
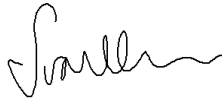

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NOISE MANAGEMENT PLAN

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Acronyms and abbreviations

Acronym	Description
ABL	assessment background level
AGL	above ground level
ARTC	Australia Rail Track Corporation
CCC	Community Consultative Committee
CHPP	Coal handling and preparation plant
CoC	Conditions of consent for SSD 10269
dB	decibel
dBA	A-weighted decibels (dBA).
DPE	NSW Department of Planning and Environment
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2021</i>
EPA	NSW Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPL	Environment Protection Licence under the POEO Act
GHGE	Greenhouse gas emissions
GSC	Gunnedah Shire Council
HSE	Health, Safety and Environment
IEA	Independent environmental audit
kg	kilogram
km	kilometre
m	metre
m/s	metres per second
ML	Mining Lease
MLA	Mining Lease Application
mm/s	millimetres/second
Mtpa	Million tonnes per annum
NCOPL	Narrabri Coal Operations Pty Ltd
NMP	Noise Management Plan
NSC	Narrabri Shire Council
NSW	New South Wales
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
pW	pico-watt
RBL	rating background level
REA	reject emplacement area
ROM	Run of mine



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Acronym	Description
SWL	sound power level
SSD	State significant development
TARP	Trigger Action Response Plan
VLAMP	<i>NSW Voluntary Land Acquisition and Mitigation Policy (2018)</i>




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1. Introduction

1.1 Background

The Narrabri Mine is an existing underground coal mining operation situated in the Gunnedah Coalfield, approximately 25 kilometres (**km**) southeast of Narrabri and approximately 60 km northwest of Gunnedah, within the Narrabri Shire Council (**NSC**) Local Government Area, in New South Wales (**NSW**). It is operated by Narrabri Coal Operations Pty Ltd (**NCOPL**), on behalf of the Narrabri Mine Joint Venture¹, which consists of two Whitehaven Coal Limited's (WHC) wholly owned subsidiaries, and other joint-venture partners.

Stage 1 was approved in November 2007 (as PA 05_0102) under Part 3A of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**). Development of Stage 1 included site establishment and the construction of coal processing infrastructure commencing in 2008, with production using continuous miner mining methods up to 2.5 million tonnes per annum (**Mtpa**) commencing in 2010.

Project Approval 08_0144 for Stage 2 of the Narrabri Mine was issued under Part 3A of the EP&A Act in 2010, which allowed the Narrabri Mine to convert to a longwall mining operation to extract coal from the Hoskissons Coal Seam. Project Approval 08_0144 allowed for the production and processing of up to 11 Mtpa of Run of Mine (**ROM**) coal until July 2031. Approval under the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) was granted on 21 January 2011 (**EPBC 2009/5003**) and the Narrabri Mine converted to a longwall mining operation within Mining Lease 1609, in 2012. Following the determination of Stage 2, PA 05_0102 for Stage 1 was surrendered on 2 August 2011.

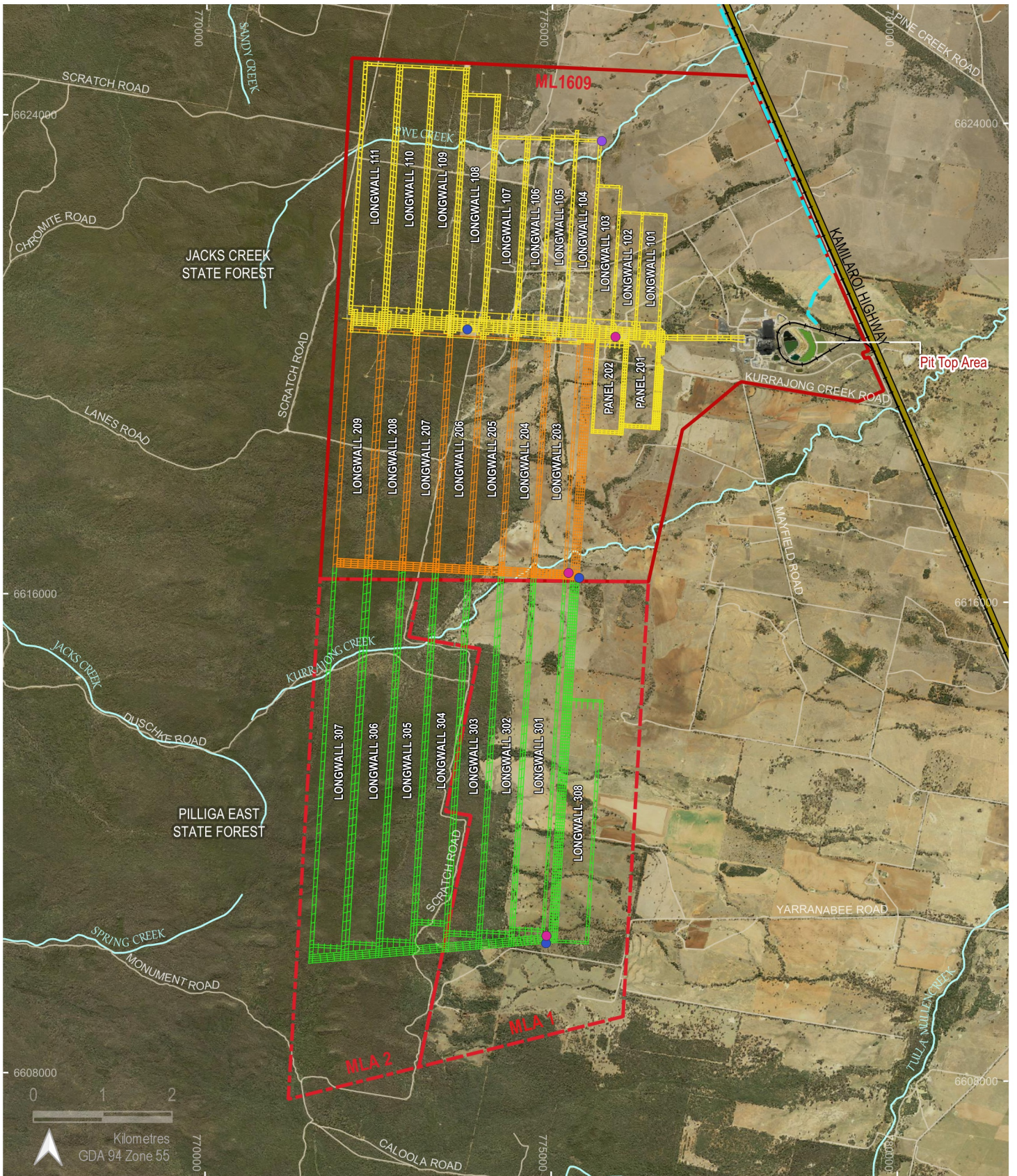
The Narrabri Underground Mine Stage 3 Extension Project (**Stage 3**) involves a southern extension to the previously approved Stage 2 mining area (approximately 609 ha of additional surface development footprint) to gain access to additional areas of coal reserves within Mining Lease Application (**MLA**) 1 and 2, an increase in the mine life to 2044, and the development of supporting surface infrastructure. Bord and pillar mining operations for panels LW 201 and LW 202 were previously approved as modification 7 (Mod 7) to PA 08_0144.

The Stage 3 Extension Project State Significant Development (**SSD**) was granted approval under section 4.38 of the EP&A Act on 1 April 2022, following the determination by the Independent Planning Commission (**SSD-10269**). Approval under the EPBC Act (**EPBC 2019/8427**) is pending.

Under the Stage 3 SSD-10269 Conditions of Consent (**CoC**), NCOPL is required to surrender PA 08_0144 no more than 12 months from the date of commencement of the Stage 3 development in accordance with the *Environmental Planning and Assessment Regulation 2021* (**EP&A Regulation**). Until then, the CoC prevail to the extent of any inconsistency with the conditions of PA 08_0144.

The Narrabri Mine underground mining layout is shown in Figure 1-1 and surface development footprint is shown in Figure 1-2.

¹ For full details on the joint venture ownership, refer to the introduction of the Environmental Management Strategy.

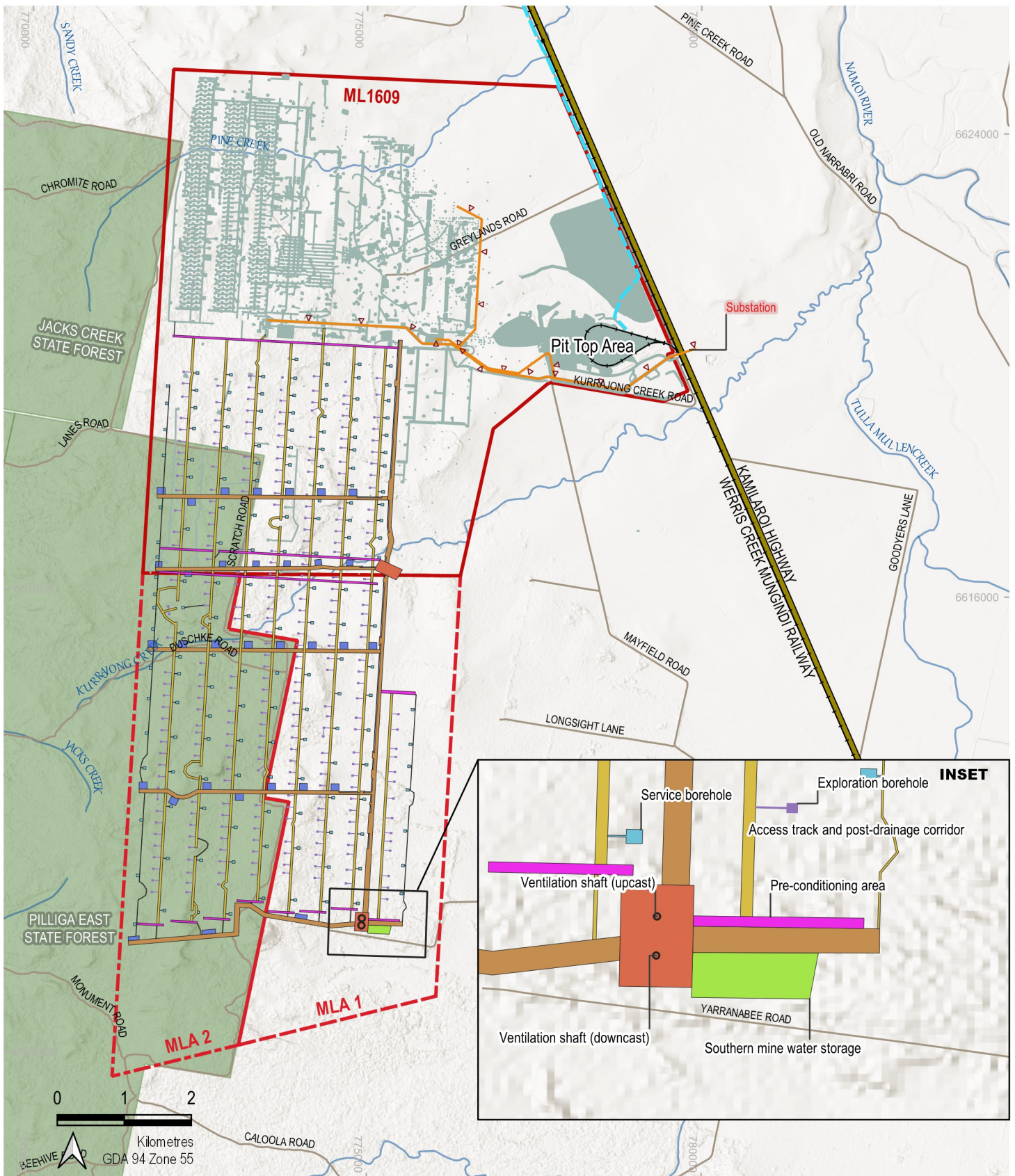


LEGEND

- ▭ ML1609
- ▭ MLA1
- ▭ MLA2
- ▭ Namoi River pipeline (buried)
- ▭ Stage 2 underground mining layout
- ▭ Stage 3 - 200 series underground mining layout
- ▭ Stage 3 - 300 series underground mining layout
- Ventilation complex (downcast)
- Ventilation complex (upcast)
- Ventilation complex (upcast - decommissioned)
- ▬ Highway
- ▬ Road
- ▬ Watercourse
- ▬ Railway

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FIGURE 1-1
Underground Mining Layout




LEGEND

- | | |
|---|---|
| ML1609 | Stage 2 surface development |
| MLA1 | Access track and post-drainage corridor |
| MLA2 | Exploration borehole |
| State forest | Pre-conditioning area |
| Namoi River pipeline (buried) | Service borehole |
| Electricity transmission line (constructed) | Service borehole and power reticulation |
| Highway | Services corridor |
| Road | Southern mine water storage |
| Watercourse | Ventilation complex |
| Railway | |

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FIGURE 1-2
Surface Development Footprint

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1.2 Purpose and scope

This Noise Management Plan (**NMP** or **Plan**) has been developed in accordance with CoC B6, the Environment Protection Licence (**EPL**) 12789, and the applicable regulatory framework regarding noise.

As required by CoC B8, NCOPL will implement the NMP as approved by the Planning Secretary. In accordance with CoC B7, NCOPL will not commence construction until this Plan is approved by the Planning Secretary.

This Plan forms part of the Narrabri Mine Environmental Management Strategy (**EMS**).

1.3 Objectives

The objectives of this NMP are to:

- provide details of the relevant statutory requirements, including any relevant approval, licence or lease conditions;
- provide detail on the predicted noise and vibration impacts for the life of mine;
- describe the noise management system in detail, including detailed performance criteria and noise monitoring program;
- describe the mitigation and management measures to be implemented to minimise noise and to ensure compliance with the noise criteria and operating conditions set in the CoC;
- describe the protocol for managing and reporting any incident, non-compliance or exceedance of any impact assessment criteria or performance criteria, complaint, or failure to comply with other statutory requirements;
- detail the regulatory reporting requirements;
- describe the protocol for periodic review of this Plan; and
- identify the roles and responsibilities for implementation of this Plan.


1.4 Preparation and consultation

This Plan has been prepared by Mr. Servaes van der Meulen and Mr. Mark Vile of Onward Consulting Pty Ltd, who are qualified and competent environmental practitioners with more than 20 years' experience each. Considering their individual and combined industry knowledge and professional expertise, both Servaes and Mark are deemed to be suitably qualified and experienced for the preparation of this NMP, as required by CoC B6(a).


In accordance with CoC A20 and B6(b), the draft NMP (Revision A) was provided to the EPA on 3 June 2022 for review and comment. Appendix A provides the EPA consultation correspondence letter dated 29 June 2022.

1.5 Access to information

In accordance with CoC E17(a)(iii), the NMP will be made publicly available on the WHC website following approval by the Department of Planning and Environment (**DPE**). Any subsequent revision of the NMP approved by the DPE will be made publicly available on the website, and the superseded version will be

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removed to ensure the information is kept up to date in accordance with CoC E17(b). A copy of this Plan will also be kept on the Narrabri Mine site server. Any printed copies of this Plan are uncontrolled.

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2. Roles and responsibilities

All NCOPL employees and contractors (and their sub-contractors) are responsible for the environmental performance of their activities and for complying with all legal requirements and obligations. All personnel will be required to comply with the statutory approval requirements of the activities they undertake, and any potential environmental impacts from all activities will be managed in accordance with the relevant strategies, plans and programs.

In accordance with CoC E1, the EMS sets out the roles, responsibilities, authorities and accountabilities of all key personnel involved in the environmental management of operations at Narrabri Mine, which encompasses the requirements and obligations under this NMP.

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3. Statutory requirements

3.1 Environmental Planning and Assessment Act 1979

The EP&A Act provides the statutory basis and framework for planning and environmental assessment in NSW. The EP&A Act includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision-making process. Stage 3 is permissible with development consent under the *State Environmental Planning Policy (Resources and Energy) 2021* and is identified as ‘State Significant Development’ under section 4.38 of the EP&A Act, and Clause 8 and Schedule 1 of the *State Environmental Planning Policy (Planning Systems) 2021*.

3.1.1 Project approval and development consent

The Stage 3 Extension Project (SSD 10269) was approved on 1 April 2022. The Narrabri Mine also incorporates the development formerly authorised under Project Approval 08_0144, until such time as this development consent is surrendered, in accordance with CoC A16.

In accordance with CoC E5(b), Appendix B, Table B-1 provides a summary of the relevant CoC relating to noise and outlines the section of the NMP in which each of these conditions have been addressed.

In accordance with CoC E5(c), Appendix C, Table C-1 provides a summary of the relevant commitments or recommendations within the Stage 3 Environmental Impact Statement (**EIS**) (Resource Strategies 2020) relating to noise and outlines the section of the NMP in which each of these commitments have been addressed. These relevant commitments or recommendations include those as amended or added to by the:

- Applicant’s Submission Report submitted 31 May 2021;
- Applicant’s Amendment Report submitted 31 May 2021; and
- Applicant’s final Biodiversity Development Assessment Report dated September 2021.


3.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997 (POEO Act)* regulates pollution through the control of EPLs. Activities requiring an EPL are listed in Schedule 1 of the POEO Act and include mining for coal and coal works. NCOPL is the holder of EPL 12789 which prescribes conditions relating to noise.

Section 139 of the POEO Act states that the occupier of any premises who operates any plant (other than control equipment) at those premises in such a manner as to cause the emission of noise from those premises is guilty of an offence if the noise so caused, or any part of it, is caused by the occupier’s failure to:

- maintain the plant in an efficient condition; or
- operate the plant in a proper and efficient manner.

In addition, section 140 states that the occupier of any premises who deals with materials in or on premises in such a manner as to cause the emission of noise from those premises is guilty of an offence if the noise so caused, or any part of it, is caused by the occupier’s failure to deal with those materials in a proper and efficient manner.

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3.2.1 Environmental protection license

NCOPL is the holder of EPL 12789. The EPL will be varied to reflect all Stage 3 related development and operational activities.

In accordance with CoC E5(b), Appendix B, Table B-2 provides a summary of the relevant EPL conditions relating to noise and outlines the section of the NMP in which each of these conditions have been addressed.

3.3 Mining Act

The *Mining Act 1992 (Mining Act)* regulates the licensing, land access, and operations for coal mines operating in NSW. Under the Mining Act, all resource activities must be licensed, including exploration activities.

3.3.1 Mining lease


NCOPL are the holder of Mining Lease 1609 (**ML 1609**) issued in January 2008. NCOPL are required to implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.

This Plan will be updated with any relevant conditions associated with future mining leases once these have been granted.


3.4 Relevant policies, standards, and guidelines

The following guidelines, policies and standards have been utilised during the preparation of the NMP:

- *Noise Policy for Industry* (EPA 2017)
- *Interim Construction Noise Guideline* (DECC 2009)
- *Draft Construction Noise Guideline* (EPA 2020)
- *Road Noise Policy* (DECCW 2011)
- *Rail Infrastructure Noise Guideline* (EPA 2013)
- *Assessing Vibration: A technical guideline* (DEC 2006)
- *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (EPA 2022)
- *Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development* (DPE 2018) (**VLAMP**)
- *Gas Flaring Factsheet* (EPA 2015)
- *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (Australian and New Zealand Environment Council [ANZEC] 1990)
- *AS 2659.1-1998 Guide to the use of sound measuring equipment – Portable sound level meters*
- *AS 1259.2-1990 Acoustics – Sound level meters Integrating – Averaging*
- *AS 2012.1-1990 Acoustics – Measurement of airborne noise emitted by earth moving machinery and agricultural tractors – Stationary test condition*
- *AS 1055.1-1997 Acoustics – Description and measurement of environmental noise General procedures*

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- *AS 2187.2 – 2006 Explosives – Storage and Use*

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4. Existing environment

4.1 Meteorological conditions

Certain meteorological conditions may enhance noise levels by focusing soundwave propagation paths at a single point. Such refraction of sound waves will occur during temperature inversions (atmospheric conditions where temperatures increase with height above ground level), and where there is a wind gradient (that is, wind velocities increasing with height) with wind direction from the source to the receiver.

Wind

Regional wind direction most commonly occurs from the southeast and northwest. Maximum wind speeds can reach up to 12 metres per second (**m/s**) (as an hourly average), typically in spring and wind patterns do not vary significantly from year to year.

Rainfall and temperature

Typical rainfall and temperature statistics have been obtained from the Bureau of Meteorology (**BoM**) website for the Narrabri Airport (BoM No. 54038), which provides a reliable record of rainfall/temperature statistics representative of the area. Monthly rainfall is relatively low and summer dominant, whilst temperatures are warm to hot in summer and mild in winter.

A collation of rainfall data for the Narrabri region between 2002 and 2021 identified:

- minimum annual rainfall of 206 millimetres (**mm**) in 2019;
- long term average annual rainfall of 569.84 mm;
- median annual rainfall of 584.8 mm; and
- maximum annual rainfall of 896 mm in 2021.

Based on the Narrabri Mines site-specific meteorological data, moderate to strong temperature inversions have not been identified as a feature of the site. Notwithstanding, moderate to strong temperature inversions (Stability category F [temperature inversions of 1.5 to 4 °C/100 m]) (Wilkinson Murray 2020) have been considered as part of the management measures if night-time noise enhancing conditions occur.


4.2 Background noise levels

The background noise level is the minimum repeatable level of noise measured in the absence of the operating mine. It is quantified by the noise level that is exceeded for 90% of the measurement period (**L_{A90}**). Background noise levels are often determined for the day, evening, and night-time periods where relevant.

Background noise levels are described as the Rating Background Level (**RBL**). The RBL provides a single figure that represents the background noise level for assessment purposes. The adopted RBLs for the Narrabri Mine are 35 decibels (**dB(A)**), 30 dB(A) and 30 dB(A) during the day, evening, and night-time periods, respectively.

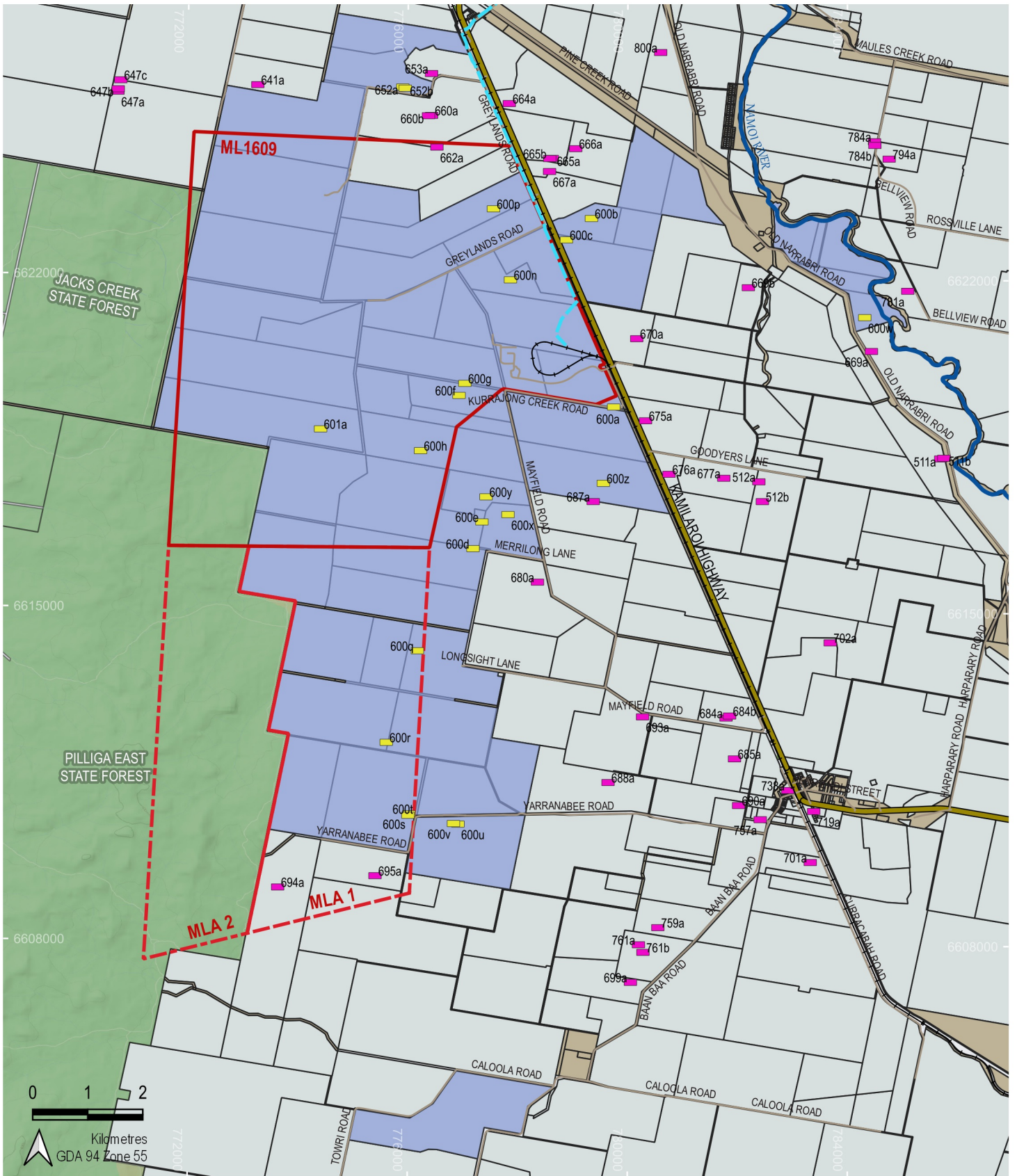
4.3 Sensitive receptors

A receiver can be defined as a noise-sensitive land use at which noise from a development can be heard (EPA 2017). The land use is based on the type of occupancy and the activities performed on the land. This can















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include existing and proposed residences, educational institutes, hospitals and medical facilities, places of worship, commercial or industrial premises and recreational areas.

Sensitive receivers identified within a 5 km radius of Narrabri Mine are shown in Figure 4-1.




LEGEND

- | | | | |
|--|-------------------------------------|---|-------------------------------|
|  | ML1609 |  | Crown land |
|  | MLA1 |  | State forest |
|  | MLA2 |  | Namoi River pipeline (buried) |
|  | NCOPL-owned land |  | Highway |
|  | Privately-owned land and other land |  | Roads |
|  | Private dwelling |  | Railway |
|  | NCOPL-owned dwelling |  | Watercourse |

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FIGURE 4-1
Nearest Sensitive Receivers

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5. Predicted impacts

A noise impact assessment was conducted for the Stage 3 EIS (Wilkinson Murray 2020) which included an assessment of the:

- operational noise;
- construction noise;
- potential blasting activities;
- road traffic noise; and
- rail traffic noise.

The following sections describe the predicted Stage 3 noise impacts from the construction and operation of the Narrabri Mine.

5.1 Noise measurement and description

The assessed noise levels are expressed in A-weighted dBA. The logarithmic dBA scale simulates the response of the human ear, which is more sensitive to mid to high frequency sounds and relatively less sensitive to lower frequency sounds. Hearing ‘nuisance’, for most people, begins at noise levels of about 70 dBA, while sustained (i.e. eight hours) noise levels of 85 dBA can cause hearing damage.

Predicted noise levels are expressed as statistical noise exceedance levels (L_{AN}), which are the levels exceeded for a specific percentage (N) of the interval period. For example, L_{A10} is the noise level that is exceeded for 10% of the sampling period and is considered to be the average maximum noise level.

The equivalent continuous noise level (L_{Aeq}) refers to the steady sound level, which is equal in energy to the fluctuating levels recorded over the sampling period.

5.2 Construction noise level predictions


The Stage 3 noise impact assessment conservatively combined construction noise levels with operational noise levels. Construction noise levels at all sensitive receivers are predicted to comply with the *Interim Construction Noise Guideline*, as documented in section 6.8.4 of the Stage 3 EIS.

The operational noise predictions are detailed in section 5.3.

5.3 Operational noise level predictions

The *Noise Policy for Industry* recommends two noise assessment criteria, ‘intrusiveness’ and ‘amenity’, both of which are relevant to the assessment of noise from the operation of the Narrabri Mine.

The intrusiveness criteria require the L_{Aeq} noise level from the source being assessed, when measured over 15 minutes, to not exceed the RBL by more than 5 dBA under specific meteorological conditions (refer to section 6.4.4). Amenity criteria are based on the setting of the area (e.g. rural, suburban, urban, industrial, etc.) as well as the L_{Aeq} over the entire day, evening or night period rather than a 15-minute interval. Notwithstanding, under the *Noise Policy for Industry*, the amenity noise levels used for the Stage 3 noise impact assessment were converted to an equivalent energy average noise level over a 15-minute period.

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As the intrusive criteria are the most stringent (i.e. less than the amenity criteria), the noise assessment utilised the operational mine levels against the intrusive criteria. These are described as the Project Noise Trigger Levels (PNTLs²). Cumulative noise levels, inclusive of other industrial noise sources, were assessed against the recommended amenity noise criteria level for rural areas, as adjusted to a 15-minute assessment period.

The PNTLs utilised for the noise impact assessment are detailed in Table 5-1.

Table 5-1 Intrusive and amenity assessment criteria for operational noise

Receiver	Intrusive $LA_{eq(15\text{ minute})}$ ¹			Amenity $LA_{eq(15\text{ minute})}$ ¹		
	Day	Evening	Night	Day	Evening	Night
All residential receivers	40 dBA	35 dBA	35 dBA	48 dBA	43 dBA	38 dBA

Note:

1 Daytime = 7.00 am to 6.00 pm; Evening = 6.00 pm to 10.00 pm; Night = 10.00 pm to 7.00 am.

Table 5-2 details the predicted noise exceedances for the operation of the Narrabri Mine based on the maximum noise predictions for all time periods and meteorological conditions, assessed against the PNTLs.

Exceedances have been separated into a Noise Management Zone (i.e. negligible, marginal or moderate impacts of up to 5 dBA above the criteria) and a Noise Affectionation Zone (i.e. greater than 5 dBA above the criteria, with impacts considered to be moderate or significant).

Table 5-2 Summary of potential operational noise exceedances at sensitive receivers

Period	Noise Management Zone			Noise Affectionation Zone	
	Negligible	Marginal	Moderate	Significant	
	0-2 dBA above PNTL	3-5 dBA above PNTL AND ≤ Amenity Noise Trigger Level	3-5 dBA above PNTL AND > Amenity Noise Trigger Level	>5 dBA above PNTL AND ≤ Amenity Noise Trigger Level	>5 dBA above PNTL AND > Amenity Noise Trigger Level
Day	670a ¹	-	-	-	-
Evening	675a ²	-	-	670a	-
Night	687a	675a	-	670a	-


Note:

1 NCOPL have a private agreement with receiver 670a.

2 NCOPL have a private agreement with receiver 675a.

The analysis of the occurrence of temperature inversions meteorological data and shows that F and G class Pasquill-Gifford stability categories are not considered a feature of the area

² The PNTL is a level that, if exceeded, would indicate a potential noise impact on the community, and so 'trigger' a management response. It takes into account a range of factors that may affect the level of impact. It is not intended for use as a mandatory requirement.

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5.3.1 Sleep disturbance

The maximum noise level criteria of 52 dBA (LA_{Fmax}) and 40 dBA ($LA_{eq(15\text{ minute})}$) were adopted for the assessment of sleep disturbance in accordance with the *Noise Policy for Industry*. One receiver (670a) is predicted to experience a moderate exceedance of the $LA_{eq(15\text{ minute})}$ sleep disturbance criteria. This receiver is in the Noise Affection Zone due to predicted operational noise (Table 5-2).

5.3.2 Low-frequency noise predictions

A low-frequency noise assessment was undertaken as part of the Stage 3 noise impact assessment to ascertain whether any sensitive receivers should be subject to a modifying factor correction due to dominant low-frequency content, prior to comparing to the relevant PNTL.

The low frequency noise assessment indicated it is unlikely any of the sensitive receivers surrounding the mine will be subject to dominant low-frequency noise, except on infrequent occasions.

5.4 VLAMP noise level predictions

The operational noise predictions detailed in Table 5-2 that are applicable to the VLAMP are:


- receiver 675a is predicted to experience a marginal exceedance (i.e. 3 to 5 dBA above the PNTL) in the night-time period, and experience a negligible exceedance in the evening period;
- receiver 670a is predicted to experience a moderate exceedance (i.e. >5 dBA above the PNTL) in the evening and night time periods; and
- receiver 687a is predicted to experience a negligible (0-2 dBA above the PNTL) exceedance in the night time period.

NCOPL has entered into a private agreement with receiver 670a and 675a which allows exceedances of the VLAMP criteria (refer to section 8.3.2).

5.5 Blast predictions

Blasting that may be required at the surface for ventilation shaft construction activities was assessed as part of the Stage 3 EIS against the relevant human comfort criteria adopted by the EPA in accordance with *Assessing Vibration: A technical guideline* (DEC 2006).

Blasting that may be required for the construction of ventilation shafts is predicted to comply with the vibration and overpressure criteria at the nearest sensitive receiver, namely 695a (refer to Figure 4-1).

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6. Noise management system

In accordance with CoC B5(b), NCOPL will operate a comprehensive noise management system commensurate with the risk of impact, such as using a combination of predictive meteorological forecasting and real time noise monitoring data (sections 6.2 and 6.5) to guide 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 consent.

6.1 Approved hours of operations

6.1.1 Mining operations

In accordance with CoC A10, mining operations may be undertaken 24 hours a day, 7 days a week.

6.1.2 Construction activities

In accordance with CoC A11, drilling at ventilation shaft sites may take place 24 hours a day, 7 days a week. In accordance with CoC A12, all other construction works will only be undertaken during the hours of 7.00 am to 6.00 pm (Monday to Sunday).

The *Interim Construction Noise Guideline* is applicable to construction activities between the hours prescribed above (i.e. 7.00 am to 6.00 pm Monday to Sunday). Activities undertaken outside of the approved construction can include:

- the delivery of materials of which delivery is required, by the NSW Police or NSW Roads and Maritime Services to be undertaken for safety reasons outside the normal construction hours; and
- emergency work to avoid the loss of life, damage to property or to prevent environmental harm.


6.2 Noise management measures

In accordance with CoC B5(a) and CoC B5(c), NCOPL will take all reasonable and feasible steps to minimise noise from construction and operational activities, including low frequency noise, road and rail noise, and noise impacts during noise enhancing meteorological conditions. The reasonable and feasible management measures described in this section have been developed to ensure that best practice management is being employed.

General noise controls

To mitigate the potential for an exceedance of the noise criteria, NCOPL will implement the following controls:

- equipment used on-site is regularly serviced;
- when selecting new/replacement equipment, equipment with an equivalent or lower sound power level (**SWL**) is selected where feasible;
- reversing alarms on key surface mobile equipment are broadband frequency types (i.e. high frequency reversing alarms are not permitted);
- the rotary breaker is fully enclosed;

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- the CHPP is enclosed from the first level with the exception of access and egress points;
- the approved hours of operation detailed in section 6.1 will be adhered to;
- review of BoM 7-day weather forecasts and real-time data (i.e. wind speed, wind direction and temperature inversions) from the onsite meteorological station W1 and meteorological tower W2 (Figure 6-1) to provide information to assist in planning during noise enhancing meteorological conditions;
- real time and attended noise monitoring will be conducted during mining operations to verify compliance with the noise criteria as per the methods described in section 6.5 and to assess the need, if any, for additional noise management measures;
- NCOPL will maintain dialogue with neighbours and the local community to ensure any concerns in relation to noise are addressed, mainly through the Community Consultative Committee (**CCC**) and complaints handling process (refer to section 10); and
- a Trigger Action Response Plan (**TARP**) has been developed (Appendix D) as part of the reactive measures to manage risk to operations, personnel, and the environment in response to noise emissions.

As part of the noise modelling approach, the following additional feasible mitigation measures were identified and will be implemented:

- the additional upcast ventilation facilities are required to meet a specification of 116 dBA;
- product and ROM stockpile dozers and Reject Emplacement Area dozer's limited to a SWL of 116 dBA or less; and
- north-west directivity applied to ventilation complexes to minimise noise impacts, as detailed in Appendix H of the Stage 3 EIS.

Controls during noise enhancing meteorological conditions


The changes to operations that are required to prevent non-compliances during noise enhancing meteorological conditions are:

- limit the use of bulldozers to process-critical operations during temperature inversion conditions; and
- limit the number of truck movements to the Reject Emplacement Area to 1 load per 15-minute period during temperature inversion conditions.

Road and rail noise controls

The following road and rail noise measures will be implemented:

- the site access road is sealed and regularly maintained;
- all employees and contractors will be instructed to enter and exit the mine site in a courteous manner and without undue traffic noise;
- all unsealed access roads will be regularly maintained to limit body noise from empty trucks, and a 40 km/hr speed limit enforced to minimise transport noise;
- an average of four trains per day will be loaded, with a maximum of eight trains per day loaded during peak coal transport periods;

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- the rail track within the rail loop is inspected monthly to monitor rail condition and highlight issues requiring rectification; and
- adaptive measures include response to any community issues of concern or complaints (refer to section 10 for the complaints procedure), discussions with relevant landowners and liaison with rail operators regarding train operating procedures.

In accordance with CoC B5, NCOPL will only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in the Australian Rail Track Corporation (**ARTC**'s) EPL and use reasonable endeavours to ensure that rolling stock is selected to minimise noise.

Construction noise controls

Construction activities will be temporary in nature. Noise generation from construction will be managed in accordance with the above noise measures and the requirements of the *Interim Construction Noise Guideline*, to minimise noise levels at the nearest sensitive receptors, where applicable.

Noise Management Zone and Noise Affection Zone

Receivers exposed to operational noise levels of between 1 to 5 dB above the noise criteria fall within the "Noise Management Zone" and greater than 5dB fall within the "Noise Affection Zone" (Table 5-2). Additional mitigation and management measures apply to sensitive receptors falling within these zones, these may include:

- response to any community issues of concern or complaints including discussions with relevant landowners;
- refinement of on-site noise mitigation measures and mine operating procedures;
- implementation of feasible and reasonable acoustical mitigation at receivers, in accordance with the VLAMP (marginal to moderate residual impact); and
- entering into agreements with landowners (including acquisition for receivers identified to be in the Noise Affection Zone) (i.e. receivers 670a and 675a).

Gas Flaring


The Narrabri Mine will incorporate flaring of pre-drainage gas in particular parts of the underground mining area. The key mitigation measures to reduce potential impacts of noise emissions will include:

- operation of a maximum of three flaring units at any one time;
- location of the infrastructure away from any sensitive receptors; and
- flare will be designed as an enclosed flare surrounding the burner head with a refractory shell that is internally insulated to reduce noise, luminosity and heat radiation in accordance with the enclosed flare method (EPA 2015).

Risk Management

NCOPL will implement the following risk management principles:

- all personnel are required to identify, assess, and eliminate or control noise risks at the mine and report newly identified risks to the Environmental Superintendent; and

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- the Environmental Superintendent will update the NMP, where appropriate, to include control measures identified as a result of risk assessments undertaken as part of the operation of the mine.

6.3 Blast management and mitigation measures

In accordance with EPL 12789 Condition L5, blasting operations at the premises may only take place between 10:00am to 4:00pm Monday to Friday. Where compelling safety reasons exist, the EPA may permit a blast to occur outside the abovementioned hours with prior written notice.

Blasting at the premises (on each day that blasting is permitted) is limited to:

- a maximum of two (2) blasts per day; and
- five (5) blasts a week, averaged over a twelve month period.


6.4 Performance measures

6.4.1 Construction noise criteria

In accordance with CoC B1, NCOPL will ensure that the noise generated by construction is managed in accordance with the *Interim Construction Noise Guideline*. The recommended acceptable construction noise levels during standard construction hours are detailed in Table 6-1.

Table 6-1 Noise at receivers using quantitative assessment

Time of day	Management level $LA_{eq, (15min)}$	How to apply
Recommended standard hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. <ul style="list-style-type: none"> Where the predicted or measured $LA_{eq, (15min)}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to minimise the noise level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
Recommended Standard Hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. <ul style="list-style-type: none"> Where noise is above this level, the relevant authority may require respite periods by restrict the hours that the very noisy activities can occur, taking into account: <ol style="list-style-type: none"> times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences). if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

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Time of day	Management level $LA_{eq, (15min)}$	How to apply
Outside standard hours	Noise affected + 5 dB	<ul style="list-style-type: none"> A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the impacted residents.

6.4.2 Operational noise criteria

In accordance with CoC B2, noise generated as a result of mine operations must not exceed the criteria listed in Table 6-2 at any residence on privately owned land.

Table 6-2 Operational noise criteria dB(A)

Noise assessment location	Day $LA_{eq} (15 min)$	Evening $LA_{eq} (15 min)$	Night $LA_{eq} (15 min)$	Night
CoC B2				
687a	40	36	36	$52 L_{AF max}$
Any other residential receiver	40	35	35	$52 L_{AF max}$
EPL 12789 Condition L4.1				
All privately-owned residences	35	35	35	$45 LA_1 (1min)$

In accordance with CoC B4, the noise criteria in Table 6-2 do not apply if NCOPL has an agreement with the receiver, and NCOPL has notified DPE in writing of the terms of the agreement/s (i.e. receiver 670a and 675a).

In accordance with Condition L4.5 of EPL 12789, noise criteria will apply during all meteorological conditions except:

- wind speeds greater than 3 m/s at 10 m above ground level (**AGL**); or
- stability category F temperature inversion conditions and wind speeds greater than 2 m/s at 10 m AGL; or
- stability category G temperature inversion conditions.

For the purposes of Condition L4.5 of EPL 12789:

- data recorded by the meteorological station identified as EPA Identification Point(s) W1 must be used to determine meteorological conditions; and
- temperature inversion conditions (stability category) are to be determined by direct measurement over a minimum 50m height interval as referred to in Part E2 of Appendix E of the "New South Wales Industrial Noise Policy" dated January 2000 ISBN 0 7313 2715 2.

Time definitions for the purpose of Table 6-2 are shown in Table 6-3.


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Table 6-3 Time period definitions

Period	Time
Day	7am to 6pm
Evening	6pm to 10pm
Night	10pm to 7am

6.4.3 Blast criteria

The exceedance criteria for noise and vibration as a result of blasting must be in accordance with EPL 12789 Conditions L5 as follows:

- maximum overpressure due to blasting must not exceed 115 dB for more than 5% of blasts in any year, and must not exceed 120 dB for any blast;
- maximum peak particle ground velocity vibration should not exceed 5 millimetres per second (mm/s) for more than 5% of blasts in any year and should not exceed 10 mm/s for any blast;
- the airblast overpressure level from blasting operations listed in Conditions L4.1 and L4.2 must not be exceeded at any point within 30 metres of any non-project related residential building or other noise sensitive location; and
- the ground vibration peak particle velocity limits listed in Conditions L4.5 and L4.4 must not be exceeded at any point within 3.5 metres of any private residential receiver or other noise sensitive location.

6.4.4 Meteorological criteria

The ideal meteorological conditions for noise monitoring are an average wind speed < 5 m/s at microphone height, no rain, and no extraneous noise³. The conditions under which monitoring will not meet accepted measurement standards should be identified. For example, measurement should not be undertaken when wind at microphone heights exceeds 5 metres per second (m/s), or during rain events. The meteorological conditions and criteria, as specified in the *Noise Policy for Industry*, and as summarised in Table 6-4, are to be applied when assessing potential noise exceedances.


Table 6-4 Standard and noise-enhancing meteorological conditions

Meteorological conditions	Meteorological parameters
Standard meteorological conditions	<ul style="list-style-type: none"> • Day/evening/night: stability categories A–D1 with wind speed up to 0.5 m/s at 10 m AGL.
Noise-enhancing meteorological conditions	<ul style="list-style-type: none"> • Daytime/evening: stability categories A–D with light winds (up to 3 m/s at 10 m AGL). • Night-time: stability categories A–D with light winds (up to 3 m/s at 10 m AGL) and/or stability category F with winds up to 2 m/s at 10 m AGL.

Source:

Fact sheet D of the *Noise Policy for Industry*

³ Noise resulting from activities that are not typical of the area.

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6.5 Monitoring

In accordance with CoC B3, operational noise will be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the *Noise Policy for Industry*. As required by CoC B1, noise generated by construction will be managed in accordance with the requirements of the *Interim Construction Noise Guideline* (section 6.4.1).

The Narrabri Mine noise monitoring program includes:

- a combination of real-time and supplementary attended noise monitoring to evaluate performance at the nearest and/or most affected sensitive receptor/s;
- a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time; and
- airblast overpressure and vibration monitoring in the event that blasting is required.

The noise monitoring methods are described in the following sections. A summary of the noise monitoring program is provided in section 6.5.6.

6.5.1 Real time noise monitoring

Real time (unattended) noise monitoring is conducted using mobile SentineX real time continuous noise monitors positioned in proximity to sensitive receptors that are most likely to be impacted by operational noise (i.e. representative locations). The key features of the monitoring system are:


- real time access to monitoring information;
- alarms generated based on certain parameters that include 15-minute noise levels approaching compliance limits;
- universal user interface platform (web browser);
- automatic daily reporting;
- streaming audio to PC; and
- continuous audio recording (.mp3 format).

Results from the real time monitoring system will be used as an onsite management tool to guide noise mitigation measures. Real time noise monitoring can be used as a trigger for additional attended noise monitoring if activities are conducted in a noise sensitive area (refer to section 6.5.3).

6.5.2 Calibration of real-time noise monitoring data

In accordance with CoC B6(e)(iii), calibration and validation of the real time noise monitoring results with attended monitoring results will be conducted biannually. The following method is to be implemented for the calibration of monitoring results:

- Identify the overall noise levels of the attended noise monitoring data and estimate the contribution from mine operations only based on audibility and review of 1/3 octave data in the lower frequencies normally associated with operational mine noise.

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- Collect attended noise monitoring data for the corresponding time period of the real time SentineX monitor.
- Analyse the data and consider mine activities at the time, distance between the SentineX and attended noise monitoring location, and prevailing meteorological conditions.
- A suitably qualified and experienced person will determine the relationship between the real time SentineX data and the attended monitoring noise data to enable adaptive management to minimise development related noise impacts.

6.5.3 Attended noise monitoring

Attended monitoring is undertaken on a quarterly basis over a period of three consecutive days by a suitably qualified acoustical consultant. Monitoring is to be undertaken at the monitoring points identified in Table 6-5.

In accordance with EPL 12789, Condition M7, monitoring is to occur during each day, evening and night period for a minimum of:

- 1.5 hours during the day;
- 30 minutes during the evening; and
- 1 hour during the night.

The results of the attended monitoring are to be used to assess compliance with the noise criteria for mine contributed noise in accordance with the *Noise Policy for Industry*.


If monitoring results during operations are found to contain dominant low-frequency content, appropriate modifying factors will be applied to measured noise levels in accordance with Condition L4.6 of EPL 12789. In circumstances where the acoustic consultant identifies that the attended monitoring program does not provide weather conditions conducive to enable monitoring over the three days (i.e. wind speed and/or inversions outside the valid range of values for extended periods), then within one month, an additional set of monitoring will be conducted by the independent acoustic consultant with consideration to meteorological forecasting.

6.5.4 Meteorological monitoring

NCOPL have an established site-specific meteorological monitoring station (**W1**) and meteorological tower (**W2**) installed and operated in close proximity to the Pit Top Area in accordance with EPL 12789. The meteorological station and meteorological tower comply with the requirements of the *Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales* (EPA 2022) and will be used to identify noise enhancing meteorological conditions in accordance with the *Noise Policy for Industry*. The night-time noise enhancing meteorological conditions for the purposes of planning proactive noise mitigation has been identified as temperature inversions of 1.5 to 4 °C/100 m. The changes to operations to prevent non-compliances prior to or during noise enhancing meteorological conditions are described in section 6.2.

In accordance with EPL 12789 Condition M4.1, NCOPL is required to monitor the following weather parameters at the meteorological station identified as ‘W1’:

- rainfall;
- wind speed at 10 m;

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- wind direction at 10 m;
- temperature at 2 m and 10 m;
- sigma theta at 10 m; and
- solar radiation.

Temperature inversion monitoring is undertaken at the meteorological station identified as 'W2'. Data is continuous and directly measures temperature at two elevations 50 m apart at 10 m and 60 m from ground level. The differential over 50 m is extrapolated to determine temperature lapse rate per °C/100 m. When temperature inversion conditions are present, the SentineX real-time monitoring system generates an alarm that alerts operational personnel and triggers reactive measures to manage noise emissions as outlined in the TARP (Appendix D).

6.5.5 Blast monitoring

There are currently no permanent blast monitors installed at the mine, as blasting may only be required for the construction of ventilation shafts. In the event that surface construction blasting is conducted, NCOPL will install temporary blast monitors to measure and electronically record airblast overpressure and ground vibration at the nearest publicly accessible location to receiver 695a. Construction blasts will be monitored in accordance with *AS 2187.2 – 2006 Explosives – Storage and Use* and the document *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC 1990) and results analysed against the blast criteria detailed in section 6.4.3.

6.5.6 Summary of noise monitoring program

The Narrabri Mine noise monitoring program, as shown in shown in Figure 6-1 and summarised in Table 6-5, has been developed in accordance with the requirements of the CoC and EPL 12789.

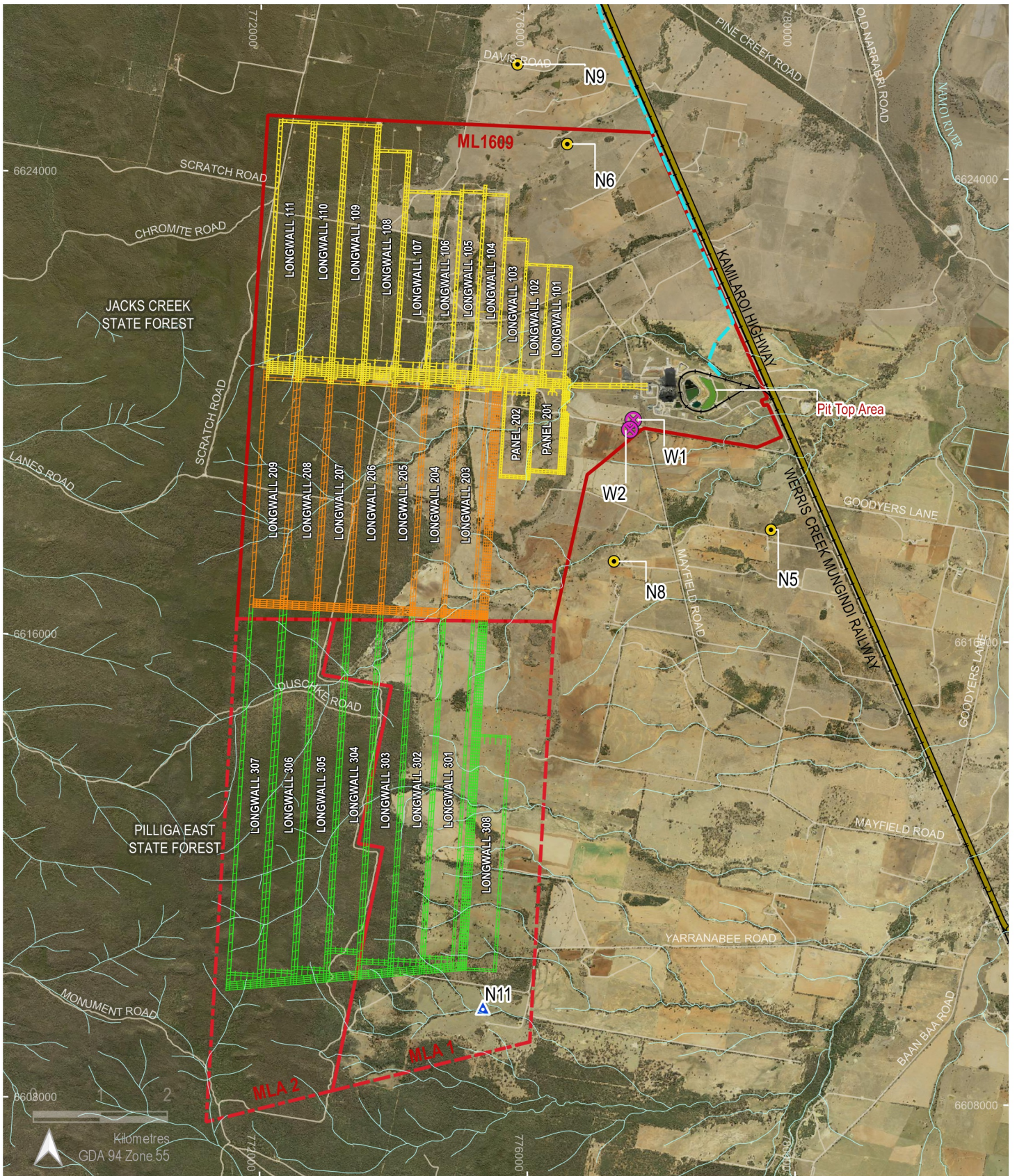
Condition M1.3 of EPL 12789 requires the following records to be kept for all data:

- the date(s) on which the sample was taken;
- the time(s) at which the sample was collected;
- the point at which the sample was taken; and
- the name of the person who collected the sample.

In addition to the above, the results of all noise monitoring must be retained as follows:

- in a legible form, or in a form that can be readily reduced to a legible form;
- kept for at least 4 years after the monitoring or event to which they relate took place; and
- produced in a legible form to any authorised officer who asks to see them.

In accordance with CoC B5(f), NCOPL will regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent in accordance with the measures detailed in section 6.2 and the TARP (Appendix D).



LEGEND

- ML1609 ML1609
- MLA1 MLA1
- MLA2 MLA2
- Namoi River pipeline (buried)
- Stage 2 underground mining layout
- Stage 3 - 200 series underground mining layout
- Stage 3 - 300 series underground mining layout
- ⊗ Meteorological Station
- Noise Monitoring
- ▲ Proposed noise monitoring site
- Highway
- Roads
- +— Railway
- Watercourse

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FIGURE 6-1
Noise Monitoring Locations


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Table 6-5 Noise monitoring program


Identification	Parameter	Location	Monitoring type	Unit of measure	Frequency	Responsibility
N5 ¹	Ambient noise	Within 30 m of the residence on the property "Oakleigh"	Attended	LA _{eq} (15minute) LA _{max} LA ₁ LA ₁₀ LA ₉₀ LA _{min}	Quarterly	Suitably Qualified Acoustical Consultant
N6	Ambient noise	Within 30 m of the residence on the property "Newhaven"	Attended		Quarterly	Suitably Qualified Acoustical Consultant
N8 ²	Ambient noise	Within 30 m of the residence on the property "Haylin View"	Attended		Quarterly	Suitably Qualified Acoustical Consultant
N9 ²	Ambient noise	Within 30 m of the residence on the property "High Range"	Attended		Quarterly	Suitably Qualified Acoustical Consultant
N11 ³	Ambient noise	Within approximately 600 m of the residence on the property "Uambi" (nearest publicly accessible location)	Attended		Quarterly	Suitably Qualified Acoustical Consultant
N10	Ambient noise	Portable monitor – relocate to areas of potential greatest impact	Real-time		Continuous	NCOPL or Suitably Qualified Acoustical Consultant
W1	Weather parameters	W1 weather station	Real-time	Temperature (°C) Wind speed (m/s)	Continuous	NCOPL or Suitably Qualified Acoustical Consultant
W2	Inversion conditions	W2 weather station	Real-time	Temperature lapse rate (°C/100 m)	Continuous	NCOPL or Suitably Qualified Acoustical Consultant
Blasting	Airblast overpressure	Receiver 695a (nearest publicly accessible location)	Attended	dB (Lin Peak)	When required	Suitably Qualified Acoustical Consultant
	Ground vibration peak particle velocity			mm/sec		

Notes:

¹ Located adjacent to private landholder 687a "Pine View".

² Property owned by NCOPL.

³ Associated with private landholder 695a.

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7. Trigger Action Response Plan

A Trigger Action Response Plan (TARP) has been developed (Appendix D) as part of the reactive measures to manage risk to operations, personnel, and the environment in response to noise emissions.

The TARP has been developed based off alarms generated from the temperature inversion tower (W2) and mobile real time noise units. The TARP requires actions to be implemented depending on the alarm type (i.e. initial or repeating), record of actions taken and notifications made (if required). Actions that can be implemented include:

- reviewing the live audio to determine source of alarm;
- limiting dozer reverse speeds;
- relocating equipment if identified as a noise source;
- reducing and/or ceasing some surface operations; and
- internal notification of the measures implemented.

This NMP and its associated TARP are stored on the WHC intranet and are available to all NCOPL personnel.

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8. Incidents and non-compliance

8.1 Incident notification

An incident is defined under the CoC as *an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.*

Material harm, as defined in Schedule 1 of the CoC, is harm to the environment that:

involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).

This definition excludes “harm” that is authorised under either the CoC or any other statutory approval (e.g., EPL).

In accordance with condition E9, NCOPL will notify DPE and any other relevant agencies immediately as it becomes aware of an incident. Incident notification will be made immediately, in writing, via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.

Notifications to the NSW EPA will be made by telephoning the Environment Line service on 131 555 and written details of the notification within 7 days of the date on which the incident occurred.

Incident reporting and emergency response is further described in the EMS.

8.2 Non-compliance


The CoC defines a non-compliance as *an occurrence, set of circumstances or development that is a breach of this consent.* For clarity, ‘this consent’ is referring to development consent SSD-10269.

In accordance with CoC E4, where an exceedance of the relevant criteria or performance measures has occurred, NCOPL will, at the earliest opportunity, take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur. All reasonable and feasible options for remediation (where relevant) will be considered and a report submitted to the DPE describing those options and any preferred remediation measures or other course of action.

In accordance with CoC E10, within seven days of becoming aware of a non-compliance, NCOPL will notify DPE of the non-compliance⁴. The notification will be made in writing via the Department’s Major Projects Website and identify the development (including the development application number and name), set out the CoC that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

NCOPL will implement any reasonable remediation measures as directed by the Planning Secretary, to the satisfaction of the Planning Secretary.

⁴ A non-compliance which has been notified as an incident under section 8.1 does not need to be notified as a non-compliance under section 8.2.

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8.3 Notification of exceedances to landowners

In accordance with CoC D6, as soon as practicable, and no longer than 7 days after obtaining monitoring results showing an exceedance of noise criteria set in Table 6-2, NCOPL will provide the details of the exceedance to any affected landowners and/or tenants.

8.3.1 Independent review

If a landowner considers that the Narrabri Mine is exceeding any noise criteria, they can request an independent review from the Planning Secretary. Any independent review requests will follow the process outlined under CoC D7 to CoC D9.

The independent review process is further detailed in the EMS.

8.3.2 Additional mitigation upon request

In accordance with CoC D2, upon receiving a written request for mitigation from the owner of any residence on the privately-owned land listed in Table 8-1, NCOPL must implement additional mitigation measures at or in the vicinity of the residence in consultation with the landowner. These measures must be consistent with the measures outlined in the VLAMP. They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise quality impacts of the development. NCOPL must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.

NCOPL have private agreements with receivers 670a and 675a in accordance with the VLAMP.

Table 8-1 Land subject to additional mitigation upon request

Mitigation basis	Land
Noise	670a, 675a


In accordance with CoC D4, NCOPL will, within one month of commencing development under the CoC:

- notify in writing the owner of the residence on the land listed in Table 8-1 that they are entitled to ask NCOPL to install additional mitigation measures at the residence; and
- notify the tenants of any mine-owned land of their rights under the CoC.

Additionally, prior to entering into any tenancy agreement for any land owned by NCOPL that is predicted to experience exceedances of the recommended noise criteria, NCOPL will advise the prospective tenants of the rights they would have under the CoC, to the satisfaction of the Planning Secretary.

8.3.3 Land acquisition

An exceedance of the noise criteria detailed in Table 6-2 may trigger landowner acquisition rights as per the VLAMP. If a written request for acquisition from a landowner is made, NCOPL will follow the process outlined under Conditions D10 to D17. The land acquisition process is further detailed in the EMS.

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9. Reporting, evaluation and review

9.1 EPA quarterly noise report

In accordance with Condition R4.1 of EPL 12789, NCOPL are required to complete a noise compliance assessment report within thirty (30) days of the completion of the quarterly noise monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- an assessment of compliance with noise limits detailed in the limit conditions of the EPL; and
- an outline of any management actions taken within the monitoring period to address any exceedances of the limits detailed in the conditions of the EPL.

9.2 EPL Annual Return

In accordance with Condition R1 of EPL 12789, NCOPL will submit an Annual Return to the EPA within 60 days after the end of the reporting period (anniversary date), using the form provided by the EPA.

9.3 Annual review

NCOPL will review the performance of its noise management system for the previous calendar year and report results within the Annual Review to the satisfaction of the Planning Secretary and in accordance with CoC E11. Table B-1, Appendix B lists all components of the Annual Review.

In accordance with CoC E12, the Annual Review will be submitted to DPE, the IAPUM (via DPE as Secretariat), NSC and Gunnedah Shire Council (**GSC**) and regulatory agencies and made available to the CCC and any interested person upon request. The Annual Review will also be made publicly available on the WHC website.

9.4 Independent Environmental Audit


Within one year of commencement of the development, and every three years thereafter (unless the Planning Secretary directs otherwise), NCOPL will commission an Independent Environmental Audit (**IEA**) of the development, to be conducted in accordance with CoC E13 and CoC E14. The IEA will be led and conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary.

The IEA process and requirements are further described in the EMS.

9.5 NMP review and evaluation

In accordance with CoC E7, NCOPL will review the suitability of the NMP within three months of the:

- submission of an incident report under CoC E9 or E10;
- submission of an Annual Review under CoC E11;
- submission of an Independent Environmental Audit under CoC E13;
- approval of any modification of the CoC (unless the conditions require otherwise); or

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- notification of a change in development phase under CoC A14.

As required by CoC E8, if the review under CoC E7 determines that the NMP requires revision to either improve the environmental performance of the development, cater for a modification, or comply with a direction, the revised document will be submitted to the Planning Secretary for approval within six weeks of the review. The revision status of this NMP is indicated in section 13.

A dedicated review register will be maintained which will provide the details of the review of all relevant strategies, plans and programs that need to be reviewed as required by CoC E7.


9.6 Improvement measures

Consent condition E5(g) requires this Plan to include a program to investigate and implement ways to improve the environmental performance of the development over time. Improvement measures may be investigated through review of the following:

- monitoring data, and any assessment of trends;
- audit outcomes, including audits of the noise management measures;
- incident reports, including any community complaints; and
- industry leading practice in environmental management.

Reasonable and feasible improvement measures will be implemented and documented as a management measure in a revision to the Plan as described in section 9.5.

CoC E5(j) states that the Plan is to include a protocol for periodic review of the Plan. The protocol for review is set out by CoC E7, E8 and E11, which have been addressed in section 9.5.

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10. Complaints management

Any complaints received in relation to noise impacts will be managed in accordance with the complaints management protocol as follows:

- publicly advertised telephone complaints line, 1800WHAVEN, will be in place to receive complaints.
- each complaint received will be recorded in a Complaints Register, which will include the following details:
 - date and time of complaint;
 - method by which a complaint was made;
 - personal details the complainant wishes to provide or, if no such details are provided, a note to that effect;
 - nature of the incident that led to the complaint;
 - action taken by NCOPL in relation to the complaint (i.e., any required remedial actions), including any follow-up contact with the complainant; and
 - if no action was taken, the reason why no action was taken.
- the Environmental Superintendent will be responsible for ensuring that an initial response is provided within 24 hours of receipt of a complaint (except in the event of complaints recorded when the mine is not operational or outside of usual business hours).
- once the identified measures are undertaken, the Environmental Superintendent will sign off on the relevant complaint within the Complaints Register.
- if necessary, follow-up monitoring will take place to confirm the source of the complaint is adequately mitigated.
- a summary of the complaints will be maintained up to date by NCOPL and made available to the CCC, the complainant (on request) and on the WHC website. A summary of complaints received every 12 months will be provided in the Annual Review.


Condition E2.1 of EPL 12789 states that noise impacts where wind speed exceeds 3 m/s at 10 m above the ground must be addressed by documenting noise complaints received to identify any higher level of impacts or wind patterns. Where levels of noise complaints indicated a higher level of impact then actions to quantify and ameliorate any enhanced impacts where wind speed exceeds 3 m/s at 10 m above the ground should be developed and implemented.

All relevant information pertaining to the time of the noise complaint will be gathered as follows:

- locations and quantities of mining plant that were operational;
- meteorological conditions; and
- noise monitoring data from the nearest real time noise monitor.


Real time monitoring data will be utilised to determine the contribution of noise related mine activities to noise emissions. Using the above data an assessment is to be made as to the validity of the noise complaint.

In the event that any complainant considers that NCOPL has not adequately addressed their concerns, the NCOPL representative will attempt additional meetings with the complainant.

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11. References

- NSW Department of Environment and Conservation (February 2006) *Assessing Vibration: a technical guideline*.
- NSW Department of Environment and Climate Change (July 2009) *Interim Construction Noise Guideline*.
- NSW Department of Environment, Climate Change and Water (March 2011) *NSW Road Noise Policy*.
- NSW Environmental Protection Authority (November 2020) *Draft Construction Noise Guideline*.
- NSW Environmental Protection Authority (May 2013) *Rail Infrastructure Noise Guideline*.
- NSW Environmental Protection Authority (October 2017) *Noise Policy for Industry*.
- NSW Government (September 2018) *Voluntary Land Acquisition and Mitigation Policy – For State Significant Mining, Petroleum and Extractive Industry Developments*.
- NSW Independent Planning Commission (April 2022). *Development Consent SSD 10269, Narrabri Underground Mine Stage 3 Extension Project*.
- Resource Strategies Pty Ltd (October 2020) *Narrabri Underground Mine Stage 3 Extension Project – Environmental Impact Statement*. Prepared for Narrabri Coal Operations Pty Ltd.
- Wilkinson Murray (June 2020) *Narrabri Underground Mine Stage 3 Extension Project Noise & Blasting Assessment*. Prepared for Narrabri Coal Operations Pty Ltd.


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12. Glossary


Term	Definition
A-weighted	Is a frequency dependent curve (or filter) applied to sound pressure levels to mimic the effects of human hearing, especially at lower levels. The A-weighting curve is used extensively for general purpose noise measurements but the C-weighting correlates better with the human response to high noise levels.
Adaptive management	Adaptive management includes monitoring subsidence impacts and subsidence effects and based on the results, modifying the mining plan as mining proceeds to ensure that the effects, impacts and/or associated environmental consequences remain within predicted and designated ranges and in compliance with the CoC.
Annual Review	The review required by condition E11.
Applicant	Narrabri Coal Operations Pty Ltd.
Calendar year	A period of 12 months from 1 January to 31 December.
Calibrate	Correlate the readings of (an instrument) with those of a standard in order to check the instrument's accuracy.
Conditions of Consent (CoC)	SSD 10269 issued under s4.38 of the EP&A Act.
Construction	The carrying out of all physical works to enable mining operations to be carried out and decommissioning, including erection of buildings, infrastructure and other works and demolition, but not including pre-construction activities.
Date of commencement	The date notified to the Department by the Applicant under CoC A14.
Day	The period from 7 am to 6 pm (Monday to Saturday) and 8 am to 6 pm (Sundays and public holidays).
Decibel (dB)	A measure of sound level. The decibel is a logarithmic way of describing a ratio. The ratio may be power, sound pressure, voltage, intensity or other parameters. In the case of sound pressure, it is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure squared to a reference sound pressure squared.
Decibel (A weighted; dB[A])	Unit used to measure 'A-weighted' sound pressure levels. A-weighting is an adjustment made to sound-level measurement to approximate the response of the human ear.
Decommissioning	The permanent cessation of active use of the mine, including demolition of buildings, infrastructure and other works.
Department	The NSW Department of Planning, Industry and Environment (DPE)
Development	The Stage 3 development described in the Stage 3 EIS as modified by the CoC.
Environmental Impact Statement	The <i>Environmental Impact Statement titled Narrabri Underground Mine Stage 3 Extension Project – Environmental Impact Statement</i> , prepared by Resource Strategies Pty Ltd on behalf of the Applicant and dated October 2020, as amended or added to by the Applicant's <i>Submissions Report</i> submitted 31 May 2021, the Applicant's <i>Amendment Report</i> submitted 31 May 2021, the Applicant's final <i>Biodiversity Development Assessment Report</i> dated September 2021, and the Applicant's Additional Information on GHGEs dated 15 October 2021 and 17 December 2021.
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings.

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Term	Definition
Extraneous noise	Noise resulting from activities that are not typical of the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Evening	Refers to the period from 6 pm to 10 pm.
Feasible	Means what is possible and practical in the circumstances.
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance.
Intrusive noise	Refers to noise that intrudes above the background level by more than 5 decibels.
LA1	The LA1 level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the LA1 level for 99% of the time.
LA10	The LA10 level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the LA10 level for 90% of the time. The LA10 is a common noise descriptor for environmental noise and road traffic noise.
LA90	The LA90 level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the LA90 level for 10% of the time. This measure is commonly referred to as the background noise level.
LAeq	The equivalent continuous sound level (LAeq) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.
Land	Part B of the CoC defines land to mean the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of the CoC.
Low frequency	Noise containing major components in the low-frequency range (10 hertz [Hz] to 160 Hz) of the frequency spectrum.
Material harm	<p>Is harm to the environment that:</p> <ul style="list-style-type: none"> • involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or • results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment) <p>This definition excludes “harm” that is authorised under the CoC or any other statutory approval.</p>
Maximum Noise Level (LAm _{ax})	The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period
Meteorological conditions	Wind and temperature-inversion conditions
Mine owned land	Land owned by a mining, petroleum or extractive industry company (or its subsidiary or related party)
Minimise	Implement all reasonable and feasible mitigation measures to reduce the impacts of the Project

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Term	Definition
Mining operations	The carrying out of mining, including the extraction, processing, stockpiling and transportation of coal on the site and the associated removal, storage and/or emplacement of vegetation, topsoil, overburden and reject material; and includes underground development necessary for mining operations to be carried out (such as installation and use of electricity, water, communications and other services and infrastructure)
Mitigation	Activities associated with reducing the impacts of the development
Narrabri Mine	The development approved under the CoC, together with the development approved under project approval 05_0102 and project approval 08_0144
Night	The period from 10 pm to 7 am (Monday to Saturday), and 10 pm to 8 am (Sundays and public holidays)
Noise criteria	Enforceable noise levels that appear in conditions on consents and licences. Noise criteria are based on achievable noise levels which the proponent has predicted can be met during the environmental assessment and are developed in accordance with the NSW Noise Policy for Industry.
Noise impact assessment	The component of an Environmental Impact Statement, Environmental Assessment, Statement of Environmental Effects, or licence application that considers the impacts of noise resulting from a development or activity.
Non-compliance	An occurrence, set of circumstances or development that is a breach of the conditions of the statutory approvals
Plan	Noise Management Plan
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
Pollution incident	Has the same meaning as in the POEO Act
Privately-owned land	Land that is not owned by a public agency or mine-owned land
Project noise trigger level	Target noise levels for a particular noise-generating facility. They are based on the most stringent of the project intrusiveness noise level or the project amenity noise level.
Rating Background Level (RBL)	The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Receiver	The noise-sensitive land use at which noise from a development can be heard
Residence	Existing or approved dwelling at the date of grant of the CoC
Sensitive receptor	A location where people are likely to work or reside; this may include a dwelling, school, hospital, office or public recreational area.
Sleep disturbance	Awakenings and disturbance to sleep stages.
Sound Power Level (SWL)	Sound Power Level is the total sound energy radiated per second from a noise source. It is quoted in decibels with respect to the reference power level. The reference level is 1 pico-watt (pW) or 1×10^{-12} watts.
Stage 2	Narrabri Mine Stage 2 approved under PA 08_0144
Stage 3	Narrabri Underground Mine Stage 3 Extension Project approved under SSD 10269


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Term	Definition
Temperature inversion	An atmospheric condition in which temperature increases with height above the ground.
Validate	Check or prove the validity or accuracy of data.

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13. Review history

Revision	Comments	Author	Authorised by	Date
0A	Approved by Department of Planning and Environment on 23 December 2022	Onward Consulting	Manager HSE	1 September 2022

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Appendix A - Consultation records



DOC22/452159-3
29 June 2022

Brent Baker
Environmental Superintendent
Whitehaven Coal Limited
Email: BrentBaker@whitehavencoal.com.au

No Comment to Planning Advice Request

Dear Mr Baker

Thank you for the request for advice from the NSW Environment Protection Authority (EPA) on the Narrabri Underground Mine Stage 3 Extension Project - Noise Management Plan (SSD-10269-PA-6) at Whitehaven Coal Limited.

The EPA does not provide advice on or endorsement of any management plans developed for planning assessments. Accordingly, the EPA will not be providing further comment to this request.

If you have any questions about this request, please contact me on (02) 6773 7000 or via email at info@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Lindsay Fulloon', written over a horizontal line.

LINDSAY FULLOON
Manager Regional Operations
Regulatory Operations Regional West

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(from outside NSW)

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Shane Rily
Environmental Superintendent
Narrabri Coal Operations Pty Ltd
10 Kurrajong Creek Road
Baan Baa, NSW, 2390

23/12/2022

Subject: Noise Management Plan for Narrabri Coal Stage 3 (SSD-10269)

Dear Mr. Rily,

I refer to your submission, requesting review and approval of the Noise Management Plan for the Narrabri Coal Stage 3 project. I also acknowledge your response to the Department's review comments and request for additional information.

I note the Noise Management Plan has been prepared in consultation with NSW EPA and contains the information required by the conditions of approval.

The Department has carefully reviewed the document and is satisfied that it meets the requirements of the relevant conditions in Development Consent (SSD-10269).

Accordingly, as nominee of the Planning Secretary, I approve the Noise Management Plan (Rev 0A, dated 1 September 2022).


Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely




Stephen O'Donoghue
Director
Resource Assessments
As nominee of the Planning Secretary

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Appendix B - Compliance conditions relevant to this Plan

Table B-1 SSD 10269 consent conditions relevant to this Plan

Condition	Requirement	Document reference
Obligation to minimise harm to the environment		
A1.	In addition to meeting the specific performance measures and criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development, and any rehabilitation required under this consent.	Section 6 Section 8.2
Hours of operation		
A10.	Mining operations may be undertaken 24 hours a day, 7 days a week.	Section 6.1.1
Construction hours		
A11.	Drilling at ventilation shaft sites may take place 24 hours a day, 7 days a week.	Section 6.1.2
A12.	All other construction works must only be undertaken during the hours of 7.00 am to 6.00 pm (Monday to Sunday), unless included within an approved Noise Management Plan or the Planning Secretary agrees otherwise.	
Evidence of Consultation		
A20.	Where conditions of this consent require consultation with an identified party, the Applicant must: <ul style="list-style-type: none"> (a) consult with the relevant party prior to submitting the subject document; and (b) provide details to the Department of the consultation undertaken including: <ul style="list-style-type: none"> (i) the outcome of that consultation, matters resolved and unresolved; and (ii) details of any matters not resolved between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved. 	Section 1.4 Appendix A
Staging, combining and updating strategies, plans or programs		
A21.	With the approval of the Planning Secretary, the Applicant may:	
	a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program);	No staging or combining of NMP proposed
	b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined);	No combining of NMP with another plan proposed
	c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development); and	Section 9.5
d) combine any strategy, plan or program required by this consent with any similar strategy, plan or program required by an adjoining mining consent or approval, in common ownership or management.	No combining of NMP with another plan proposed	

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Condition	Requirement	Document reference																				
Compliance																						
A30.	The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.	Section 2																				
Applicability of guidelines																						
A31.	References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of inclusion (or later update) in the condition.	Section 3.4																				
A32.	However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may. In respect of ongoing monitoring and management obligations, agree to or require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or replacement of them.																					
Construction noise																						
B1.	NCOPL must ensure that the noise generated by construction is managed in accordance with the requirements of the <i>Interim Construction Noise Guideline</i> (DECC, 2009).	Section 6.4.1																				
Operational noise criteria																						
B2.	<p>NCOPL must ensure that the noise generated by the development does not exceed the criteria in Table 1 at any residence on privately-owned land^a</p> <p style="text-align: center;">Table 1: Operational noise criteria dB(A)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Noise Assessment Location</th> <th>Day LAeq (15 min)</th> <th>Evening LAeq (15 min)</th> <th>Night LAeq (15 min)</th> <th>Night LAF max</th> </tr> </thead> <tbody> <tr> <td>675a^b</td> <td style="text-align: center;">40</td> <td style="text-align: center;">39</td> <td style="text-align: center;">39</td> <td style="text-align: center;">52</td> </tr> <tr> <td>687a</td> <td style="text-align: center;">40</td> <td style="text-align: center;">36</td> <td style="text-align: center;">36</td> <td style="text-align: center;">52</td> </tr> <tr> <td>Any other residential receiver</td> <td style="text-align: center;">40</td> <td style="text-align: center;">35</td> <td style="text-align: center;">35</td> <td style="text-align: center;">52</td> </tr> </tbody> </table> <p>a The Noise Assessment Locations referred to in Table 1 are shown in Appendix 4. b Receiver 675a is eligible for noise mitigation under condition D2.</p>	Noise Assessment Location	Day LAeq (15 min)	Evening LAeq (15 min)	Night LAeq (15 min)	Night LAF max	675a ^b	40	39	39	52	687a	40	36	36	52	Any other residential receiver	40	35	35	52	Section 6.4.2
Noise Assessment Location	Day LAeq (15 min)	Evening LAeq (15 min)	Night LAeq (15 min)	Night LAF max																		
675a ^b	40	39	39	52																		
687a	40	36	36	52																		
Any other residential receiver	40	35	35	52																		
B3.	Noise generated by the development must be monitored and measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the <i>NSW Noise Policy for Industry</i> (EPA, 2017).	Section 6.5																				
B4.	The noise criteria in Table 1 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the noise criteria, and the Applicant has advised the Department in writing of the terms of this agreement.	Section 6.4.2 Section 8.3.2																				
Noise operating conditions																						
B5.	The Applicant must:																					
	a) take all reasonable and feasible steps to minimise noise from construction and operational activities, including low frequency noise and other audible characteristics, as well as road and rail noise associated with the development;	Section 6 Section 7 Section 8.2																				
	b) operate a comprehensive noise management system commensurate with the risk of impact, such as using a combination of predictive meteorological forecasting and real-time noise protocol data to guide the day to day planning of mining operations, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent;	Section 6 Section 7 Appendix D																				

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Condition	Requirement	Document reference
	c) take all reasonable and feasible steps to minimise the noise impacts of the development during noise-enhancing meteorological conditions;	
	d) only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL and use reasonable endeavours to ensure that rolling stock is selected to minimise noise	Section 6.2
	e) carry out regular attended noise monitoring (at least every three months, unless otherwise agreed by the Planning Secretary) to determine whether the development is complying with the relevant conditions of this consent; an	Section 6.5.3
	f) regularly assess the noise monitoring data and modify or stop operations on the site to ensure compliance with the relevant conditions of this consent.	Section 6.5.6 Section 7 Section 9.2


Noise Management Plan

B6.	NCOPL must prepare a Noise Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:	
	a) be prepared by a suitably qualified and experienced person/s;	Section 1.4
	b) be prepared in consultation with the EPA;	
	c) describe the measures to be implemented to ensure:	
	(i) compliance with the noise criteria and noise operating conditions in this consent;	Section 6
	(ii) best practice management is being employed;	
	(iii) noise impacts of the development are minimised during noise-enhancing meteorological conditions;	
	d) describe the noise management system in detail; and	Section 6
	e) include a monitoring program that:	
	(i) uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the development;	Section 6.5
	(ii) monitors noise at the nearest and/or most affected residences;	
	(iii) includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time;	
	(iv) adequately supports the noise management system; and	
	(v) includes a protocol for identifying any noise-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of any such event.	Section 8
B7.	The Applicant must not commence construction until the Noise Management Plan is approved by the Planning Secretary.	Section 1.2
B8.	The Applicant must implement the Noise Management Plan as approved by the Planning Secretary.	


Meteorological monitoring

B24.	Prior to the commencement of construction and for the life of the development, NCOPL must ensure that there is a suitable meteorological station operating in the vicinity of the site that:	
	a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and	Section 6.5.4
	b) is capable of measuring meteorological conditions in accordance with the <i>NSW Noise Policy for Industry</i> (EPA, 2017), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA.	


Acquisition upon request

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Condition	Requirement	Document reference				
D1.	<p>Upon receiving a written request for acquisition from the owner of privately-owned land^a listed in Table 11, the Applicant must acquire in accordance with the procedures in conditions D10 to D17, inclusive.</p> <p>Table 11: Land subject to acquisition upon request</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc;">Acquisition Basis</th> <th style="background-color: #cccccc;">Land</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Noise</td> <td style="text-align: center;">601a</td> </tr> </tbody> </table> <p>^a The location of land referred to in Table 11 is shown in Appendix 4.</p>	Acquisition Basis	Land	Noise	601a	Receiver 601a has been acquired by NCOPL, therefore this condition does not apply to this Plan.
Acquisition Basis	Land					
Noise	601a					
Additional mitigation upon request						
D2.	<p>Upon receiving a written request for mitigation from the owner of any residence on the privately-owned land^a listed in Table 11 or Table 12, the Applicant must implement additional mitigation measures at or in the vicinity of the residence in consultation with the landowner. These measures must be consistent with the measures outlined in <i>the Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development</i> (NSW Government, 2014). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise and/or air quality impacts of the development. The Applicant must also be responsible for the reasonable costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.</p> <p>Table 12: Land subject to additional mitigation upon request</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc;">Mitigation Basis</th> <th style="background-color: #cccccc;">Land</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Noise</td> <td style="text-align: center;">670a, 675a</td> </tr> </tbody> </table> <p>^a The locations of land referred to in Table 12 is shown in Appendix 4.</p>	Mitigation Basis	Land	Noise	670a, 675a	Section 8.3.2
Mitigation Basis	Land					
Noise	670a, 675a					
D3.	<p>If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution.</p>					
Notification of landowners/tenants						
D4.	<p>Within one month of the date of commencement of development under this consent, the Applicant must:</p> <ul style="list-style-type: none"> a) notify in writing the owner of the residences on the land listed in Table 11 and Table 12 that they are entitled to ask the Applicant to install additional mitigation measures at the residence; and b) notify the tenants of any mine-owned land of their rights under this consent. 	Section 8.3.2				
D5.	<p>Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended noise criteria, the Applicant must advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Planning Secretary.</p>					
Notification of exceedances						
D6.	<p>As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise or air quality criterion in PART B of this consent, the Applicant must provide the details of the exceedance to any affected landowners and/or tenants. For any exceedance of any air quality criterion in PART B of this consent, the Applicant must also provide to any affected land owners and tenants a copy of the fact sheet entitled "<i>Mine Dust and You</i>" (NSW Health, 2017).</p>	Section 8.3				
Adaptive management						
E4.	<p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and performance measures in this consent. Any exceedance of these criteria or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p>					

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Condition	Requirement	Document reference
	Where any exceedance of these criteria or performance measures has occurred, the Applicant must, at the earliest opportunity:	
	a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;	Section 8.2
	b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and	
	c) implement reasonable remediation measures as directed by the Planning Secretary.	
	to the satisfaction of the Planning Secretary.	
Management plan requirements		
E5.	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:	
	a) a summary of relevant background or baseline data;	Section 4
	b) details of:	
	(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);	Section 3 Appendix B Appendix C
	(ii) any relevant limits or performance measures and criteria; and	Section 6.4
	(iii) 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;	
	c) any relevant commitments or recommendations identified in the document/s listed in condition A2(c);	Section 3.1.1 Appendix C
	d) a description of the management measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	Section 6
	e) a program to monitor and report on the:	
	(i) impacts and environmental performance of the development; and	Section 6.5
	(ii) effectiveness of the management measures set out pursuant to paragraph (d);	
	f) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 7 Section 8.2 Appendix D
	g) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 9.6
	h) a protocol for managing and reporting any:	
	(i) incident, non-compliance or exceedance of any impact assessment criterion or performance criterion;	Section 8
	(ii) complaint; or	Section 10
	(iii) failure to comply with other statutory requirements;	Section 8.2
	i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and	Section 1.5 Section 3.4 Section 11
	j) a protocol for periodic review of the plan.	Section 9.5
E6.	Management plans prepared for the development must be consistent with the conditions of this consent and any EPL issued for the site	Section 3.1.1 Section 3.2.1 Appendix B

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Condition	Requirement	Document reference
		Appendix C
Revision of strategies, plans and programs		
E7.	Within three months of the: <ul style="list-style-type: none"> a) submission of an incident report under condition E9 or E10; b) submission of an Annual Review under condition E11; c) submission of an Independent Environmental Audit under condition E13; d) approval of any modification of the conditions of this consent (unless the conditions require otherwise); or e) notification of a change in development phase under condition A14, the suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant.	Section 9.5
E8.	If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review. <p><i>Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.</i></p>	Section 9.5
Incident notification		
E9.	The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing via the Department's Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.	Section 8.1
Non-compliance notification		
E10.	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. <p>The Notification must be in writing via the Department's Major Projects Website And identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.</p> <p>Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.</p>	Section 8.2
Annual Review		
E11.	By the end of March in each year after the commencement of the development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must: <ul style="list-style-type: none"> (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints record of the development over the previous calendar year, including a comparison of these results against the: <ul style="list-style-type: none"> (i) relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) monitoring results of previous years; and (iv) relevant predictions in the document/s listed in condition A2(c); 	Section 9.3

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	<ul style="list-style-type: none"> (c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; (d) evaluate and report on: <ul style="list-style-type: none"> (i) the effectiveness of the noise and air quality management systems; and (ii) compliance with the performance measures, criteria and operating conditions of this consent; (e) include an addendum report on Scope 1 and Scope 2 GHGE, which reports: <ul style="list-style-type: none"> (i) annual methane and annual total CO_{2-e} emissions (both categorised by source) and emissions intensity (based on ROM coal production); (ii) overall annual emissions intensity, benchmarked against representative industry sectors and the predictions in the EIS, and performance measures in Table 3; and (iii) measures undertaken to minimise Scope 1 and Scope 2 GHGE, including actions under condition B19, and estimated reductions in CO_{2-e} as a result of measures implemented; (f) identify any trends in the monitoring data over the life of the development; (g) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (h) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development. 	
E12.	Copies of the Annual Review must be submitted to the IAPUM (via the Department as Secretariat), NSC and GSC and regulatory agencies and made available to the CCC and any interested person upon request.	
Independent Environmental Audit		
E13.	Within one year of commencement of development under this consent, and every three years after, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development.	Section 9.4
E14.	Within three months of commencing an Independent Environmental Audit, or other timeframe agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary, and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report, and a timetable for the implementation of the recommendations. The recommendations must be implemented to the satisfaction of the Planning Secretary.	
Monitoring and Environmental Audits		
E16.	Noise and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in Part B, providing that these representative monitoring locations are set out in the respective management plan/s.	Section 6.5
Access to information		
E17.	Before the commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must:	

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Condition	Requirement	Document reference
	<p>a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:</p> <ul style="list-style-type: none"> (iv) the documents referred to in condition A2(c) of this consent; (v) all current statutory approvals for the development; (vi) all approved strategies, plans and programs required under the conditions of this consent; (vii) the proposed staging plans for the development if construction, mining operations or decommissioning is to be staged; (viii) minutes of CCC meetings; (ix) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; (x) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (xi) a summary of the current phase and progress of the development; (xii) contact details to enquire about the development or to make a complaint; (xiii) a complaints register, updated monthly; (xiv) the Annual Reviews of the development; (xv) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report; (xvi) any other matter required by the Planning Secretary; and <p>b) keep such information up to date, to the satisfaction of the Planning Secretary.</p>	Section 1.5 Section 3 Section 8 Section 9 Section 10 Appendix B Appendix C

Table B-2 EPL 12789 conditions relevant to this Plan

Condition	Requirement	Document reference										
Limit Conditions												
L4	<p>Noise limits</p> <p>L4.1 Noise generated at the premises must not exceed the noise limits in the table below.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="background-color: #0056b3; color: white;">Locality and Location</th> <th style="background-color: #0056b3; color: white;">Day- LAeq (15 min)</th> <th style="background-color: #0056b3; color: white;">Evening- LAeq (15 min)</th> <th style="background-color: #0056b3; color: white;">Night- LAeq (15 min)</th> <th style="background-color: #0056b3; color: white;">Night- LAeq (1 min)</th> </tr> </thead> <tbody> <tr> <td>All privately-owned residences</td> <td>35</td> <td>35</td> <td>35</td> <td>45</td> </tr> </tbody> </table> <p>L4.2 The noise limits identified in the above table do not apply at privately owned residences that are:</p> <ul style="list-style-type: none"> a) identified as residences subject to acquisition or noise mitigation on request within the Project Approval; or b) subject to a private agreement, relating to the noise levels, between the licensee and the land owner. 	Locality and Location	Day- LAeq (15 min)	Evening- LAeq (15 min)	Night- LAeq (15 min)	Night- LAeq (1 min)	All privately-owned residences	35	35	35	45	Section 6.4.2 Section 6.5
Locality and Location	Day- LAeq (15 min)	Evening- LAeq (15 min)	Night- LAeq (15 min)	Night- LAeq (1 min)								
All privately-owned residences	35	35	35	45								



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	<p>L4.3 For the purposes of the table above:</p> <p>a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays;</p> <p>b) Evening is defined as the period from 6pm to 10pm;</p> <p>c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.</p> <p>Determining compliance</p> <p>L4.4 To determine compliance:</p> <p>a) with the Leq(15 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located:</p> <p>i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or</p> <p>ii) within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable</p> <p>iii) within approximately 50 metres of the boundary of a National Park or a Nature Reserve.</p> <p>b) with the LA1(1 minute) noise limits in the Noise Limits table, the noise measurement equipment must be located within 1 metre of a dwelling façade.</p> <p>c) with the noise limits in the Noise Limits table, the noise measurement equipment must be located:</p> <p>i) at the most affected point at a location where there is no dwelling at the location; or</p> <p>ii) at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.</p> <p>L4.5 The noise limits set out in the Noise Limits table apply under all meteorological conditions except for the following:</p> <p>a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or</p> <p>b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or</p> <p>c) Stability category G temperature inversion conditions.</p> <p>For the purposes of this condition:</p> <p>i) Data recorded by the meteorological station identified as EPA Identification Point(s) W1 must be used to determine meteorological conditions; and</p> <p>ii) Temperature inversion conditions (stability category) are to be determined by direct measurement over a minimum 50m height interval as referred to in Part E2 of Appendix E of the "New South Wales Industrial Noise Policy" dated January 2000 ISBN 0 7313 2715 2.</p> <p>L4.6 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.</p>	
L5	<p>Blasting</p> <p>L5.1 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. 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.</p> <p>L5.2 The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time. Error margins associated with any monitoring</p>	<p>Section 6.4.3</p> <p>Section 6.5.5</p>



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	<p>equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.</p> <p>L5.3 The airblast overpressure level from blasting operations listed in Conditions L4.1 and L4.2 must not be exceeded at any point within 30 metres of any non-project related residential building or other noise sensitive location.</p> <p>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. 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.</p> <p>L5.5 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time. 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.</p> <p>L5.6 The ground vibration peak particle velocity limits listed in Conditions L4.5 and L4.4 must not be exceeded at any point within 3.5 metres of any non-project related residential building or other noise sensitive location.</p> <p>L5.7 Blasting operations at the premises may only take place between 10:00am-4:00pm Monday to Friday. (Where compelling safety reasons exist, the Authority may permit a blast to occur outside the abovementioned hours. Prior written (or facsimile) notification of any such blast must be made to the Authority).</p> <p>L5.8 Blasting at the premises is limited to: a) A maximum of two (2) blasts per day; b) Five (5) blasts a week, averaged over a twelve month period;</p> <p>on each day on which blasting is permitted.</p>	
Reporting Conditions		
R4	<p>Other reporting conditions</p> <p>R4.1 A noise compliance assessment report must be submitted to the EPA within thirty (30) days of the completion of the quarterly noise monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include: must be maintained in a proper and efficient condition; and must be operated in a proper and efficient manner.</p>	Section 9.1
Monitoring and Recording Conditions		
M1	<p>Monitoring records</p> <p>M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.</p> <p>M1.2 All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.</p> <p>M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken;</p>	Section 6.5.6



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	<p>b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.</p>																																																			
M4	<p>Requirement to monitor weather M4.1 For each monitoring point specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the parameter specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns:</p> <table border="1"> <thead> <tr> <th colspan="5">Point W1</th> </tr> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Averaging Period</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Rainfall</td> <td>mm</td> <td>Continuous</td> <td>1 hour</td> <td>AM-4</td> </tr> <tr> <td>Wind speed @ 10 metres</td> <td>m/s</td> <td>Continuous</td> <td>15 minute</td> <td>AM-2 & AM-4</td> </tr> <tr> <td>Wind direction @ 10 metres</td> <td>°</td> <td>Continuous</td> <td>15 minute</td> <td>AM-2 & AM-4</td> </tr> <tr> <td>Temperature @ 2 metres</td> <td>°C</td> <td>Continuous</td> <td>15 minute</td> <td>AM-4</td> </tr> <tr> <td>Temperature @ 10 metres</td> <td>°C</td> <td>Continuous</td> <td>15 minute</td> <td>AM-4</td> </tr> <tr> <td>Sigma theta @ 10 metres</td> <td>°</td> <td>Continuous</td> <td>15 minute</td> <td>AM-2 & AM-4</td> </tr> <tr> <td>Solar radiation</td> <td>W/m2</td> <td>Continuous</td> <td>15 minute</td> <td>AM-4</td> </tr> <tr> <td>Additional requirements siting measurement</td> <td></td> <td></td> <td></td> <td>AM-1 & AM-4 AM-2 & AM-4</td> </tr> </tbody> </table>	Point W1					Parameter	Units of measure	Frequency	Averaging Period	Sampling Method	Rainfall	mm	Continuous	1 hour	AM-4	Wind speed @ 10 metres	m/s	Continuous	15 minute	AM-2 & AM-4	Wind direction @ 10 metres	°	Continuous	15 minute	AM-2 & AM-4	Temperature @ 2 metres	°C	Continuous	15 minute	AM-4	Temperature @ 10 metres	°C	Continuous	15 minute	AM-4	Sigma theta @ 10 metres	°	Continuous	15 minute	AM-2 & AM-4	Solar radiation	W/m2	Continuous	15 minute	AM-4	Additional requirements siting measurement				AM-1 & AM-4 AM-2 & AM-4	<p>Section 6.5.4 Section 6.5.6</p>
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M7	<p>Noise Monitoring M7.1 For each monitoring point specified below, the Licensee must monitor the noise or vibration parameter specified in Column 1. The Licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.</p> <p>POINTS: N5, N6 and N8</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Ambient Noise</td> <td>L_{Aeq} (15minute) L_{Amax} L_{A1} L_{A10} L_{A90} L_{Amin}</td> <td>Quarterly monitoring as detailed in the most recently approved "Noise Management Plan" for the premises.</td> <td>As detailed in the most recently approved "Noise Management Plan" for the premises.</td> </tr> </tbody> </table> <p>M7.2 POINT: N10</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Parameter	Units of measure	Frequency	Sampling Method	Ambient Noise	L _{Aeq} (15minute) L _{Amax} L _{A1} L _{A10} L _{A90} L _{Amin}	Quarterly monitoring as detailed in the most recently approved "Noise Management Plan" for the premises.	As detailed in the most recently approved "Noise Management Plan" for the premises.	Parameter	Units of measure	Frequency	Sampling Method					<p>Section 6.4.2 Section 6.5</p>																																		
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Condition	Requirement	Document reference
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Ambient Noise	L_{Aeq} (15minute) L_{Amax} L_{A1} L_{A10} L_{A90} L_{Amin}	Continuous real time noise monitoring as detailed in the most recently approved "Noise Management Plan" for the premises	As detailed in the most recently approved "Noise Management Plan" for the premises.
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M7.3 For the purposes of conditions M7.1 and M7.2 the monitoring locations are described as:

EPA Identification No.	Description of location
N5	Within 30 metres of the residence on the property "Oakleigh"
N6	Within 30 metres of the residence on the property "Newhaven"
N8	Within 30 metres of the residence on the property "Haylin View"
N10	Portable Monitor
N9	Within 30 metres of the residence on the property "High Range"

Note: Monitoring at N8 to commence when surface activities approach the eastern end of the southern longwall panels.


Note: N10 is a portable monitor enabling the monitor to be relocated to areas of potential greatest impact. The licensee is responsible to ensure that it is located at the most suitable location.

M7.4 To assess compliance with the noise limits presented in the Noise Limits table, attended noise monitoring must be undertaken in accordance with the condition titled Determining Compliance, outlined above, and:


- a) at each one of the monitoring locations N5, N6, N8 and N9;
- b) occur Quarterly in a reporting period;
- c) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of:
 - i) 1.5 hours during the day;
 - ii) 30 minutes during the evening; and
 - iii) 1 hour during the night.
- d) occur for three consecutive operating days.

Special Conditions

E2	<p>Noise impacts</p> <p>E2.1 Noise impacts where wind speed exceeds 3 metres per second at 10 metres above the ground must be addressed by:</p> <p>a) documenting noise complaints received to identify any higher level of impacts or wind patterns;</p>	Section 10
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Condition	Requirement	Document reference
	where levels of noise complaints indicated a higher level of impact then actions to quantify and ameliorate any enhanced impacts where wind speed exceeds 3 metres per second at 10 metres above the ground should be developed and implemented.	

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Appendix C - Key EIS commitments




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Table C-1 Key EIS operation and construction noise management commitments


Source	Aspect	Details	Reference
EIS Section 2.5	Project development activities	<p>Surface construction and development would generally occur 7.00 am to 6.00 pm, seven days per week. Activities undertaken outside of these hours would include:</p> <ul style="list-style-type: none"> activities that cause equivalent continuous noise level over a sample period of 15 minutes (LAeq(15 minute)) of no more than 35 decibels (dB) at any privately-owned residence, or at a higher level that has been agreed with the resident 	Section 6.1
EIS Section 2.6.7	Flaring of pre-drainage gas	<p>If required for the Project, flaring infrastructure would be constructed within the indicative Surface Development Footprint (Figure 5) (i.e. no additional disturbance to that presented for the amended Project would be required for flaring) and would be constructed via the enclosed flare method, which is described as (NSW Environment Protection Authority [EPA], 2015):</p> <p><i>an enclosed flare surrounds the burner head with a refractory shell that is internally insulated. The shell helps to reduce noise, luminosity and heat radiation. Enclosed flares allow better combustion by maintaining temperature, air flow and more stable combustion conditions, maximising the conversion of methane to carbon.</i></p>	Section 6.2
EIS Section 6.8.4	Assessment of Feasible and Reasonable Noise Mitigation Measures	<p>Adoption of mitigation measures to minimise noise emissions associated with the Project. As a result of the preliminary modelling, modifications to the Project were undertaken in order to improve acoustic performance, including:</p> <ul style="list-style-type: none"> Selection of mobile plant and ventilation fans in consideration of good practice sound power levels. Use of directional ventilation fans to transmit noise away from key receivers. 	Section 6.2
EIS Section 6.8.4	Low-frequency noise assessment	<p>No modifying factor correction for low-frequency noise is warranted for the Project (Appendix H).</p> <p>Notwithstanding, if monitoring results during Project operations are found to contain dominant low-frequency content, appropriate modifying factors would be applied to measured noise levels.</p>	Section 5.3.2 Section 6.5.3
EIS Section 6.8.5	Management Plan	<p>Noise mitigation and management measures for the Narrabri Mine are described in the Noise Management Plan (NCOPL, 2018) (or the latest approved version) and would continue to be implemented for the Project. This plan would be reviewed and updated to address the Project where appropriate.</p>	This Plan
EIS Section 6.8.5	Sensitive receptors	<p>The privately-owned receivers where noise emissions are predicted to exceed the Project-specific criteria can be divided into a Noise Management Zone and a Noise Affection Zone (Table 6-2).</p> <p>Proposed management procedures, in addition to the mitigation and management measures described below, for receivers in these zones may include:</p> <ul style="list-style-type: none"> response to any community issues of concern or complaints including discussions with relevant 	Section 6.2

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Source	Aspect	Details	Reference
		<p>landowners;</p> <ul style="list-style-type: none"> refinement of on-site noise mitigation measures and mine operating procedures; implementation of feasible and reasonable acoustical mitigation at receivers, in accordance with the Voluntary Land Acquisition and Mitigation Policy (marginal to moderate residual impact); and entering into agreements with landowners (including acquisition for receivers identified to be in the Noise Affection Zone)* <p>*NCOPL has entered into private agreements with receivers 670a and 675a regarding the management of noise.</p>	
EIS Section 6.8.5	Operational noise	<p>In addition to the existing management measures outlined in the Noise Management Plan (NCOPL, 2018), additional management measures would be applied to mitigate potential noise impacts for the Project.</p> <p>As part of the noise modelling approach, the following additional feasible mitigation measures were identified and would be undertaken for the Project:</p> <ul style="list-style-type: none"> additional Project upcast ventilation facilities required to meet a specification of 116 dBA. product and ROM stockpile dozers and reject emplacement area dozer's limited to a sound power level of 116 dBA or less. north-west directivity applied for Project ventilation complexes to minimise noise impacts. 	Section 6.2
EIS Section 6.8.5	Operational noise	An additional attended noise monitoring site would be installed to the south of the Project area (Figure 6-17). The location would be confirmed in consultation with relevant government agencies and landowners.	Section 6.5.6
EIS Section 6.8.5	Construction noise	Development activities for the Project would be temporary in nature, and general construction noise management measures would be implemented to minimise noise levels at the nearest private receptors, where applicable.	Section 6.2
EIS Section 6.8.5	Adaptive measures	<p>NCOPL would continue to conduct Narrabri Mine operational noise monitoring in accordance with the Noise Management Plan (NCOPL, 2018) (as amended for the Project).</p> <p>In addition to mitigation measures already incorporated and those outlined in Section 6.8.5, Project noise adaptive management measures would include:</p> <ul style="list-style-type: none"> response to community issues or complaints including discussions with relevant landowners; refinement of on-site noise mitigation measures and mine operating procedures, where practicable; 	Section 6.2 Section 6.5 Section 8.3 Section 10

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Source	Aspect	Details	Reference
		<ul style="list-style-type: none"> • use of real-time noise monitoring as a management tool; and • if necessary (i.e. as informed by operational noise monitoring results), implementation of feasible and reasonable mitigation at relevant private receivers, in accordance with the Voluntary Land Acquisition and Mitigation Policy. 	
EIS Section 6.14.4	Management plan	<p>Noise at the Narrabri Mine is mitigated in accordance with the Noise Management Plan (NCOPL, 2018). Road noise mitigation measures at the Narrabri Mine include (NCOPL, 2018):</p> <ul style="list-style-type: none"> • the site access road is sealed and regularly maintained; • all unsealed access roads would be regularly maintained to limit body noise from empty trucks, signposted and speed limited (40 km/h) to minimise transport noise; and • the rail track within the rail loop is inspected monthly to monitor rail condition and highlight issues requiring rectification. <p>The Noise Management Plan would be updated where necessary to incorporate the Project.</p>	Section 6.2
EIS Section 6.14.5	Adaptive measures	Project road and rail transport noise adaptive management measures would include response to any community issues of concern or complaints, including discussions with relevant landowners and liaison with rail operators regarding train operating procedures.	Section 6.2 Section 10
Response to Submissions Section 4.2.8	Amenity	<p>EPA provided recommended conditions of approval for noise limits for the Project. Further, EPA noted that the Voluntary Land Acquisition and Mitigation Policy (VLAMP) (NSW Government, 2018) would apply for those receivers where noise criteria are predicted to be exceeded by greater than 5 'A' weighted decibels.</p> <p>NCOPL confirms that the EPA's recommended conditions in relation to noise accurately reflect the findings within the EIS. Further, NCOPL acknowledges the EPA's submission in regard to application of the VLAMP and conditions can confirm that all receivers within the Noise Management Zone and Noise Affectionation Zone have been consulted and agreements in place where required (with the exception of receiver 601a). The property in relation to dwelling 601a is in the process of acquisition.</p>	Section 5.4 Section 6.2 Section 8.3.2 Section 8.3.3

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Appendix D - Trigger Action Response Plan


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Table D-1 Noise monitoring and temperature inversion conditions

NOTE: This TARP applies to surface operations including CHPP, Civil Services and Drilling operations; and excludes mine ventilation.

Trigger	“RTW” (return to work) issued via SMS and/or email	Weather Alarm “Level 1A TEMPERATURE INVERSION ON” issued via SMS and/or email	Noise Alarm “Level 1B Noise Alert” issued via SMS and/or email	Noise Alarm “LEVEL 2 noise alert” issued via SMS and/or email
Detail on alarm parameters	Noise within noise criteria limits No temperature inversion conditions present	Temperature Inversion conditions present	Low Frequency (mining) noise greater than 34dB continuous for 3 x 5min periods & wind speed < 3m/s	Low frequency (mining) noise greater than 34dB for continuous 1 hour period after first (INITIAL) alarm & wind speed < 3m/s
Noise trailer reference	SENTINEX117 (Far North) / SENTINEX118 (North) / SENTINEX97 (South)			
TARP LEVEL	Normal	Level 1A	Level 1B	Level 2
CHPP Supervisor	Continue normal operations when ALARM END message received.	Check no operational issue causing excessive noise. Review operational tasks e.g. relocate dozer off of high area of coal stockpile or work on the wind side of the stockpile. Coal Track entry required.	As for Level 1A and Shut-down non-essential equipment. Coal Track entry required.	Critical dozing only (i.e. if shearer running or if loading a train). Limit dozer reversing speeds to first gear. Coal Track entry required. Review SENTINEX data for relevant noise trailer, listen to real-time audio to determine source of noise. If considered not to be mining related, send SMS notifications to Drillers/SCS to resume operations.
Tech Services- drilling crews	Continue normal operations when ALARM END message received.	Avoid unnecessary vehicle movement. Shut-down non-essential equipment. Make record of action taken and report to CHPP supervisor for Coal Track entry.	As for Level 1A and Check no operational issue causing excessive noise. Make record of action taken and report to CHPP supervisor for Coal Track entry.	Shutdown drill-rigs (and pre-conditioning operations). Light vehicle and truck movements only. Make record of action taken and report to CHPP supervisor for Coal Track entry.
Civil Services Supervisor	Continue normal operations when ALARM END message received.	Avoid unnecessary vehicle movement. Shut-down non-essential equipment. No dozer work permitted on REA. Only one truck per 15 minutes if carting from CHPP rejects stockpile to REA. Make record of action taken and report to CHPP supervisor for Coal Track entry.	Check no operational issue causing excessive noise. Avoid unnecessary vehicle movement. Shut-down non-essential equipment. Make record of action taken and report to CHPP supervisor for Coal Track entry.	Shutdown all heavy machinery. Light vehicle and truck movements only. Make record of action taken and report to CHPP supervisor for Coal Track entry.



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Trigger	"RTW" (return to work) issued via SMS and/or email	Weather Alarm "Level 1A TEMPERATURE INVERSION ON" issued via SMS and/or email	Noise Alarm "Level 1B Noise Alert" issued via SMS and/or email	Noise Alarm "LEVEL 2 noise alert" issued via SMS and/or email
Environmental Superintendent	Monitor weather forecasts and advise work groups of extreme weather events and additional noise control measures that may be required.	NOTE: Environmental Superintendent to conduct regular (monthly) reviews of SentineX noise data and alarm parameters to confirm effectiveness of TARP, and to check site records for compliance with TARP.		