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Project: Mt Piper Power Station Ash Placement

Lamberts North – Operational Noise Assessment Sept 2013

Reference: 233710

Prepared for:
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Revision: 2

8 October 2013

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Document prepared by:

Aurecon Australia Pty Ltd
ABN 54 005 139 873
Level 2, 116 Military Road
Neutral Bay NSW 2089
PO Box 538
Neutral Bay NSW 2089
Australia

T +61 2 9465 5599
F +61 2 9465 5598
E sydney@aurecongroup.com
W aurecongroup.com

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Author Signature		Approver Signature	
Name	Akil Lau	Name	Graham Mackay
Title	Acoustic Engineer	Title	Technical Director

Mt Piper Power Station Ash Placement

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Aurecon Australia Pty Ltd
ABN 54 005 139 873
Level 2, 116 Military Road
Neutral Bay NSW 2089
PO Box 538
Neutral Bay NSW 2089
Australia
T +61 2 9465 5599
F +61 2 9465 5598
E sydney@aurecongroup.com
W aurecongroup.com

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1 Introduction

1.1 Project understanding

On 16 February 2012, Delta Electricity (Delta) received Project Approval (09_0186) under delegation from the Minister of Planning for the Mt Piper Ash Placement Project (the Project) under Section 75J - *Environmental Planning and Assessment Act 1979* to permit the continued disposal of ash generated by the Mt Piper Power Station. The Project Approval was granted subject to the Conditions of Approval.

This report has been developed in accordance with the Lamberts North Ash Placement Project Condition of Approval (CoA) E11 and the mitigation measures specified in the Operational Environment Management Plan (*OEMP* May 2013). The OEMP outlines the requirements of the ongoing noise monitoring program and operational noise review in accordance with CoA's E7, E8, E9 and E11.

1.2 Background to the Project

Lamberts North is located to the immediate east of Delta's Existing Mt Piper Ash Repository, which is described in the Environmental Assessment (EA) as Area 1 (SKM, 2010). It is located in an area characterised by both rural and industrial influences, with a number of coal mines in relatively close proximity. The project site is predominately surrounded by Ben Bullen State Forest, which lies to the north and south east of Mt Piper power Station, together with open cut coal mines and coal washers. Wallerawang Power Station that is owned by EnergyAustralia NSW lies to the south east of the project site, approximately 5km away. Lamberts North is approximately 53 hectares.

Historically, the Lamberts North site has been highly disturbed as a result of extensive mining activities including, underground working (from the 1950s to the early 1990s) and recent open-cut mining activities being carried out by Centennial Coal.

EnergyAustralia NSW has engaged a principle contractor (Lend Lease) to manage and operate EnergyAustralia NSW Western Ash repositories at both Wallerawang and Mt Piper Power Stations. Operations commenced with the first placement of ash on the 20th August 2013.

1.3 Scope of work

Scope of work includes noise assessment comprising of attended noise measurements at two sensitive receiver locations to determine potential noise impacts arising from the operational activities at Lamberts North site.

1.4 Sensitive receivers

In accordance with the Operation Noise Management and Monitoring Plan (*ONMMP)* which is a sub plan of the *OEMP*, the locations of sensitive receivers identified for noise impacts within the vicinity of the Project are mentioned below. The two sensitive receivers identified as being the closest to the site are located within 3.3 km of Lamberts North, at Blackmans Flat and Wallerawang, NSW and are mentioned in Table 1. Location 3 has been used as an additional location to measure the reference noise levels from the operational activities. Position of the measurement locations are shown in Figure 1.

Table 1 | Sensitive receivers nearest to Lamberts North

Location ID[1]	Description	Map Coordinates	Noise monitoring location	Distance from Mount Piper Power Station
1	Blackmans Flat	33.36468ºS 150.05904ºE	Located at the western end of Noon Street on the southern side of the road. Positioned at the boundary of the residential property 90m from the Castlereagh Highway.	Approximately 1 Km^2 East
2	Wallerawang	33.37765ºS 150.06073ºE	Situated on a rural property southeast of Lamberts North, and approximately 1300m from Castlereagh Highway.	Approximately 3.3 Km^2 East
3	Lamberts North	33.35971ºS 150.04668ºE	Additional location at the eastern boundary of Lamberts North site	Within the Lamberts North site

[1] Refer to Figure 1 for locations
[2] Kilometres

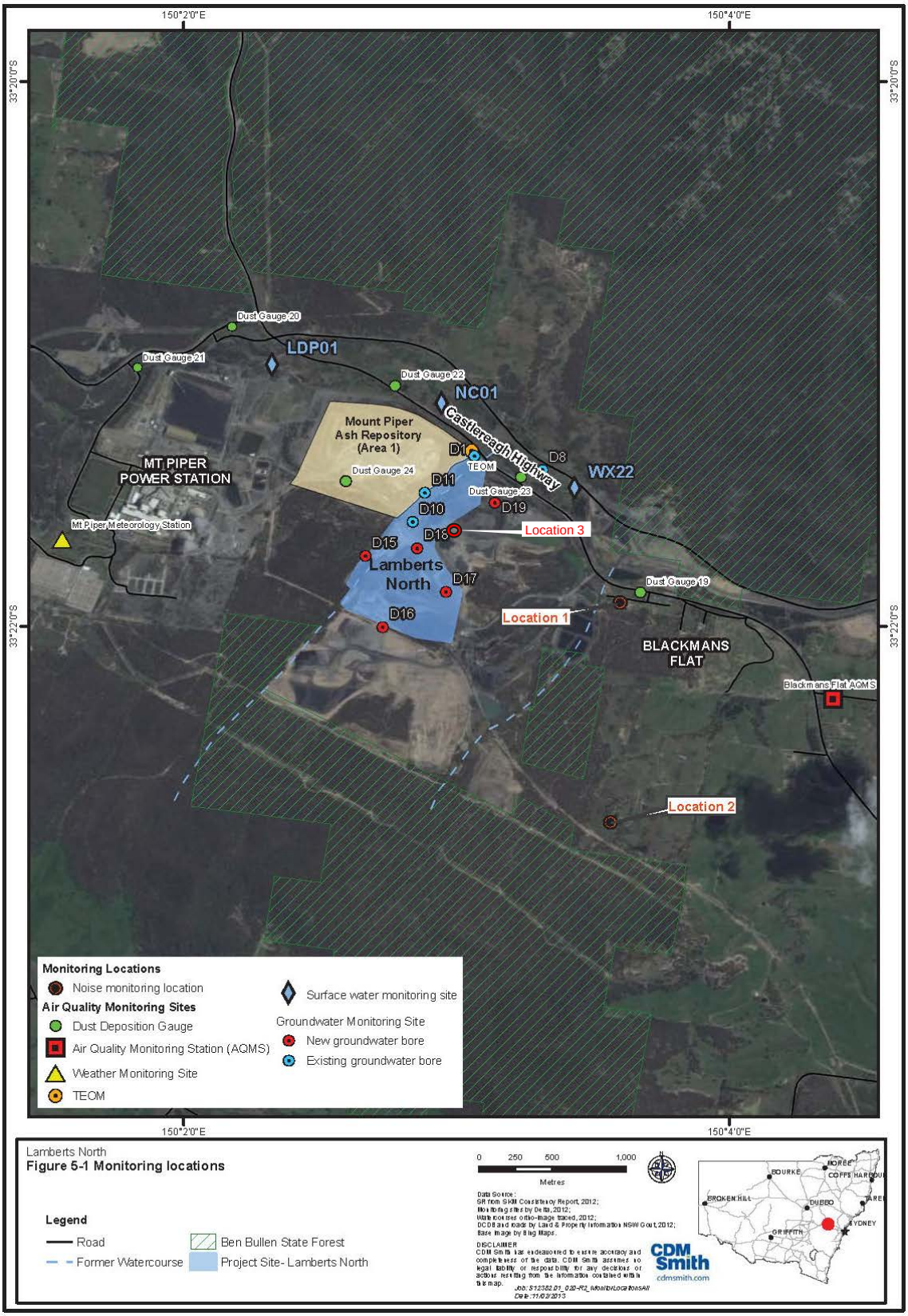


Figure 1 | Environmental noise monitoring locations

2 Operations at Lamberts North

2.1 Operation methodology

Key potential noise impacts during operational activities at Lamberts North and Mt Piper Ash Repository sites are listed below:

- Transporting fly ash and bottom ash to the ash repository using haulage trucks along the designated haul roads;
- Placing ash in stockpiles in designated areas before being spread out by a dozer;
- Compacting the ash using a dozer and roller;
- Maintenance on the haulage roads using a grader, roller, dozers and water carts;
- Dust suppression across the site using a series of techniques including but not limited to water carts and sprinklers systems;
- Developing and maintaining water management structures (containments, drains and sumps) using an excavator;
- Using variously sized pumps on site to pump water from various water sources;
- Using light vehicles on occasion to inspect the ash repository and carry out environmental monitoring;
- The machinery & plant generate noise from the engine & drive line, hydraulics and reverse warning devices.

2.2 Equipment at Lamberts North

Mt Piper and Lamberts North site are located adjacent to each other and ash repository operations at Mt Piper site were ongoing during our site visit from 15 – 21 September 2013, with the first ash placement at Lamberts North occurred on the 20th August 2013. Depositing fly ash at Lamberts North site or Mt Piper site was dependant on many factors and decided on weekly basis by the site environmental manager. The equipment outlined in Table 2 were sighted (some of them were operational) at the Mt Piper site during our site attendance. Noise generated from some of the equipment at a distance of 7 m was measured at Lamberts North site earlier by Aurecon. Sound Power Levels for the rest of the equipment were referenced from *AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites*.

Table 2 | **Equipment sighted at Lamberts North and Mt Piper site**

Equipment type	Number of equipment on site during the site visit	Sound Power Level SWL of each equipment dB(A)
Dozer / Crawler tractor*	1	106
Compactors/ rollers	1	113
Hydraulic Excavator*	1	108
Dump Truck*	2	104
Water Cart / truck*	1	101
Light commercial vehicle	1	106

* Sound Power Levels calculated based on noise measurements at a distance of 7m was which were carried out during the site visit previously (Mt Piper Power Station Ash Placement Project – Lamberts North Construction Noise monitoring 14-15 January 2013 (Revision 2, dated 11 February 2013)

2.3 Description of the surrounding environment

Lamberts North site is predominantly surrounded by Ben Bullen State Forest with open cut coal mines and coal washeries. Some of the noise sources other than the site were audible (and visually evident) during our site visit which contributed to the cumulative noise at the measurement location. Springvale Coal operated by Centennial Coal lies to the South East of the site includes activities but not limited to transportation of coal through conveyors, operation of equipment/ mobile plant, etc. Pinedale coal mine is located to the East of the site with operations of equipment and mobile plant audible. Ash placement sites owned by EnergyAustralia NSW namely Neubecks Creek lie to the East of the site and Ivanhoe No. 4 lie to the West of the site. Kerosene Vale Ash Repository (KVAR) site owned by EnergyAustralia NSW also lie to the south West of the site include activities but not limited to truck movement, ash loading and unloading, mobile plant operations, etc.

3 Noise criteria

3.1 Conditions of Approval relating to noise

The Operation Noise Management and Monitoring Plan (*ONMMP)* is a sub plan of the OEMP. It seeks to address the specific requirements of the CoA attached to the Project Approval for Lamberts North, insofar as they relate to noise and vibration during operation. CoA E7-D3a(ii) defines the operational noise requirement for the project to manage noise emissions from operational activities to not exceed the criteria shown in Table 3 below.

Table 3 | Construction noise criteria

Location	$L_{Aeq\ (15\ minute)}$ dB(A)		
	Day Time (7:00 – 18:00)	**Evening Time (18:00 – 22:00)**	**Night Time (22:00 – 7:00)**
All private receivers within the township of Blackmans Flat	42	38	35
All other residences	42	38	35

Note: These criteria do not apply where the Proponent and an affected landowner have reached a negotiated agreement in regard to noise, and a copy of that agreement has been forwarded to the Director-General and the NSW EPA.

4 Noise survey

4.1 Methodology

Attended daytime noise measurements (15 minute duration) were conducted from 15 – 21 September 2013 at the boundary of the nearest residential properties which are likely to be exposed to noise from the ongoing construction works. The statistical noise measurements including the averaged A-weighted noise levels (L_{Aeq}), maximum A-weighted noise levels (L_{Amax}) and statistical A-weighted L_{A90} and L_{A10} noise levels[3] were conducted using a Larson Davis 831 Type 1 sound level meter equipped with a LD PRM831 pre-amplifier and a PCB 377B02 ½" microphone which was set to 'A' frequency weighting, 'F' time weighting, and was fitted with an approved windshield. Measurements were typically taken at a height of 1.2 m and at least 3.5 m from any reflecting structure other than the ground. The measurement period at each location consisted of 15 minutes. A Larson Davis CAL200 was utilised to calibrate the sound level meter before and after each series of measurements with no significant calibration drift noted. Measurements were typically taken in accordance with the Australian Standard *AS 1055 1997: Acoustics – Description and measurement of environmental noise*.

Table 4 shows the equipment used for all the measurements performed on site. Attended noise measurements were conducted at three locations (as shown in Figure 1) using the Type 1 sound level meter. It should be noted that it was cloudy that day and intermittent wind (< 5 m/s) conditions were prevalent over the measurement period.

Table 4 | Sound pressure level measurement equipment

Equipment	Make	Model	Serial No.	Type	Last Calibration	Calibration Due
Sound Level Meter	LD	831	0001595	1	23.08.12	23.08.14
Calibrator	LD	CAL200	6345	-	14.03.12	14.03.14

4.2 Weather data

Local weather conditions during the noise monitoring comprised of intermittent wind <3m/s at the microphone position. Appendix D shows the wind rose graph for the duration from 15 – 21 September 2013. Below is the summary of weather conditions prevalent during the noise monitoring in accordance with the CoA E7-D3a(ii):

- Wind speeds were less than 3m/s at 10m above ground level.
- Stability Category F temperature inversion conditions were not prevalent.
- Stability Category G temperature inversion conditions were not prevalent.

4.3 Noise measurement results

Results of the noise monitoring are summarised in Table 5 below. Detailed results of continuous noise measurements over the 15-minute are shown in Appendix B. List of operating construction equipment identified at the Lamberts North site is outlined in Section 2.

[3] For explanation of the acoustic terms please refer to the attached Glossary of Terminology in Appendix A

Multiple 15 minutes measurements were taken at each spot and only the relevant measurements have been detailed in this report.

Table 5 | Results of environmental noise monitoring

Location	Date	Time	Measured sound Pressure Level, dB(A)				Note
			$L_{Aeq, 15min}$ #	$L_{A10, 15min}$ ^^	$L_{A90, 15min}$ ^	$L_{Amax, 15min}$ *	
Location 1 *(Blackmans Flat)*	15/09/13	12:25	52	54	41	70	Note 1
	18/09/13	12:29	54	56	47	66	
		18:01	52	55	41	69	
	19/09/13	08:06	52	54	47	69	
	20/09/13	05:28	53	57	41	69	
		08:02	56	57	50	72	
Location 2 *(Wallerawang)*	15/09/13	13:09	43	42	37	67	Note 2
	18/09/13	12:51	49	51	43	67	
		18:29	48	49	45	69	
	19/09/13	08:32	49	50	46	64	
	20/09/13	05:50	46	47	44	65	
		08:26	49	51	47	67	
Location 3 *(Eastern boundary of Lamberts North)*	15/09/13	-	-	-	-	-	Note 3
	18/09/13	11:54	56	59	44	74	
	19/09/13	07:08	45	44	39	74	
		07:34	43	44	39	66	
	20/09/13	07:20	50	52	44	66	

L_{Aeq} refers to A-weighted equivalent continuous sound pressure level over measurement period. It is used to quantify the average noise level over a time period.

^^ *L_{A10} refers to the A-weighted noise level which is exceeded for only 10% of the measuring period. It is usually used as the descriptor for intrusive noise level and represents ambient road traffic noise in general.*

^ *L_{A90} refers to the A-weighted noise level which is exceeded for 90% of the measuring period. It is usually used as the descriptor for background noise level during the measurement period.*

* *L_{Amax} refers to the maximum A-weighted noise level detected during the measuring period. It refers to the minimum background noise detected.*

***Note 1** (Residential premise - Location 1)*

From our site observation at residential location 1 (i.e. Blackmans flat), the noise is dominated by the noise resulting from the traffic along Castlereagh Highway and activities at Mt Piper Power Station. There was no audible noise from the western direction (i.e., Centennial coal, Springvale Mine, etc.) during our site attendance. Instantaneous noise level was measured in the range of L_{AF} 55-59 dBA when a vehicle was passing on Castlereagh Highway. L_{Amax} of 69-72 dBA was due to local domestic noise and birds.

Note 2 *(Residential premise - Location 2)*

The background noise level at the rural residential location 2 (i.e. Wallerawang) was relatively low compared to Location 1 during the day time measurements. Noise contribution during the evening and night time period included noise predominantly from insects at this location. The main sources of ambient sound at the site include: natural sounds (from wind noise, insects, bird/wildlife, etc.), slight hum from Mt Piper Power Station and distant vehicle traffic noise. Noise from distant operational activities at Lamberts North was inaudible during the entire survey period. Given the vast buffer distance of at least 2.5 Km between the location 2 rural residential dwelling and the Lamberts North, and the intervening topography, the operational noise impact at this location to be minimal or insignificant.

Note 3 *(Lamberts North eastern boundary - Location 3)*

From our site observation at the eastern site boundary of Lamberts North, noise emissions from operational equipment (clearly visible) on Mt Piper site was clearly audible. The noise varies and includes sources such as engine noise from dump truck, reverse beeps from excavator, bucket bangs of excavator, loading and unloading of ash in the dump truck.

5 Noise assessment

5.1 Measured noise levels

Result of the measured noise level at the sensitive receiver boundary can be found in Table 5. Equivalent sound pressure level (L_{Aeq}) at both the receiver locations was predominantly contributed by the traffic noise and Mt Piper Power Station and operational noise from Lamberts North was inaudible at both the sensitive locations. As the operational noise contribution from the Lamberts North was inaudible, we have undertaken a desktop study based noise prediction to conclusively assess the noise contribution from the construction activities explained in subsequent section.

The operational activity at Mt Piper site and Lamberts North site commenced each day from 6:00 until18:00 during our site visit. There were no operational activities after 18:00 until 6:00 at these sites.

5.2 Predicted noise contribution

For the purpose of this assessment, we considered the worst case scenario of the following six pieces of equipment operating at the same time simultaneously at Lamberts North. We note that the magnitude of the noise emission during the construction of the project may vary and depending on the number of machines operating, the intensity and working location of the equipment. It will be unlikely for all the plant and equipment to be running simultaneously in the same location; the nature of activities onsite is expected to vary during the course of the project.

- Dozer/ Crawler tractor
- Compactor/ roller
- Hydraulic Excavator
- Articulated Dump truck
- Water Cart
- Light commercial vehicle

The subsequent noise levels were calculated (based on sound propagation through geometric spreading) at a distance based on worst case noise emission levels (i.e. maximum sound power levels) without considering any barrier effects from the undulating surrounding terrain. The results of this calculation are shown in Table 6.

Table 6 | Predicted noise emission from Lamberts North equipment

Equipment at Lamberts North	SWL, dB(A)	Predicted sound pressure level at indicated distance, dB(A)		
		1.4KM (Location 1)*	2.0KM	2.5KM (Location 2)*
Dozer / Crawler tractor	106	31	28	26
Compactors/ rollers	113	38	35	33
Hydraulic Excavator	108	33	30	28
Dump Truck	104	29	26	24
Water Cart / truck	101	26	23	21
Light commercial vehicle	106	31	28	26
Cumulative overall predicted noise level from the operation of the above equipment		41	38	36

Results of our assessment revealed the following:

Table 7 | Summary of predicted noise level against the noise criteria (dBA)

Location*	Description	Predicted noise	Day limit 42 dBA (07:00-18:00)	Evening limit 38 dBA (18:00-22:00)	Night limit 35 dBA (22:00-07:00)
1	Blackman's Flat	41	✓	X	X
2	Wallerawang	36	✓	X	X

X No operational activity during evening and night time periods.

* Refer to Figure 1 for receiver locations

As evident from Table 7 above, noise associated with the operational activities at Lamberts North complied with the day time noise criteria at both the representative locations.

As there were no activities during evening and night time periods, background noise measurements were undertaken during the site visit and outlined below.

Table 8 | Background noise measurements

Location	Description	$L_{A90\ (15\ minute)}$ dBA	
		Evening (18:00-22:00)	Night (22:00-07:00)
1	Blackman's Flat	41	41
2	Wallerawang	45	44

6 Recommendations

6.1 Noise management measures

Should complaints from the community be received, the following noise control measures could be applied to minimise environmental noise emission from Lamberts North during operation of the project:

- Avoid the coincidence of noisy plant/machine working simultaneously close together.
- Construction trucks and other heavy machinery to use loop tracks as much as possible on the site to minimise the amount of reversing activities, i.e. managed through the Construction Traffic and Transport Management Plan.
- Consider the use of alternative warning system to the conventional single tone reversing alarm, such as broadband sound reversing alarm (e.g. BBS-TEK Backalarms) and warning lights.
- Installation of appropriate silencer/muffler on the engine exhaust for each truck working at Lamberts North.
- The use of light machinery (e.g. smaller excavators and dozers) during operation when working close to eastern site boundaries.

7 Conclusion

Attended noise monitoring at Lamberts North has been carried out by Aurecon from 15 - 21 September 2013 in accordance with Australian Standard "*AS1055.1-1997 Acoustics – Description and measurement of environmental noise, Part 1: General procedures*" using a Type 1 LD 831 sound level meter.

Environmental survey results revealed that the ambient noise at Location 1 (i.e. Blackman flat) was relatively high compared to Location 2 (i.e. Wallerawang) and the maximum equivalent continuous sound pressure level over 15 minutes at Location 1 was measured at $L_{Aeq\ (15minute)}$ 56 dB(A). The measured noise levels were dominated by the intermittent road traffic along Castlereagh Highway and slight activities from the Mt Piper Power Station. Noise from other sites (i.e. Lamberts North, Centennial Coal, and Springvale Mine) was not audible during our site attendance. The predicted noise contribution resulting from the operation of six equipment plant at the Lamberts North site at Location 1 was determined as 41 dB(A).

The background noise level at the rural residential Location 2 (i.e. Wallerawang) is relatively low compared to Location 1. The main sources of ambient sound at Location 2 are the natural sounds from wind noise, insects, bird/wildlife, etc., distant vehicle traffic noise and hum from Mt Piper Power Station. Noise from distant operational activities at Lamberts North was inaudible during the entire noise survey, equivalent continuous noise over 15 minutes at Location 2 was measured at $L_{Aeq\ (15minute)}$ 49 dB(A). The predicted noise contribution resulting from the operation of six equipment plant at the Lamberts North site at Location 2 was determined as 36 dB(A).

Noise contribution from the operational activities at Lamberts North site cannot be conclusively measured due the presence of other surrounding simultaneous noise sources and activities such as Pinedale coal mine, Springvale coal mine, KVAR site, road traffic, etc. Based on the noise survey conducted at the predetermined locations between 15 and 21 September 2013 and noise prediction, the operational noise resulting from the operation of equipment and mobile plant at the Lamberts North site comply with the *OEMP* Lamberts North Ash Placement Project – Operational Environmental Management Plan (May 2013) at the representative residential receivers at Location 1 and Location 2.

8 References

Measurements and assessment of the construction activities were carried out in accordance with:

- Office of Environment & Heritage (OEH) *Interim Construction Noise Guideline (ICNG).*
- Australian Standard *AS 1055 1997: Acoustics – Description and measurement of environmental noise*.
- Australian Standard *AS 2436-2000 Guide to noise and vibration control on construction demolition and maintenance sites*.
- Lamberts North Ash Placement Project – Operational Environmental Management Plan (OEMP) May 2013.
- *Delta Electricity Project Conditions of Approval for Mt Piper Power Station Ash Repository Extension Project (approved on 16 February 2012).*
- *Mt Piper Power Station Ash Placement Project – Lamberts North Construction Noise monitoring 14-15 January 2013 (Revision 2, dated 11 February 2013)*

Appendix A
Glossary of terms

Term	Definition
Sound Pressure Level (Lp)	Sound or noise is the sensation produced at the ear by very small fluctuations in atmospheric pressure. The human ear responds to changes in sound pressure over a very wide range (from 20 microPascals to 60 Pascals). A scale that compresses this range to a more manageable size and that is best matched to subjective response is the logarithmic scale, rather than a linear scale.
Sound Pressure Level (Lp)	Is defined as: $L_P = 10\log_{10}\left(\frac{p^2}{p_{ref}^2}\right)dB$ In the above equation, p is the sound pressure fluctuation (above or below atmospheric pressure), and p_{ref} is 20 microPascals (2×10^{-5} Pa), the approximate threshold of hearing. To avoid a scale which is too compressed, a factor of 10 is included, giving rise to the decibel, or dB for short.
A-Weighted Decibel (dB(A)) & Loudness	In some circumstances, the sound pressure level is expressed as C-Weighted decibels, instead of the more common A-Weighted. The C-Weighting filter is designed to replicate the response of the human ear above 85 dB, and places a greater weighting on low frequency noise.
L_{Aeq}	The time averaged C-weighted sound pressure level for a time interval, as defined in AS1055.1. It is generally described as the equivalent continuous C-weighted sound pressure level that has the same mean square pressure level as a sound that varies over time. It can be considered as the average sound pressure level over the measurement period.
L_{Ceq}	The time averaged C-weighted sound pressure level for a time interval, as defined in AS1055.1. It is generally described as the equivalent continuous C-weighted sound pressure level that has the same mean square pressure level as a sound that varies over time. It can be considered as the average sound pressure level over the measurement period.
L_{An}	The sound level, which, for a specified time interval, in relation to an investigation of a noise, means the A-weighted sound pressure level that is equalled or exceeded for n% of the interval. Commonly used percentages are 1, 10, 90 & 99%.
L_{Cpk}	The peak C-weighted sound pressure level for a time interval.

$L_{Cmax,T}$	The average maximum C-weighted sound pressure level, which, for the specified time interval, means the C-weighted sound pressure level during the interval obtained by using the fast time weighting and arithmetically averaging the maximum sound levels of the noise during the interval. Under certain conditions the 10th percentile noise level, $L_{C10,T}$, can represent the average maximum C-weighted sound pressure level.
L_{A10}	A-weighted noise level which is exceeded for only 10% of the measuring period. It is usually used as the descriptor for intrusive noise level and represents ambient road traffic noise in general.
L_{A90}	A-weighted noise level which is exceeded for 90% of the measuring period. It is usually used as the descriptor for background noise level during the measurement period.
L_{Amin}	Minimum A-weighted noise level detected during the measuring period. It refers to the minimum background noise detected.
Octave	Frequency bands allow a representation of the spectrum associated with a particular noise. They are an octave wide, meaning that the highest frequency in the band is just twice the lowest frequency, with all intermediate frequencies included and all other frequencies excluded. Each octave band is described by its centre frequency.
Maximum Exposure Time (Hours)	The maximum possible time a person can be safely exposed to a specific noise level (L_{Aeq}).

Appendix B
Photos of noise monitored locations at Blackmans Flat and Wallerawang

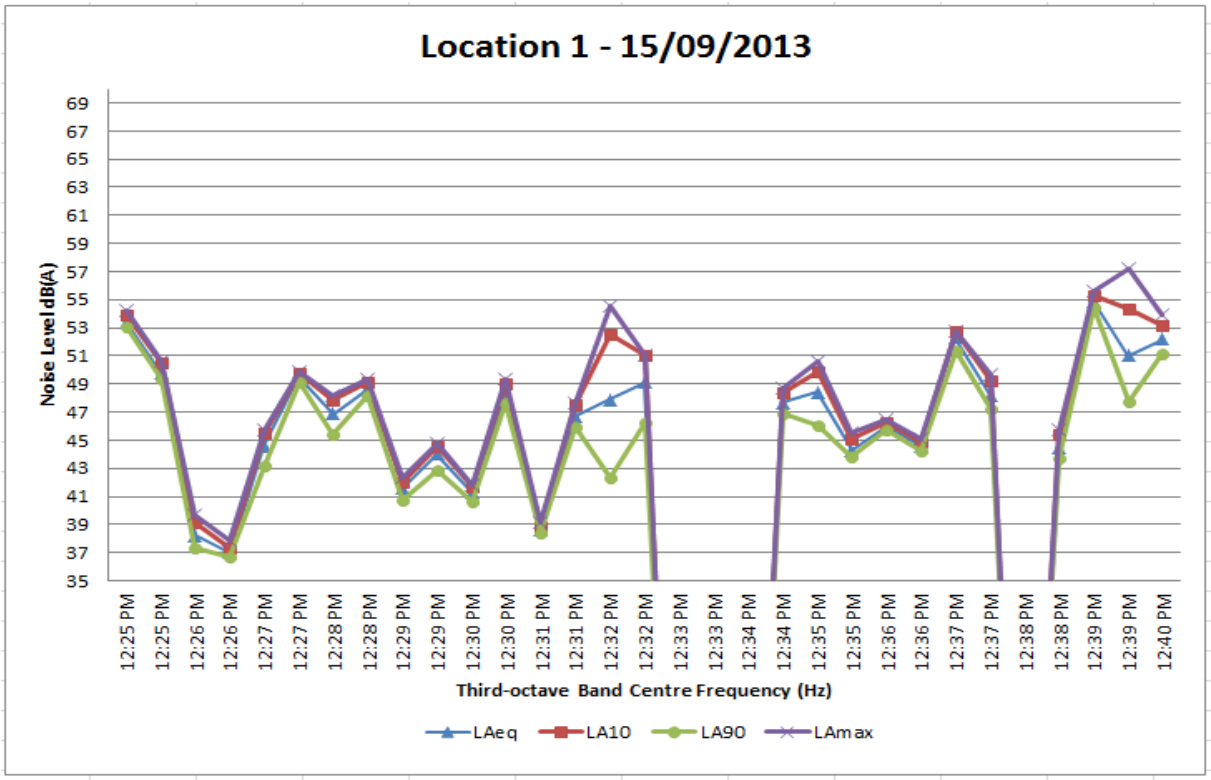
Figure 2 | Photograph of Measurement Location 1

Figure 3 | Photograph of Measurement Location 2

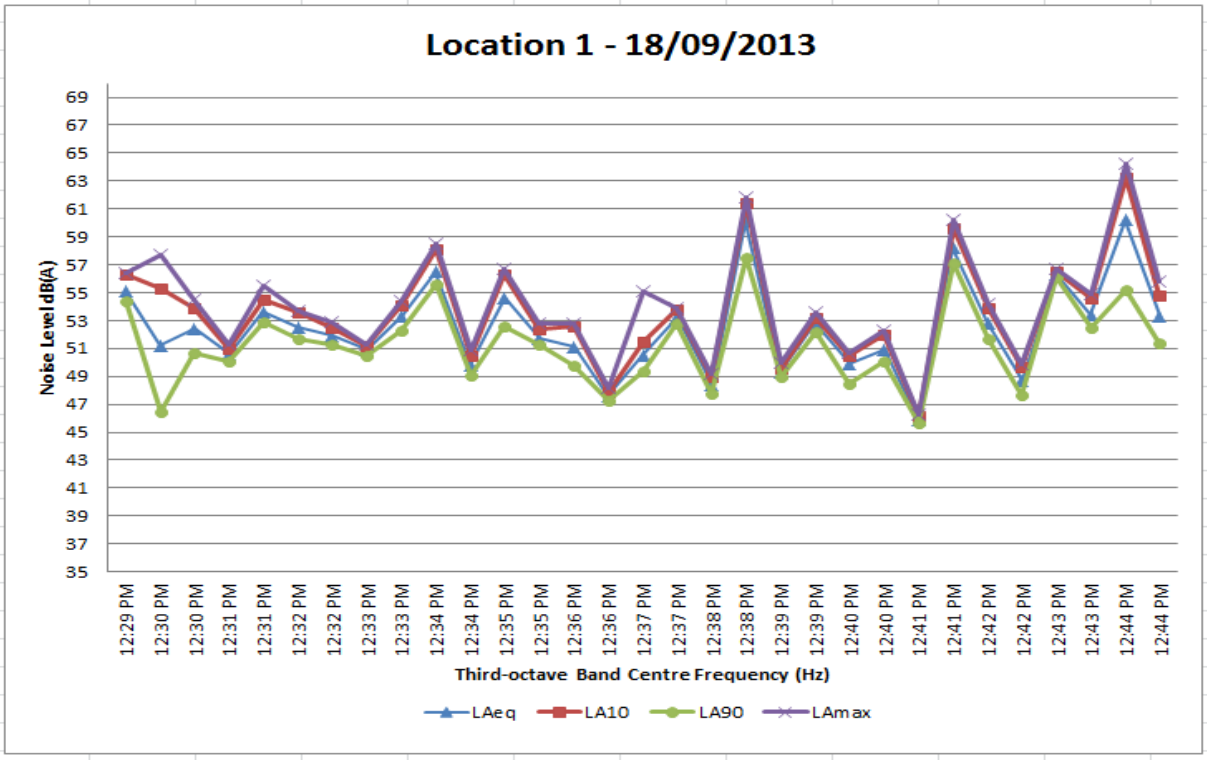
Figure 4 | Photograph of Lamberts North eastern boundary

Appendix C
Noise monitoring graphs

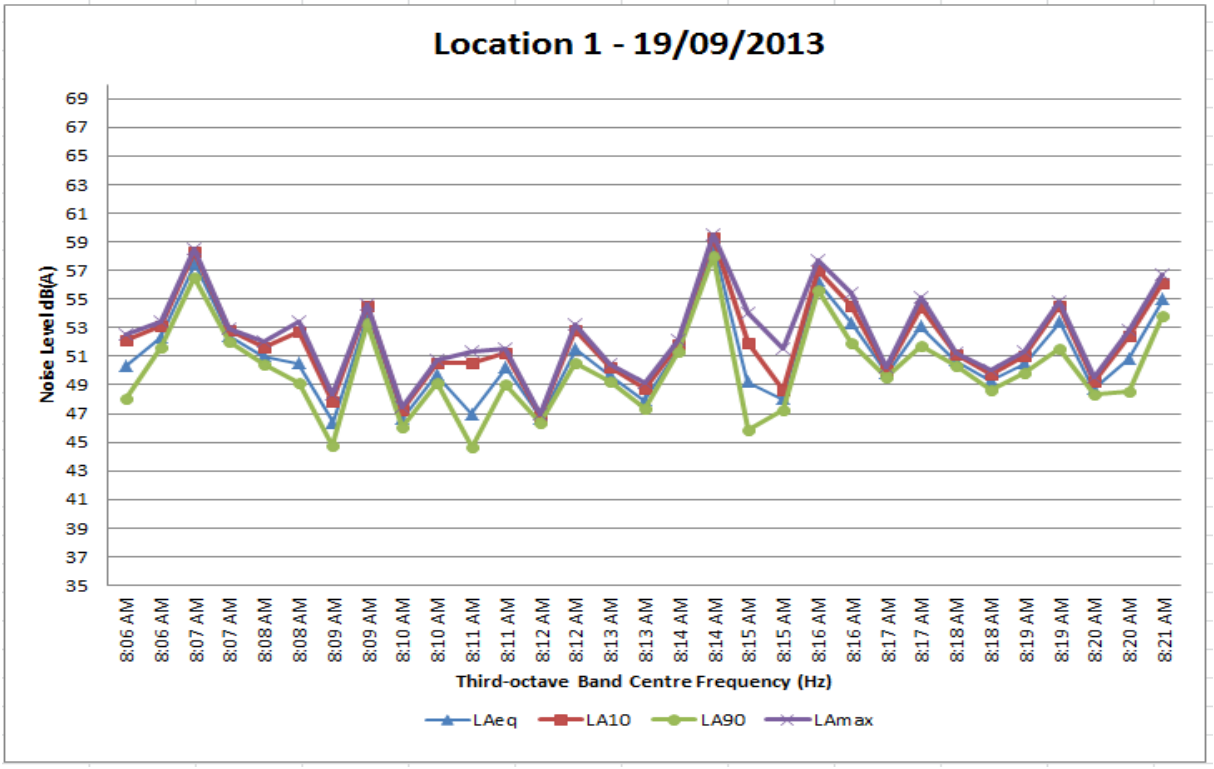
Location 1 – Residential property at Blackmans Flat (Sunday 15/09/2013)



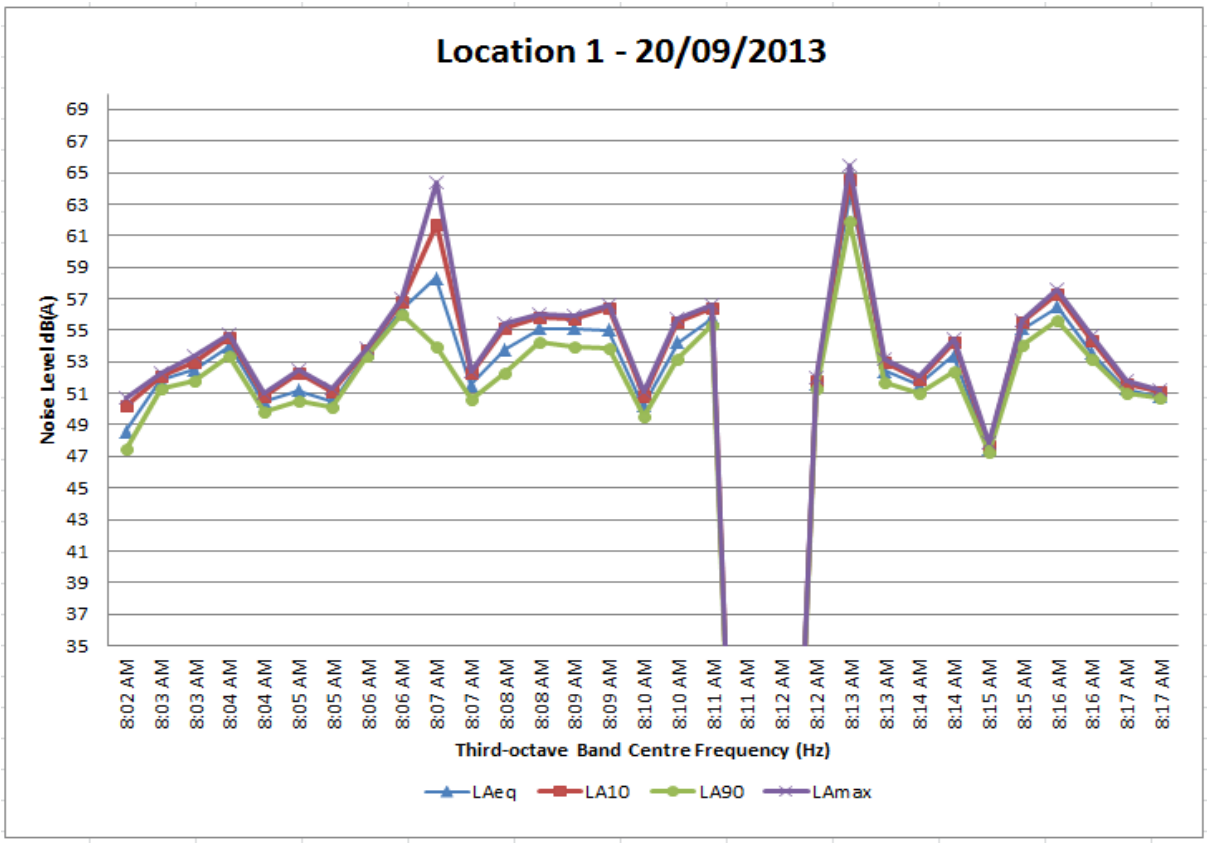
Location 1 – Residential property at Blackmans Flat (Wednesday 18/09/2013)



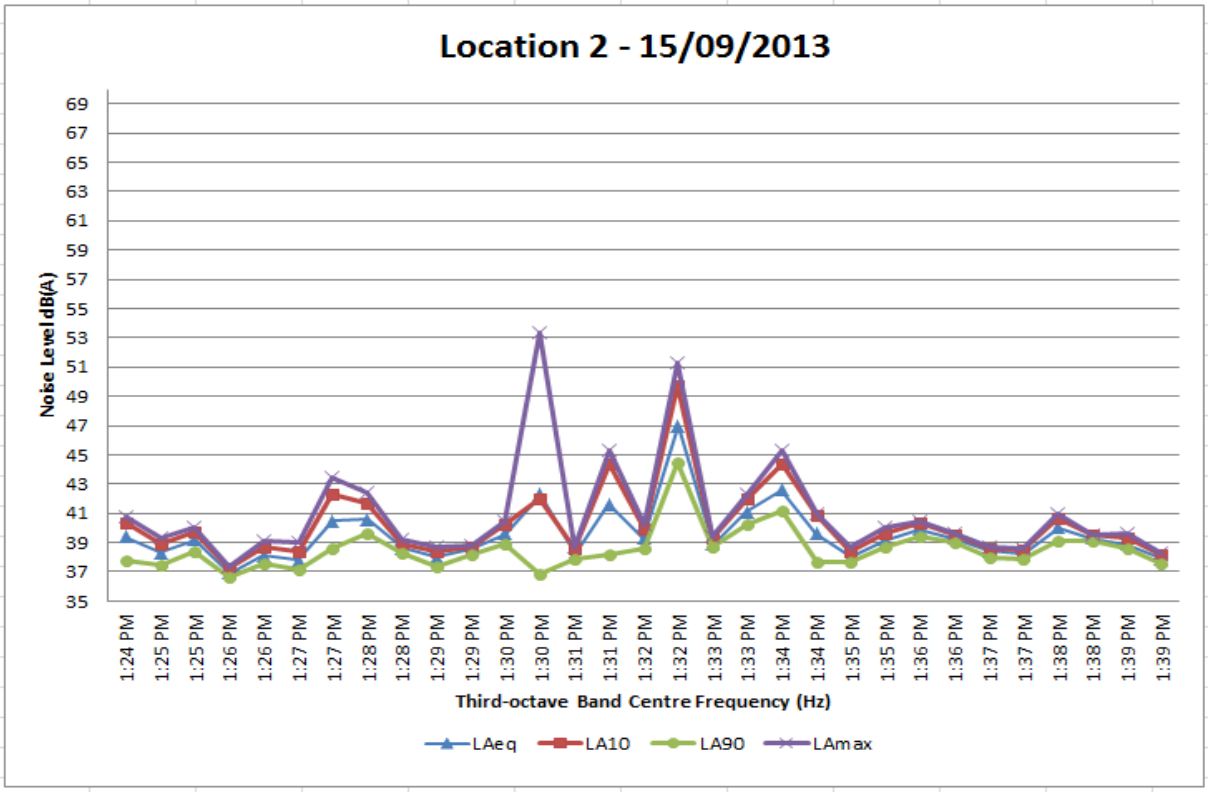
Location 1 – Residential property at Blackmans Flat (Thursday 19/09/2013)



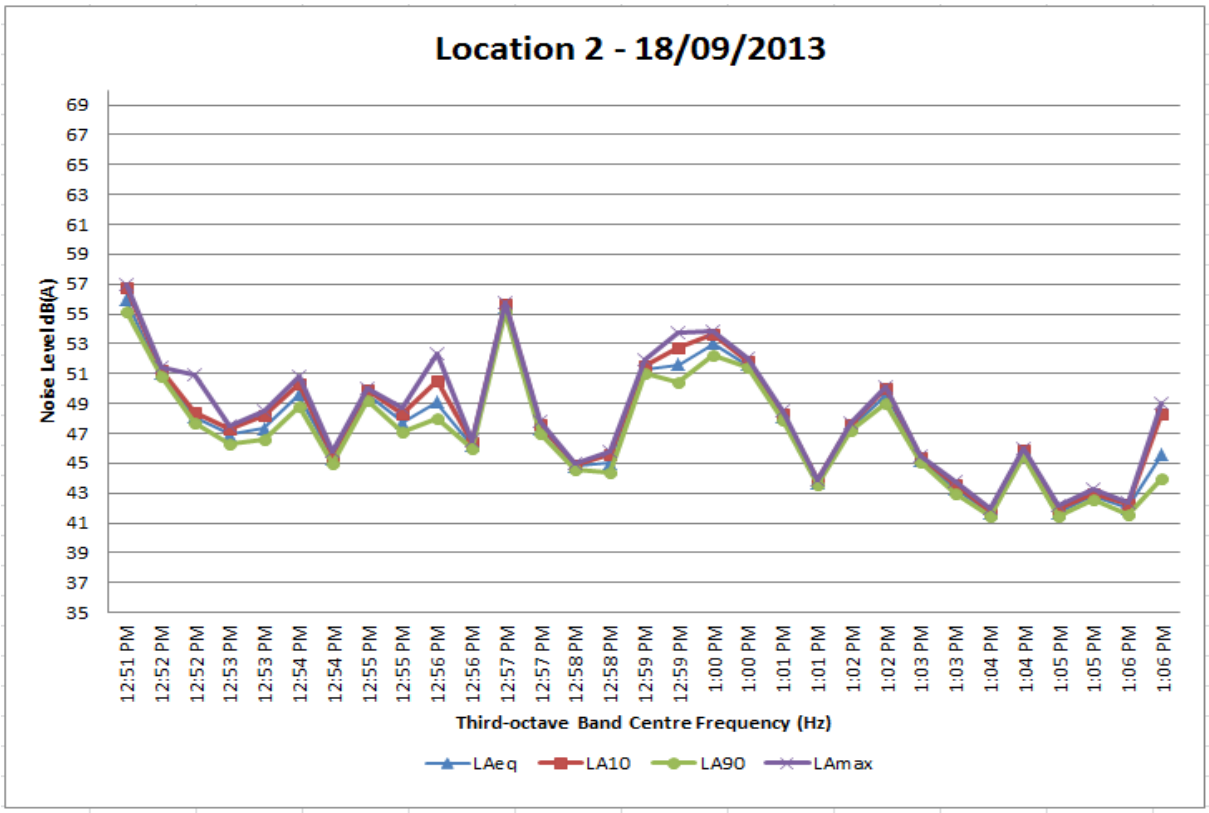
Location 1 – Residential property at Blackmans Flat (Friday 20/09/2013)



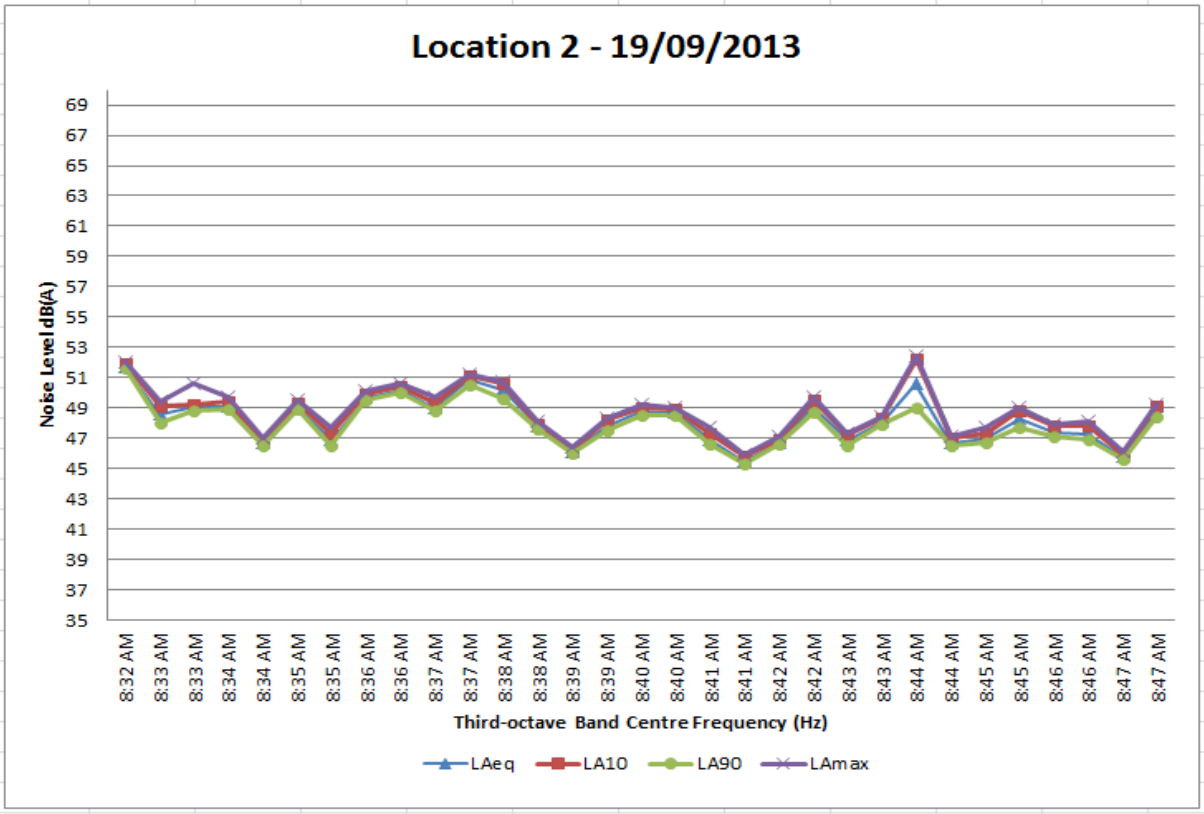
Location 2 – Residential property at Wallerawang (Sunday 15/09/2013)



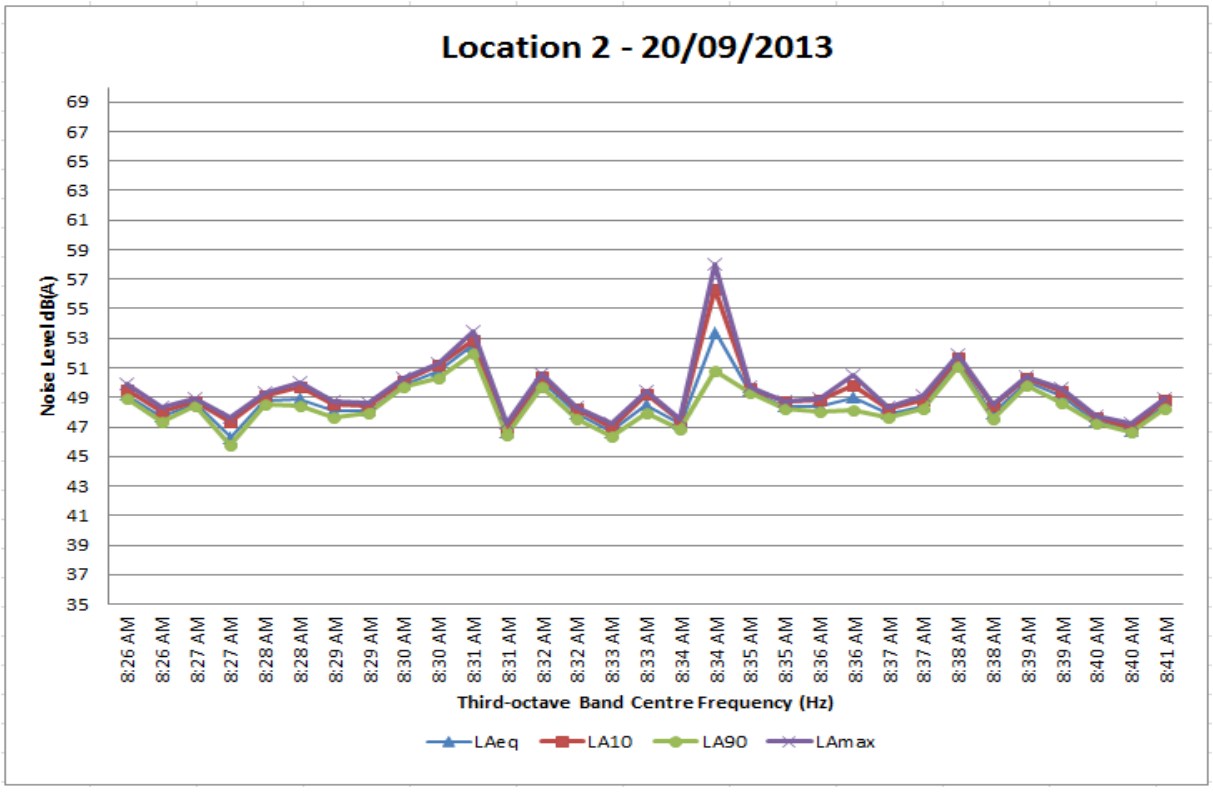
Location 2 – Residential property at Wallerawang (Wednesday 18/09/2013)



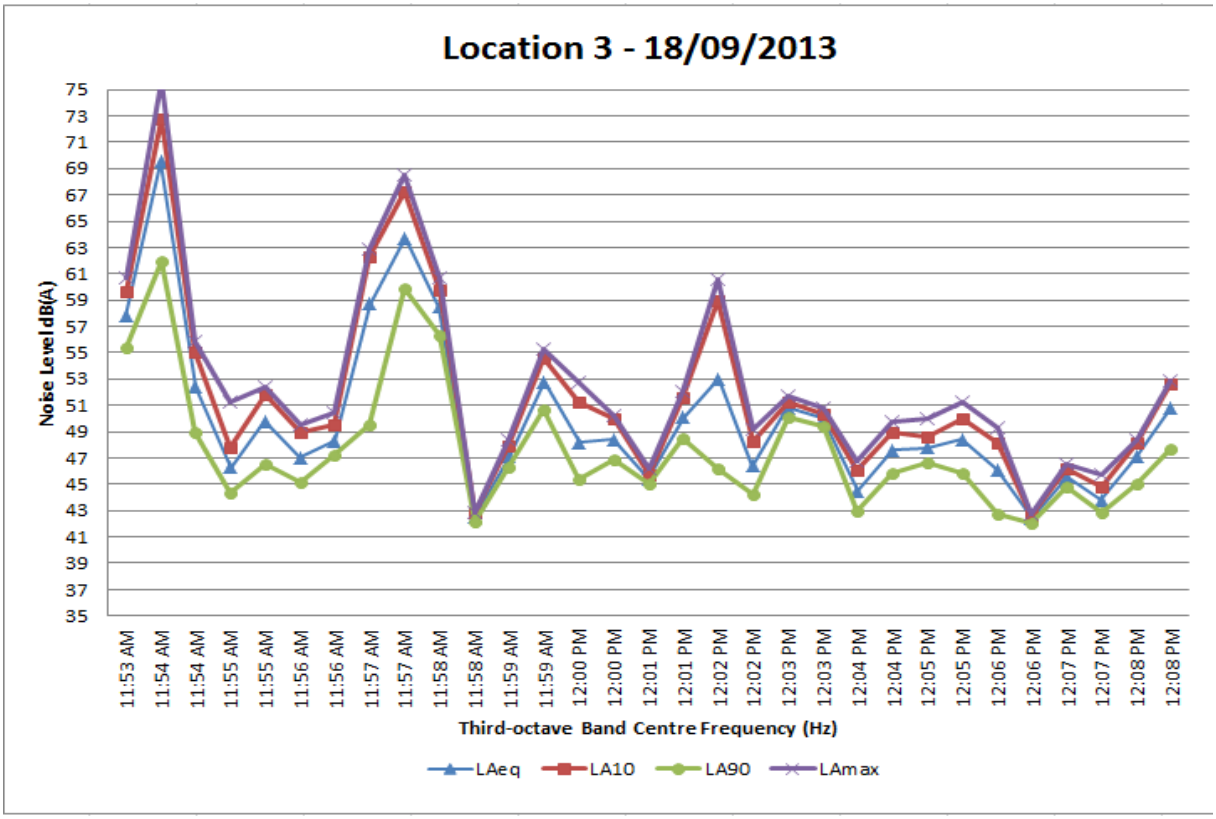
Location 2 – Residential property at Wallerawang (Thursday 19/09/2013)



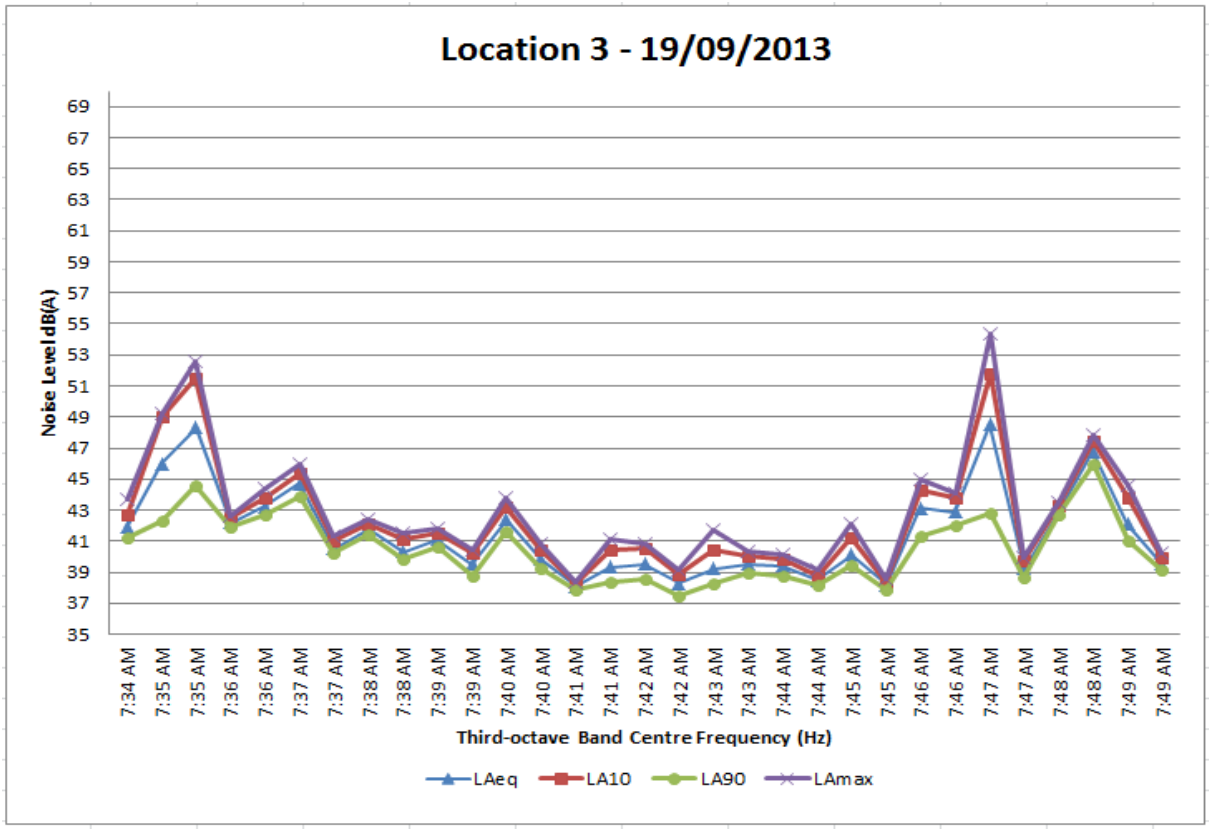
Location 2 – Residential property at Wallerawang (Friday 20/09/2013)



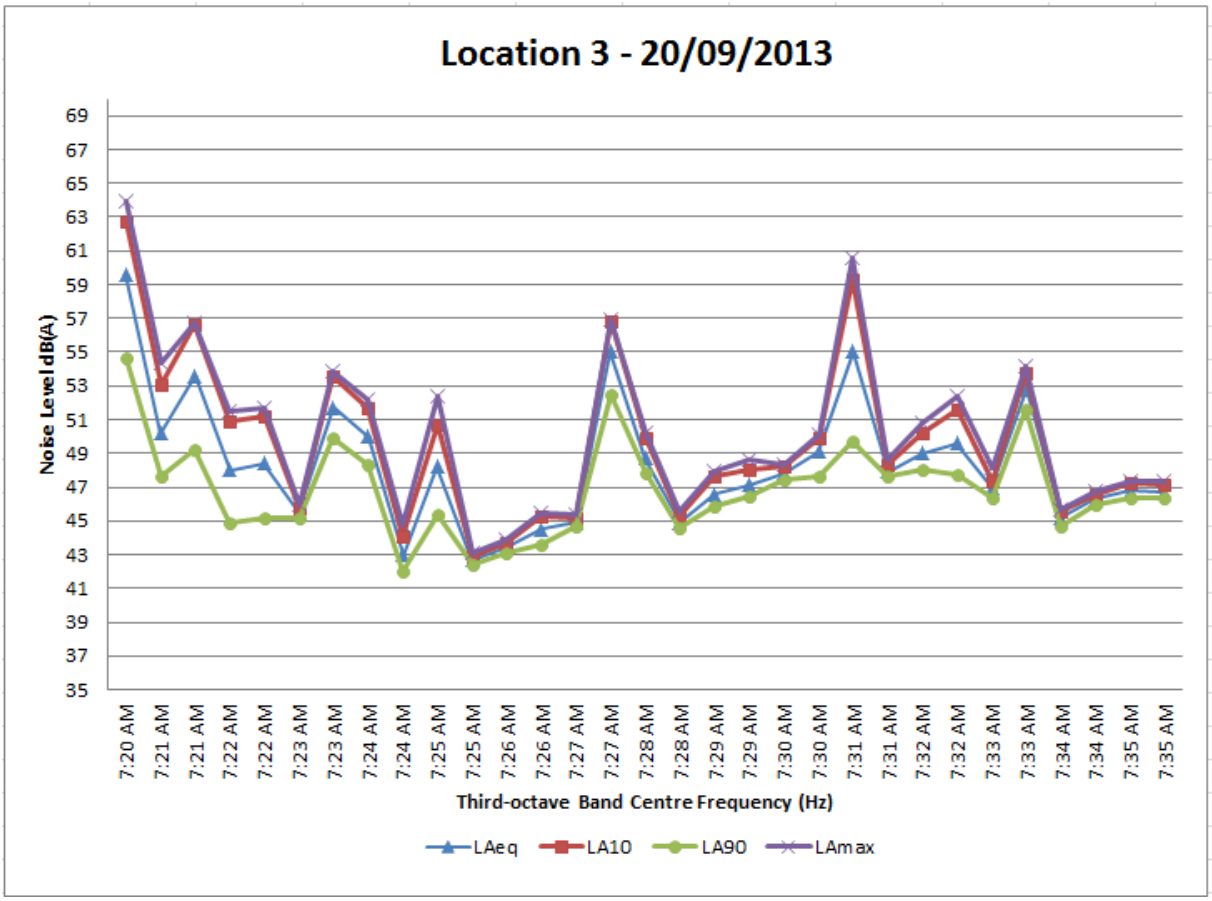
Location 3 – Lamberts North Eastern site boundary (Wednesday 18/09/2013)



Location 3 – Lamberts North Eastern site boundary (Thursday 19/09/2013)



Location 3 – Lamberts North Eastern site boundary (Friday 20/09/2013)



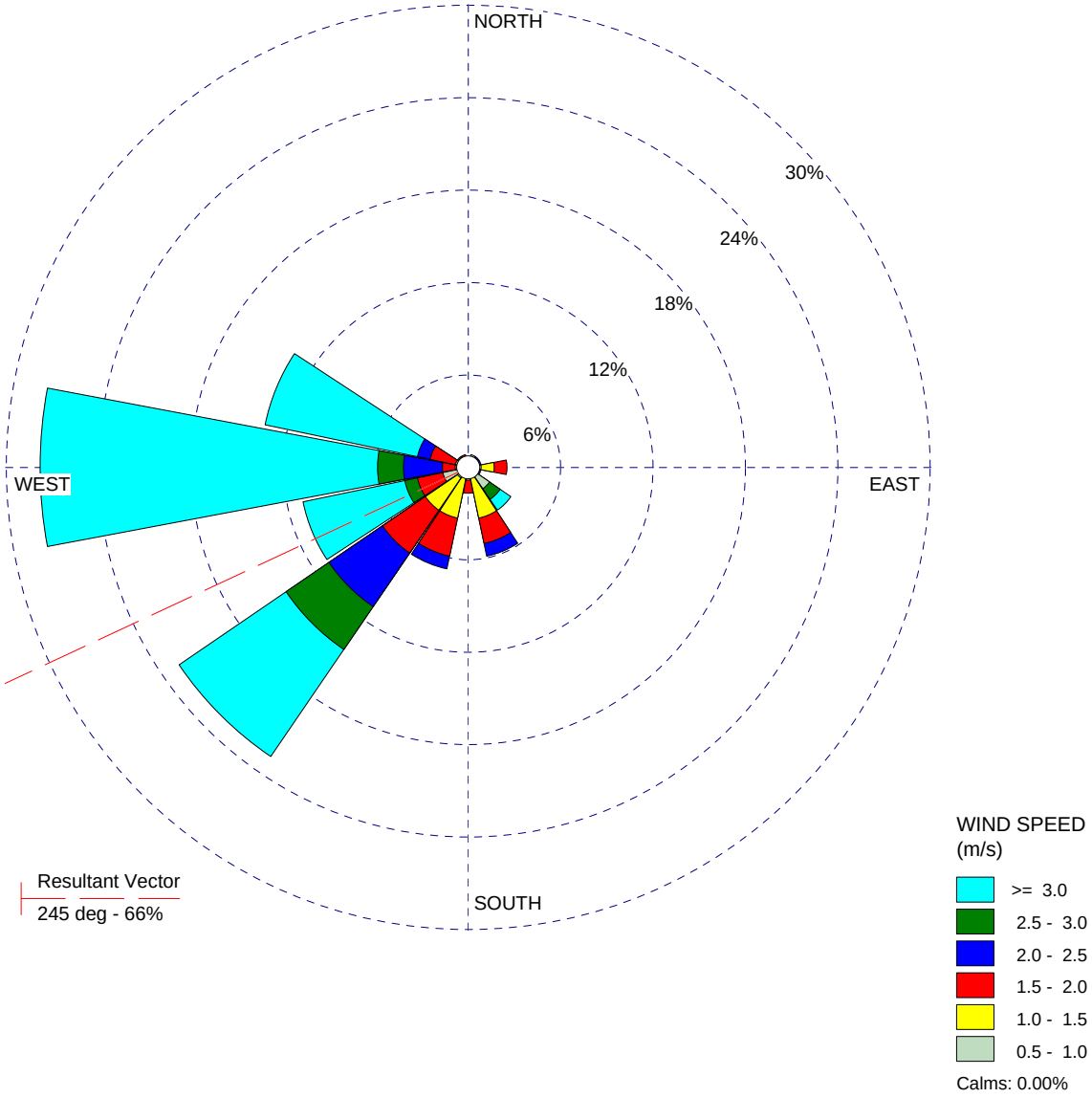
Appendix D
Wind Rose

WIND ROSE PLOT:

Mt Piper Weather Station
Winter Wind Rose September 2013

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: **Start Date: 9/15/2013 - 01:00** **End Date: 9/21/2013 - 23:00**	COMPANY NAME: **Aurecon**	
		MODELER:	
	CALM WINDS: **0.00%**	TOTAL COUNT: **119 hrs.**	
	AVG. WIND SPEED:	DATE: **9/30/2013**	PROJECT NO.: **231256-001**

Aurecon Australia Pty Ltd
ABN 54 005 139 873
Level 2, 116 Military Road
Neutral Bay NSW 2089
PO Box 538
Neutral Bay NSW 2089
Australia
T +61 2 9465 5599
F +61 2 9465 5598
E sydney@aurecongroup.com
W aurecongroup.com

Aurecon offices are located in:
Angola, Australia, Botswana, China, Ethiopia, Hong Kong, Indonesia, Lesotho, Libya, Malawi, Mozambique, Namibia, New Zealand, Nigeria, Philippines, Singapore, South Africa, Swaziland, Tanzania, Thailand, Uganda, United Arab Emirates, Vietnam.