Austar Coal Mine

Environmental Noise Monitoring
Quarter 4 2010

Prepared for
Austar Coal Mine Pty Ltd

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Austar Coal Mine Quarter 4, 2010
Environmental Noise Monitoring

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1 INTRODUCTION

1.1 BACKGROUND

Global Acoustics was engaged by Austar Coal Mine to conduct a noise survey around Austar mine, an underground coal mine located at Paxton, NSW.

Environmental noise monitoring described in this report was undertaken during the day of 3 December 2010 and the evening and night of 7/8 December 2010. Figure 1 shows monitoring locations.

The purpose of the survey is to quantify and describe the acoustic environment around the site and compare results with specified limits. As this is an underground mine, there are a limited number of noise generating items at the site. The coal handling and preparation plant (CHPP) and surface facilities (including a dozer, conveyors and train movements) are the primary sources of noise. More recently, a nitrogen plant, compressor and ventilation fan has been established and form part of the Kalingo Infrastructure Area (KIA). The KIA has separate noise criteria to the other mining operations such as the CHPP and therefore has been assessed separately in this report.

1.2 MONITORING LOCATIONS

There were a total of five (5) monitoring locations during this survey. Table 1.1 details the monitoring locations in proximity to the Austar CHPP. Chapter 2 provides detailed consent information.

Table 1.1 MONITORING LOCATIONS - CHPP

Descriptor	Monitoring Location
A	Pelton Village
B	South of Bimbadeen Road, Mt View
C	Bimbadeen Road, Mt View

Table 1.2 details the nearest residences to the KIA. Due to difficulties accessing receptor locations, direct measurement of noise is not possible. Monitoring is therefore undertaken at a reference point close to the KIA and results modelled to the nearest residential locations to determine compliance. This methodology is explained further in Section 3.2.

Table 1.2 MONITORING LOCATIONS - KIA

Descriptor	Reference Point(s)	Nearest Residential Location
D	Eastern boundary of KIA	Nash Lane, Quorrobolong
E	Western boundary of KIA and Kalingo Dam	Glennie Street, Ellalong

Note: 1. The eastern boundary of the KIA is a reference point for both location D and E. Kalingo Dam is a reference point for location E only.

1.3 TERMINOLOGY

Some definitions of terminology, which may be used in this report, are provided in Table 1.3.

Table 1.3 TERMINOLOGY

Descriptor	Definition
L_A	The A-weighted root mean squared (RMS) noise level at any instant
L_{A10}	The noise level which is exceeded for 10 per cent of the time, which is approximately the average of the maximum noise levels
L_{A90}	The level exceeded for 90 per cent of the time, which is approximately the average of the minimum noise levels. The L_{A90} level is often referred to as the "background" noise level and is commonly used to determine noise criteria for assessment purposes
L_{Aeq}	The average noise energy during a measurement period
L_{pk}	The unweighted peak noise level at any instant
dB(A)	Noise level measurement units are decibels (dB). The "A" weighting scale is used to describe human response to noise
SPL	Sound pressure level (SPL), fluctuations in pressure measured as 10 times a logarithmic scale, the reference pressure being 20 micropascals
SEL	Sound exposure level (SEL), the A-weighted noise energy during a measurement period normalised to one second
Hertz (Hz)	Cycles per second, the frequency of fluctuations in pressure, sound is usually a combination of many frequencies together
Day	This is the period 7:00am to 6:00pm
Evening	This is the period 6:00pm to 10:00pm
Night	The period 10:00pm to 7:00am

1.4 LOG OF OPERATIONS

The log of operations provided by Austar mine confirms normal operations were in progress during the survey period. Operations in progress at the CHPP during the day survey are provided in Table 1.4.

Table 1.4 OPERATIONAL LOG – 3 DECEMBER 2010, 09:00 – 18:00

Equipment Type	Equipment Numbers	Location/Status
CHPP	-	Operating up to 17:00
Overland	-	-
Train	-	-
Dozer	1	Pushing up for train

Operations in progress at the CHPP during the evening and night survey are provided in Table 1.5.

Table 1.5 OPERATIONAL LOG – 7/8 DECEMBER 2010, 18:00 – 02:00

Equipment Type	Equipment Numbers	Location/Status
CHPP	-	Operated for short periods – exact times unknown
Overland	-	-
Train	2	Loading
Dozer	1	Pushing up for trains

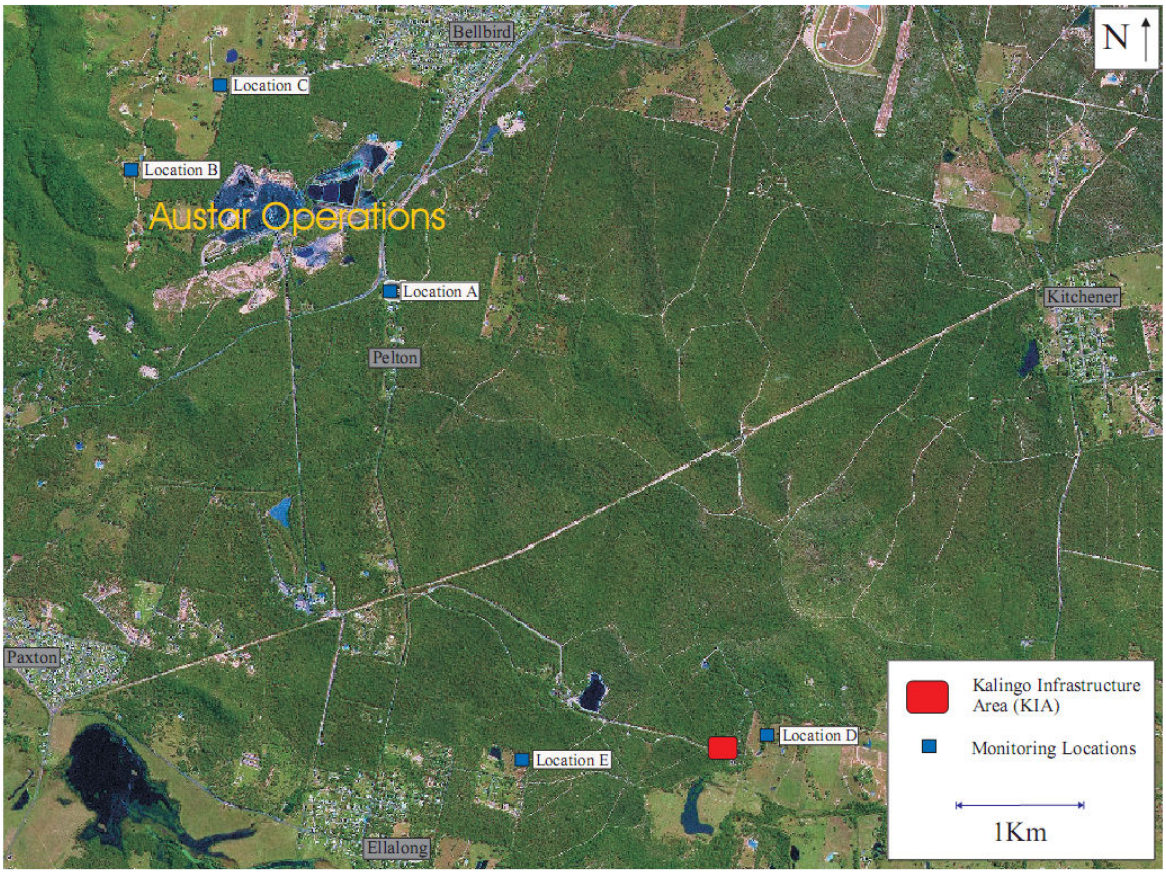

Figure 1 Monitoring Sites

2 CONSENTS AND CRITERIA

2.1 CURRENT CONSENT

Austar mine includes the CHPP and KIA, the latter situated southeast of the Austar CHPP. Noise impacts at Austar are addressed in documents detailed in Table 2.1.

Table 2.1 APPLICABLE CONSENTS/LICENSES FOR AUSTAR MINE

Consent Area	Consent/License	Applicable Area
Austar mine and CHPP	EPA Environment Protection License No. 416	Mine and CHPP
Kalingo Infrastructure Area (KIA)	Modification MOD-49-4-2006	KIA

Noise impacts must be assessed separately against each of the above development consents or license. Table 2.2 details monitoring locations and relevant limits for each consent area. The relevant sections of the consents/license are reproduced in Appendix A.

2.2 PROJECT SPECIFIC CRITERIA

Noise goals for monitoring locations near the Austar CHPP are detailed in Table 2.2.

Table 2.2 PROJECT SPECIFIC CRITERIA - CHPP

Descriptor	Monitoring Location	$L_{A90(15\ min)}$ Noise Goals dB
A	Pelton Village	43
B	South of Bimbadeen Road, Mt View	40
C	Bimbadeen Road, Mt View	37

Criteria for the Kalingo Infrastructure Area are detailed in Table 2.3.

Table 2.3 PROJECT SPECIFIC CRITERIA – KIA

Descriptor	Monitoring Location	$L_{Aeq(15\ min)}$ Criteria dB Day/Evening/Night
D	Nash Lane, Quorrobolong	35
E	Glennie Street, Ellalong	35

3 METHODOLOGY

3.1 ASSESSMENT METHOD - CHPP

Attended monitoring was conducted at three sites near the Austar CHPP in accordance with the Department of Environment, Climate Change and Water (DECCW) 'Industrial Noise Policy' (INP) guidelines and Australian Standard AS1055 'Acoustics, Description and Measurement of Environmental Noise'. Atmospheric condition measurements were also undertaken.

The terms "Inaudible" (IA) and "Not Measurable" (NM) are used in this report. When site noise is noted as IA then there was no site noise at the monitoring location.

However, if site noise is noted as NM, this means some noise was audible but could not be quantified. This means that noise from the site was either very low, or, being masked by other noise that was relatively loud. In the former case (very low site levels) we consider it not necessary to attempt to accurately quantify site noise as it would be significantly less than any criterion and most unlikely to cause annoyance (and in many cases, to be even noticed).

If site noise were NM due to masking then we would employ methods as per the Industrial Noise Policy (e.g. measure closer and back calculate) to determine a value for reporting if deemed necessary.

Meteorological data was obtained from the Austar Coal Mine meteorological station. This allowed correlation of atmospheric parameters and measured noise levels.

The duration of each day, evening and night measurement was 15 minutes. Exceptions were when mining was inaudible during the day; the duration was reduced to 10 minutes. Attended monitoring is preferred to the use of noise loggers when determining compliance with prescribed limits; it allows an accurate determination of the contribution, if any, to the overall measured noise levels by the source of interest (in this case Austar Coal Mine).

The equipment used to measure and record environmental noise levels is detailed in Table 3.1.

Table 3.1 MONITORING EQUIPMENT

Model	Serial Number	Calibration Due Date
Rion NA-28 sound level analyser	00370304	22/05/2011
Rion NC-73 calibrator	11248306	29/01/2012

Calibration certificates are provided in Appendix B.

3.2 ASSESSMENT METHOD – KIA

As discussed previously, in accordance with the consent modification, direct measurement of noise from the KIA at the nearest receivers is not possible due to accessibility issues. Therefore, noise levels were measured close to the noise source at specific reference points.

The monitoring at the reference point was validated using ENM, a noise model package, to confirm the accuracy of results. Levels were then calculated for the nearest monitoring locations (D and E) for the same meteorological conditions that occurred throughout the survey and additionally for worst case meteorological conditions as per Note (b) of the consent modification, which is reproduced in Appendix A.

4 RESULTS

4.1 ATTENDED NOISE MONITORING - CHPP

Overall noise levels measured at the CHPP monitoring locations are provided in Table 4.1.

Table 4.1 MEASURED NOISE LEVELS, QUARTER 4, 2010 – CHPP

Location	Date And Time	L_{A1} dB	L_{A10} dB	L_{Aeq} dB	L_{A90} dB
	Day				
A	03/12/2010 14:59	71	63	60	48
B	03/12/2010 16:24	48	44	42	40
C	03/12/2010 16:02	48	44	42	38
	Evening				
A	07/12/2010 19:59	63	59	58	53
B	07/12/2010 18:04	52	47	45	42
C	07/12/2010 18:26	46	40	38	36
	Night				
A	07/12/2010 22:43	49	47	46	43
B	08/12/2010 00:17	54	54	50	43
C	07/12/2010 23:56	57	56	54	51

Notes: 1. Levels in this table are not necessarily the result of activity at Austar CHPP.

Table 4.2 details L_{A90} noise levels from Austar CHPP in the absence of other noise sources. Criteria are then applied if weather conditions are in accordance with the mine's EPL.

Discussion as to the noise sources responsible for these measured levels is provided in Section 5 of this report.

Table 4.2 $L_{A90(15\ min)}$ GENERATED BY AUSTAR CHPP – QUARTER 4 2010

Location	Date And Time	WS m/s [7]	SC [8]	Criterion dB	Criterion Applies? [1,5]	Austar L_{A90} dB [2,3,4]	Exceedance [5,6]
	Day						
A	03/12/10 14:59	2.7	B	43	Y	IA	Nil
B	03/12/10 16:24	2.3	B	40	Y	35	Nil
C	03/12/10 16:02	2.8	A	37	Y	34	Nil
	Evening						
A	07/12/10 19:59	2.7	E	43	Y	<20	Nil
B[9]	07/12/10 18:04	3.9	B	40	N	39	NA
C[9]	07/12/10 18:26	3.3	A	37	N	30	NA
	Night						
A[9]	07/12/10 22:43	1.2	E	43	Y	30	Nil
B[9]	08/12/10 00:17	1.2	E	40	Y	40	Nil
C[9]	07/12/10 23:56	0.3	F	37	Y	22	Nil

Notes:

1. *Noise emission limits apply for winds up to 3 metres per second (at a height of 10 metres), and Pasquill stability class from A to F;*
2. *These are results for Austar CHPP in the absence of all other noise sources;*
3. *NM denotes audible but not measurable, IA denotes inaudible;*
4. *Bolded results in red are those greater than the relevant criterion (if applicable).*
5. *Y denotes Yes, N denotes No;*
6. *NA in exceedance column means atmospheric conditions outside conditions specified in the EPL and so criterion is not applicable;*
7. *Wind speed (WS) data is from Austar weather station;*
8. *Sigma theta data from Austar weather station has been used to calculate Stability Class (SC) in accordance with the INP.*

Atmospheric condition data measured at each CHPP monitoring location are shown in Table 4.3.

Table 4.3 MEASURED ATMOSPHERIC CONDITIONS - CHPP

Location	Date And Time	Temperature degrees C	Wind Speed m/sec	Wind Direction	Cloud Cover (1/8s)
Location A	03/12/10 14:59	30	0.3	100	6
Location B	03/12/10 16:24	26	0.8	130	8
Location C	03/12/10 16:02	29	0.3	330	8
Location A	07/12/10 19:59	22	0.4	90	1
Location B	07/12/10 18:04	26	0.7	90	3
Location C	07/12/10 18:26	26	0.5	50	3
Location A	07/12/10 22:43	20	0.3	130	0
Location B	08/12/10 00:17	19	0.0	-	0
Location C	07/12/10 23:56	19	0.0	-	0

Notes: 1. Wind speed and direction measured at 1.8 metres.

4.2 ATTENDED NOISE MONITORING & MODEL VALIDATION - KIA

Overall noise levels measured at each reference point nearest the KIA are provided in Table 4.4. Discussion as to the noise sources responsible for these measured levels is provided below.

Table 4.4 MEASURED NOISE LEVELS, QUARTER 4, 2010 – KIA

Ref. Point	Date And Time	L_{A1} dB	L_{A10} dB	L_{Aeq} dB	L_{A90} dB	L_{Aeq} dB[1]
	Daytime					
East b'dry	03/12/2010 14:11	60	59	58	56	45
Dam	03/12/2010 14:35	57	56	54	52	27
	Evening					
East b'dry	07/12/2010 20:53	53	53	52	52	49
Dam	07/12/2010 20:27	55	54	53	51	32
	Night-Time					
East b'dry	07/12/2010 22:00	53	53	52	51	48
Dam	07/12/2010 22:20	61	56	52	48	32

Note: 1. L_{Aeq} levels in this column are attributable to KIA,
2. IA denotes inaudible; and
3. NM denotes not measurable.

As shown in Table 4.4, levels at the eastern boundary of the KIA are high. This is primarily due to the close proximity of a nitrogen plant, ventilation fan and compressor. Levels generated by the KIA at this location are generally consistent across day, evening and night. Insects contribute to the total measured levels, particularly during the evening and night.

Monitoring near Kalingo Dam, however, shows that the pump is often inaudible, or audible at very low levels. As a result, validation modelling was only undertaken for levels from the eastern boundary of the KIA to locations D and E.

Model validation results are provided in Table 4.5 and compared with the relevant KIA criterion.

Table 4.5 MODELLED NOISE LEVELS, QUARTER 4, 2010 – KIA

Ref. Point/ Descriptor	KIA $L_{Aeq(15min)}$ dB(A) Measured[1]	KIA $L_{Aeq(15min)}$ dB(A) Predicted[2]	KIA $L_{Aeq(15min)}$ dB(A) 3 m/s[3]	KIA $L_{Aeq(15min)}$ dB(A) 3 degs/100m[4]	KIA $L_{Aeq(15min)}$ dB(A) Criterion
East b'dry	48	47	48	47	NA
Ref. point					
D	NA	27	33	29	35
E	NA	16	11	21	35

Note: 1. Measured level based on night-time monitoring as described in Table 4.4. Meteorological conditions are detailed in Table 4.6;
2. Predicted level modelled using ENM and meteorological conditions described in note 1;
3. Predicted level modelled using ENM and wind speed of 3 metes per second (refer note (b) of notice of modification); and
4. Predicted level modelled using ENM and temperature inversion of 3 degrees per 100 metres (refer note (b) of notice of modification).

Atmospheric condition data measured at each reference point during the Quarter 4 2010 survey at the KIA are shown in Table 4.6.

Table 4.6 MEASURED ATMOSPHERIC CONDITIONS - KIA

Reference Point	Date And Time	Temperature degrees C	Wind Speed m/sec[1]	Wind Direction[1]	Cloud Cover (1/8s)
Eastern b'dary	03/12/2010 14:11	29	1.0	100	6
Kalingo Dam	03/12/2010 14:35	33	0.6	90	6
Eastern b'dary	07/12/2010 20:53	21	0.0	-	0
Kalingo Dam	07/12/2010 20:27	22	0.4	90	0
Eastern b'dary	07/12/2010 22:00	20	0.2	110	0
Kalingo Dam	07/12/2010 22:20	20	0.7	100	0

Notes: 1. Wind speed and direction measured at 1.8 metres.

5 DISCUSSION

5.1 NOTED NOISE SOURCES

Table 4.1 and Table 4.2 present data gathered during attended monitoring. These noise levels are the result of many sounds reaching the sound level meter microphone during monitoring. Received levels from various noise sources were noted during attended monitoring and particular attention was paid to the extent of Austar Coal Mine's contribution, if any, to measured levels. At each receptor location, Austar Coal Mine's L_{Aeq} or L_{A90} (in the absence of any other noise) was, where possible, measured directly, or, determined by frequency analysis.

From these observations summaries have been derived for each location. The following chapter sections provide these summaries. Statistical 1/3 octave band analysis of environmental noise was undertaken at each location and a figure is included showing the frequency ranges for various noise sources. These figures also provide, graphically, statistical information for these noise levels.

An analysis example is provided as Figure 2 where it can be seen that frogs and insects are generating noise at frequencies above 1000 Hz; mining noise is at frequencies less than 1000 Hz (this is typical). Adding levels at frequencies that relate to mining only allows separate statistical results to be calculated. This analysis cannot always be performed if there are significant levels of other noise at the same frequencies as mining; this can be dogs, cows, or, most commonly, road traffic.

It should be noted that the method of summing statistical values up to a cut-off frequency can overstate L_{A1} and L_{A10} results by a small margin, understate L_{A90} by a small margin, but is entirely accurate for L_{Aeq}.

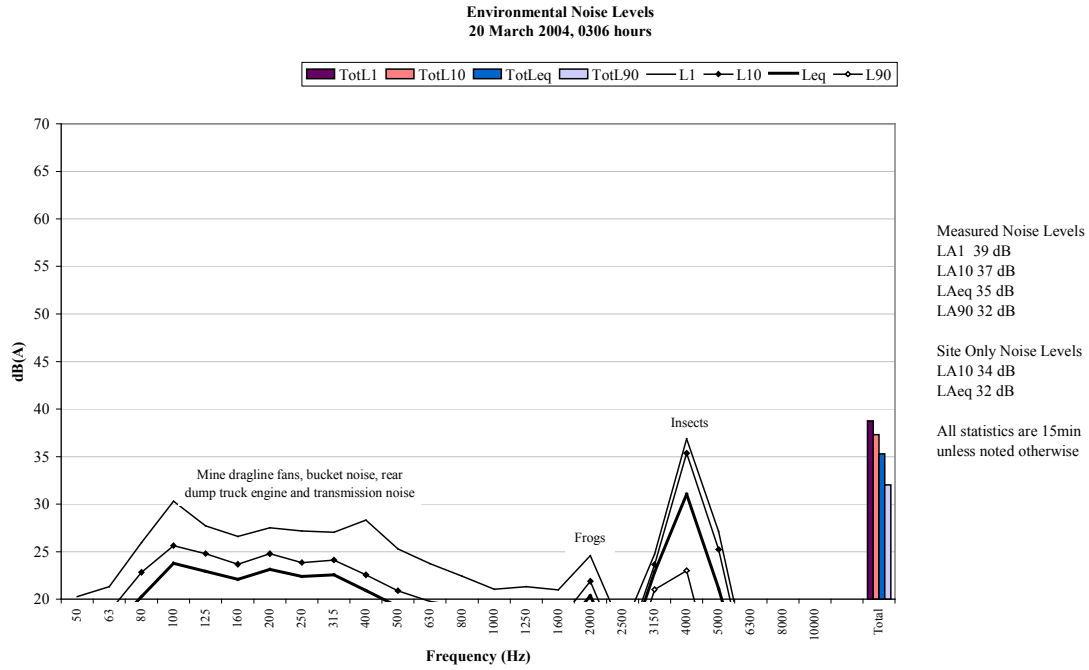

Figure 2 Sample Graph

5.1.1 Location A, 3 December 2010, Day

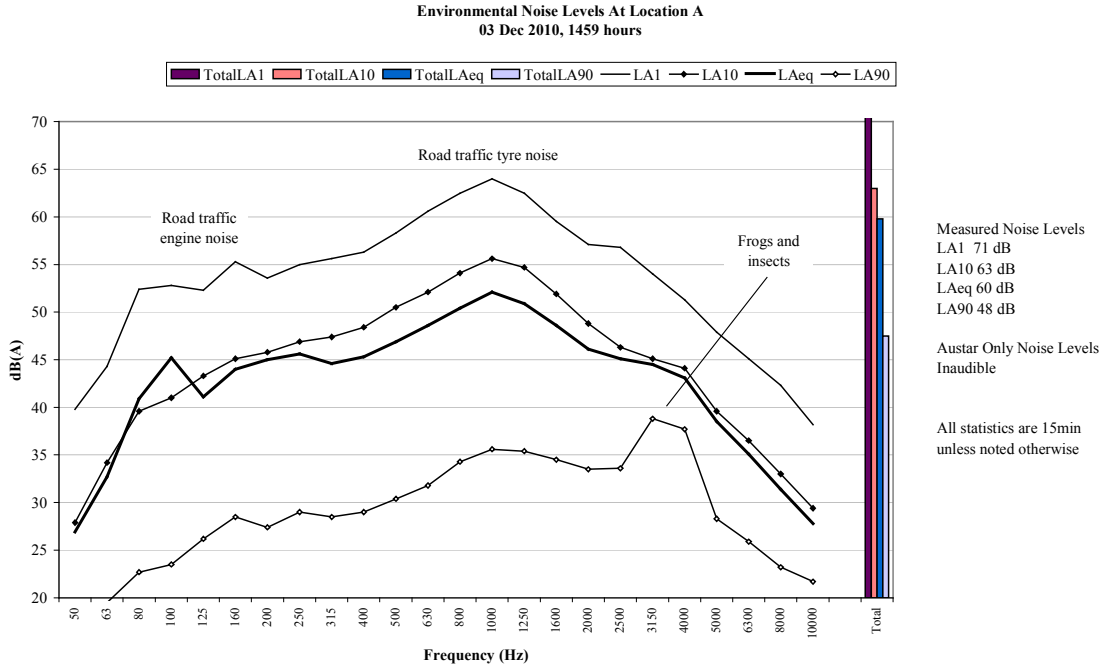

Figure 3 Environmental Noise Levels, Location A

Austar was inaudible.

Road traffic generated all the measured levels. A combination of frogs, insects and road traffic tyre noise were responsible for the measured L_{A90}.

Breeze in foliage was also noted.

5.1.2 Location A, 7 December 2010, Evening

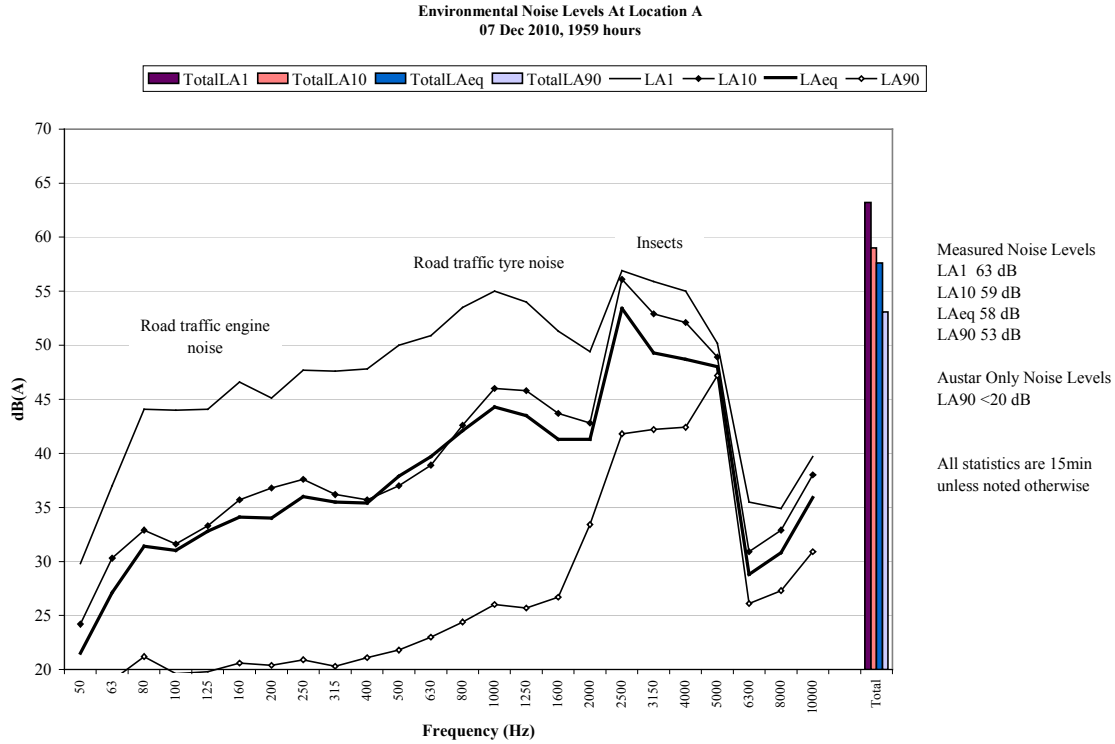

Figure 4 Environmental Noise Levels, Location A

A very low level continuum from Austar CHPP was briefly audible during the measurement, generating the Austar only L_{A90} of <20 dB.

Insects were primarily responsible for the measured levels.

Road traffic tyre and engine noise and a nearby idling car were also noted.

5.1.3 Location A, 7 December 2010, Night

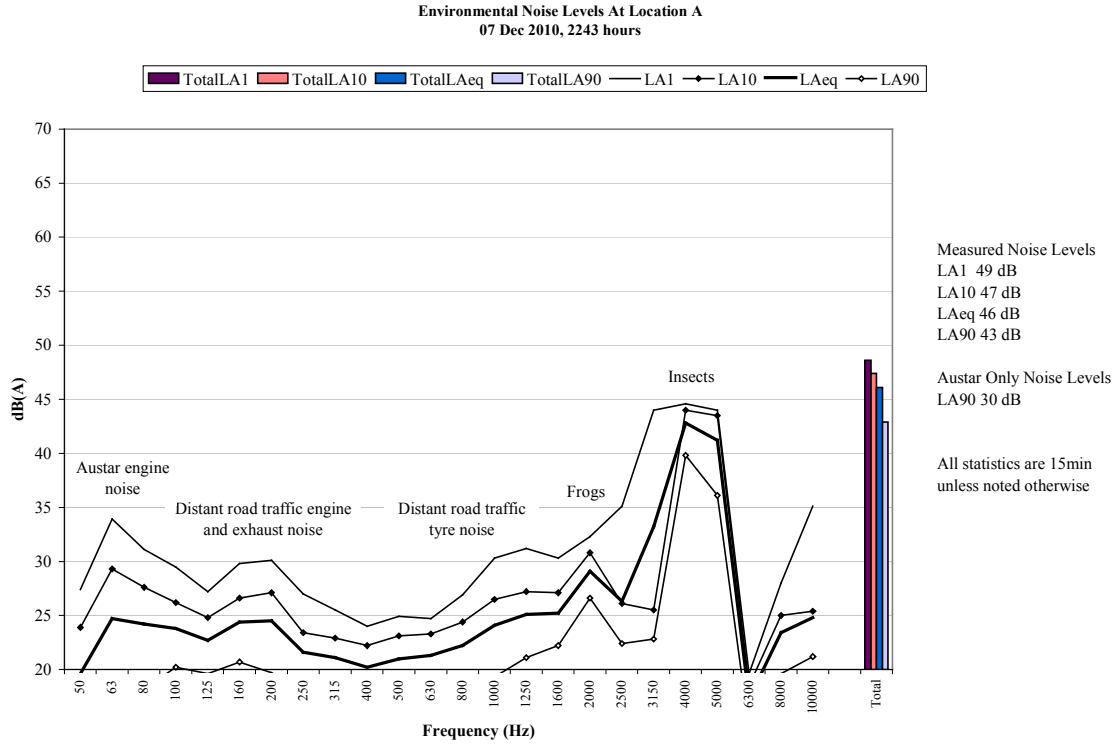

Figure 5 Environmental Noise Levels, Location A

A continuum from Austar CHPP was audible throughout the measurement and generated the Austar only L_{A90} of 30 dB. A surge in engine noise from Austar was audible on three occasions. Dozer tracks were audible once at a low level.

Insects were responsible for all measured levels.

Road traffic tyre and engine noise, frogs and breeze in foliage were also noted.

5.1.4 Location B, 3 December 2010, Day

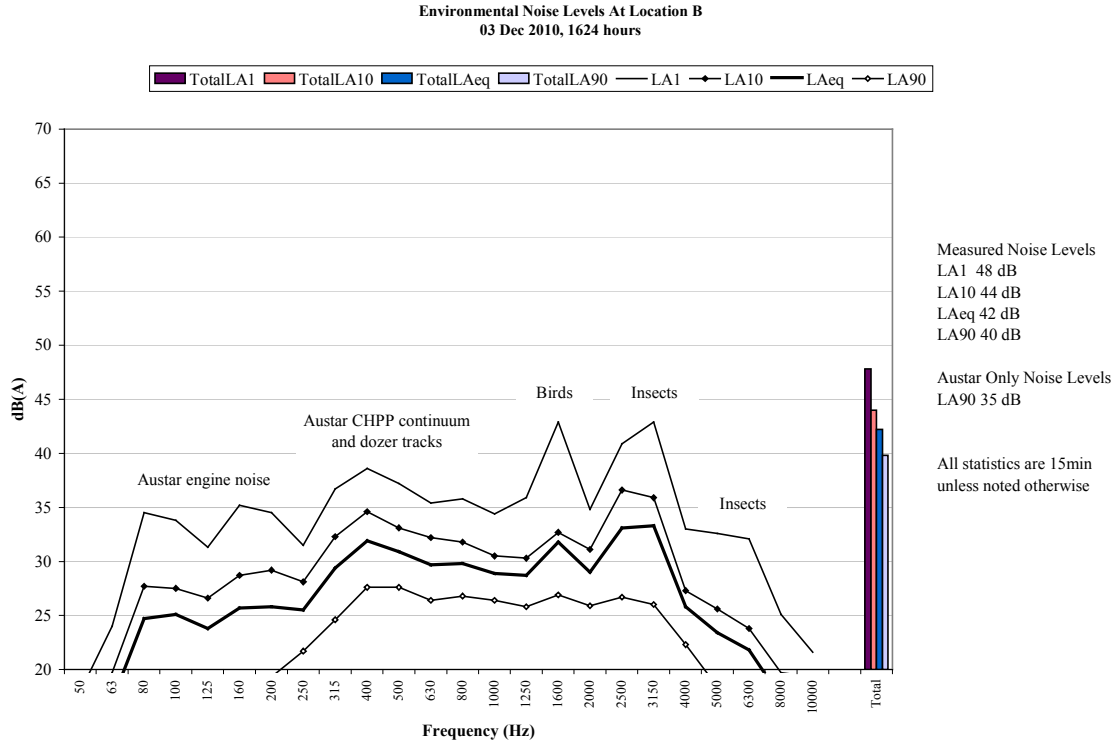

Figure 6 Environmental Noise Levels, Location B

A continuum from Austar CHPP was audible during the measurement and generated the Austar only L_{A90} of 35 dB. A surge in engine noise from Austar was frequently audible during the measurement up to L_A 45 dB. Dozer tracks were also frequently audible in the range L_A 40 to 42 dB

Insects and birds generated the measured L_{A1} and contributed to the measured L_{A10}, L_{Aeq} and L_{A90}.

A distant motorbike exhaust and an aircraft were also noted.

5.1.5 Location B, 7 December 2010, Evening

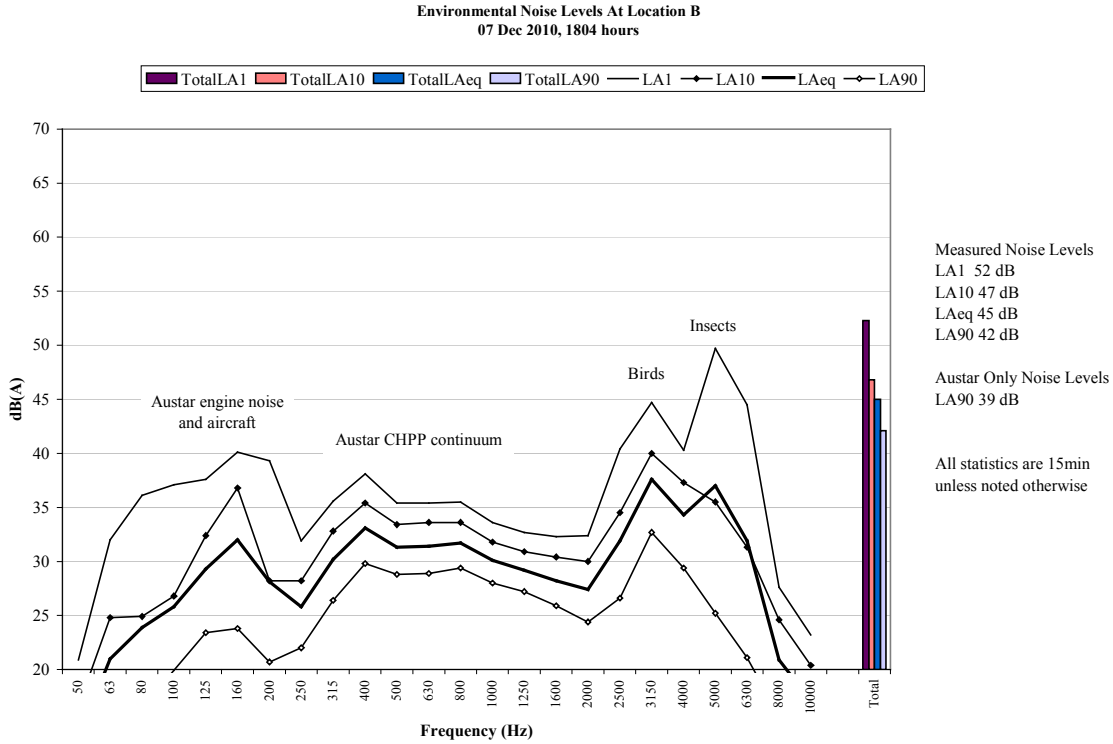

Figure 7 Environmental Noise Levels, Location B

A continuum from Austar CHPP was audible throughout the measurement and generated the Austar only L_{A90} of 39 dB. Engine noise was also audible with surges up to L_A 40 dB. The control room telephone ring was audible once and dozer tracks were audible twice but they were not measurable.

Insects generated the measured L_{A1}. Insects and birds were primarily responsible for the measured L_{A10}, L_{Aeq}. A combination of birds and Austar CHPP generated the measured L_{A90}.

An aircraft, breeze in foliage, breeze on the microphone and distant road traffic were also noted.

5.1.6 Location B, 8 December 2010, Night

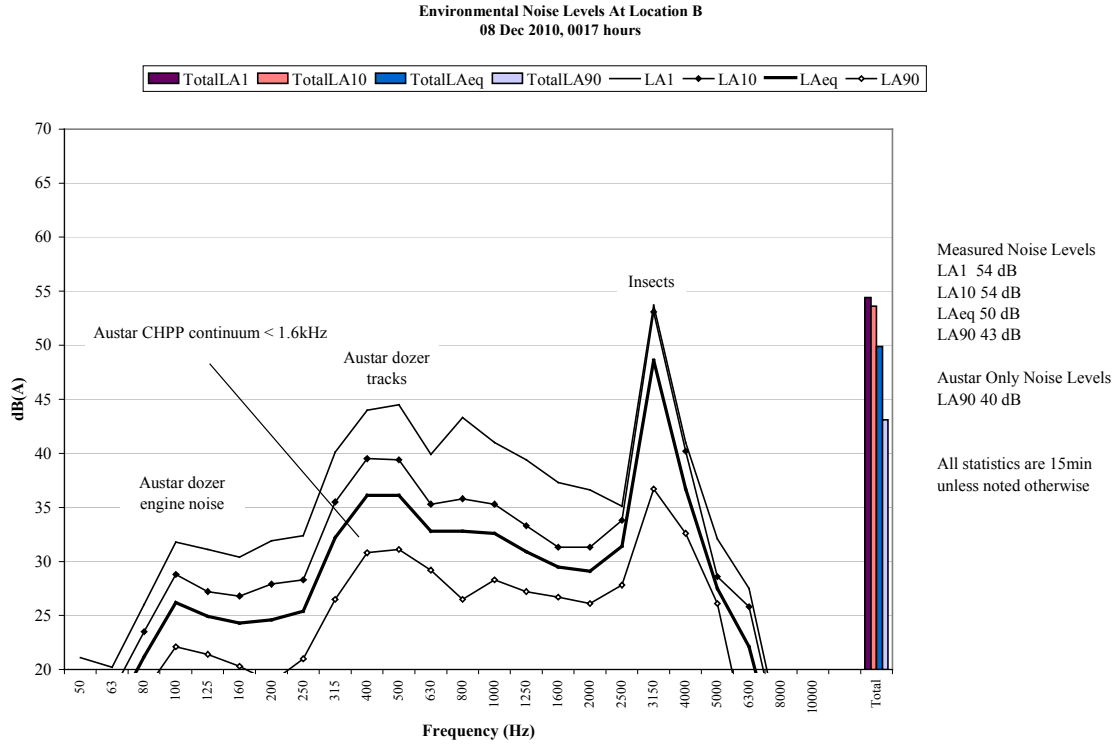

Figure 8 Environmental Noise Levels, Location B

A continuum from Austar CHPP was audible throughout the measurement, generating the Austar only L_{A90} of 40 dB. Dozer tracks were frequently audible in 1st and 2nd gear, in the range L_A 49 to 54 dB. Dozer engine noise was also frequently audible with surges up to L_A 39 dB.

Insects were primarily responsible for measured levels.

5.1.7 Location C, 3 December 2010, Day

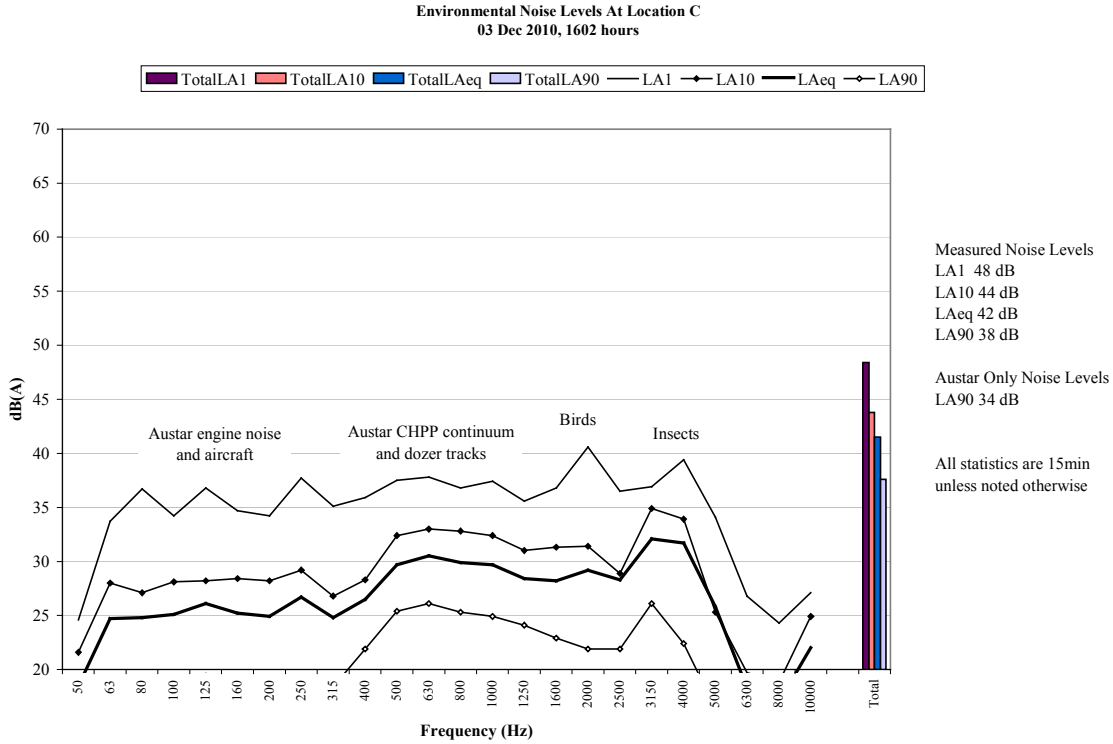

Figure 9 Environmental Noise Levels, Location C

A continuum from Austar CHPP was audible during the measurement, generating the Austar only L_{A90} of 34 dB. Engine noise was frequently audible in the range L_A 33 to 35 dB. Dozer tracks were also frequently audible up to L_A 40 dB. Reverse alarms were frequently audible but not measurable. Impact noises were audible on three occasions at L_A 35 dB.

Birds generated the measured L_{A1}. Birds, insects and Austar CHPP were responsible for the measured L_{A10} and L_{Aeq}. A combination of insects and Austar CHPP generated the measured L_{A90}.

Road traffic tyre noise, two aircraft and breeze in foliage were also noted.

5.1.8 Location C, 7 December 2010, Evening

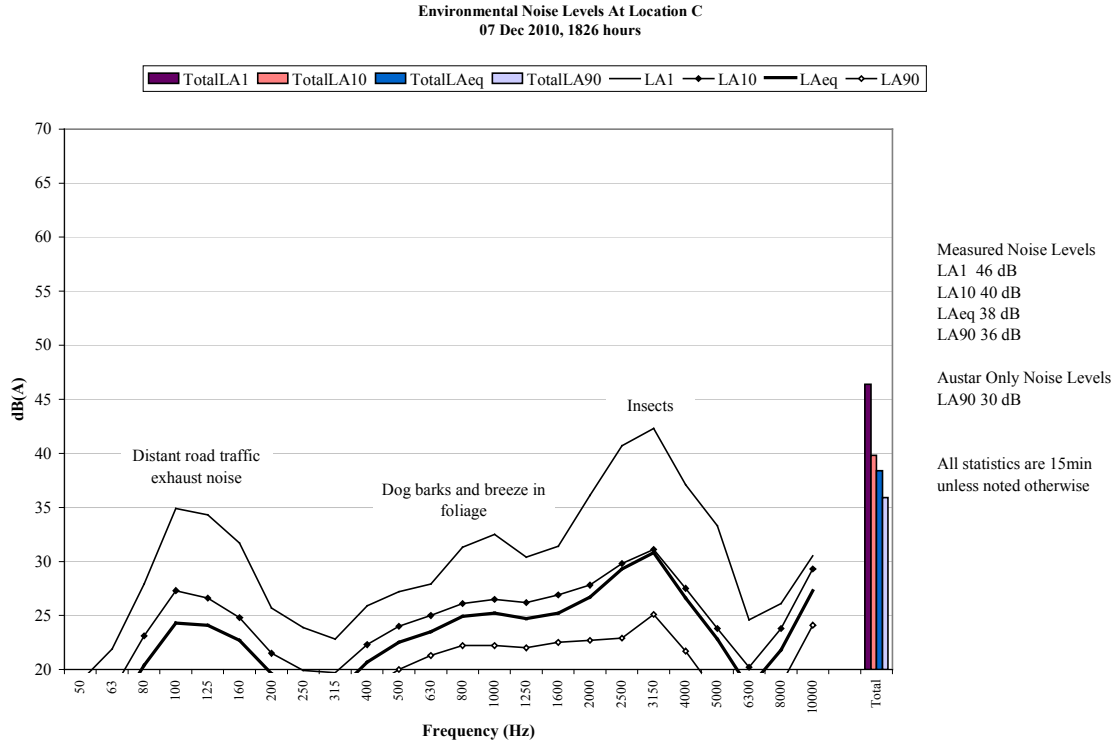

Figure 10 Environmental Noise Levels, Location C

A continuum from Austar CHPP was audible during the measurement, decreasing over the course of the measurement. The continuum generated the Austar only L_{A90} of 30 dB.

Insects generated the measured L_{A1} and were primarily responsible for the measured L_{A10}, L_{Aeq} and L_{A90}.

A distant lawn mower, dogs, breeze in foliage, cows, an aircraft and distant road traffic exhaust noise were all noted.

5.1.9 Location C, 7 December 2010, Night

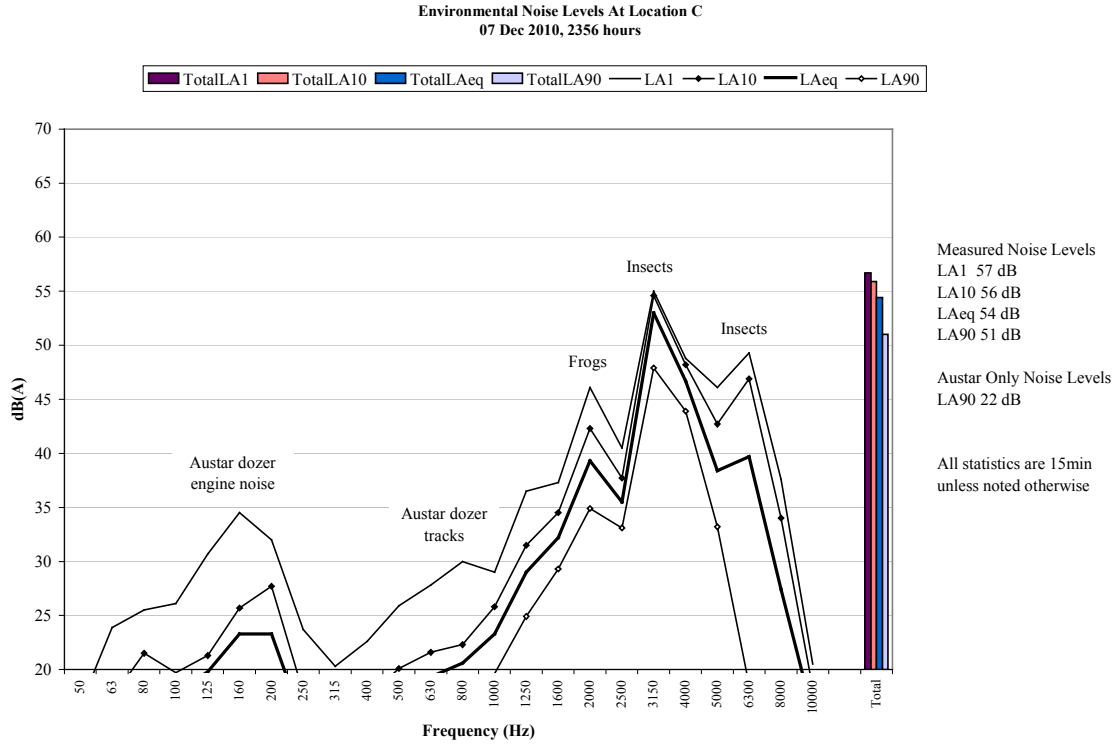

Figure 11 Environmental Noise Levels, Location C

A low level continuum from Austar CHPP was audible throughout the measurement and generated the Austar only L_{A90} of 22 dB. Increases in dozer engine noise were frequently audible with levels up to L_A 37 dB. Dozer track noise was also frequently audible in the range L_A 35 to 38 dB.

Frogs and insects were responsible for all measured levels.

6 SUMMARY

6.1 SUMMARY

The following summaries apply to the latest monitoring conducted during the day of the 3 December 2010, and evening and night of the 7/8 December 2010.

Austar Coal Mine complied with the day, evening and night noise limits applicable at all monitoring locations during the Quarter 4 2010 monitoring.

Global Acoustics Pty Ltd

Appendix

A: Development Consent

Several documents specifying noise criteria apply to the Austar Mine. The noise sections of the relevant consent, licence and NMP are reproduced below.

A1.1 AUSTAR MINE DEVELOPMENT CONSENT

Development consent DA29/95 of the underground coal mine (now Austar Coal Mine) was granted consent in February 1996 by the Minister for Urban Affairs and Planning. Schedule 2, which includes criteria relevant to noise, was replaced by the notice of modification described below.

A1.2 AUSTAR MINE CONSENT MODIFICATION

The modification MOD-49-4-2006 was granted by the Department of Planning for the Kalingo Infrastructure Area in September 2006.

The relevant noise conditions from Specific Environmental Conditions of the modification is reproduced below.

NOISE AND VIBRATION

Impact Assessment Criteria

18. The Applicant shall ensure that the noise generated by the Infrastructure Upgrade Area identified in Figure 1.3 of the SEE referenced in condition 2 (c) does not exceed the noise impact assessment criteria in Table 1.

Table 1 NOISE IMPACT ASSESSMENT CRITERIA dB(A)

Day/Evening/Night LAeq(15 minute)	Land
35	All privately owned land

Notes:
a) Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the LAeq(15 minute) noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the Department and the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
b) The noise emission limits identified in the above table apply under meteorological conditions of:
• wind speeds of up to 3 m/s at 10 metres above ground level; or
• temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.

However, if the Applicant has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DEC, then the Applicant may exceed the noise limits in Table 1 in accordance with the negotiated noise agreement.

Continuous Improvement

19. The Applicant shall:

(a) implement all reasonable and feasible noise mitigation measured;
(b) investigate ways to reduce the noise generated by the development; and
(c) report on these investigations and the implementation and effectiveness of these measures in the AEMR

to the satisfaction of the Director General.

Noise Monitoring

20. Prior to 31 December 2006, the Applicant shall prepare a Noise Monitoring Program for the development to the satisfaction of the Director-General. This program must be implemented to the satisfaction of the Director-General and shall include quarterly attended noise monitoring, and a noise monitoring protocol for evaluating compliance with the noise impact assessment criteria in this consent.

A1.3 AUSTAR MINE ENVIRONMENT PROTECTION LICENCE NO. 416

The EPL for Austar was issued in February 2006 with the latest variation issued on the 5 August 2010. The relevant section is reproduced below.

U1.3 Noise generated from the premises must not exceed the noise limits presented below during the Coal Handling and Preparation Plant Noise Reduction Program:

Receiver	dB(A)L_{90}
Pelton Village	43
Pyne Residence	40
O'Hearn Residence	37

U1.4 The noise limits apply during day or night-time under winds up to 3 metres per second (measured at 10 metres above ground level) and Pasquill stability class from A to F.

U1.5 Noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise limits in Condition L6.1 unless otherwise stated.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the DECCW may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.

The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise level where applicable.

Appendix

B: Calibration Certificates

Acoustic Research Laboratories
Proprietary Limited A.B.N. 47 050 100 804
Noise and Vibration Monitoring Instrumentation for Industry and the Environment

Sound Level Meter Test Report

Report Number : 09229

Date of Test : 22/05/2009

Report Issue Date : 25/05/2009

Equipment Tested: **Rion Sound Level Meter**

Model Number: NA-28

Serial Number: 00370304

Client Name : Global Acoustics Pty Ltd
12/16 Huntingdale Drive
Thornton NSW 2322

Contact Name : Amanda Borserio

Tested by : Morgan Rae

Approved Signatory :

Ken Williams

Date : **25/05/2009**

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www.acousticresearch.com.au

Acoustic Research Laboratories
Proprietary Limited A.B.N. 47 050 100 804
Noise and Vibration Monitoring Instrumentation for Industry and the Environment

Acoustic Calibrator Test Report

Report Number : 10038

Date of Test : 29/01/2010

Report Issue Date : 02/02/2010

Equipment Tested: **Rion Acoustic Calibrator**

Model Number: NC-73

Serial Number: 11248306

Client Name : Global Acoustics

12/16 Huntingdale Drive

Thornton NSW 2322

Contact Name : Amanda Borserio

Tested by : Michelle Youssef

Approved Signatory :

Ken Williams

Date : **2 February 2010**

NATA
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