their potential to lessen blasting impacts.

10.3 Independent Audit

In accordance with Schedule 5 Condition 10 MP 11_0047 an Independent Environmental Audit (IEA) of TCM was initially undertaken in 2014 and additional IEAs have been undertaken every 3 years since. The IEA includes a review of the blast monitoring performance of TCM, assess compliance with the requirements in this plan, and implementation of blasting management measures.

11 References

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11.1 Version Control

Revision	Description	Author	Authorised by	Date
1	Document Developed		Chris Burgess	January 2006
1.1	Amendments to Monitoring locations		Danny Young	Nov 2008
1.2	2010 modification review		Danny Young	March 2011
1.3	PA11_0047 Review		Jill Johnson	Dec 2014
1.4	PA11_0047 Review		Jill Johnson	Dec 2016
2.1	PA11_0047 Review		Environmental Superintendent	Aug 2018
2.2	PA11_0047 Review		Environmental Superintendent	Oct 2019
2.3	PA11_0047 Review		Environmental Superintendent	Oct 2020
2.4	PA11_0047 Review Mod 7		TCM	May 2021
2.5	In accordance with Sch 5 Cn 5 of PA11_0047		Environmental Superintendent	March 2022
2.6	In Response to DPE comments		Environmental Superintendent	Sept 2020
3.0	Update and Transfer BMP into new WHC template	Drill and Blast Superintendent	Environmental Superintendent	June 2025

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Figure 1: Tarrawonga Coal Mine Blast Monitoring Locations

Created by: TCM Environment
Date: Mar 2025

Spatial Reference
Name: GDA2020
MGA Zone 56

Appendix 1: Project approval conditions

Table 4 Tarrawonga Coal Project Approval 11_0047

Schedule	Condition	Approval Condition (MP 11_0047)	Relevant Section of this BMP
		Blasting Criteria	
3	14	The Proponent shall ensure that blasting does not cause any exceedance of the criteria in Table 5. However, these criteria do not apply if the Proponent has a written agreement with the relevant owner or infrastructure provider/owner to exceed the limits in Table 5, and the Proponent has advised the Department in writing of the terms of this agreement.	Section 5, 6.1
		Blasting Hours	
3	15	The Proponent shall only carry out blasting on the site between 9 am and 5 pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.	Section 5
		Blasting Frequency	
3	16	The Proponent may carry out a maximum of: (a) 1 blast a day; unless an additional blast is required following a blast misfire; and	Section 2, Section 5
		(b) 4 blasts a week, averaged over a calendar year, for the project. 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, or to blasts required to ensure the safety of the mine or its workers. *Note: 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.*	Section 2, Section 5
		Property Inspections	
3	17	Schedule 3 Condition 17. If the Proponent receives a written request from the owner of any privately-owned land within 2 kilometres of the approved open-cut 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 report updated, then within 2 months of receiving this request the Proponent shall: (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to:	Section 8.4
		(b) establish the baseline condition of any buildings and/or structures on the land, or update the previous property inspection report; and	Section 8.4
		(c) identify any measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and	Section 8.4
		(d) 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 Proponent or landowner disagrees with the findings of the independent property investigation, either party may refer the matter to the Secretary for resolution.	Section 8.4
		Property Investigations	
3	18	Schedule 3 Condition 18. If any owner of privately-owned land within 2 kilometres of blasting operations, or any other landowner nominated by the Secretary, claims that the buildings and/or structures on his/her land have been damaged as a result of blasting on site, then within 2 months of receiving this claim in writing from the landowner, the Proponent shall: (a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties, to investigate the claim; and	Section 8.4
		(b) give the landowner a copy of the property investigation report. If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damages to the satisfaction of the Secretary. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or landowner disagrees with the findings of the independent property investigation, either party may refer the matter to the Secretary for resolution.	Section 8.4
		Operating Conditions	

Schedule	Condition	Approval Condition (MP 11_0047)	Relevant Section of this BMP
3	19	Schedule 3 Condition 19. During mining operations on site, the Proponent shall: (a) implement best practice blasting management 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; • minimise the dust and fume emissions of any blasting; and • minimise blasting impacts on heritage items in the vicinity of the site;	Section 5
		(b) co-ordinate the timing of blasting on site with the timing of blasting at other mines within the Leard Forest Mining Precinct to minimise the cumulative blasting impacts of the mines; and	Section 5
		(c) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, to the satisfaction of the Secretary.	Section 5
		Schedule 3 Condition 20. The Proponent shall not undertake blasting on-site within 500 metres of: (a) any public road without the approval of Council; or	Section 5
		(b) any land outside of the site not owned by the Proponent, unless: • the Proponent has a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, and the Proponent has advised the Department in writing of the terms of this agreement; or • the Proponent has: o demonstrated that the blasting can be carried out closer to the land without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and o 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, to the satisfaction of the Secretary.	Section 5
		Blast Management Plan	
3	21	Schedule 3 Condition 21. The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Secretary. This plan must: (a) be submitted to the Secretary for approval by the end of May 2013;	This plan (a) Lodged with Planning Secretary department during May 2013
		(b) be prepared in consultation with the EPA and interested members of the local community who would potentially be affected by blasting;	Section 3
		(c) propose and justify any alternative ground vibration limits for public infrastructure in the vicinity of the site;	Section 2
		(d) describe the measures that would be implemented to ensure: • best management practice is being employed; and • compliance with the relevant conditions of this approval;	Section 5
		(e) include a road closure protocol for blasting within 500 metres of a public road, that has been prepared in consultation with Council;	Section 5
		(f) include a specific blast fume management protocol to demonstrate how emissions will be minimised, including risk management strategies if blast fumes are generated;	Section 5
		(g) include a monitoring program for evaluating blasting performance, which includes: • compliance with the applicable criteria; and • minimising blast fume emissions; and	
		(h) include a Leard Forest Mining Precinct Blast Management Strategy, that has been prepared in consultation with other mines within the Leard Forest Mining Precinct, to minimise cumulative blasting impacts.	Section 6

Table 5 Tarrawonga Coal Pty Environmental Protection Licence No. 12365

Section	Condition	Condition Description* (required)	This Plan
L5	1	The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time and at any point within 30 metres of any non project related residential building or other noise sensitive location. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Table 2 Section 6
L5	2	The overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) for more than five per cent of the total number of blasts over each reporting period at any time and at any point within 30 metres of any non-project related residential building or other noise sensitive location. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Table 2 Section 6
L5	3	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time and at any point within 3.5 metres of any non project related residential building or other noise sensitive location. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Table 2 Section 6
L5	4	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec for more than five per cent of the total number of blasts over each reporting period at any point within 3.5 metres of any non project related residential building or other noise sensitive location. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.	Table 2 Section 6
L5	5	Blasting operations on the premises must only be carried out between the hours 9am to 5pm, Monday to Saturday, inclusive.	Table 2
L5	6	The hours during which blasting is permitted may be varied by the EPA upon consideration of the impact any variation may have on the amenity of the residents in the locality.	Noted
L5	7	Blasting at the premises is limited to 1 blast on each day on which blasting is permitted[2].	Table 2

[2] Note: Additional blasts are permitted where it is demonstrated to be necessary for safety reasons and the EPA and neighbours have been notified of the intended blast prior to the additional blast being fired.
Condition L5.7 does not apply to blasts that generate ground vibration of 0.5mm/s or less at any residence on privately-owned land.