Rio Tinto

MOUNT PLEASANT PROJECT

CONSTRUCTION NOISE MANAGEMENT PLAN

EMM | 18 September 2015

Construction Noise Management Plan

Draft report

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DEFINITIONS

Term	Definition
dB(A)	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
EPA	NSW Environment Protection Authority
Feasible[1]	A work practice or abatement measure is feasible if it is capable of being put into practice or of being engineered and is practical to build given project constraints such as safety and maintenance requirements.
INP	NSW Industrial Noise Policy (Published by the EPA in 2000).
L_1	The noise level exceeded for 1% of a measurement period.
L_{10}	A noise level which is exceeded 10% of the time. It is approximately equivalent to the average of maximum noise levels.
L_{90}	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
L_{eq}	It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period. The Leq, 15min descriptor refers to an Leq noise level measured over a contiguous 15 minute period.
L_{max}	The maximum root mean squared sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single value background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Reasonable[1]	Selecting reasonable measures from those that are feasible involves making a judgment to determine whether the overall noise benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the measure.
SI	SI ("Still Isothermal") refers to calm weather conditions (ie the absence of any wind or temperature gradients).
Sound Power Level	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental property of the source and is independent of the surrounding environment.
Temperature Inversion	A positive temperature gradient. A meteorological condition where atmospheric temperature increases with altitude.
($\sigma\theta$) sigma-theta	The standard deviation of horizontal wind fluctuation.

Notes: 1. Source: ICNG

CONTENTS

Rio Tinto

CONSTRUCTION NOISE MANAGEMENT PLAN

1. INTRODUCTION

1.1 Description of locality

The Mount Pleasant Project (the Project) is located in the Upper Hunter Valley of New South Wales, approximately three kilometres (km) north-west of Muswellbrook and approximately 50 km north-west of Singleton. The villages of Aberdeen and Kayuga are located 12 km north-north-east and 3 km north of the Project boundary, respectively.

The Project boundary is taken to be that shown as the modified development consent boundary in Figure 3.2 (Figure 1.1 below) of the Project's Development Consent (DA 92/97), as modified.

This Construction Noise Management Plan (CNMP) has been developed per the Statement of Commitments and the Development Consent (DA 92/97) for Coal & Allied Operations Pty Limited's (Coal & Allied) Mount Pleasant Project (the Project). It forms part of the Environmental Management Strategy for the proposed Project.

As permitted by Schedule 2, Section 13 of the Development Consent, the noise management plan is submitted in a staged process. The CNMP will cover the construction stage, approximately the first 18 to 24 months of the project. This stage will cover the construction of all infrastructure, including the CHPP, roads, rail, workshops and other buildings, dam walls, diversion drains, water pipelines, power lines and earthworks.

1.2 Scope of the Construction Noise Management Plan

The scope of the CNMP applies to the Project boundary and all construction activities within it. This includes:

- upgrade of Wybong Road from Bengalla Link Road through to the mine access;
- installation of the Hunter River water supply and associated pipeline;
- establishment of site access roads ;
- temporary facilities required for construction activities, eg offices, workshops, laydown areas;
- construction of all permanent infrastructure, including but not limited to the CHPP, administration buildings, workshops, sediment dams, power lines, haul roads, light vehicle access roads, dam walls, diversion drains, storage areas and fuel farms predominantly located within the Mine Industrial Area as shown on Figure 1.1;
- construction of the standalone rail loop from the Ulan line, and associated load out structures;
- installation of appropriate fencing and barriers to ensure public safety and security for mining and construction.

Construction activities exclude the development of the box-cut and any activities related to the extraction of coal (eg overburden stripping associated with mining).

Representative construction activities have been modelled in detail and these include Wybong Road realignment, Mine Infrastructure Area (MIA) works, rail loop and spur, conveyor between MIA and rail loop, and 66kV power line realignment as shown in Figure 1.1. This was done to produce predicted noise levels at representative assessment locations (ie residences) to quantify potential construction noise levels.

The Development Consent (DA 92/97) includes noise conditions for the operational phase of the project, but does not address the construction phase. Consent conditions that are relevant to construction are represented in Table 1.2 below. The conditions have been updated where they specifically mentioned operational phase aspects. The conditions have been, cross-referenced to the corresponding CNMP sections where they are addressed.

Table 1.2 Consent conditions relevant to noise management

Consent Condition		Where addressed
Schedule 3, Condition 8	The Applicant shall: (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the construction noise generated by the development; (b) minimise the noise impacts of the development during adverse weather; (c) regularly assess the noise monitoring and meteorological forecasting data and modify activities on site to minimise noise levels as much as practicable; and (d) co-ordinate the noise management on site with the noise management at nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines, to the satisfaction of the Director-General.	Chapter 5 and Appendix B
Schedule 3, Condition 9:	The Applicant shall prepare and implement a Construction Noise Management Plan for the development to the satisfaction of the Director-General. This plan must: (a) be submitted to the Director-General for approval prior to carrying out any development on site; (b) describe the noise mitigation measures that would be implemented , including a noise management system that employs both reactive and proactive mitigation measures; (c) include a noise monitoring program that: • uses attended monitoring to evaluate the performance of the development; • includes a protocol for determining exceedances of the relevant criteria; and (d) include a protocol that has been prepared in consultation with the owners of the nearby mines (including the Bengalla mine) to minimise the cumulative noise impacts of the mines.	Appendix A and Appendix B
Schedule 4, Condition 1:	Notification of landowners on noise affected land.	Appendix A
Schedule 5, Condition 2:	The Applicant shall ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • the relevant statutory requirements (including any relevant consent, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of the development or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the development; • effectiveness of any management measures (see c above); (e) a contingency plan to manage any unpredicted impacts and their consequences; (d) a program to investigate and implement ways to improve the environmental performance of the development over time; (e) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan.	Section 1.2 Does not apply to construction Section 3 Chapter 5 Chapter 8 Appendix B Chapter 8 and Appendix B Chapter 8

Table 1.2 Consent conditions relevant to noise management

Consent Condition		Where addressed
Schedule 5, Condition 4:	Within 3 months of: (a) the submission of an annual review under condition 3 above; (b) the submission of an incident report under condition 7 below; (c) the submission of an audit under condition 9 below; and (d) any modification to the conditions of this consent, the Applicant shall review, and if necessary revise, the strategies, plans, and programs required under this consent to the satisfaction of the Director-General.	Chapter 8
Schedule 5, Condition 5:	In conjunction with the owners of the nearby mines (including the Bengalla mine), the Applicant shall use its best endeavours to minimise the cumulative impacts of the development on the surrounding area to the satisfaction of the Director-General.	Chapter 3
Schedule 5, Condition 7:	Incident reporting	Appendix A
Schedule 5, Condition 8:	The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent, and to the satisfaction of the Director-General.	Chapter 8

1.3 Baseline data

The Mount Pleasant Mine Environmental Impact Statement (EIS) prepared in 1997 (ERM Mitchell McCotter, 1997) included long term noise monitoring data at seven representative residential locations. Section 12.1 of the EIS describes the surrounding environment and details the baseline noise survey undertaken at that time. Another supportive source of suitable background noise monitoring data is found in the *Mt Arthur Coal – Consolidated Project Noise and Blasting Impact Assessment* (Wilkinson Murray, 2009). These sources of data provide rating background levels (RBL) and a good representation of the existing noise climate.

Long term unattended and short term attended noise monitoring has been undertaken since 2006 and continues on a quarterly basis as part of the Project's ongoing baseline surveys. This provides targeted qualitative and quantitative information on existing noise levels for surrounding residential areas to the Project.

The Project itself has had little or no noise emission since the development consent was substantially commenced in 2004 through construction of an environmental dam. For the residential locations of the surrounding community, the noise climate includes typical sources such as natural sounds, road traffic noise, agriculture and suburban activities, as well as the following:

- for Racecourse Road and South Muswellbrook areas – noise sources include Bengalla Mine operations, MAC operations and rail transport;
- for the Muswellbrook area – noise sources include Bengalla Mine operations, New England Highway traffic and rail transport;
- for areas immediately north of Muswellbrook – noise sources include Muswellbrook Coal Company operations and New England Highway; and
- for areas of Wybong Road / Roxburgh Road - noise sources include Bengalla Mine, specifically the coal preparation plant operations.

Noise modelling was completed for the Environmental Assessment (EA) in 2010. This work assessed the Project to contemporary requirements, in line with the Industrial Noise Policy, and reviewed the impacts of the proposed conveyor, which resulted in an additional four properties being affected.

For the mine surrounds, including all the residential locations referred to in the preceding paragraphs, representative background noise levels (RBLs) have been derived from the recent long term unattended noise monitoring (conducted quarterly as part of the ongoing baseline surveys) or from published noise assessments from neighbouring operations. The RBL values are summarised in Table 1.1. The locations referred to in the table below are shown on Figure 1.1.

It is useful also to have some appreciation of the scale of decibels, the unit of noise measurement. The following gives some practical indication as to what an average person perceives about changes in noise levels:

- differences of less than approximately 2 dB are imperceptible in general, ie, most people would find it difficult to discern which is the louder of two noise sources having levels within 2 dB of each other; and
- a difference in noise levels of around 10 dB appears as either doubling or halving of loudness.

Table 1.1 Representative background noise levels (RBL)

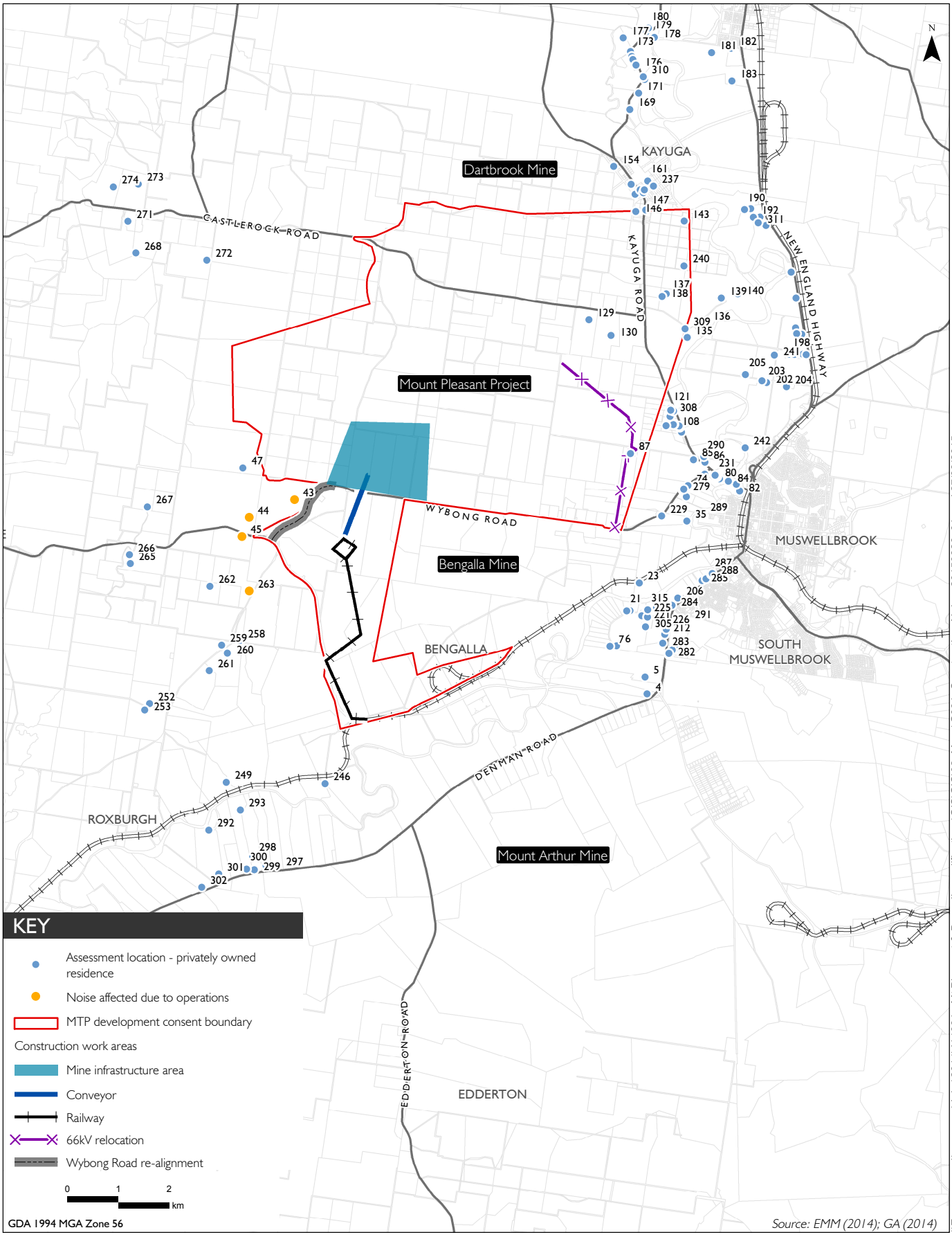
Location		Measured RBL, dB(A)[1]			Source
Name	Relative to site	Day	Evening[2]	Night	
Burtons Lane	Far east (north of Muswellbrook), near the New England Highway	32	37	32	2009 Coal & Allied quarterly data
Aberdeen	North-east	32	34	31	2010 Coal & Allied quarterly data
Kayuga	North north-east	30	30	30	2010 Coal & Allied quarterly data
Kayuga Road	North-east	35	38	32	2009 Coal & Allied quarterly data
Wybong Road	South-west - conveyor area	30	30	30	2009 Coal & Allied quarterly data
Muswellbrook	South-east	36	40	34	2009 Coal & Allied quarterly data
Racecourse Road	South-east	38	37	36	Mt Arthur Coal 2009 EA data[3]
Yammanie	South-east (south-east of Racecourse)	34	33	32	Mt Arthur Coal 2009 EA data[3]
East Antiene, New England Hwy	South-east (applies to residences near New England Hwy east of site)	36	35	34	Mt Arthur Coal 2009 EA data[3]

Notes: *1. Where RBL values below 30dB(A) were measured, the NSW Industrial Noise Policy (1999)'s minimum recommended background of 30dB(A) is adopted.*

2. As per the INP application notes, where RBL values for the evening are unjustifiably higher than that for the day, the daytime or night time RBL has been adopted.

3. Mt Arthur Coal – Consolidated Project Noise and Blasting Impact Assessment (Wilkinson Murray 2009). The raw data was not verified, although the methodology presented in the EA is considered appropriate.

4. Day, evening and night is as per the INP definitions (ie day = 7am to 6pm Monday to Saturday, 8am to 6pm Sundays and public holidays; evening is 6pm to 10pm and night is the remainder of the time).



EMM
EMGA Mitchell McLennan

The Mount Pleasant Project
Mount Pleasant Project
Construction Noise Management Plan
Figure 1.1

2. BACKGROUND

The Project has approval under Development Consent (DA 92/97) to extract up to 10.5 million tonnes of run-of-mine (ROM) coal per year initially by using truck and shovel, and later on through dragline operations. The potential for operational noise impact of the Project was assessed as part of the EIS (ERM Mitchell McCotter, 1997). The assessment indicated that the greatest potential noise impacts would be to the east, south-east, north and north-east of the Project boundary. Potentially impacted areas include 15 properties as listed in the conditions of consent. To date, no coal has been mined from the Project, however, the development consent was substantially commenced in 2004 through construction of an environmental dam.

In October 2010, the Project sought approval for a minor modification to DA 92/97. The modification assessment determined that there would be a relatively minor number of additionally impacted private receivers as a result of these changes during operational phases. These are four properties to the west. Construction noise impacts were also highlighted through predicted noise above noise management levels at seven properties to the west. This modification was granted approval on 19 September 2011.

This CNMP is based on the modified consent conditions and the noise impact assessment in the EA (EMGA Mitchell McLennan, 2010).

3. CONSULTATION

Schedule 3, Condition 23 of DA 92/97requires the Construction Noise Management Plan be prepared to the satisfaction of the Secretary (formerly Director-General). The sections below provided an overview of consultation that has occurred during the preparation of the Construction NMP.

It is noted that further consultation will be completed during preparation of the Operational NMP.

3.1 Government Agencies

This CNMP at version 8.0 is being submitted to the Department of Planning and Environment as a minor update to version 7.0 as submitted in 2012. Recent discussions with DoPI have indicated that this is appropriate given that scope of the project or the requirements of the development consent have not changed since 2012.

3.2 Neighbouring Mines

The neighbouring Bengalla mining operation is adjacent to the Mount Pleasant construction area. Liaison with Bengalla operations has commenced in regards to noise management and monitoring cooperation options.

At this stage, no formal agreement has been developed with Bengalla, however an in principle agreement for data sharing has been agreed upon.

It is noted that a formal agreement will be developed in consultation with Bengalla during the preparation of the Operational NMP.

3.3 Community

Throughout the development of the CNMP interested local community members have been engaged with through a series of focus group meetings and workshops (2007 and 2012). These sessions discussed operational control measures as described in the draft management plans. Suggestions put forward by the community members have been assessed and included in the management plan.

4. EXISTING CHARACTER / IMPACT ASSESSMENT

4.1 Existing Character / Infrastructure and Activities

The Project is located approximately 3 km to the west-north-west of the town of Muswellbrook with its commercial hub and surrounding suburbs. Further south east is South Muswellbrook, which is predominantly a residential area, and the Muswellbrook Racecourse, which includes residential neighbours. To the north-north-east is the town of Kayuga, with residential properties located along its eastern boundary. More isolated residences are located further afield to the east, south west and south.

Located to the south of the Project are the neighbouring mines Bengalla and Mt Arthur Coal, and further to the west, Muswellbrook Coal Company. To the south-east, towards Singleton, are the Bayswater and Liddell power stations, along with a number of other open cut and underground coal mines.

Land-use in the vicinity of the Project includes coal mining, grazing, viticulture and rural residential holdings. Other features of interest include the Hunter River Valley which is in a general north to south alignment in this area and intersects with the general north-west to south-east alignment of the Hunter Valley.

The terrain surrounding the Project is dominated by the Hunter Valley landform which is, for the most part, gently undulating within the valley with steeper slopes found along the valley walls. Much of the higher ground and steeper slopes retain moderately dense woodland cover which forms part of the national parks and state forests found within the region.

4.2 Impact Assessment Criteria

4.2.1 Introduction

Noise impacts as a result of construction activities may potentially affect residences to the west and south west of the infrastructure areas, including the rail loop, and residences to the east and south east of the power line realignment works.

The sources of noise during construction and early works may include:

- vegetation clearing and grubbing and topsoil stripping using dozers and other earthmoving equipment;
- excavation and transport of soil and fill;
- equipment used for general construction and handling of materials for the construction of the rail loop, CHPP, 66kV power line realignment and upgrade of Wybong Road from Bengalla Link Road through to the mine access;
- road transport and offloading of construction materials;
- generators; and
- general vehicle noise including start up and dozer tracks.

These aspects need to be managed to minimise impacts to sensitive receivers, and to allow Coal & Allied to work effectively amongst its neighbours and the broader community.

4.2.2 Objectives and performance criteria

The objectives of the CNMP are to:

- manage the noise impacts of the construction phase to minimise impacts to sensitive receivers; and
- ensure that statutory requirements, including performance criteria, and corporate standards are met;

The effectiveness of noise management actions will be determined by a series of key performance indicators (KPIs) set to meet the objectives.

Table 4.1 highlights the objective and performance criteria.

Table 4.1 Objectives and performance criteria

Parameter	Target	KPI
Compliance with criteria	Compliance with noise criteria	Noise management levels (NMLs) as specified in Table 4.2.
Manage near neighbour relationships	Minimise complaints from near neighbours at the start of construction and maintain or decrease numbers over time.	Manage construction noise levels at sensitive receivers

4.3 Noise management levels

The EPA's Interim Construction Noise Guideline (ICNG) provides Noise Management Levels (NMLs) of background plus 10dB for standard ICNG hours (ie 7am to 6pm Monday to Friday, 8am to 1pm Saturdays and no work on Sundays or public holidays). With the exception of some maintenance activities, works are not anticipated outside standard hours although restrictions on hours do not apply if works are in audible at residences. The NMLs are listed below in Table 4.2 (refer to Figure A.1 for NAG locations). The ICNG also states that residences are considered to be 'Highly Affected' by construction noise if levels exceed 75dB(A).

The Noise acquisition criteria are provided in the Operational Noise Management Plan (ONMP). For acquisition criteria to be adopted, the exceedances need to be considered systematic. Acquisition is considered only relevant to the operational phases of the project as construction is not a permanent noise source and in any case is restricted to daytime hours. However, if mining operations commence while construction is ongoing, and construction were to occur out of daytime hours, it would then be difficult to separate these impacts at a receiver if they originate in the same general direction. In these situations acquisition criteria would apply. To determine systematic exceedance, monitoring must show a regular or frequent pattern of exceedance for the monitoring period being sampled.

In the context of a mine site, systematic exceedance of noise criteria is considered to be sustained exceedances caused by noise from site as a whole. This aligns with the INP where it states that *"In general, the types of noise sources dealt with in the policy are…facilities (encompassing all the activities taking place within the property boundary of the facility), usually comprising many sources of sound"*. As construction activities that may produce intrusive noise will be relatively short term, will generally involve single pieces of equipment, and will be limited to daylight hours (as defined in the Development Consent), any short-term exceedances should not be considered to be systematic. All reasonable and feasible noise mitigation measures will be implemented to minimise noise impacts. Tables 1 and 2 in Schedule 3 of the Development Consent identify properties which are either subject to acquisition or subject to noise mitigation. Letters were sent to these property owners prior to 31 December 2011 to notify them of their rights under the Development Consent.

The definition of exceedance of noise management levels includes a field measurement tolerance of 2dB, as per the Industrial Noise Policy (INP, 2000).

Appendix A discusses the protocol for determining exceedances.

Notwithstanding the above conditions, construction works may be undertaken outside the hours specified in the following circumstances:

- where they can be shown to be inaudible at residences;
- where a negotiated agreement has been arranged with affected receivers;
- for the delivery of materials required by the police or other authorities for safety reasons;
- where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; and
- out of hours construction works from time to time (for example commissioning activities) as

approved by the DP&E (including an approved Out-Of-Hours Work Protocol prepared as part of the Construction Noise and Vibration Management Plan). The protocol must include notification of the relevant Council, local residents and other affected stakeholders and sensitive receivers of the timing and duration at least 48 hours prior to the commencement of the works.

Location		Standard Hours
		$L_{Aeq(15min)}$
NAG1	All privately-owned residences	40
NAG 2	All privately-owned residences	40
NAG 3	All privately-owned residences	40
NAG 4	All privately-owned residences	40
NAG 5	All other privately-owned residences	46
NAG 6	All privately-owned residences	42
NAG 7	All other privately-owned residences	45
NAG 8	All other privately-owned residences	46
NAG 9	All other privately-owned residences	44
NAG 10	All other privately-owned residences	40
NAG 11	All other privately-owned residences	42
All other privately-owned residences		40

Notes: 1. Standard hours, defined as per the ICNG (ie standard = 7am to 6pm Monday to Friday, 8am to 1pm Saturdays.

4.4 Potential Impacts

4.4.1 Noise modelling

A three-dimensional noise model developed for the site as part of the EA in 2010 was updated and used to predict potential noise levels from the proposed five broad construction activities and their proposed locations. These are the realignment of Wybong Road, rail spur and loop construction (split into early works and track laying), the Main Infrastructure Area (MIA) and the 66kV power line realignment.

Typical plant locations for each activity were modelled as generally in the worst case locations within each construction area outlined in Figure 1.1. The modelled equipment and quantity are described in Table 4.3 and represent typical plant used on similar projects. The modelling conservatively assumes all listed plant are operating simultaneously at the quoted emission values. The adopted sound power levels shown are based on EMM's database and it should be noted that these are only indicative. Contractors may choose to use any combination of plant listed.

Table 4.3 Modelled likely construction plant quantity and sound power levels

Plant	Quantity					Sound power level, dBA
	Wybong Rd	Rail (early)	Rail (laying)	MIA	Powerline	
Excavator	1		1		1	107
Truck (Moxie)	1					108
Dozer	1					116
Grader	1					104
Light vehicle	1				1	76
Vibrating Roller	1					116
Scraper		1		1		103
Compactor		1		1		100
Water truck		1		1		96
Grader		1		1		110
Excavator		1		1		105
Front-end loader		1		1		104
Dozer		1		1		108
Backhoe		1		1		111
Road truck		2		4		104
Generator		1		1		101
Light tower		2		3		101
Roller		1		1		106
Crane			1		1	106
Front-end loader			1		1	111
Tamping machine			1			116
Road truck			1		1	102
Welding truck			1			96
Fuel truck				1		96
Total	6	14	6	18	5	

4.4.2 Predicted construction noise levels

Table 4.4 provides results of predicted construction noise levels from the main activities of construction works proposed. This provides a high level assessment against the ICNG NMLs as shown. Where construction noise is predicted to be above NMLs, all feasible and reasonable noise management and mitigation will be applied to minimise noise levels (refer to ICNG definitions). The predictions demonstrate that the NMLs can be achieved at all assessment locations if managed appropriately.

Table 4.4 Predicted construction noise levels dB(A)

Location	Construction activity				
	Wybong Rd	Rail (early)	Rail (laying)	MIA	Powerline
NAG 1	21-46	0-38	0-44	1-38	0-15
NAG 2	16-32	0-20	0-22	0-23	0-11
NAG 3	11-30	0-21	0-26	0-23	0-43
NAG 4	< (11-26)[2]	0-17	0-20	0-18	0-27
NML (NAG 1 to NAG 4)	40	40	40	40	40
NAG 5	<(12-26)[2]	0-16	0-19	0-17	0-26
NML	46	46	46	46	46
NAG 6	<(14-28)[2]	0-19	<(2-24)[2]	<(5-20)[2]	<(11-44)[2]
NML	42	42	42	42	42
NAG 7	11-30	0-21	0-26	1-22	8-49
NML	45	45	45	45	45
NAG 8	15-31	0-22	4-27	5-23	3-40
NML	46	46	46	46	46
NAG 9	<(20-31)[2]	<(7-22)[2]	<(10-27)[2]	<(11-23)[2]	<(5-35)[2]
NML					
NAG 10	17-34	2-35	5-41	3-22	0-12
NML	40	40	40	40	40
NAG 11	<(18-32)[2]	<(2-29)[2]	<(5-35)[2]	<(3-20)[2]	0-10
NML	42	42	42	42	42

Notes: *1. NMLs are the noise management level for standard ICNG hours.*

2. These NAGs are buffered by other NAGs between them and the site, and therefore were not modelled. Hence the predictions quoted are based on the closest receiver in the closer neighbouring NAG and therefore the use of the less than '<' symbol.

3. The predicted noise level range for each NAG is based on worst case representative receivers and include all assessable prevailing meteorology

5. NOISE MANAGEMENT CONTROLS

5.1 Management actions

Table 5.1 summarises the broad management actions for the CNMP, describing how impacts will be managed. The details of monitoring programs are included in the appendices of this CNMP, which will be reviewed and updated as required independent of this document.

Construction activity will be undertaken by several independent contractors. Individual contracting companies will each be required to develop and implement a construction environmental management plan (CEMP) which will be approved by Rio Tinto. The CEMP will include noise management, and will comply with this plan.

General management actions will include:

- Working during daylight hours as defined in the ICNG
- Noise monitoring for new or changed activities
- Altering activities based on noise monitoring results
- Identifying conditions where Noise Management Levels (NMLs) could be exceeded (for example adverse meteorology) and adjusting activities accordingly.

The Rio Tinto Project Manager and HSE Superintendent will have overall authority to direct any on-site contractors and Coal & Allied staff to take noise mitigating actions, up to and including temporary cessation of activity until favourable conditions return.

5.2 Contingency actions

Appendix B – Mount Pleasant Noise Trigger Action Response Plan (noise TARP) summarises the triggers (i.e. early warning systems) and actions needed to prevent exceedance of relevant parameters, where possible.

Where agreement can be obtained from landowners, a trigger of an exceedance of construction noise management levels would not require implementation of the actions listed above.

Table 5.1 Best practice noise management control measures and actions

Parameter	Management action
General project site	• Environmental inductions will ensure that relevant employees and contractors are aware of potential impacts on sensitive receptors from equipment and its operation. • Equipment noise emission levels will be considered in awarding all contracts. Engineering or design controls will be the preferred methods for reducing noise emission levels. • Control activities audible at residence (intrusive noise) to daylight hours. • Consider temporary cessation of work within an area or from a particularly noisy piece of equipment. • Attended noise monitoring and feedback to site to manage levels to below criteria. • 'Quackers' will be used in place of reverse beepers • Noise impacts will be considered during risk analysis and change management procedures
Adverse conditions	• Consider temporary cessation of work within an area or from a particularly noisy piece of equipment. • Modify activities during adverse weather conditions as outlined in the TARP (Appendix B).
Impacts arising through clearing	• Limit clearing works to daylight hours.
Issues raised by residents	• Review of works and possible changes. • Feedback to residents. • Where required, implement monitoring outlined in Appendix A.
Relationship with surrounding communities and privately owned, occupied residences	• Regular communication and updates to local residents. • Notification to local residents prior to unusual activities. • Attended noise monitoring at residential properties in accordance with the Monitoring Programme (Appendix A).

6. MONITORING PROGRAM

Construction noise monitoring at the Project site will be undertaken in accordance with the Construction Noise Monitoring Programme set out in Appendix A.

7. IMPLEMENTATION OF THE CONSTRUCTION NOISE MANAGEMENT PLAN

7.1 Reporting

7.1.1 Internal reporting

Determining exceedances of noise criteria will be undertaken in accordance with the protocol for evaluating compliance (Noise Monitoring Programme), reproduced in Appendix A.

Internal reporting of noise incidents (exceedances and non-compliances of noise criteria) will be undertaken in accordance with Rio Tinto Coal Australia HSEQ14 – Incident and Action Management.

The HSE Superintendent will report any potential or confirmed exceedance / noncompliance to relevant site personnel, including the General Manager, Project Manager and Manager Environment NSW.

Non-compliance events will be investigated. Where additional controls are identified for implementation to reduce the risk of repeated non-compliance, these will be assigned to the relevant accountable person. Actions are tracked to completion.

7.1.2 External Reporting

The HSE Superintendent will report any potential or confirmed exceedance / non-compliance in writing to the Dept. as soon as practicable following receipt of information indicating any such potential or confirmed exceedance / non-compliance. (Where required by the Approvals, non-compliances will also be reported to the EPA as soon as practicable). No further agencies are considered relevant, and thus do not require notification of noise non-compliance events.

Affected residences will be notified in writing in the event of a confirmed non-compliance with noise conditions.

The performance of this NMP will be reviewed annually through the Annual Review process with the final report published to the company website. Details will be provided in these reports on the success of the NMP implemented on the Project site and any areas requiring modification to meet the performance indicators given in Table 4.1.

7.2 Review

The construction NMP will be reviewed and updated prior to any mining activities occurring on site such as the development of the box cut or extraction of coal.

The NMP will be reviewed within three months of the submission of the Annual Review and updated to the satisfaction of the Director-General of the DP&I where necessary.

The NMP will also be reviewed within three months of the completion of an independent environmental audit, any non-compliance of the Approvals' criteria or any modification to the conditions of the Approvals.

Any major amendments to the NMP that affect its application will be undertaken in consultation with the appropriate regulatory authorities and stakeholders. Minor changes such as formatting edits may be made with version control on the Project website.

The NMP may also be revised due to:

- deficiencies being identified;
- introduction of additional mitigation measures or controls;
- results from the monitoring and review programme, including exceedances of criteria;
- recommendations resulting from the monitoring and review programme;
- changing environmental requirements;
- improvements in knowledge or technology becoming available;
- changes in legislation;
- identification of a requirement to alter the NMP
- following a risk assessment; or,
- updating of the Mining Operation Plan.

7.3 Roles and Responsibilities

The Rio Projects Tinto Execution Team will have ultimate accountability for implementation and operation of the NMP. They will ensure that the various contracting companies working on site are aware of their responsibilities. Roles and responsibilities are detailed in Table 8.1.

Table 8.1 Roles and Responsibilities

Project Manager – Construction
• Direction and overall project oversight
Manager – Environmental Services (Hunter Valley Services)
• Technical oversight
Site Environmental Co-ordination/Officer – Mount Pleasant
• Exceedance investigation
• Receipt of community complaints
• Receipt of noise alarms and communicate
• Respond to community complaints
HSE Superintendent – Mount Pleasant
• Management and implementation of noise monitoring programme
• Non-compliance reporting
• Manage maintenance of unattended monitoring network
• Management Plan reviews
• Systems development
Principle contractor / Sub contractors
• Comply with the requirements of this plan when undertaking works
Supervisors / Shift Co-ordinator
• Implement modification of activities following triggers
• Monitor the works and activities as they relate to this plan
All Site Personnel
• Understand and comply with the requirements of this plan
Community Relations
• Communication and updates with community as required

REFERENCES

EMGA Mitchell McLennan, 2010, *Mount Pleasant Project Environmental Assessment*. Report prepared for Coal & Allied.

EPA, 1999, *Industrial Noise Policy*. Environment Protection Authority NSW.

Department of Environment and Climate Change (DECC), 2009, Interim Construction Noise Guideline. Environment Protection Authority NSW.

ERM Mitchell McCotter, 1997, *Mount Pleasant Project Environmental Impact Statement*. Report prepared for Coal & Allied.

Wilkinson Murray, 2009, *Mt Arthur Coal – Consolidated Project Noise and Blasting Impact Assessment*.

Appendix A – Construction Noise Monitoring Programme

A.1 Objective

This Noise Monitoring Programme outlines the noise monitoring required to assess compliance with this Construction Noise Management Plan.

The objectives of minimising noise caused by construction must be recognised by all personnel and contractors.

A.2 Scope

The NSW EPA's ICNG contains the noise management levels for privately owned, occupied residences. Schedule 3, Condition 9 (as modified to suit construction activities in Table 1.2 herein) outlines the requirements of the noise monitoring program.

The noise management levels are replicated in Section 4.3 of this CNMP.

A.3 Standards and policies

The noise monitoring at the Project must be undertaken in accordance with all relevant Australian Standards and EPA policies. At the time of writing this CNMP these include:

- Australian Standard AS 1055: Acoustics – A description and measurement of environmental noise;
- Interim Construction Noise Guideline (ICNG 2009), EPA; and
- NSW Industrial Noise Policy (INP 2000), EPA.

A.4 Noise monitoring programme

Noise monitoring during construction will be targeted for different types of work, therefore the exact locations will vary depending on the location of the work, and its position relative to any sensitive receptors and prevailing weather. Indicative and representative monitoring locations are shown in Figure A.1

The following notes apply to the noise monitoring:

- Monitoring will be targeted for the start of different types of work, for example, the start of earthworks.
- Attended monitoring will be completed for a day, collecting 15-minute samples from representative residences most affected by noise from the prevailing activity.
- There will be a minimum of two short term attended readings on each monitoring occasion. The instrument will include third-octave band centre frequency filters to aid in removing non-Project related noise. The attendant will be a suitably trained person in the practice of compliance noise monitoring. The attendant will document and quantify the activities contribution to noise levels at the monitoring location. Where this is not deemed possible, an adequate data set will be captured to allow determination of whether NMLs are achieved through the observations documented by the attendant. The instrument will meet Australian Standard Type 1 class sound meter specifications.
- If the monitoring exceeds the relevant NMLs, the TARP will be enacted to ensure a consistent approach is taken to mitigation measures.
- If the work changes, for example, different equipment is introduced; further monitoring will be completed to ensure the change has not caused an exceedance of the criteria.
- Weather conditions including wind speed at the microphone position will be quantified and any data collected during wind speeds above 5 m/s at the microphone will be deemed unsuitable. Similarly, 10 m elevation wind speed, wind direction and sigma-theta data will be reported for the duration of monitoring using the Project's automatic weather station located as shown in Figure A.1. The weather data will be used to assess compliance.
- In addition to the noise parameters listed in Table 2.2, the monitoring will also capture background noise levels including $L_{90,15minute}$ and whether this is influenced by construction noise or not.
- Monitoring locations will be subject to landowner agreement.

A permanent, real time noise monitoring system will be installed as construction proceeds, these will be operational prior to the commencement of mining activities and the implementation of the Operational Noise Management Plan.

A.4.1 Compliance issues identified through monitoring

Where noise monitoring identifies an exceedance of the NMLs, the following protocol will be followed.

- quantify the level of the exceedance to the nearest decibel and compare against the relevant NMLs in Chapter 2, and define the exceedance as either within field measurement tolerance (ie 1-2 dB), or above the tolerance level (ie greater than 2 dB);
- document the date and time of the exceedance(s);
- confirm that weather conditions prevailing at the time of the exceedance were applicable according to the consent;
- identify the activities at the time of the exceedance, with the view to isolate the likely item of plant or activity that caused the exceedance;
- notify the affected landowner and tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the development is complying with the relevant NML again; and
- log and report all the details of the exceedance including final resolution outcomes. The report will be provided to the regulator and the landowner within two weeks of the exceedance.

Where an exceedance occurs during attended monitoring, the appropriate construction works manager will be contacted to discuss immediate noise control options. Following any changes to the operation, another 15 minute measurement will be undertaken at the location of the exceedance. All results will be included for reporting purposes.

A.4.2 Complaints driven noise monitoring

Noise complaints will be received through a Mount Pleasant Project Contact Line, maintained by Coal & Allied 24 hours a day, 365 days a year. All complaints lodged with the Contact Line will be investigated and responded to promptly.

Should a complaint be received due to noise generated from construction related activities, the TARP as outlined in Appendix B will be enacted.

Where complaints due to construction noise require additional monitoring this will be undertaken at a location representative of the complainant's residence as described in Table A.1.

Table A.1 Construction complaints driven noise monitoring

Location	Type	Period	Duration	Frequency
Complainant's location	Attended short term	Day/Evening/Night	1 hour in each period (where relevant)	Upon request. Further monitoring will be undertaken as required on a case by case basis.

A.5 Complaints Management

The Environmental Services department will maintain a centralised location to record communication details of relevant external stakeholders. Complaints will be handled in accordance with CNA-09-EWI-SITE-003 Environmental Complaints Line work instruction, which is an internal document regularly updated.

The Complaints Procedure will utilise the Community Complaints Hotline, 1800 656 892 that will be regularly advertised in the Muswellbrook Chronicle. The Complaints Hotline will be in operation 24 hours per day, seven days a week. Complaints will be recorded and investigated by project staff. All other complaints lodged via letter, in person or by fax, will also be recorded and investigated by project staff.

Where a noise complaint is received, the following protocol will be followed:

- contact the appropriate construction works manager to confirm that noise generating construction activity is occurring and determine immediate actions which can be taken, for example:

  - the location and elevation of the construction activities will be reviewed and where possible equipment will be relocated to lower elevation until more suitable conditions return (eg changes in prevailing weather); and/or
  - review of feasible and reasonable mitigation; and/or
  - temporary cessation of work within an area or from a particularly noisy piece of equipment; and
- follow up the complainant with a plan to resolve the issue:
  - this may include further investigations including noise monitoring if deemed necessary; and/or
  - where an exceedance is identified, follow the protocol described earlier for regular monitoring.

A.6 Review and reporting

A.6.1 Review

The construction noise monitoring programme will be reviewed on an as required basis, at a frequency not exceeding 1 year. If any major modifications to the CNMP are required as a consequence of the review, the relevant authority at the time will be consulted and the revised CNMP will be submitted in accordance with Development Consent (DA 92/97).

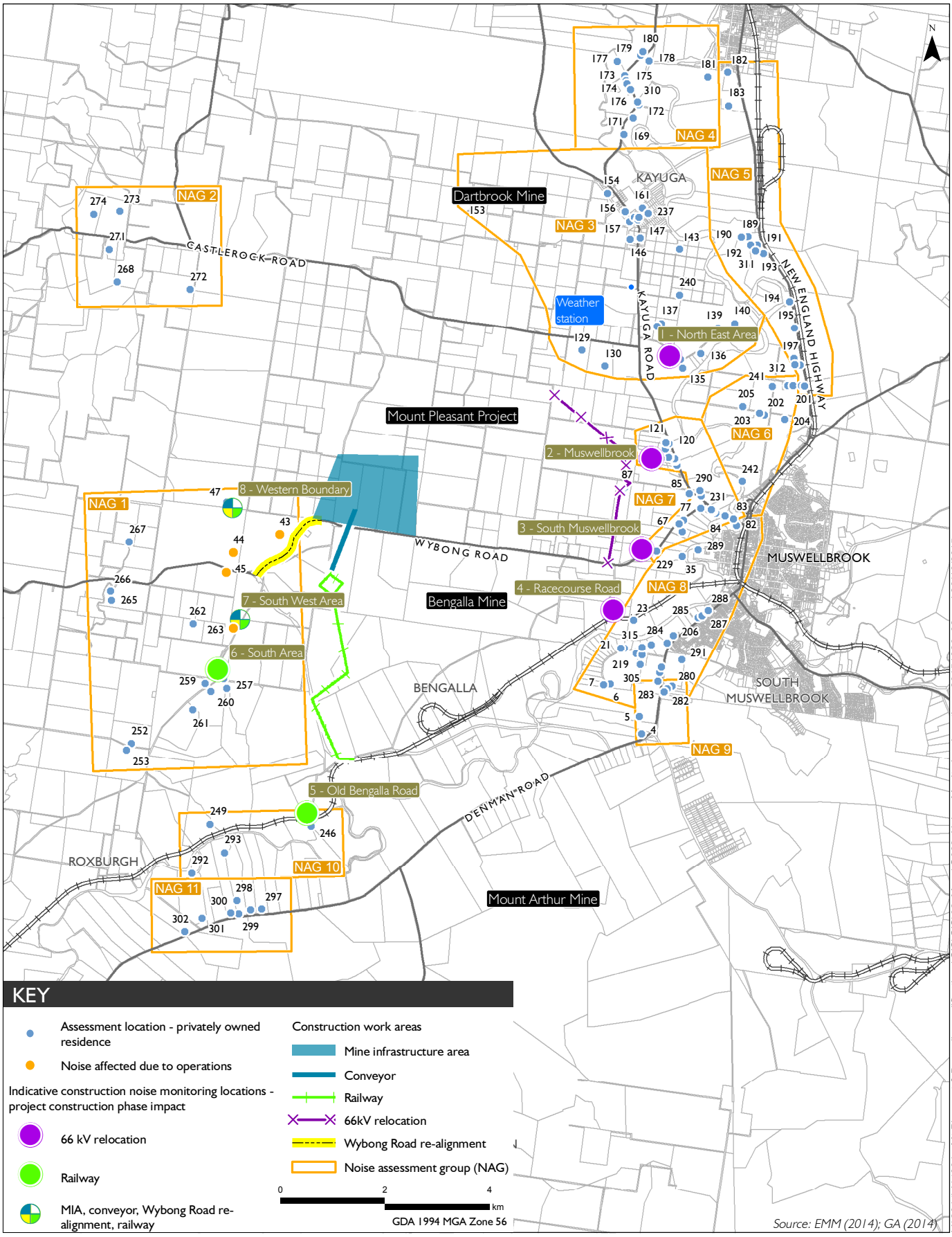
The monitoring outlined above will be reviewed 6 monthly and reported annually in the AEMR and include a review of the attended short term data. The reporting will include an analysis of any identified trends in the data over a 12 month period (e.g. seasonal influences etc.).

A.6.2 Non Compliance reporting

In the event that the monitoring results identify an exceedance of the NMLs at any monitoring locations, Coal & Allied will, within 24 hours of the exceedance, report the incident to the Department of Planning and Environment (DP&E) and EPA and will initiate investigations as to the cause. Within seven calendar days of providing this notification, Coal & Allied will provide the DP&E and the EPA with a written report:

- identifying the date, time and scale of the exceedance;
- identifying the cause or likely cause of the exceedance;
- describing the actions taken in relation to the exceedance; and
- identifying any measures being undertaken to minimise the risk of future exceedance of noise criteria.

In addition, the affected landowner/resident will be notified of the exceedance, provided with an initial explanation as to the cause and a follow-up report. In the AEMR for the mine, Coal & Allied will make specific reference to any exceedance in noise criteria, and actions taken to minimise the risk of future exceedance. Non-compliant results will also be reported in the annual return for the Project's environment protection licence.



Indicitave noise monitoring locations

Mount Pleasant Project
Construction Noise Management Plan
Figure A1

Appendix B – Trigger Action Response Plan

Noise Management TRIGGER LEVEL AND ACTION RESPONSE PLAN (TARP)				
Parameter	**Normal State**	**Level 1**	**Level 2**	**Level 3**
Meteorological conditions	Calm weather conditions: • No detectable wind (eg <0.5m/s) • Sunny • Generally favourable wind direction (e.g. NE & SW)	Presence of prevailing meteorological conditions: • Detectable wind • Overcast • Adverse wind direction (e.g. NW & SE)	N/A	N/A
Risk to Sensitive receptors	Sensitive receptor is upwind of construction works	Sensitive receptor is downwind of construction works	N/A	N/A
Attended Noise Monitoring results	Well below Noise Management Levels (NML)	Recording noise within range of NML	Exceedance of NML (one off)	Exceedance of NML (repeated)
Community (including regulator)	• No community concerns • No non-compliances	• Informal community concern / comment	• Formal community complaint (one off) • Non-compliance (one off)	• Formal community complaint (repeated) • Non-compliances (repeated)
Construction activities / equipment types	No high risk noise activities or equipment	• High risk noise activities (e.g. material handling, dozing, dumping, scraping) • High risk work locations close to sensitive receptors (close proximity to residence or mining lease boundary) • High risk noise equipment (e.g. dozers, trucks, graders, excavators.)	N/A	N/A

Noise Management TRIGGER LEVEL AND ACTION RESPONSE PLAN (TARP)				
	Normal State	**Level 1 Response**	**Level 2 Response**	**Level 3 Response**
	Day to day active management	*Immediate response – take proactive measures to prevent noise causing a non-compliance or community concern*	*Immediate response – reactive measures to mitigate an actual non-compliance or community concern*	*Longer term response –actions to address an ongoing / repeated source of non-compliance or community concern*
General Manager Construction	No response / action.	No response / action.	• Notify the relevant government department of exceedances against relevant NML.	No response / action.
Construction Manager / Project Manager	No response / action.	No response / action.	• Consider the use of noise mitigation options; • Relocate, reschedule or modify work method for activities generating noise; • Investigate current activities and, in the absence of effective controls, consider the temporary cessation of activities until favourable weather conditions return or adequate controls are implemented	Consider accessibility to additional noise suppression technology for mobile plant or use of additional mitigation.
Supervisor	Check and monitor weather forecast for wind speed, wind direction and cloud cover.	• Minimise use of high risk noise equipment; • Minimise use of plant and equipment in exposed or elevated areas; • Perform regular inspections on plant and equipment and rectify maintenance issues	• Act as directed by the Construction Manager or Project Manager; • Log an incident report.	Act as directed by the Manager Construction.
Advisor Environment	• Regularly review monitoring data; • Monitor meteorological station and daily / weekly weather forecasts.	• Notify the Manager Construction and Supervisors that attended noise monitoring results indicated warning levels; • Advise Supervisors and the Construction Manager regarding noise attenuation controls.	• Notify Manager Construction and Supervisors that NML have been exceeded; • Assist Manager Construction with investigation of non-conformance; • Review monitoring data and interpret against site activities; • Coordinate the community complaints process.	Prepare communication for government bodies as appropriate.

Noise Management TRIGGER LEVEL AND ACTION RESPONSE PLAN (TARP)				
	Normal State	**Level 1 Response**	**Level 2 Response**	**Level 3 Response**
	Day to day active management	*Immediate response – take proactive measures to prevent noise causing a non-compliance or community concern*	*Immediate response – reactive measures to mitigate an actual non-compliance or community concern*	*Longer term response –actions to address an ongoing / repeated source of non-compliance or community concern*
Specialist Community Relations	Inform potentially impacted sensitive receptors of; • the nature of the work to be carried out; • the duration of the work to be carried out; • the expected noise levels.	Inform potentially impacted sensitive receptors of; • the nature of the work to be carried out; • the duration of the work to be carried out; • the expected noise levels.	Provide support for response to enquiries and community concerns	No response / action.

Appendix C – Department of Planning and Environment (DP&E) Approval Letter

NSW GOVERNMENT | Planning & Environment

Contact: Scott Brooks
Phone: 6575 3401
Fax: 6575 3415
Email: scott.brooks@planning.nsw.gv.au
Our ref: DA 92/97

David Patterson
Senior Advisor – Health, Safety and Environment
Rio Tinto
123 Albert St
BRISBANE Qld 4000

Dear David,

Mt Pleasant Mine Project – Approval of Construction Noise Management Plan

Thank you for forwarding the revised Construction Noise Management Plan, as amended on the 2nd November 2015, for review. It is required by Condition 9 Schedule 3 of the Mt Pleasant Approval DA 92/97. Following submission of the plan in 2012, it was re-reviewed in 2015.

The Department has reviewed the plan provided in 2015 and found it generally satisfies the requirements of the Approval. I would like to advise you that the Secretary has approved the Plan.

There are no earlier versions of this Plan This Plan comes into force on the 7th December 2015 and remains in force until replaced by any future updated approved Plans, or the "Construction works" are completed.

Could you please forward finalised copies of the above plan (preferably in PDF format with a copy of this approval letter appended) for the Department's records by the end of December 2015.

If you require further information or clarification in this matter please contact Scott Brooks on 6575 3401 or by email to scott.brooks@planning.nsw.gov.au.

Yours sincerely

Scott Brooks
Investigations (Lead) Compliance
2 - 12 - 2015
As Nominee for the Secretary, Department of Planning & Environment

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