

# Noise Monitoring Assessment

Northparkes Mines

Quarter 3, 2023



# *Document Information*

## Noise Monitoring Assessment

### Northparkes Mines

Quarter 3, 2023

**Prepared for:** CMOC Mining Services Pty Limited

PO Box 995

Parkes NSW 2870



**Prepared by:** Muller Acoustic Consulting Pty Ltd

PO Box 678, Kotara NSW 2289

ABN: 36 602 225 132

P: +61 2 4920 1833

[www.mulleracoustic.com](http://www.mulleracoustic.com)

Document ID	Date	Prepared By	Signed	Reviewed By	Signed
MAC190810RP18	20 September 2023	Kristian Allen		Rod Linnett	

Field Officer: Kristian Allen

#### DISCLAIMER

All documents produced by Muller Acoustic Consulting Pty Ltd (MAC) are prepared for a particular client's requirements and are based on a specific scope, circumstances and limitations derived between MAC and the client. Information and/or report(s) prepared by MAC may not be suitable for uses other than the original intended objective. No parties other than the client should use or reproduce any information and/or report(s) without obtaining permission from MAC.

Any information and/or documents prepared by MAC is not to be reproduced, presented, or reviewed except in full.

## CONTENTS

1	INTRODUCTION.....	5
2	NOISE CRITERIA.....	7
2.1	OPERATIONAL NOISE CRITERIA.....	7
3	ASSESSMENT METHODOLOGY .....	9
3.1	OPERATIONAL NOISE MEASUREMENT METHODOLOGY.....	9
4	RESULTS.....	11
4.1	OPERATIONAL NOISE RESULTS .....	11
4.2	ROAD NOISE RESULTS.....	16
4.3	UNATTENDED NOISE RESULTS .....	17
5	DISCUSSION.....	19
5.1	OPERATIONAL NOISE DISCUSSION.....	19
5.1.1	DISCUSSION OF RESULTS – LOCATION NM1, HUBBERSTONE .....	19
5.1.2	DISCUSSION OF RESULTS – LOCATION NM2, LONE PINE .....	19
5.1.3	DISCUSSION OF RESULTS – LOCATION NM3, MILPOSE.....	20
5.1.4	DISCUSSION OF RESULTS – LOCATION NM4, HILLVIEW.....	20
5.1.5	DISCUSSION OF RESULTS – LOCATION NM5, ADAVALE.....	20
6	CONCLUSION.....	21
APPENDIX A – GLOSSARY OF TERMS		
APPENDIX B – REGULATORY NOISE LIMITS		

*This page has been intentionally left blank*

# 1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by CMOC Mining Services Pty Limited (CMOC) to complete a Noise Monitoring Assessment (NMA) for Northparkes Mines (Northparkes), 27km Northwest of Parkes, NSW. The NMA has been completed to quantify operational noise emissions as per Conditions 1 to 5 of Schedule 3 of the Project Approval Conditions (PA11\_110060) and the Northparkes Noise Management Plan (NMP, 2019).

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA) 2017, Noise Policy for Industry (NPI);
- NSW Environment Protection Authority (EPA's), Approved Methods for the measurement and analysis of environmental noise in NSW, 2022; and
- Standards Australia AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

*This page has been intentionally left blank*

## 2 Noise Criteria

### 2.1 Operational Noise Criteria

This assessment has adopted criteria as per Conditions 1 to 5 of Schedule 3 of the Development Consent Conditions (PA11\_110060) and the Northparkes Noise Management Plan (Northparkes, 2019) (see **Appendix B**) and is summarised below in **Table 1**.

Table 1 Noise Criteria				
Location	Day	Evening	Night	
	dB LAeq(15min)	dB LAeq(15min)	dB LAeq(15min)	dB LA1(1min)
All privately-owned land	35	35	35	45

Additionally, the conditions state:

*Operational Noise generated by the project will be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy.*

*These limits apply under all meteorological conditions except the following:*

- *during periods of rain or hail;*
- *average wind speeds at microphone height exceeds 5 m/s;*
- *wind speeds greater than 3 m/s at 10 metres above ground level; or*
- *temperature inversion conditions of up to 3 °C/100m or alternatively a stability class of G.*

*Except for wind speed at the microphone height, the data to be used for determining meteorological conditions will be that recorded by the meteorological station located onsite. Operational noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.*

*These limits do not apply if NPM have an agreement with the relevant owner/s of the residences or land to generate higher noise levels, and NPM has advised the Department in writing of the terms of the agreement.*

*This page has been intentionally left blank*



### 3 Assessment Methodology

All attended noise monitoring surveys for this assessment were conducted in general accordance with the procedures described in Standards Australia AS 1055:2018, “Acoustics - Description and Measurement of Environmental Noise” and the NMP.

The acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed  $\pm 0.5$  dBA.

#### 3.1 Operational Noise Measurement Methodology

The locality surrounding the mine is primarily rural/residential. In accordance with the NMP, five representative receivers were selected for this assessment and are presented in **Table 2**.

**Table 2 Noise Monitoring Locations**

ID	Location	Coordinate Locations, MGA55	
		Easting (m)	Northing (m)
NM1	Hubberstone	600687	6360754
NM2	Lone Pine	593669	6358933
NM3	Milpose	594827	6352971
NM4	Hillview	602993	6353469
NM5	Adavale	593568	6356920

Note: NM5 is an additional monitoring initiative by NPM.

Monitoring locations with respect to the mine site are shown visually in **Figure 1**.

Measurements were carried out using a Svantek Type 1, 971 noise analyser from Tuesday 15 August 2023 to Wednesday 16 August 2023. The monitoring regime consisted of three 15-minute measurements during the daytime, evening and night-time periods at each monitoring location. Throughout each survey, the operator quantified the contribution of significant noise sources where possible.

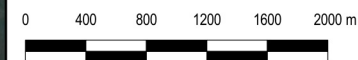




FIGURE 1  
Locality Plan  
MAC190810  
Northparkes Mine

**KEY**

● Monitoring Locations





## 4 Results

### 4.1 Operational Noise Results

The monitoring assessment results for each location are presented in **Table 3** to **Table 7**. Each table contains results for each of the three 15-minute measurements for daytime, evening and night-time periods for each location including wind direction, wind speed and atmospheric stability class.

**Table 3 Operator-Attended Noise Survey Results – Location NM1, Hubberstone**

Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90		
Day					
16:51 16/08/2023	56	37	19	WD: N WS: 0.5m/s Stab Class: C	Traffic 20-56
17:06 16/08/2023	70	44	19		Birds 20-70
17:21 16/08/2023	68	47	24		Livestock 20-38
					Residential Nosie 25-63
					Site Inaudible
Site L <sub>A</sub> eq(15min) Contribution					<30
Evening					
21:12 15/08/2023	51	38	26	WD: SE WS: 0.1m/s Stab Class: F	Livestock 20-55
21:27 15/08/2023	55	37	25		Traffic 20-51
21:42 15/08/2023	52	39	24		Aircraft 25-38
					NPM – Production Hum <20-28 (Just audible throughout)
Site L <sub>A</sub> eq(15min) Contribution					<30
Night					
22:10 15/08/2023	43	30	27	WD: SE WS: 0.1m/s Stab Class: E	Livestock 25-49
22:25 15/08/2023	48	31	29		Aircraft 30-45
22:40 15/08/2023	49	33	28		NPM - Production 25-32
					(Just audible to audible throughout)
Site L <sub>A</sub> eq(15min) Contribution					<30
Site L <sub>A</sub> 1(1min) Contribution					<45

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

**Table 4 Operator-Attended Noise Survey Results – Location NM2, Lone Pine**

Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA	
	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90			
Day						
15:49 16/08/2023	71	49	27	WD: NW WS: 1.0m/s Stab Class: A	Wind In Trees 25-42 Birds 25-80	
16:04 16/08/2023	78	56	33		Aircraft 30-61 Traffic 30-68	
16:19 16/08/2023	80	53	29		Residential Noise 25-53 Site Inaudible	
Site L <sub>A</sub> eq(15min) Contribution					<30	
Evening						
20:11 15/08/2023	53	21	16	WD: SE WS: 0.1m/s Stab Class: F	Birds 15-25 Aircraft 20-45 MAC Operator 53 Site Inaudible	
20:26 15/08/2023	35	17	15			
20:41 15/08/2023	45	24	13			
Site L <sub>A</sub> eq(15min) Contribution					<30	
Night						
02:01 16/08/2023	37	21	19	WD: SE WS: 0.1m/s Stab Class: E	Wildlife 20-28 MAC Operator 48 NPM – Site Hum 17-23 (Just audible throughout)	
02:16 16/08/2023	48	23	21			
02:31 16/08/2023	48	23	21			
Site L <sub>A</sub> eq(15min) Contribution					<30	
Site L <sub>A</sub> 1(1min) Contribution					<45	

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

**Table 5 Operator-Attended Noise Survey Results – Location NM3, Milpose**

Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90		
Day					
13:57 16/08/2023	71	44	23	WD: NE WS: 1.5m/s Stab Class: A	Birds 25-41 Wind in Trees 20-51
14:12 16/08/2023	51	34	23		Traffic 25-37 Residential Noise 25-77
14:27 16/08/2023	77	47	23		NPM – Site Hum 19-23 (Barely audible throughout)
Site L <sub>A</sub> eq(15min) Contribution					<30
Evening					
20:11 16/08/2023	53	34	15	WD: N WS: 0.1m/s Stab Class: E	Dogs Barking 20-34 Residential Noise 20-53
20:26 16/08/2023	42	23	15		Aircraft 25-41 Site Inaudible
20:41 16/08/2023	45	29	15		
Site L <sub>A</sub> eq(15min) Contribution					<30
Night					
00:07 16/08/2023	48	23	21	WD: SE WS: 0.1m/s Stab Class: F	MAC Operator 48 NPM – Exhaust Fan 18-28 (Just audible to audible throughout)
00:22 16/08/2023	36	24	22		
00:37 16/08/2023	36	24	21		
Site L <sub>A</sub> eq(15min) Contribution					<30
Site L <sub>A</sub> 1(1min) Contribution				<45	

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

**Table 6 Operator-Attended Noise Survey Results – Location NM4, Hillview**

Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90		
Day					
12:44 16/08/2023	58	45	34	WD: NE WS: 1.0m/s Stab Class: A	Traffic 30-56 Birds 25-58 Wind in Trees 27-48 Residential Noise 35-66
12:59 16/08/2023	53	42	35		Site Inaudible
13:14 16/08/2023	66	42	31		
Site L <sub>A</sub> eq(15min) Contribution			<30		
Evening					
18:00 16/08/2023	59	48	39	WD: N WS: <0.5m/s Stab Class: F	Agricultural Noise 36-51 Traffic 31-59 Birds 35-48 Residential Noise 35-73
18:15 16/08/2023	73	49	40		Site Inaudible
18:30 16/08/2023	59	47	37		
Site L <sub>A</sub> eq(15min) Contribution			<30		
Night					
23:07 15/08/2023	60	41	16	WD: SE WS: 0.1m/s Stab Class: F	Traffic 30-60 Dogs Barking 20-39 Site Inaudible
23:22 15/08/2023	48	27	14		
23:37 15/08/2023	48	23	13		
Site L <sub>A</sub> eq(15min) Contribution			<30		
Site L <sub>A</sub> 1(1min) Contribution			<45		

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

**Table 7 Operator-Attended Noise Survey Results – Location NM5, Adavale**

Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L <sub>A</sub> max	L <sub>A</sub> eq	L <sub>A</sub> 90		
Day					
14:53 16/08/2023	61	38	29	WD: NW WS: 1.5m/s Stab Class: A	Wind In Trees 20-61
15:08 16/08/2023	55	32	26		Birds 20-47
15:23 16/08/2023	45	34	25		Site Inaudible
Site L <sub>A</sub> eq(15min) Contribution					<30
Evening					
19:16 16/08/2023	50	17	13	WD: N WS: 0.1m/s Stab Class: E	MAC Operator 50
19:31 16/08/2023	40	15	13		Site Inaudible
19:46 16/08/2023	47	18	13		
Site L <sub>A</sub> eq(15min) Contribution					<30
Night					
01:06 16/08/2023	33	26	24	WD: SE WS: 0.1m/s Stab Class: F	Wildlife 20-33
01:21 16/08/2023	49	25	24		MAC Operator 49
01:36 16/08/2023	46	26	24		NPM – Exhaust Fan 22-28 (Audible throughout)
Site L <sub>A</sub> eq(15min) Contribution					<30
Site L <sub>A</sub> 1(1min) Contribution					<45

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

## 4.2 Road Noise Results

As an additional initiative to operational attended noise monitoring, Northparkes include two 1-hour attended noise monitoring measurements at the Hillview monitoring location (NM4) to quantify Northparkes road noise levels associated concentrate trucks movements (where present) and shift change traffic flows. **Table 8** presents the results of the road traffic noise measurements with a comparison against the road noise criteria outlined in the NMP which is consistent with the NSW Road Noise Policy (DECCW, 2011).

**Table 8 Operator-Attended Road Noise Survey Results – Location NM4, Hillview**

Time(hrs)/Date Duration 1 hour	Measured Noise Level dB LAeq(1hr)	Meteorology	Criteria dB LAeq(1hr)	Description and SPL dBA
12:44 16/08/2023	42	WD: NE WS: 1.0m/s Stab Class: A	55	Traffic 30-56
				Birds 25-58
				Wind in Trees 27-48
				Residential Noise 35-66
				NPM Concentrate Truck (offsite) 30-54 (2 Passes) (Approx. 20 vehicles Enter/Exit NPM Site)
18:00 16/08/2023	48	WD: N WS: <0.5m/s Stab Class: F	55	Agricultural Noise 36-51
				Traffic 31-59
				Birds 35-48
				Residential Noise 35-73
				NPM Concentrate Truck (offsite) 30-53 (1 Pass) (Approx. 79 vehicles Enter/Exit NPM Site)

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Results of the road noise survey identify that the LAeq(1hr) noise contribution at NM4 is <50dBA for both measurements and hence, satisfy the relevant road noise criteria as outlined in the NMP and the RNP. Observations from MAC operator identified concentrate truck movements during the day, evening and night measurement periods, at a maximum of two movements per hour, which is in line with previous NPM quarterly measurements.



### 4.3 Unattended Noise Results

Unattended noise monitors are installed at four attended monitoring locations. Data from the unattended monitors provide a real time method for monitoring noise events, although it is noted that the results include all noise sources (ie project noise and extraneous noise sources). The results are used as a management tool for the project site.

Metrics for Quarter 3, ending September 2023 for all unattended monitoring locations were unavailable due to technical issues.

*This page has been intentionally left blank*

## 5 Discussion

### 5.1 Operational Noise Discussion

#### 5.1.1 Discussion of Results – Location NM1, Hubberstone.

Attended measurement results for monitoring conducted at NM1, Hubberstone, for the quarter ending September 2023 noise survey, identified that NPM was inaudible during day measurements and generally just audible throughout evening, and night-time measurements.

Contributions from NPM were characterised as general processing hum. External noise sources including birds, traffic, livestock, aircraft, and residential noise, were audible during the monitoring period.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM1.

#### 5.1.2 Discussion of Results – Location NM2, Lone Pine.

Attended measurement results for monitoring conducted at NM2, Lone Pine, for the quarter ending September 2023 noise survey, identified that NPM was inaudible during day and evening measurements and just audible throughout night-time measurements.

Contributions from NPM were characterised as general site hum and exhaust fan noise. External noise sources including, traffic, birds, wind in trees, aircraft, wildlife, residential noise, and MAC operator noise were all audible during the monitoring periods.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM2.

### 5.1.3 Discussion of Results – Location NM3, Milpose.

Attended measurement results for monitoring conducted at NM3, Milpose, for the quarter ending September 2023 noise survey, identified that NPM was generally just audible during the day and night measurements and inaudible throughout evening measurements.

Contributions from NPM were characterised as general site hum and exhaust fan noise. External noise sources including traffic, birds, dogs barking, wildlife, wind in trees, MAC operator noise and residential noise were all audible during the monitoring periods.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM3.

### 5.1.4 Discussion of Results – Location NM4, Hillview.

Attended measurement results for monitoring conducted at NM4, Hillview, for the quarter ending September 2023 noise survey, identified that NPM inaudible during day, evening measurements and night-time measurements.

External noise sources including traffic, birds, dogs barking, wind in trees, agricultural and residential noise were all audible during the monitoring period.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM4.

### 5.1.5 Discussion of Results – Location NM5, Adavale.

Attended measurement results for additional monitoring conducted at NM5, Adavale, for the quarter ending September 2023 noise survey, indicated that NPM was inaudible during the day and evening measurements and generally audible throughout night-time measurements.

Contributions from NPM were characterised as general site hum and exhaust fan noise. External noise sources including wind in trees, birds, wildlife, and MAC operator noise were all audible during the monitoring period.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM5.

## 6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) on behalf of CMOC Mining Services Pty Limited (CMOC). The assessment was completed to quantify site noise emissions against relevant noise criteria pertaining to NPM operations in accordance with Conditions 1 to 5 of Schedule 3 of the Development Consent Conditions (PA11\_110060) and the Northparkes, Noise Management Plan (NMP, 2019) for Quarter 3, ending September 2023.

Road noise monitoring identified that vehicle movements associated with shift change generated noise levels below the relevant road noise criteria specified in the RNP and NMP.

Attended monitoring has identified that operational emissions generated by NPM comply with relevant noise criteria at all monitoring locations for all assessment periods. Furthermore, project related noise emissions were generally just audible at four monitoring locations during day, evening, and night periods. NPM noise sources such as production, exhaust fan and general site hum were audible and extraneous non-mining sources such as wind in trees, traffic, birds, dogs barking, aircrafts, insects, wildlife, residential noise, and agricultural noise were audible during the monitoring period.

*This page has been intentionally left blank*

# Appendix A – Glossary of Terms

Table A1 provides a number of technical terms have been used in this report.

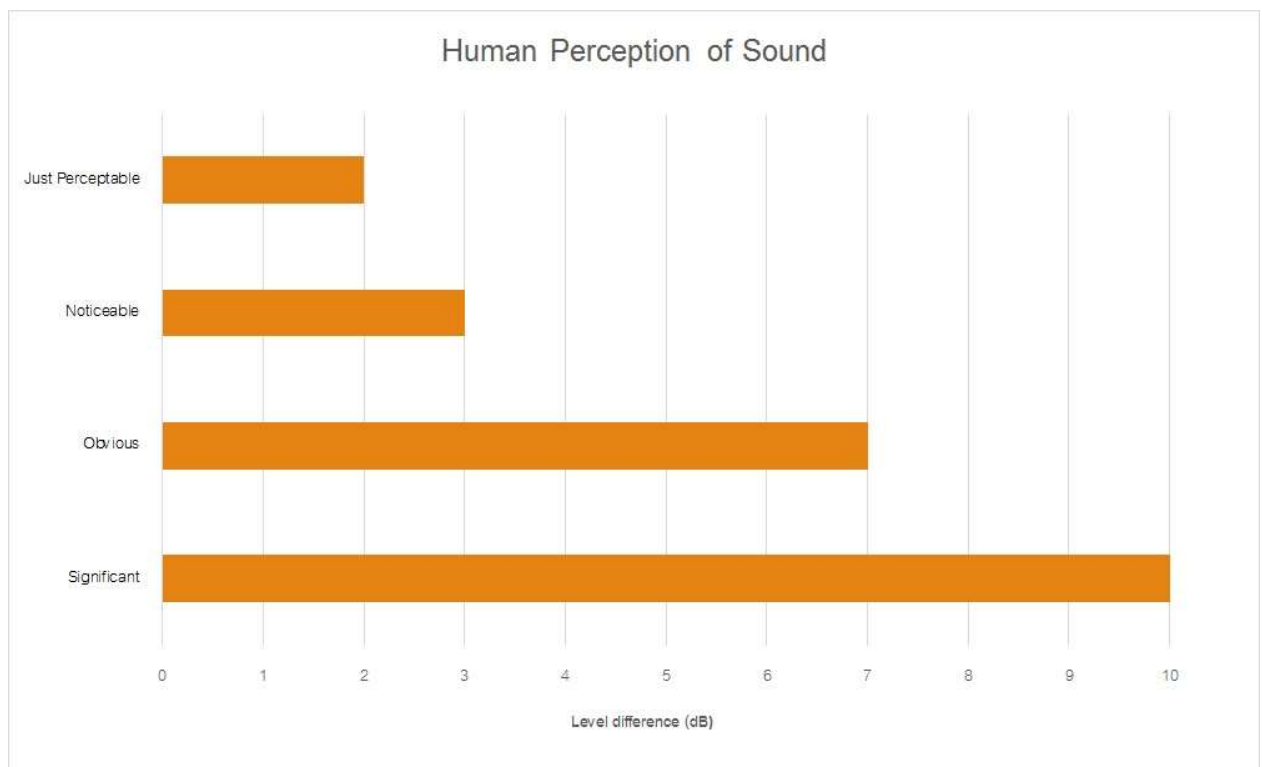
Table A1 Glossary of Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured LA90 statistical noise levels.
Adverse Weather	Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter).
Ambient Noise	The noise associated with a given environment. Typically a composite of sounds from many sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.
dBA	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.
dB(Z), dB(L)	Decibels Linear or decibels Z-weighted.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
LA90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
LAeq	The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.
LAmaz	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure 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.
Sound power level (LW)	<p>This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment. Or a measure of the energy emitted from a source as sound and is given by :</p> $= 10 \cdot \log_{10} (W/W_0)$ <p>Where : W is the sound power in watts and W<sub>0</sub> is the sound reference power at 10-12 watts.</p>



Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA	
Source	Typical Sound Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



*This page has been intentionally left blank*

## Appendix B – Regulatory Noise Limits

Doc ID No. 3-3718	Version No. No.14	Owner PSE Manager	Next Review Date 29 Feb 20
----------------------	----------------------	----------------------	-------------------------------

**Table 1** NSW Development Consent Conditions – Schedule 3

Condition						Related Section in NMP
Noise Criteria						
1. The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land.						Section 5.4.1
Table 2 Noise impact assessment criteria dB(A)						
Property		Day	Evening	Night		
		L <sub>Aeq</sub> (15min)	L <sub>Aeq</sub> (15min)	L <sub>Aeq</sub> (15min)	L <sub>A1</sub> (1min)	
All land	privately-owned	35	35	35	45	
<p><b>Note:</b> To interpret the land referred to in Table 1, see the applicable figures in Appendix 4.</p> <p>Operational noise generated by the project is to be measured in accordance with the relevant requirements of the <i>NSW Industrial Noise Policy</i>. Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.</p>						
2. The Proponent shall only carry out the construction works associated with the upgrade of McClintocks Lane, the construction of the McClintocks Lane access road and the upgrade of the intersection of McClintocks Lane and Bogan Road during the day.						Section 5.4.1
3. During construction of the works referred to in condition 2 of schedule 3, the noise criteria in Table 1 do not apply to the residences located in the vicinity of the works. The Proponent shall implement all reasonable and feasible measures to minimise construction noise impacts on the residences in the vicinity of these works.						Section 6
4. The Proponent shall:						Section 6 & Section 7
a) implement best management practice to minimise the construction, operational and road noise of the project;						
b) operate a comprehensive noise management system that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval;						
c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply (see Appendix 5); and						
d) carry out regular monitoring to determine whether the project is complying with the relevant conditions of this approval,						
To the satisfaction of the Secretary.						
5. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:						Section 6 & Section 7
a) be prepared in consultation with the EPA, and submitted to the Secretary prior to the commencement of construction;						
b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval;						
c) describe the proposed noise management system in detail; and						
d) include a monitoring program that:						
• evaluates and reports on:						Section 7
– the effectiveness of the noise management system;						
– compliance against the noise criteria in this approval; and						
– compliance against the noise operating conditions;						
• includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this approval and trigger for further attended monitoring); and						Section 7.1
• defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents						

Muller Acoustic Consulting Pty Ltd

PO Box 678, Kotara NSW 2289

ABN: 36 602 225 132

Ph: +61 2 4920 1833

[www.mulleracoustic.com](http://www.mulleracoustic.com)

