

NOISE MANAGEMENT STRATEGY

For Boggabri – Tarrawonga – Maules Creek Complex

MAY 2017

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Glossary

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AQMS	Air Quality Management Strategy
BCOPL	Boggabri Coal Operations Pty Limited
BTM Complex	Boggabri-Tarrawonga-Maules Creek Complex (previously Leard Forest Mining Precinct)
CCC	Community Consultative Committee
CL	Coal Lease
DA	Development Application
dB(A)	A-weighted Decibel
DoEE	Commonwealth Department of the Environment and Energy
DP&E	NSW Department of Planning and Environment
EA	Environmental Assessment
EPA	NSW Environmental Protection Agency
EP&A Act	<i>Environmental Planning and Assessment Act, 1979</i>
IAR	Idemitsu Australia Resources Pty Limited
MCCM	Maules Creek Coal Mine
Mtpa	Million Tonnes Per Annum
NMP	Noise Management Plan
NMS	Noise Management Strategy
OEA	Overburden Emplacement Area
OEH	NSW Office of Environment and Heritage
PAC	NSW Planning Assessment Commission
ROM	Run of Mine
SCADA	Supervisory Control and Data Acquisition
TCM	Tarrawonga Coal Mine
TCPL	Tarrawonga Coal Pty Ltd - Tarrawonga Joint Venture
the Strategy	BTM Complex Noise Management Strategy
WRF	Weather Research and Forecasting

1. Introduction

1.1 Background and purpose

The purpose of this cumulative noise management strategy (NMS) is to document the approach that will be taken by mines within the Boggabri-Tarrawonga-Maules Creek Complex (BTM Complex)¹ to monitor and collectively manage the cumulative noise impacts of their operations. The NMS outlines the cumulative noise management protocols that will be implemented within the BTM Complex.

The BTM Complex is an existing mining precinct centred within and around the Leard State Forest, approximately 15 km northeast of Boggabri in the Narrabri Shire local government area. The BTM Complex currently includes the existing Tarrawonga Coal Mine (TCM) in the south, the Boggabri Coal Mine (BCM) to the north and the Maules Creek Coal Mine (MCCM) to the northwest. BCM is managed by Boggabri Coal Operations Pty Limited (BCOPL), a wholly owned subsidiary of Idemitsu Australia Resources Pty Limited (IAR). MCCM is managed by Maules Creek Coal Pty Ltd, a wholly owned subsidiary of Whitehaven Coal, on behalf of the Maules Creek Coal Joint Venture. TCM is managed by Tarrawonga Coal Pty Ltd (TCPL), a wholly owned subsidiary of Whitehaven Coal, on behalf of the Tarrawonga Joint Venture.

Project applications for the continued operation of BCM (application number 09_0182) and the development of the MCCM (application number 10_0138) were determined by the NSW Planning Assessment Commission (PAC) in July and October 2012 respectively, under delegation by the NSW Minister for Planning and Infrastructure. Subsequent to this, the (then) Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPAC), now the Commonwealth Department of the Environment and Energy (DoEE), granted conditional approval for both the BCM Extension (EPBC 2009/5256) and the MCCM Project (EPBC 2010/5566) on 11 February 2013. Given the level of public interest in these projects, and the potential for cumulative impacts, approvals were granted subject to stringent conditions related to the management of cumulative impacts.

The TCM application for continuation of mining was approved on 22 January 2013, with similar cumulative impact management conditions to those detailed in the BCM and MCCM. The (now) DoEE granted EPBC approval (EPBC 2011/5923) to the Tarrawonga project on 11 March 2013.

Approval conditions require the preparation of a suite of regional strategies for environmental management, developed in partnership by all three currently operating mines of the BTM Complex. This NMS has been developed to serve as the regional strategy for noise management within the BTM Complex, in accordance with each project's approval requirements, and should be considered in conjunction with other BTM Complex Strategies, in particular the Air Quality Management Strategy (AQMS) that describes the predictive meteorological forecasting system for the Complex.

Approval conditions relevant to the management of cumulative noise impacts within the BTM Complex are detailed in Table 1.1.

¹ In previous environmental assessments and approval documents this group of mines has been referred to as the Leard Forest Mining Precinct. For the purposes of this strategy and all other relevant cumulative impact management documents, all references to the 'Leard Forest Mining Precinct' have been replaced with the term 'BTM Complex'.

Table 1.1 Approval requirements for cumulative noise impact management

Boggabri Coal Mine Project Approval 09_0182 Condition	Maules Creek Coal Mine Project Approval 10_0138 Condition	Tarrawonga Coal Mine Project Approval 11_0047 Condition	Details	Section reference in NMS
12 (b)	15 (b)	11 (b)	Operate a comprehensive noise management system on site that uses a combination of predictive meteorological forecasting and real time noise monitoring data to guide the day to day planning of mining operations and implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval	Whole of NMS along with respective site NMP's and the AQMS
12 (j)	15 (i)	11 (h)	Co-ordinate the noise management on site with the noise management at other mines within the Leard Forest Mining Precinct to minimise the cumulative noise impacts of these mines	Whole of NMS, including Section 4
	16 (g)	12 (g)	<p>Prepare and implement a Noise Management Plan that...</p> <p>includes a Leard Forest Mining Precinct Noise Management Strategy that has been prepared in consultation with other coal mines in the Precinct to minimise the cumulative noise impacts of all mines within the Complex Precinct, and includes:</p> <ul style="list-style-type: none"> ▪ A description of the measures that would be implemented to ensure that the noise management of the mines is properly coordinated to ensure compliance with the relevant noise criteria; ▪ a suitable monitoring network for the Precinct; ▪ protocols for data sharing; and ▪ procedures for identifying and apportioning the source/s and contribution/s to cumulative noise impacts for the operating mines and other sources, using the noise and meteorological monitoring network and appropriate investigative tools. <p>Note: The Leard Forest Mining Precinct Noise Management Strategy can be developed in stages and will need to be subject to ongoing review dependent upon the determination and commencement of other mining projects in the area.</p>	Whole of NMS.
13 (g)			<p>Prepare and implement a Noise Management Plan that...</p> <p>includes a Leard Forest Mining Precinct Noise Management Strategy that has been prepared in consultation with other coal mines in the Precinct to minimise the cumulative noise impacts of all mines within the Precinct, that includes:</p> <ul style="list-style-type: none"> ▪ Systems and processes to ensure that all mines are managed to achieve their noise criteria; ▪ a shared environmental monitoring network 	Whole of NMS, specifically Sections 4 and 5

Boggabri Coal Mine Project Approval 09_0182 Condition	Maules Creek Coal Mine Project Approval 10_0138 Condition	Tarrawonga Coal Mine Project Approval 11_0047 Condition	Details	Section reference in NMS
			<p>and data sharing protocol; and</p> <ul style="list-style-type: none"> procedures for identifying and apportioning the source/s and contribution/s to cumulative noise impacts for operating mines and other sources, using the noise and meteorological monitoring network and appropriate investigative tools. <p>Note: The Leard Forest Mining Precinct Noise Management Strategy can be developed in stages and will need to be subject to ongoing review dependent upon the determination and commencement of other mining projects in the area.</p>	

1.2 Document structure

The structure of this strategy is as follows:

- **Section 1** provides an introduction to the NMS, including the background to the NMS, and the scope of the NMS.
- **Section 2** provides an overview of the BTM Complex mines (BCM, TCM, MCCM).
- **Section 3** describes the cumulative noise criteria applicable to each of the mines in the BTM Complex
- **Section 4** describes existing monitoring networks, sets objectives for cumulative noise monitoring, responsibilities of each mine, data interpretation, noise triggers for each individual mine and mitigation measures and processes to mitigate outcomes for the BTM Complex.
- **Section 5** describes data management
- **Section 6** describes the review and revision of the NMS
- provides a list of references used in this document.

1.3 Scope

This document is the overarching strategy for management of cumulative noise for the BTM Complex.

Individual mines will manage their ongoing operations and associated noise emissions in accordance with their site specific Noise Management Plans (NMPs) that will, by default, ensure that the cumulative noise criteria of the BTM Complex will be met. Statutory requirements relating to noise will be provided in each individual mine’s NMP.

It is envisaged that any additional mines can be incorporated into the NMS in the future.

2. BTM Complex

The BTM Complex is centred within and around the Leard State Forest, approximately 15 km northeast of Boggabri in the Narrabri Shire local government area. The current mines within the Complex include TCM in the south, the BCM to the north and the MCCM to the northwest. The extents of the EA boundaries and noise monitoring locations for each of the mines that comprise the BTM Complex are presented in Figure 2.1.

2.1 Boggabri Coal Mine

Boggabri Coal Operations Pty Limited (BCOPL) is majority owned (80%) by Idemitsu Australia Resources Pty Limited (Idemitsu), a subsidiary of Japanese company Idemitsu Kosan Pty Ltd which operate the BCM. The BCM is located 15 kilometres (km) north-east of the township of Boggabri in the north-west Region of NSW (see figure 2.1).

Full scale mining commenced at BCM in 2006. In 2009, BCOPL lodged an application for the continuation of BCM (the Boggabri Coal Project). This included an increase of production from five to seven million tonnes of product coal per annum. The Boggabri Coal Project was approved under Project Approval 09_0182 on 18 July 2012 and activities have continued at the site since, including:

- construction of a new Coal Handling and Preparation Plant (CHPP)
- construction of a 17 km rail spur line and rail load-out facility
- construction of a high voltage power line (275kV) and associated substations
- upgrade of other ancillary infrastructure.

Four modifications of the Project Approval have subsequently been approved. Modification 2, approved on 17th February 2015 permits the CHPP to process up to 3.5 Mtpa of ROM coal and the transport of up to 3 Mtpa of ROM coal from Tarrawonga Coal Mine to BCM. Modification 3, approved on 17th March 2014, permits the construction of permanent mine access roads from the Kamilaroi Highway and use of other infrastructure. Modification 4, approved on 23rd March 2014 permits project boundary adjustments, alterations to existing infrastructure, realignment of a haul road, extension of the ROM coal stockpile and construction of new hardstand areas & a project boundary security fence. Modification 5, approved on 30th August 2016, permits the use of groundwater production bores for the supply of water to BCM.

BCOPL also operates under an approval granted under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (EPBC Approval 2009/5256).

Condition 13 (g) of the Boggabri Project Approval (DA 09_0182) (as detailed in Table 1.1) requires the preparation of a (BTM Complex) NMS, as part of a Boggabri Coal Mine NMP.

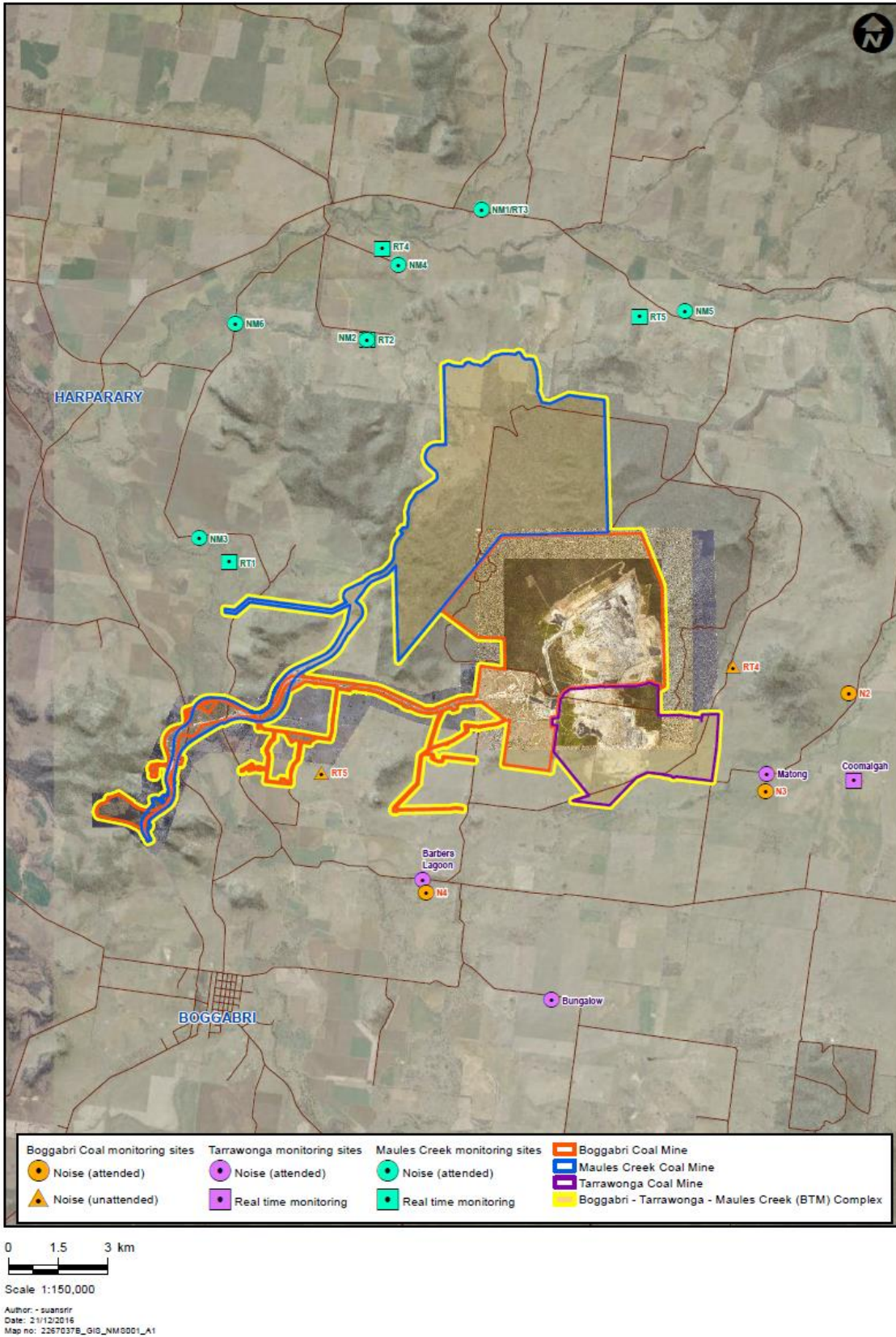


Figure 2.1 Project boundaries and noise monitoring locations for the BTM Complex Mines

2.2 Tarrawonga Coal Mine

The TCM is an existing coal mining operation that was granted approval by the (now) DP&E to extract 2 Mtpa of ROM coal in 2005 (DA88-4-2005). TCPL, a subsidiary of Whitehaven Coal, submitted a project application in July 2011 for an extension of open cut mining operations with an increased production rate to 3 Mtpa of ROM coal for a further 17 years from 2013 to 2030. This project application was determined by the PAC on 22 January 2013 and included, under Condition 12 (g), the requirement that the proponent shall prepare and implement a NMP that must include a NMS for the BTM Complex.

A modification was lodged with the DP&E in May 2013 to allow for the processing of up to 3 Mtpa of ROM coal from TCM at the Boggabri Infrastructure Facilities in Coal Lease (CL) 368, and the associated transport of up to an additional 3 Mtpa of product coal along the private Boggabri rail spur. This modification was approved on 17th February 2015.

A further modification was lodged with the DP&E in February 2014 to allow continued trucking of Tarrawonga coal to the Whitehaven CHPP located west of Gunnedah post commissioning of the Boggabri Coal CHPP and rail spur. This modification was determined on the 6th November 2014.

2.3 Maules Creek Coal Mine

The MCCM Project Approval (PA 10-0138) was granted by the PAC as delegate of the Minister of DP&E on 23 October 2012. The approval includes extraction of up to 13 Mtpa of ROM coal for 21 years, construction and operation of site infrastructure including a CHPP and associated facilities; train loading facility; rail spur and loop; a mine access road; communications and power reticulation; explosives storage; and a water pipeline from the Namoi River.

Two modifications to the operations have subsequently been approved. Modification 1, lodged in April 2013, sought approval for construction and operation of high voltage transmission lines and an associated switching station, following detailed design; a minor extension to an existing 11 kV transmission line; and realignment of the CHPP area and associated facilities. Project approval was received in July 2013. Modification 2 was lodged in February 2014 seeking approval for an optimised design for key water related infrastructure components (raw water pipeline and pump station). This modification was approved in March 2014. In addition to the two approved modifications, a third modification application regarding the proportion of workforce utilising the shuttle bus service to site (i.e. the Employee Transport Modification) is currently under assessment. Approval of the Employee Transport Modification was pending at the time of writing.

3.Noise criteria

3.1 Cumulative noise assessment criteria

Cumulative noise assessment criteria are contained in the Boggabri Coal Project Approval (09_0182), the Maules Creek Coal Project Approval (10_0138) and the Tarrawonga Coal Project Approval (11_0047). Except for the noise affected land identified in Condition 3 of Project Approval 09_0182, Table 1 of Project Approval 10_0138, and Table 1 of Project Approval 11_0047, each mine is required to ensure that the operational noise generated by their respective project, combined with the noise generated by other mines in the BTM Complex, does not exceed the criteria in Table 3.1 at any residence on privately-owned land.

Table 3.1 Cumulative noise assessment criteria

Location	Day (LAeq (period))	Evening (LAeq (period))	Night (LAeq (period))
All privately-owned land	40	40	40

Note: Cumulative noise is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy. Operational noise includes noise from the mining operations and use of private haul roads and rail spurs.

4. Monitoring Network

The mines of the BTM Complex implement comprehensive noise management systems. These noise management systems utilise a combination of attended monitoring for compliance with project approval's and EPL's for the individual mines, and unattended real time monitoring for use as management tools as part of the day to day operations.

This existing noise monitoring network will be used to monitor and manage cumulative impacts associated with the operation of mines in the BTM Complex. The existing network may be reviewed and modified in accordance with each of BTM Complex mine project approvals (refer to 6).

A noise monitoring network has been established to quantify cumulative noise levels from the BTM Complex and noise from individual mines' by monitoring in real-time (unattended) and attended noise levels at sensitive receivers. Attended and unattended noise monitoring will be conducted at the locations outlined in the individual mines' approved Noise Management Plans, refer Figure 2-1. Real-time noise monitors are used to manage operating noise from the mines' and attended noise monitoring is conducted to confirm individual and cumulative noise affectation criteria are achieved. The objective of the cumulative noise monitoring is to determine whether received noise meets relevant noise affectation criteria, both cumulative (40 dBA) and the lower mine specific (35 dBA).

Where attended monitoring results indicate noise levels are above 35dB(A) the noise specialist conducting the monitoring will assess whether the noise impact is a result of cumulative impacts from other mines in the BTM Complex, and in doing so attempt to identify the source and apportion the noise contribution accordingly.

Where cumulative impacts are suspected, the noise specialist will undertake attended monitoring at additional locations, with consideration of real-time meteorological conditions and direction to operations, to assist determination of respective noise contributions.

Should it be determined that the elevated noise is due to cumulative impacts, notification to the neighbouring mining operations will occur as per section 5. Monitoring data from relevant mines' noise management systems will be used to assist in apportioning this contribution.

Mitigation measures and processes as described in each sites respective NMP's (e.g. relocation/stand down of equipment as necessary), will be followed should exceedance of noise criteria be determined.

5. Data Sharing

Each mine is responsible for the maintenance, calibration, repair, operating costs, site access agreements and data storage of the noise monitoring network of their operations.

To ensure that there is a coordinated approach to noise management of the mines in the BTM Complex, a level of data sharing is required. Data that will be shared includes:

- Attended noise monitoring reports
- Meteorological data
- Historic data files from real time noise monitors
- Calibration certificates

This data will be provided on request to assist investigation of potential noise sources and/or contributions from other mines following exceedance of noise criteria, during attended noise monitoring.

Data may also be requested in the event that a mine's (proactive and reactive noise management system) noise trigger levels are activated, to assist in determining contributing noise sources.

Data will not be validated prior to sharing with other mines.

Monthly meetings are held between BTM Complex personnel to discuss various cumulative impacts.

When cumulative noise criteria are identified as exceeded, discussions will be held as soon as practicable between BTM Complex mines to review causal factors and response actions, and the appropriate agencies notified in accordance with the requirements of each mines' project approval.

6. Review and revision

In accordance with the project approvals, the NMS and respective sites NMPs will be reviewed, and if necessary revised, within three months of:

- an annual review
- incident threatening material harm, requiring notification of the Secretary of relevant agencies
- statutory audit
- modification of project approval.

7. References

Project Approval (PA 09_0182) for Boggabri Coal Mine.

Project Approval (PA 10_0138) for Maules Creek Coal Mine.

Project Approval (PA 11_0047) for Tarrawonga Coal Mine.