



HEGGIES
A U S T R A L I A

REPORT 10-4309-R4

Revision 0

**White Bay Berth 4 Bulk Liquids Handling
Botany Tradewind
Ship Noise Monitoring Report**

PREPARED FOR

Sydney Ports Corporation
207 Kent Street
Sydney NSW 2000

31 JANUARY 2006



White Bay Berth 4 Bulk Liquids Handling Botany Tradewind Ship Noise Monitoring Report

PREPARED BY:

Heggies Australia Pty Ltd
 ABN 29 001 584 612
 Level 2, 2 Lincoln Street Lane Cove NSW 2066 Australia
 (PO Box 176 Lane Cove NSW 1595 Australia)
 Telephone 61 2 9427 8100 Facsimile 61 2 9427 8200
 Email sydney@heggies.com.au Web www.heggies.com.au

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
10-4309-R4	Revision 0	31 January 2006	Bojan Sevo	Glenn Homes	Glenn Homes



EXECUTIVE SUMMARY

Heggies Australia has been commissioned by Sydney Ports Corporation (SPC) to conduct monitoring of noise emissions during the unloading of Botany Tradewind (a bulk liquids vessel) at White Bay Berth 4 (WB-4), as required by Clause M7.1(1a) of the EPA's Environment Protection Licence (Licence No. 12095).

Measured LAeq and LA90 levels are assessed against the EPA licence imposed noise goals. Exceedances of the LAeq(15 min) noise goals range between 2 dBA and 3 dBA in Pyrmont, while in Balmain the measured levels exceed the LAeq(15 min) noise goals by 2 dBA. An exceedance of the LAeq(night) descriptor of 10 dBA was observed in Balmain during the pumping operation.

Extraneous noise sources unrelated to the bulk liquids operations at WB-4 contributed to the overall LAeq levels measured at the Pyrmont monitoring location. Taking this into account as well as the generally constant nature of WB-4 related noise at Pyrmont, the measured LA90 levels are considered to better represent the true (WB-4 related) LAeq levels in absence of extraneous noise. On this basis, the noise levels from the licenced operations are found to range from complying with the LAeq(15min) criteria to exceeding it by a marginal 2 dBA in Pyrmont.

Bulk liquids terminal related maximum (LAmax) noise levels during unloading of this ship were found to be generated by truck based pressure release valves. A single LAmax event of 64 dBA relating to truck engine noise was also recorded.

Subject to feasibility, practicality and reasonability, potential noise control measures that may be considered (as required by condition R4.1) in order to meet the Licence imposed noise goals, include a combination of applying engineering noise controls to trucks and on-site noise management strategy. Noise impact mitigation measures have been evaluated in the Noise Impact Mitigation and Management Strategy (Document No. 10-4309R7-R1), with a list of mitigation measures considered feasible and reasonable identified in the Noise Impact Mitigation Action Plan.



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Appendix C Description of the Pyrmont / Glebe Monitoring Location at 2 Point Street, Pyrmont



1 INTRODUCTION

Heggies Australia has been commissioned by Sydney Ports Corporation (SPC) to conduct monitoring of noise emissions during the unloading of Botany Tradewind (a bulk liquids vessel), as required by Clause M7.1(1a) of the EPA's Environment Protection Licence (Licence No. 12095).

The measurements during unloading operations (ship pumps and truck activity on the wharf in addition to APUs) have been conducted at locations considered representative of the potentially most exposed residential receivers. In addition, attended noise measurements were carried out at the Balmain location during a period of unloading inactivity (i.e. when unloading was not taking place).

Measured noise levels are assessed against the noise goals set out in Table U1 of the Environment Protection Licence. Feasible and reasonable noise mitigation measures are discussed in broad terms, with the aim of minimising the noise impacts from the operations, where the noise goals are exceeded.



2 SITE DESCRIPTION

The White Bay Port facility is located at the southern end of the Balmain peninsula. The facility sits on about 40 hectares of waterfront land, and forms a crescent around White Bay, with a water frontage of about 2,100 m in length.

The facility layout comprises the following main elements:

- Six multiple-use berths spread along the northern side of White Bay.
- Storage warehouse situated to the north east of White Bay, Berth 4 (WB-4); and
- Internal road continuing from Robert Street, providing truck access to storage areas of docks 1 to 6.

Berth 4 is approximately located in the middle of the northern side of White Bay, as shown in **Figure 1**. To the north and north-west of the site is a mixture of residential dwellings consisting of 1 and 2 storey detached houses and terraces. A number of recently constructed 4 and 5 storey residential developments are situated directly west of Berth 4, and incorporate acoustic façade treatments to achieve satisfactory internal noise levels. In addition, buildings in direct view were designed to provide significant acoustical shielding to the rest of the development. The storage warehouse (on port land) to the north-east of WB-4 is about 20 metres at the highest point, and provides significant acoustic shielding to the residential properties directly behind. To the south-east of the site is Glebe Island, another working port area with four berths, two of which are currently used as car terminals, and two as multiple-use berths. To the south west of WB 4, about 550 m across the water is the Pyrmont Peninsula, with a number of high-rise residential apartments near the waterfront.

2.1 Measurement Locations

The Noise Impact Assessment (NIA) Study (Report Number 10-4309R1 prepared by Heggies) for the proposed bulk liquid terminal operation has previously identified 5 Waite Street and 36 Refinery Drive as the most affected receiver locations within the Balmain/Rozelle and Pyrmont / Glebe areas respectively.

For the current study, in the Balmain / Rozelle area, monitoring was carried out at 13 Donnelly Street (also assessed in the noise impact assessment) due to the availability of day/night access to the property boundary. Note that noise measurements at 13 Donnelly Street can be carried out off street, whereas at 5 Waite Street, noise measurements require backyard access. Furthermore, the location at 13 Donnelly Street is in close proximity of 5 Waite Street. It is approximately the same distance away and is also directly exposed to unloading operations at WB-4. It is therefore considered to be of similar acoustical environment to that of 5 Waite Street, Balmain.

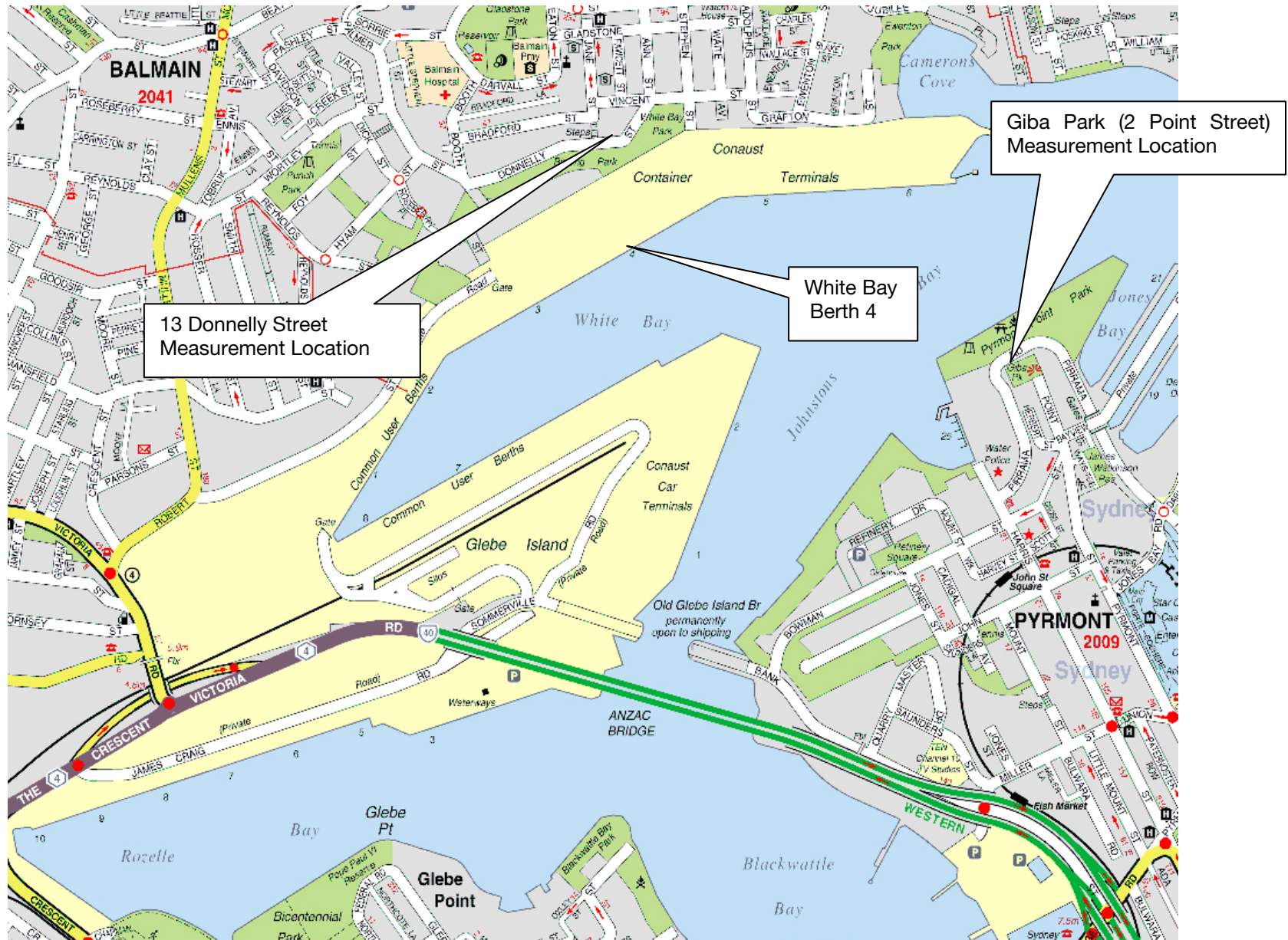
The monitoring location at 36 Refinery Drive, identified by the NIA as the most affected receiver in the Pyrmont / Glebe area was found to be exposed to high levels of traffic related noise from the Anzac Bridge. Giba Park (a publicly accessible park situated at the top of the 4 level apartment complex at 2 Point Street) was therefore selected as the representative measurement location for the Pyrmont / Glebe area, as it allowed ship noise measurements to be taken in relative absence of traffic noise. Giba Park is considered to be equivalent to level 5, 2 Point Street. **Table 1** below summarises the receiver locations where measurements were conducted in each area, and give a brief description of each location. A more detailed description and photos of the selected monitoring locations are presented in **Appendix B** and **Appendix C**.

**Table 1 Representative Receiver Locations**

Location	Representative Receiver Location	Description
Balmain and Rozelle	13 Donnelly Street, Balmain	Ground level at the front of residence, about 7 m away from the facade
Pymont and Glebe	2 Point Street, Pymont	At Giba Park, on top of a 4 storey building at 2 Point Street (i.e. height equivalent of a 5 storey building)



Figure 1 White Bay / Glebe Island Layout with Attended Noise Monitoring Locations





3 EPA LICENCE NOISE GOALS

For the purpose of the bulk liquid cargo handling operations at White Bay Berth 4 (WB-4), the environment protection licence granted by the EPA sets out the project noise goals at the neighbouring residential communities. The noise goals are set out in Table U1 of the licence conditions and reproduced in **Table 2** below.

Table 2 EPA License Noise Goals (Reproduced from Table U1)

Location	Night		
	LAeq(15 min)	LAeq(night)	LA(max)
Balmain and Rozelle	49 dBA	41 dBA	59 dBA
Pymont and Glebe	41 dBA	Not Applicable	51 dBA

Explanatory notes:

1. LA(max) means maximum A-weighted sound pressure level measured on fast time weighting during the time over which sound is measured
2. All other acoustic terms including 'night' have the same meaning as in the INP
3. Not Applicable: In instances where the amenity criteria LAeq(night) has been determined to be a higher number than the intrusive criteria LAeq(15 min) that the amenity criteria is less stringent than the intrusive criteria, then the amenity criteria becomes 'not applicable'. This is because compliance with the criteria will ensure compliance with the intrusive criteria will ensure compliance with the amenity criteria.



4 MEASUREMENT METHODOLOGY AND INSTRUMENTATION

Sound pressure measurements were carried out at 1.5 m above ground level at 13 Donnelly Street and 1.5 m above ground level at Giba Park, located on top of the residential apartment complex at 2 Point Street, Pyrmont. The measurements were carried out using a precision sound level meter conforming to the requirements of AS 1259-1982 "Sound Level Meters". Calibration was checked prior to and subsequent to the survey. Any drift in calibration was within 0.5 dBA and considered acceptable.

The survey instrumentation used during the studies is set out in **Table 3**.

Table 3 Noise Survey Instrumentation

Type	Serial Number	Instrument Description
2260	2335702	Brüel & Kjær Modular Precision Sound Level Meter
4189	2378026	Brüel & Kjær 12.5 mm Prepolarised Condenser Microphone
4231	2022772	Brüel & Kjær Calibrator

The licence calls for L_{Aeq} (A-weighted equivalent continuous) sound pressure level measurements to be carried out at locations representative of those potentially most affected (i.e. waterfront) locations during periods of inactivity (e.g. ship Auxiliary Power Units (APUs) operating) and during unloading operations (e.g. ship pumps and truck activity on the wharf in addition to APUs), in accordance with Clause M7.1 (2).

A window of opportunity to measure ship noise levels during periods of unloading inactivity exists immediately after the ship berths, while the unloading equipment is being set up (hoses unrolled and connected to the ship's manifold etc). The equipment setup phase usually lasts less than 2 hours, after which the unloading is continuous, with one road tanker being filled at any one time. Ship noise measurements during periods of activity can be measured at any time after unloading commences.

The previous ship noise monitoring report prepared by Heggies (Report Number 10-4309R2R1) concluded that measurements are best carried out at night (preferably after 1 am). Extraneous noise (not related to the activity) is generally at a minimum at this time and results are likely to be much more meaningful.

The ship Botany Tradewind was scheduled to berth at 6:00 am on Wednesday 11 January 2006. In light of the expected high levels of extraneous noise from peak traffic during this time, noise measurements during ship inactivity prior to unloading commencement were not carried out on this occasion.

Measurements during periods of activity were carried out on the night of the 11th of January, commencing at 2:00 am, as the extraneous ambient noise is generally at a minimum at this time. A noise measurement during the period of ship inactivity was carried out at 3:30 am on the Balmain Side. The opportunity arose as no road tanker was available on site at that time to unload into.

Environmental noise measurements were carried out with reference to the guidelines contained within the NSW Industrial Noise Policy (INP). In circumstances where it was not practical to carry out measurements at the potentially worst affected receiver locations as predicted by the Noise Impact Assessment, locations of similar noise characteristics were chosen, as described in **Section 2.1**.



Given the relatively constant nature of noise related to the bulk liquids cargo handling operations, short term measurements (15 minute duration) were considered to be sufficient to provide an estimate of the LAeq(night) noise levels at the selected residential receivers. A brief description of acoustic terminology used in this report is presented in **Appendix A**.



5 RESULTS

The results of the 15 minute duration attended noise measurements are summarised in **Table 4** and **Table 5** below. Discussion of the results is presented in **Section 6** of this report. It should be noted that the measured levels include noise from the bulk liquids cargo handling facility as well as ambient noise unrelated to the facility.

Table 4 Measured Noise Levels - Unloading Activity

Address	Start Time	LAeq	LA90	LAmaz Range ¹
13 Donnelly Street (Balmain / Rozelle)	03:05 am	51 dBA	49 dBA	55 dBA – 68 dBA (55 dBA – 68 dBA)
Level 5, 2 Point Street (Pyrmont / Glebe)	02:10 am	44 dBA	43 dBA	52 dBA (52 dBA)
	02:35 am	43 dBA	41 dBA	None observed during monitoring period

Notes: 1. Range of observed LAmaz values with port related LAmaz noise levels shown in brackets

Table 5 Measured Noise Levels – No Unloading Activity

Address	Start Time	LAeq	LA90	LAmaz Range ¹
13 Donnelly Street (Balmain / Rozelle)	03:30 am	47 dBA	46 dBA	None observed during monitoring period

At 2 Point Street, the measured noise levels were generally subject to frequent noise from crickets and seagulls. Due to the presence of extraneous ambient noise sources (cricket and seagull) and given the relatively constant nature of WB-4 related noise, the measured LA90 levels at this location are considered to better represent the true (WB-4 related) LAeq noise levels, as this descriptor is less sensitive to transient extraneous noise.

At 13 Donnelly Street on the other hand, the measured noise levels appeared to be dominated by noise related to the bulk liquids unloading operations. It should be noted that pump-like noise was observed for up to 10 minutes after the conclusion of unloading activity. Noise measurement representing the ship idling (i.e. no unloading activity) was carried out following the cessation of pump-like noise.

Noise from both the ship's Auxiliary Power Units (APUs) and pump / fan operations was constant in nature. Noise from trucks was observed to be the main contributor to (LAmaz) maximum noise level events. Detailed summaries of the LAmaz events are presented in **Table 6** and **Table 7**.

An assessment of the measured noise levels against goals listed in the Licence Conditions are presented in **Table 8**, **Table 9** and **Table 10**.



Table 6 Summary of Attended L_{Amax} Noise Levels at 13 Donnelly Street, Balmain

L _{Amax} Source	L _{Amax} Range	Notes
Pressure release valve (truck based)	59 dBA – 68 dBA	Truck based pressure release valve (possibly related to use of hand brakes) could be heard coming from the truck at arrival and immediately prior to departure from the site. The events last for approximately 1 second
Truck engine switching off	64 dBA	Truck engine switching off. One event recorded where the truck engine (possibly still under load) generated a sound similar to light drumming on a hollow metal container. The event lasted for about 5 seconds with noise levels ranging from 55 dBA to 64 dBA during this period.
Car passing nearby (about 85 m away)	59 dBA	A single event involving car noise was recorded during the measurement period. The 59 dBA recorded level was caused by a loud car exhaust passing along Vincent Street, some 85 m away.

NOTE: Car Passby on Donnelly Street unrelated to bulk liquids unloading operation at White Bay berth 4.

Table 7 Summary of Attended L_{Amax} Noise Levels at 2 Point Street, Pyrmont

L _{Amax} Source	L _{Amax} Range	Notes
Car parking on Pirrama Road	52 dBA	Single L _{Amax} event recorded during the monitoring period at 2 Point Street – not related to unloading activity.

Table 8 Assessment of Measured Noise Levels Against L_{Aeq}(15 min) Noise Goals

Measurement Location	Measured levels		L _{Aeq} (15 min) Noise Goals	L _{Aeq} (15 minute) Exceedance of Licence Goals	L _{A90} Exceedance of Licence Goals
	L _{Aeq}	L _{A90}			
13 Donnelly Street (Balmain / Rozelle)	51 dBA	49 dBA	49 dBA	2 dBA	0 dBA
Level 5, 2 Point Street (Pyrmont / Glebe)	44 dBA	43 dBA	41 dBA	3 dBA	2 dBA
	43 dBA	41 dBA		2 dBA	No Exceedance

Table 9 Assessment of Measured Noise Levels Against L_{Aeq}(night) Noise Goals

Measurement Location	Measured levels		L _{Aeq} (night) Noise Goals	L _{Aeq} Exceedance of Licence Goals	L _{A90} Exceedance of Licence Goals
	L _{Aeq}	L _{A90}			
13 Donnelly Street (Balmain / Rozelle)	51 dBA	49 dBA	41 dBA	10 dBA	8 dBA
Level 5, 2 Point Street (Pyrmont / Glebe)	44 dBA	43 dBA	N/A	N/A	N/A
	43 dBA	41 dBA			



Table 10 Assessment of (WB-4 Related) Measured Noise Levels Against L_{max} Noise Goals

Measurement Location	Range of Maximum Measured Levels (L_{max} Range)	L_{max} Noise Goals	Range of Recorded L_{max} Exceedances of the Licence Noise Goals
13 Donnelly Street (Balmain / Rozelle)	59 dBA – 68 ¹ dBA	59dBA	0 dBA - 9 dBA
Level 5, 2 Point Street (Pyrmont / Glebe)	N/A ²	51 dBA	N/A

- 1 Two events registered during the 30 min monitoring period; 68 dBA and 59 dBA due to hand brake pressure release valve, and 64 dBA caused by a truck engine switching off.
- 2 Only one L_{max} event was recorded during the two 15 minute monitoring periods. This event was caused by a car parking nearby, totally unrelated to the bulk liquids cargo handling facility.



6 DISCUSSION

Measured LAeq and LA90 levels are assessed against the stated goals in **Table 8**, **Table 9** and **Table 10**. LAeq(15 min) exceedance of noise goals of 2 dBA was recorded in Balmain, while in Pyrmont the measured LAeq noise levels exceed the Licence goals by 2 dBA to 3 dBA. An LAeq(night) exceedance of 10 dBA occurs in Balmain.

Due to the relatively high level of ambient noise and the generally constant nature of WB-4 related noise at Pyrmont, the measured LA90 levels are considered to better represent the true (WB-4 related) LAeq noise levels at this location. On this basis, the noise levels from the licenced operations are found to range from complying with the LAeq criteria to exceeding by 2 dBA in Pyrmont.

Comparing the measured noise levels during periods of loading activity (51 dBA) and inactivity (47 dBA) at Balmain suggests a noise contribution of 47 dBA from the APUs and 49 dBA from the pumping operation.

Pressure release (blow-off) valves were identified as the major source of noise responsible for exceedances of LAm_{ax} noise levels, ranging from 59 dBA to 68 dBA. The events were found to be of short duration, typically not more than 1 second. A single LAm_{ax} event of 64 dBA related to a truck engine being switched off was recorded and lasted for approximately 5 seconds. The LAm_{ax} noise criterion was exceeded by up to 9 dBA in the Balmain / Rozelle area. No exceedances were recorded at the representative Pyrmont/Glebe location. A comparison of the measured noise levels with those predicted by the NIA model (based on Botany Treasure) with consideration to extraneous noise contributions indicates that the noise model is reasonably representative of the observed noise emissions.

In order to fulfil the requirement of Licence condition R4.1 and in relation to compliance with Licence conditions O4.1 and O4.2, the potential noise control measures are discussed below in concept for the sources identified during attended monitoring.

Truck based LAm_{ax} noise levels could potentially be managed through identifying the offending vehicles and fitting appropriate muffling devices. Servicing the engine and/or replacing worn parts on offending vehicles would potentially address the noise related to truck engine switching off. It should be noted that this was the first recorded instance of this noise source.

Based on subjective observations, three significant sources of noise were identified on the ship. These included engine noise emanating from approximately deck height, a noise source coming from mid-deck (possibly pump noise) and noise from a ventilator shaft at the aft of the deck. At the Balmain location, the contribution of APU related noise was measured to be 47 dBA. The overall noise level, including the operation of the pumps and truck activity on site was measured at 51 dBA. This indicates that the noise contribution due to bulk liquids unloading (pumping operation) is in the order of 49 dBA, thus controlling the overall noise levels.

A Noise Impact Mitigation and Management Strategy (Document No. 10-4309R7-R1) has been prepared for the operation. Taking into consideration the infrequency and limited duration of the operation, expected costs, development times, uncertainty of effective outcome, and the impact on flexibility in relation to ships that may be used in the operation, the implementation of ship specific engineering noise control measures is not considered practical nor reasonable within the Noise Impact Mitigation and Management Strategy. Instead, the document recommends an on-site mitigation management strategy be implemented based on operator awareness and procedures to identify and repair abnormally noisy equipment, as outlined within the Noise Impact Mitigation Action Plan.



7 CONCLUSION

Noise measurements were carried out on the night of 11th January 2006 during the unloading of Botany Tradewind, a bulk liquids transport vessel. The measured noise levels (presented in **Table 8**, **Table 9** and **Table 10**) were assessed against the noise goals imposed by the EPA licence conditions. It was found that $L_{Aeq(15\text{ min})}$ exceedances of noise goals range between 2 dBA and 3 dBA in Pyrmont, while in Balmain the measured levels exceed the $L_{Aeq(15\text{ min})}$ goals by 2 dBA. An exceedance of the $L_{Aeq(\text{night})}$ descriptor of 10 dBA was observed in Balmain during the pumping operation.

It should also be noted that ambient noise sources unrelated to the WB-4 activities contributed to the overall L_{Aeq} levels measured at the Pyrmont monitoring location. Taking this into account as well as the relatively constant nature of WB-4 related noise at Pyrmont, the measured L_{A90} levels are considered to better represent the true (WB-4 related) L_{Aeq} levels in absence of extraneous noise. On this basis, the noise levels from the licenced operations are found to range from complying with the $L_{Aeq(15\text{ min})}$ criteria to exceeding it by a marginal 2 dBA in Pyrmont.

Bulk liquids terminal related maximum (L_{Amax}) noise levels during unloading of this ship were found to be generated by truck based pressure release valves. An isolated L_{Amax} event of 64 dBA relating to truck engine noise was also recorded.

Potential noise control measures that may be considered to meet the Licence imposed noise goals (as required by condition R4.1) subject to feasibility, practicality and reasonability, include a combination of applying engineering noise control measures to trucks and an on-site noise management strategy. Noise impact mitigation measures have been evaluated in the Noise Impact Mitigation and Management Strategy (Document No. 10-4309R7-R1), with a list of mitigation measures considered feasible and reasonable identified in the Noise Impact Mitigation Action Plan.

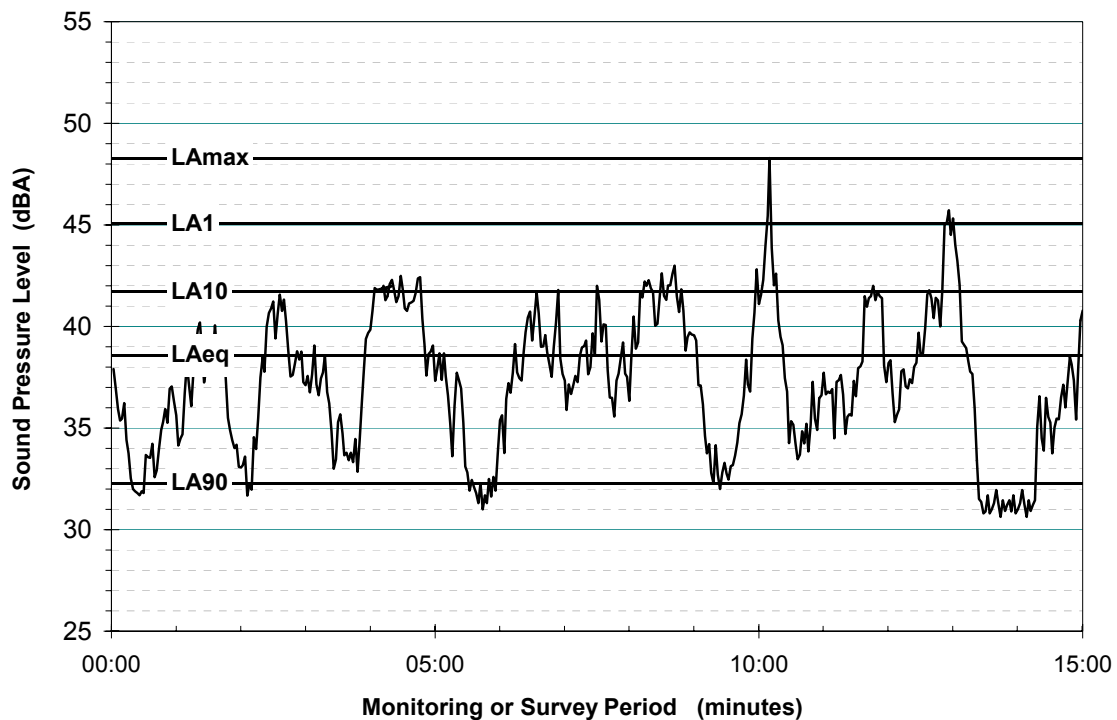
ACOUSTIC TERMINOLOGY USED IN THE REPORT

Typical Noise Indices

This Report makes repeated reference to certain noise level descriptors, in particular the LA10, LA90 and LAeq and LAmax noise levels.

- The LA10 is the A-weighted sound pressure level exceeded 10% of a given measurement period and is utilised normally to characterise typical maximum noise levels.
- The LAeq is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound over the same measurement period. The LAeq(15hour) is the measurement parameter used to describe the road traffic noise level over the entire daytime (7.00 am to 10.00 pm) period. The LAeq(9hour) is the measurement parameter used to describe the road traffic noise level over the entire night-time (10.00 pm to 7.00 am) period. Similarly, the LAeq(1hour) is the measurement parameter used to describe the road traffic noise level during the loudest 1-hour period during the daytime or night-time periods.
- The LA90 noise level is the A-weighted sound pressure level exceeded 90% of a given measurement period and is representative of the average minimum background sound level (in the absence of the source under consideration), or simply the “background” level.
- The LAmax noise level is the maximum A-weighted noise level associated with road traffic movements.

Graphical Display of Typical Noise Indices



Typical Noise Levels

The following table presents examples of typical noise levels.

Typical Noise Levels

Sound Pressure Level (dBA)	Typical Source	Subjective Evaluation
130	Threshold of pain	Intolerable
120	Heavy rock concert	Extremely noisy
110	Grinding on steel	
100	Loud car horn at 3 m	Very noisy
90	Construction site with pneumatic hammering	
80	Kerb side of busy street	Loud
70	Loud radio or television	
60	Department store	Moderate to
50	General Office	Quiet
40	Inside private office	Quiet to
30	Inside bedroom	Very quiet
20	Unoccupied recording studio	Almost silent

A-Weighting or dBA Noise Levels

The overall level of a sound is usually expressed in terms of dBA, which is measured using the “A-weighting” filter incorporated in sound level meters. These filters have a frequency response corresponding approximately to that of human hearing. People’s hearing is most sensitive to sounds at mid frequencies (500 Hz to 4000 Hz), and less sensitive at lower and higher frequencies. Thus, the level of a sound in dBA is a good measure of the “loudness” of that sound. Different sources having the same dBA level generally sound about equally as loud, although the perceived loudness can also be affected by the character of the sound (eg the loudness of human speech and a distant motorbike may be perceived differently, although they are of the same dBA level).

Sensitivity of People to Noise Level Changes

A change of up to 3 dBA in the level of a sound is difficult for most people to detect, whilst a 3 dBA to 5 dBA change corresponds to a small but noticeable change in loudness. A 10 dBA change corresponds to an approximate doubling or halving in loudness

13 DONNELLY STREET, BALMAIN

The location is situated approximately 170 m away from and directly overlooking White Bay Berth 4 (across the park). It is elevated some 15 m above dock level. The measurement was conducted from street level (from a footpath) with Donnelly Street traffic less than 2 m away.



Aerial Photo showing the monitoring location at 13 Donnelly Street, relative to White Bay Berth 4 (WB-4).



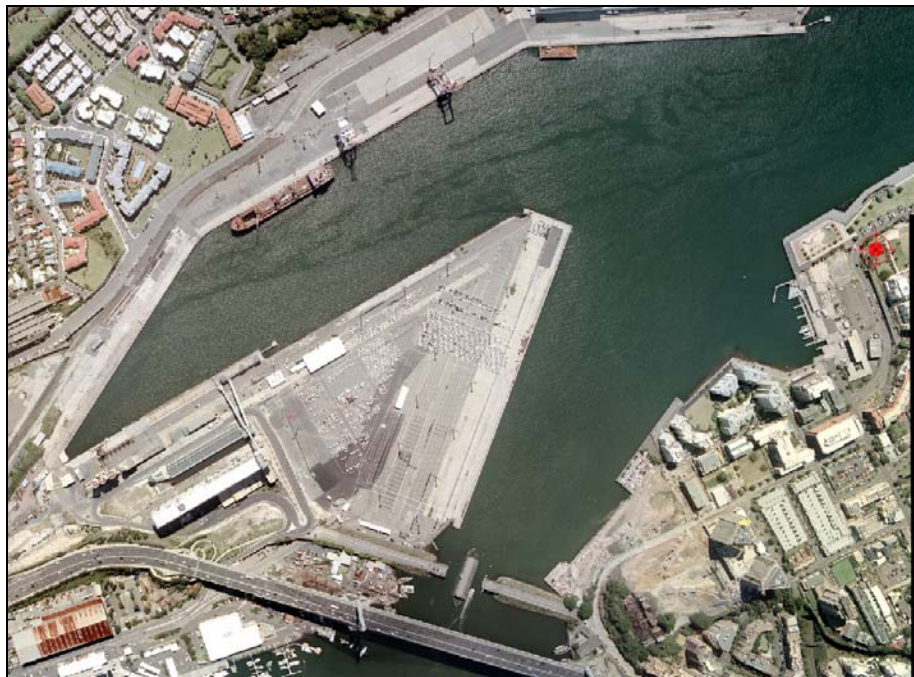
View from WB-4 deck towards 13 Donnelly Street



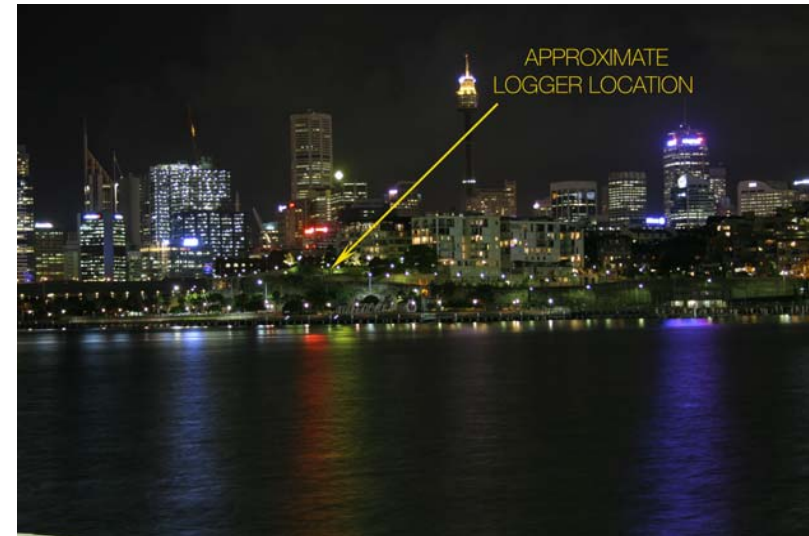
View from 13 Donnelly St towards a bulk liquids ship berthed at WB-4

2 POINT STREET, PYRMONT

This monitoring location is situated approximately 660 m away from White Bay Berth 4 (across the bay). Monitoring was conducted at a height equivalent of a 5 storey building, on the cliffs edge. Pirrama Road encircles the park from west, north and east sides, approximately 15 m below.



Aerial Photo showing the monitoring location at 2 Point Street, relative to White Bay Berth 4 (WB-4).



View from WB-4 deck towards 2 Point Street



View from 2 Point Street towards a bulk liquids ship berthed at WB-4