Noise Management Plan

Visy Pulp & Paper Tumut Mill

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1.0 Introduction

1.1 Background

Visy Pulp and Paper Tumut (VPP) is a fully integrated unbleached Kraft Pulp and Paper Mill, located approximately 8 km West of Tumut and 7 km east of Adelong in the South West Slopes region of New South Wales. Development Approval for the project was obtained on 29 November 1998 pursuant to the provisions of the *Environmental Planning and Assessment Act* 1979. This consent, subject to over 105 individual conditions, was issued for existing operations with capacity of up to 300,000 tonnes per year (tpy) and increase of up to 450,000 tpy for the future mill expansion.

In May 2006, Visy wrote to the Minister for Planning seeking a further increase to the future Mill expansion of up to 700,000 tpy. As this increase was substantially greater than the 450,000 tpy that was originally approved, Visy was required to prepare an Environmental Assessment for the proposed expansion.

The Visy Tumut Expansion Environmental Assessment for the 700,000 tpy was prepared and submitted to the Minister for Planning in February 2007 and approval was granted by the Minister in May 2007 pursuant to the provisions of Section 75J of the *Environmental Planning and Assessment Act* 1979. This approval was granted subject to Concept and Project Approval Conditions issued in Schedule 2 of the approval dated 1 May 2007. Visy sought further modification to this approval in June 2007 (ref. Mod 2007) that considered Project Component Phasing Changes. The Project Component Phasing was approved under the Modification to the Instrument of Approval (06_0159 Mod 1) in August 2007.

In December 2016, Visy submitted a development modification application accompanied by an Environmental Assessment for the maximum production tonnage limit increase. Approval was granted on the 7 July 2017 by the NSW Department of Planning & Environment for the maximum production tonnage limit increase to 800,000 tonnes per year (tpy).

The Noise Management Plan (NMP) for stage 1 was prepared in accordance with Development Consent Condition no. 25. Under the current Project Consent Approvals (Condition no. 5.4c), Visy are required to prepare an updated NMP to cover specific items related to the expansion in consultation with the NSW Department of Environment and Climate Change (DECC) and for the approval of Minister for Planning. This updated NMP has been prepared in accordance with these Project Approval Conditions and specifically covers the Project Component Phasing under 1a. Subsequent phases will be covered under future updates to this NMP.

1.2 Overview of Noise Impact Assessments

During the Environmental Impact Study for the initial development, a detailed noise impact assessment was undertaken. Noise control measures were implemented and noise compliance studies had demonstrated compliance with these noise limits. During the subsequent noise impact assessment for the Visy Expansion *(Refer Visy Pulp and Paper Proposed Mill Expansion Final Environmental Assessment January 2007, Appendix N)*, noise modelling carried out using "SoundPlan" indicated noise levels for the expanded mill would increase by up to 2.2 dB(A) at some receivers. Subsequently Visy sought approval for increase to night time noise limit to 40 dB(A) during neutral and slightly noise enhancing meteorological conditions. A further limit of 43 dB(A) was proposed under extreme meteorological conditions that occur infrequently during late Autumn and early Winter. Based on the assessments, the NSW Department of Environment and Climate

Change (DECC) defined Licence conditions that specified Noise emission limits for operations under changes to the *Environment Protection Licence no. 10232 (EPL)* dated 29 June 2009.

1.3 Environmental Management System

The NMP is a component of the site's Environmental Management System (EMS), certified to ISO 14,001:2015. The Environmental Management System consisting of the Operational Environmental Management Plans, operational and environment procedures, and detailed monitoring and auditing program aims to maintain compliance with Environmental regulations and achieve best-practice standards through a system of continual improvement, as represented below in Figure 1.0.

The EMS is integrated with the site's Safety and Quality management systems which are both certified to the relevant standards (i.e. ISO 9001:2015, ISO 45001:2018).

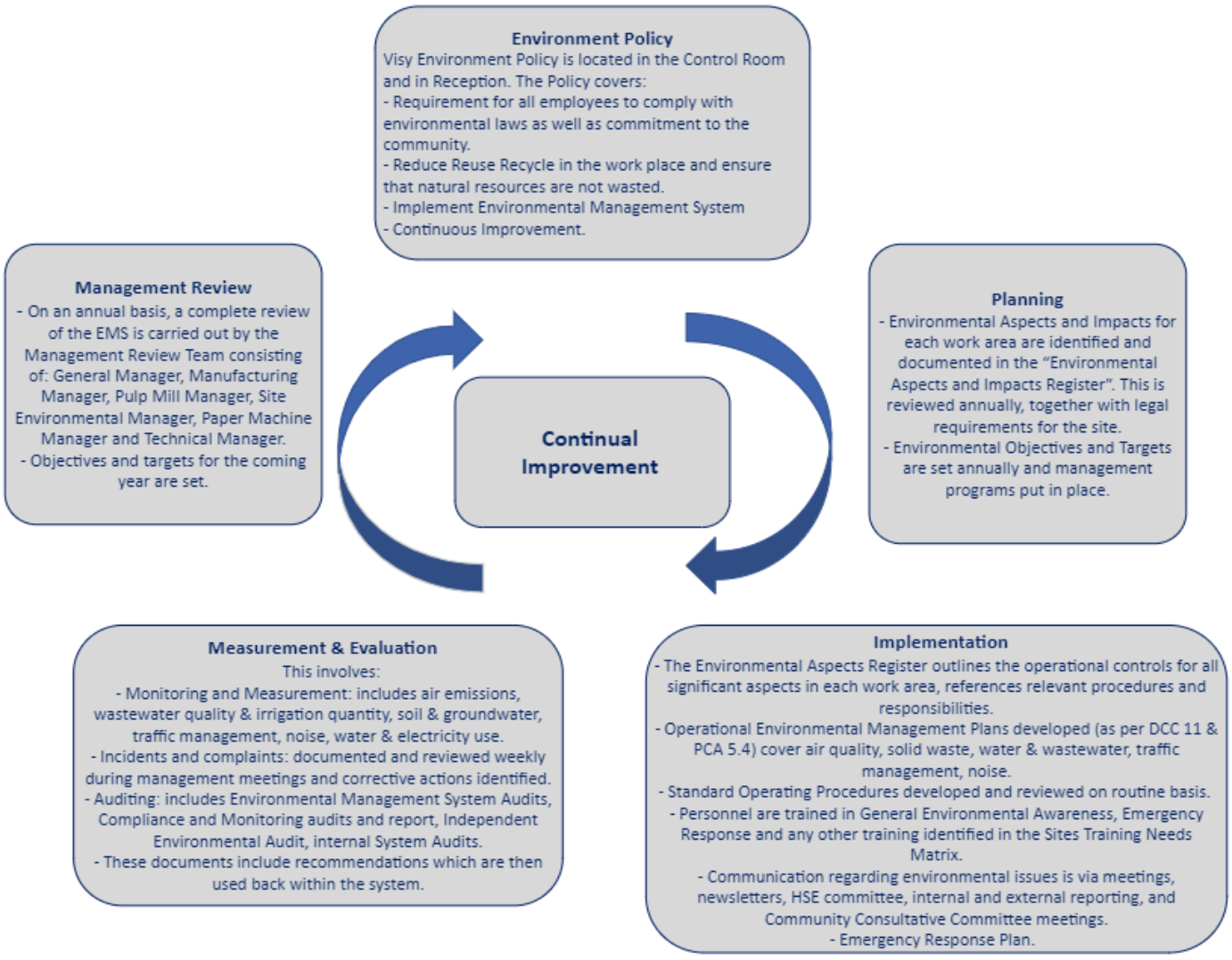

Figure 1.0 Overview of site Environmental Management System (EMS) Continual Improvement

2.0 Legal Requirements

2.1 Environmental Planning and Assessment Act 1979

The NSW legislation for granting of development approval for the Visy Mill Development is the *Environment Planning and Assessment Act* 1979. Approval of the initial Development (Stage 1) was granted under *section 91AB(2)* of the Act. Approval was granted subject to meeting the Development Consent Conditions under approval S96/00598. The subsequent Visy Tumut Mill Expansion Development was granted under Part 3A. This approval was granted subject to meeting the Concept and Project Approval Conditions under approval 06_0159.

The statutory requirements which apply to the Tumut site are:

- Documents as listed under Condition 1 of Development Consent Conditions for the initial development(S96/00598 DCC);
- Additional documents as listed under Condition 2 of Development Consent Conditions for the modified development(S96/00598 DCC_ MOD -45-5-2003-1);
- Environment Protection Licence (Licence No. 10232);
- Documents as listed under Condition 1.1 of Project Approval Conditions for the Expansion (06_0159 PA);
- Documents as listed under Condition 1.1 Concept Approval Conditions for the Expansion (06_0159 CA);
- Statement of Commitment Stage 2 (April 2007); and
- Documents as listed under Condition 1.1 Modification Approval for the Expansion (06_0159 Mod 1).

2.2 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act* 1997, is the key piece of environmental protection legislation administered by the EPA to authorise the carrying out of scheduled activities at Visy Tumut. The *POEO Act 1997* requires that the operation of the site be undertaken without causing offensive noise and applies the following definition:

> **"Noise pollution"** means the emission of offensive noise.
>
> *Where "offensive noise" means:*
>
> *(a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:*
>
> *(i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or*
>
> *(ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or*
>
> *(b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations.*

Under this legislation Visy are issued with an *Environment Protection Licence (EPL No. 10232)* to operate subject to satisfying the various conditions of this Licence that includes air, noise and water emission limits, waste receival and disposal and requirements for monitoring and reporting.

2.3 NSW EPA Noise Policy for Industry (2017)

The NSW EPA *Noise Policy for Industry (2017)* was developed by the NSW Environment Protection Authority (EPA) primarily for the assessment of noise emissions from industrial sites regulated by the NSW EPA.

The policy sets out the NSW Environment Protection Authority's (EPA's) requirements for the assessment and management of noise from industry in NSW. It aims to ensure that noise is kept to acceptable levels in balance with the social and economic value of industry in NSW.

The former *Industrial Noise Policy (INP)* was used to derive project specific noise limits used in the Environmental Assessment for the Visy Tumut expansion. Allowable noise limits determined by the Department of Planning and Environment is based on the above mentioned noise limits however remains consistent with the INP.

3.0 Objectives and Performance Outcomes

The objectives and performance outcomes for the Operational Noise Management Plan are described, Table 1.0 below.

Table 1.0 Objectives and Performance Outcomes

Objectives	Performance Outcomes
• To comply with all statutory requirements. • To minimise noise impacts on surrounding environment. • To maintain reasonable levels of amenity for surrounding residents. • To keep the local community informed and regulators informed and to respond quickly and effectively to issues. • To ensure that the results of noise monitoring comply with EP Licence and Noise Policy for Industry (2017). • To ensure noise compliance assessment is undertaken in accordance with requirements of Consent Conditions. • To minimise traffic noise impacts along major haulage routes.	• Periodic noise monitoring during plant operation. • Appropriate actions undertaken to investigate and effectively respond to noise complaints. • Plant and equipment are operated and maintained in accordance with the Operational and Maintenance procedures. • Continued restriction on night time Heavy Vehicle Traffic through Adelong. • Onsite speed restrictions for Heavy Vehicles. • Undertake traffic noise monitoring assessment with initial 12 months of operation. • Heavy vehicle operators driver education to mitigate excessive speed and use of compression breaking in built up areas.

4.0 Noise Emission Issues

4.1 Site Activities

The main noise sources in each area are listed for both Stage 1 and Stage 2 (Phase 1A) in Table 2.0 below:

Table 2.0 Main operational noise sources

Stage 1	Stage 2 (Phase 1A)
Evaporation area (various pumps, motors, steam vents and pressure relief valves).	Vapour Compression Evaporator (fan, motor, pumps).
Cooling Towers (5 cells inclusive of fans and motors).	One larger fan installed in Cooling Tower no. 1.
Woodyard (Chipper, Debarker, log crane, log handling, conveyors, reclaimers, mobile plant, log trucks).	Woodyard (New log crane to replace existing, new chipper to replace existing).
Recovery Boiler A (Pumps, Fans, Air compressors, Smelt Tank, steam vents etc).	Recovery Boiler B (Pumps, Fans, Air compressors, Smelt Tank, steam vents etc).
Power Boiler (Pumps, Fans, Steam Vents etc).	No changes.
Paper Machine No. VP9 (Pumps, Fans, Paper Machine, Refiners, Agitators, Vacuum Pumps, Steam Vents, Dump Condenser etc).	Paper Machine No. VP10 (Pumps, Fans, Paper Machine, Refiners, Agitators, Vacuum Blower, Steam Vents, etc).
Fibreline (Digester, Pumps, DD Washer, Screw Press Refiners, Steam Vents, Pressure Relief Valves etc).	Fibreline (Impregnation vessel, DD Washer, Pumps, Screw Press, Refiners, Vacuum Pumps, Steam Vents, Pressure Relief Valves etc).
White Liquor Plant A (Lime Kiln A, Pumps, motors air compressors, fans, bucket elevators, conveyors, pressure relief valves, steam vents etc).	White Liquor Plant B (Lime Kiln B, Pumps, motors, air compressors, fans, bucket elevators, conveyors, pressure relief valves, steam vents etc).
28 MW Turbine (Steam turbine, Generator, pumps, motors, steam vents, pressure relief valves etc).	12 MW Turbine (Steam turbine, generator, pumps, motors, steam vents, pressure relief valves, Dump Condensers etc).
Recycled Fibre Plant (Mobile Plant, conveyors, pumps, motors, Broke Pulper etc).	Recycled Fibre Plant (Mobile Plant, conveyors, pumps, motors, High Density Pulper etc).
Recrystallisation and Water Treatment Plant (pumps, motors, screw conveyors, steam vents etc).	Additional Water Treatment Plant equipment and Tanks.
Heavy vehicle traffic.	Additional Heavy vehicle traffic.

The major process areas are shown on following site plan below Figure 2.0.
Heavy vehicle traffic can also pose a significant source of noise, for residents along the major transport routes at night time.

Figure B Site Plan

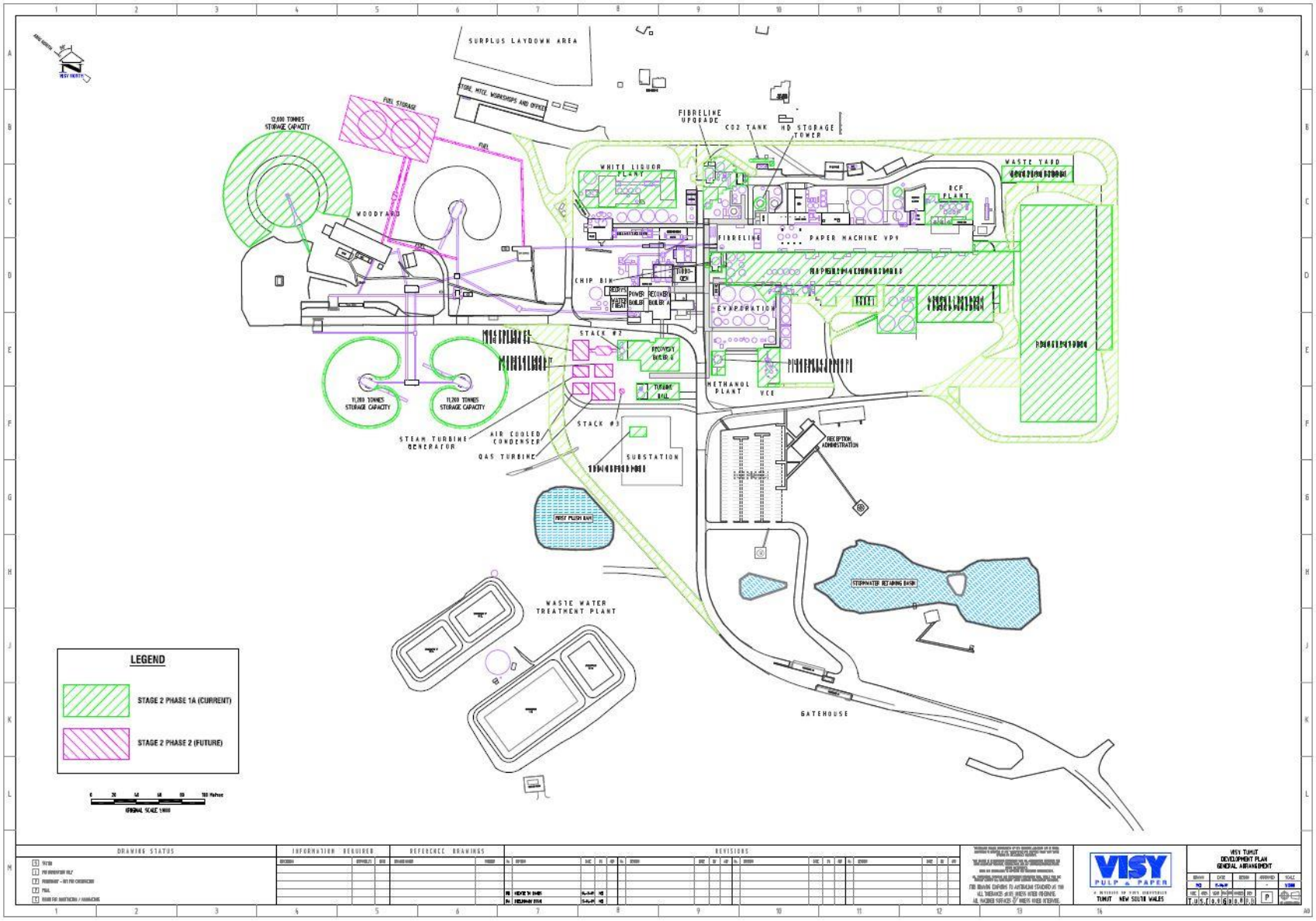

Figure 2.0 Site Plan

4.2 Noise Modelling

A detailed list of noise sources included in the “Sound Plan” noise model and the predicted noise data has been included in Appendix D.

The noise source data used in the model for Stage 1 are based on noise measurements conducted during compliance monitoring assessments.

The Stage 2 noise source data has been based on Stage 1 noise sources due to the similarity in type and capacity of equipment. Specific noise data has been provided for the following equipment:

- Recovery Boiler ID fans
- Vapour Compression Evaporator Fan
- Paper Machine Vacuum Blowers
- 12 MW Turbine

Data included in the model is provided Appendix B.

4.3 Adverse Weather Conditions

The frequency of adverse weather conditions - that is weather conditions that are likely during certain times of the year to enhance noise levels at receptor sites was modelled as part of the Environment Assessment, 2007, (Appendix N). Weather conditions can be characterised according to stability using the Pasquill Index detailed below in Tables 3.0 and 4.0 (ARL Laboratories, Wikipedia, 2009). The classes range from A, unstable condition such as may be found on a sunny day with light winds, (less than 8km/hr) through to F, stable conditions such as occur when the sky is clear, winds are light and an inversion is present. Class G conditions are only used to describe clear, cold, calm nights when the atmosphere is very stable and a marked inversion is present, (12° C/100m, 1m/second).

Table 3.0 Stability phases according to Pasquill Index

Index	Stability phase
A	Very unstable
B	Moderately unstable
C	Slightly unstable
D	Neutral
E	Slightly stable
F	Moderately stable
G	Very stable

Table 4.0 Determination of stability classes according to weather conditions

All times	Daytime sunshine			Night time	
Surface wind speed (km/hr)	Strong	Moderate	Slight	Thin overcast or 4 octas of cloud or more	Less than 4 octas of cloud
<8	A	A-B	B	E	F
8-12	A-B	B	C	D	D
18-23	C	C-D	D	D	D
>23	C	D	D	D	D

Notes: Heavy overcast days or nights are always a D. Class G is only used for clear, calm, cold nights

Octa/Okta: cloud cover observation derived from the number of eights of the dome of the sky covered by cloud. A completely clear sky is recorded as zero while a totally overcast sky is recorded as an eight.

The frequency of the occurrence of each of the atmospheric stability classes was calculated in the EA, 2007 from the sigma theta data collected at Point 5 monitoring point. From the 2004 – 2005 data (48 months total) F class stability (moderately stable) would have occurred on average for 811 hours or 9.6% of the year (Appendix K) and G class conditions would occur for approximately 1% of the year (Appendix N). Assuming an inversion of F class stability would typically last from evening through to morning (for example 8pm to 8am) this would equate to approximately 68 nights per year. Inversions typically occur during the colder winter months from late May through to mid-September. Temperature inversions occur when air temperature increases with height or altitude, trapping colder stable air against the earth's surface. Predicted noise levels at an adjoining properties Woomera in the EA, 2007 under F class conditions revealed that even with treatment options receiver noise levels would be unable to be met. This property has since been acquired as part of the Stage 2 expansion. The predicted noise levels under neutral and Class F weather stability conditions are provided in the next section, Section 4.4.

4.4 Predicted Noise Levels

4.4.1 Site Activities

Sensitive noise receivers have been identified through modelling. The Visy property boundaries and the receiver locations are shown in Figure 3.0.

The predicted noise levels at these receivers with control measures in place and comparisons to noise emission limits are included below in Table 5.0

Table 5.0 Tumut noise model - Assessed receiver levels under neutral conditions (D class stability), wind speed <3m/s

Location	L_{Aeq} dB(A)	Criterion dB(A)*	Compliance
01 Havilah[(1)]	24.3	N/A	N/A
02 Pleasant View	39.2	40.0	Yes
03 Minjary	26.6	35.0	Yes
04 Reka	35.1	36.0	Yes

05 Woomera[(2)]	47.9	N/A	N/A
06 Whispering Pine	34.2	35.0	Yes
07 Deep Creek	36.2	39.0	Yes
08 Glengarry	35.2	36.0	Yes
09 Glenroy Park	32.5	35.0	Yes
09a Un-named	31.4	35.0	Yes

From Table 4.12 from Noise Impact Assessment, Appendix N EA 2007 but the noise model has been updated with information from equipment suppliers.

(1) Property purchased by Visy in November 2007

(2) Property purchased by Visy in March 2008

Table 6.0 Tumut Noise Model - Assessed Receiver Levels under stable, F class stability, 2m/s wind from source to receiver

Location	L_{Aeq} dB(A)	Criterion dB(A)*	Compliance
01 Havilah[(1)]	24.5	N/A	N/A
02 Pleasant View	38.3	40.0	Yes
03 Minjary	24.9	35.0	Yes
04 Reka	33.6	36.0	Yes
05 Woomera[(2)]	46.8	N/A	N/A
06 Whispering Pine	32.8	35.0	Yes
07 Deep Creek	36.6	39.0	Yes
08 Glengarry	34.3	36.0	Yes
09 Glenroy Park	33.1	35.0	Yes
09a Un-named	30.0	35.0	Yes
10 The Lagoon	30.8	35.0	Yes
11 Un-named	30.2	35.0	Yes
12 Moonapinna	26.8	35.0	Yes
13 Un-named	9.1	35.0	Yes
14 Willow Bend	8.7	35.0	Yes
19 Un-named	30.3	35.0	Yes
21 Un-named	33.8	35.0	Yes
22 Un-named	32.3	35.0	Yes

From Table 4.13 Noise impact assessment, Appendix N EA 2007

(1) Property purchased by Visy in November 2007

(2) Property purchased by Visy in March 2008

Based on modelling results, the predicted noise emissions meet the Licence limits at all of above residential locations under neutral conditions with wind speeds up to 3 m/s, Table 4.5.

4.4.2 Short duration maximum noise levels

The short duration maximum noise level events are more likely to cause annoyance and potentially lead to complaints from nearby residents. These events tend to occur on site due to safety features or requirements for the extensive high pressure, high temperature steam system:

- Safety release valves – on the high pressure/high temperature steam lines, releasing and closing during upset unplanned condition; and
- "Warming" of the steam lines during the start-up phase of both planned and unplanned shutdown/start-ups.

Safety release valves are in place on all steam systems to release steam and pressure and prevent possible "pressure explosions" in the event of a loss of operational control within the plant. The noise is usually of short duration and is more likely to occur during upset unplanned conditions. These events occur infrequently due to the level of process automation and control. When they do occur, action is immediately taken by plant operators to return the plant to normal operating conditions. Some of these management measures are discussed in detail in Section 6.1.3.

"Warming" of the steam lines occur during the start-up phase of an annual Maintenance shutdown as all systems have been cooled down. This is part of routine start-up procedures on all high pressure, high temperature steam lines, making sure that the integrity and safety of the system is intact before the piping system is brought back into operation and the high steam (high pressure and high temperature) system started up. This is done by using steam to gradually warm the cool to cold steam pipes using the relationship between temperature and pressure to remove all condensation within the pipes via drains. This is a safety procedure used to clear the pipes of any cold condensate which could cause water hammer and subsequent failure in the pipes. The subsequent noise is caused by the warm steam being blown through the pipe drains. The period of time for this to occur is the initial 24 to 48 hour start-up period during the sequential start-up of the various plant and equipment. The higher noise levels are likely to occur in the first 4 to 6 hours of start up with sequential steam blowing of lines occurring in the first 2 hours and then the last hour. In an unplanned shutdown, the high pressure steam lines do not become completely 'cold' and therefore the above warming of the lines does not need to occur.

In these systems the temperature ranges from 180 to 460 degrees C and the pressure ranges from 3.6 to 64pBar. Procedures for operation of the steam systems associated with the boilers and turbines are in line with the legal requirements associated with operating these pieces of equipment.

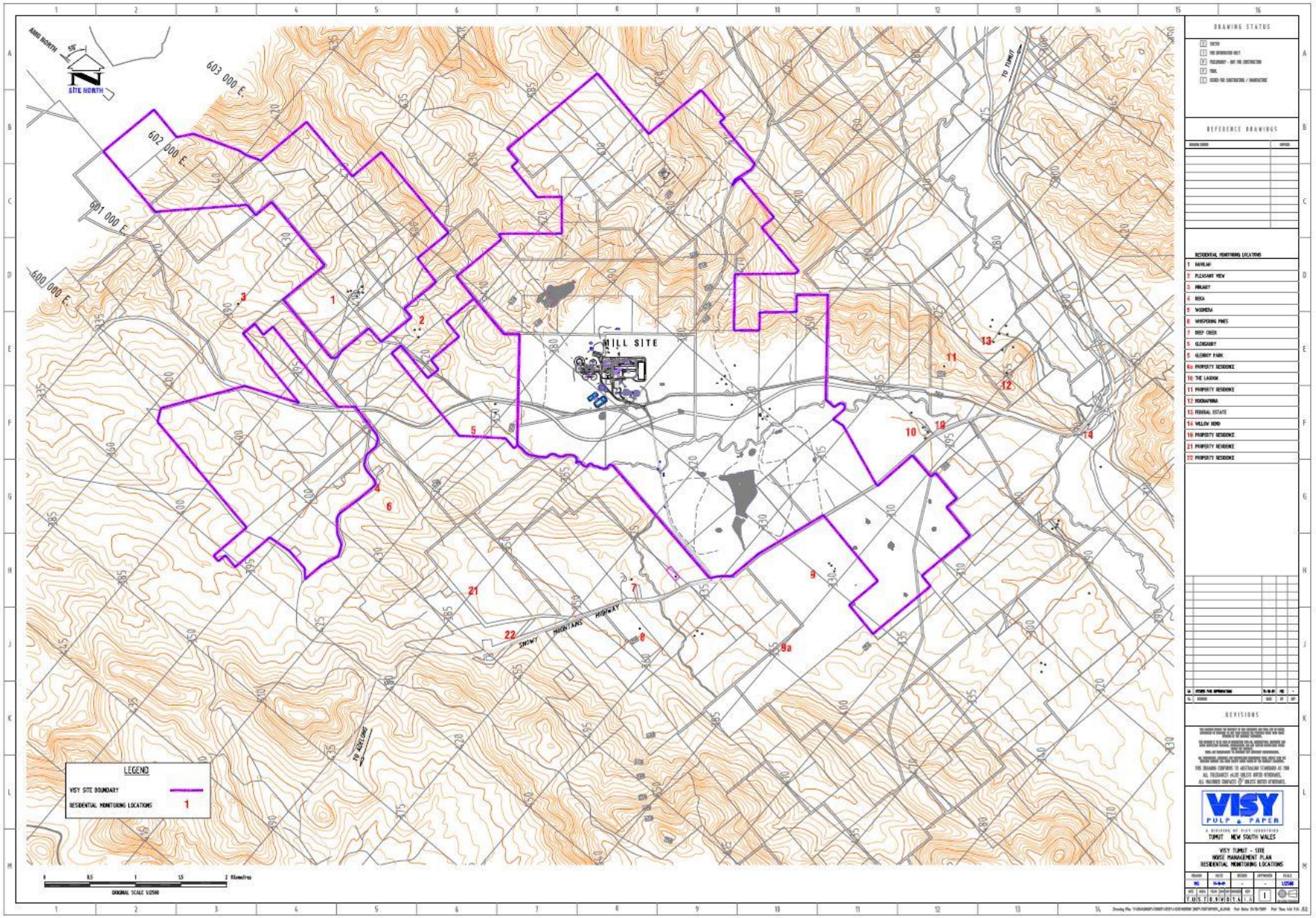

Figure 3.0 Residence Noise Monitoring Locations

4.4.3 Traffic

A traffic noise impact assessment was undertaken as part of the requirements for development of a green-fields site in the original EIS in 1996. This was undertaken in accordance with, the guidelines provided in the then *NSW EPA Environmental noise control manual* and draft *DUAP Assessment of noise vibration and blasting impacts*, and discussions with the EPA.

The *NSW EPA Environmental noise control manual* stipulated that normal movement of trucks is preferred between the hours of 7am to 6pm Monday to Friday. Where night time truck movements are required for the viability of an industrial activity, compliance with traffic noise criteria and sleep disturbance criteria are necessary. Therefore, traffic count data and predicted maximum traffic numbers and corresponding traffic noise levels were modelled for the areas adjacent to the Snowy Mountains Highway (and specifically Adelong and Tumut) and Batlow Road.

The subsequent Development Consent Conditions included specific requirements in relation to traffic generated noise and included:

> DCC 47: no night time movements (10pm to 7am) semi-trailer or B double truck movements to and from the plant via the Snowy Mountains Highway through Adelong, except where, on the advice of the Director General in consultation with the Council, such a restriction poses unacceptable impacts on alternative routes;
>
> DCC 50: preparation and implementation of a Traffic Management Plan with (b) requirements to document measures to reduce sleep disturbance impacts in built up areas including reduced speed limits, prohibition on the use of exhaust brakes, and the provision of air bag suspension to heavy vehicles.

A truck noise impact assessment was undertaken during the EA 2007 (Appendix O, Visy EA 2007), to assess the noise impacts from additional heavy vehicle movements to residents living along or adjacent to major arterial routes. Predicted truck movements along the major transport routes were calculated along with a review of existing truck movement numbers, Table 7.0.

Table 7.0 Existing and proposed Heavy vehicle traffic volume[(1)]

Route no.	Route	Existing Total Daily Traffic Movements	Phase 1 Visy Heavy Vehicle Daily Traffic Volumes		Phase 2 Visy Heavy Vehicle Daily Traffic Volumes	
		Day/Night	Day time	Night time	Day time	Night time
1	Snowy Mtn Hwy, Adelong	223	92	0	92	0
2	Wondalga Road, via Batlow	185	102	35	103	35
3	Gocup Rd, via Gundagi	235	79	45	94	50
4	Bombowle Rd	549	47	11	49	11
5	Snowy Mtn Hwy, West of Batlow Rd	450	296	106	324	114

6	Snowy Mtn Hwy, Tumut	564	194	71	221	78
7	Snowy Mtn Hwy, Talbingo	185	1	0	10	0

(1) Information sourced from Table 2-1, Appendix O Visy Tumut Expansion Environmental Assessment 2007.

The *NSW DECCW, 2011: NSW Road Noise Policy*, provides traffic noise level criteria dependent on a number of functional categories, such as traffic volume, heavy vehicle use, through or local traffic, vehicle speeds and applicable traffic management options. The functional categories for roads and their traffic noise criteria within the local road transport routes are provided below in Table 8.0.

Table 8.0 Road type and functional category

Road type	Function	Local road example
Arterial roads (including freeways)	Carry predominantly through traffic from one region to another, forming principal avenues of communication for urban traffic movements.	*Hume Highway* (Sydney, Brisbane Melbourne, Canberra, Bombala, Macquarie region) *Snowy Mountains Highway* (through traffic from/to Adelaide, Melbourne, to Tumut), *Gocup Road* (through traffic from/to Sydney, Macquarie region, Canberra and Bombala to Tumut).
Sub-arterial roads	Roads handling through-traffic with characteristically heavy and continuous traffic flows during peak periods. Through traffic is traffic passing through a locality bound for another locality.	*Batlow Road* (Forest areas South of Tumut in Tumbarumba to Tumut), *Buccleuch Road* (Forest areas North of Tumut).

The *NSW DECCW, 2011: NSW Road Noise Policy: Table 3*, sets out the traffic noise level criteria to be applied to particular types of roadways and land uses, including residential, rural, and urban zoned lands and as such the criteria presented are intended to preserve amenity appropriate to the land use. The type or developments are listed 1to 6 and the traffic noise criteria applicable to the Stage 2 development are provided below in Table 9.0.

Table 9.0 Road traffic noise criteria (DECCW, 2011)

Type of Development	Traffic noise criteria		Transport route
	Day (7:00am-10pm)	Night (10pm – 7am)	
3. Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments.	$L_{Aeq(15\ hour)}$ 60dB(A)	$L_{Aeq(9\ hour)}$ 55dB(A)	Snowy Mountains Highway, Gocup Road, Wondalga/Batlow Road, Buccleuch Road.

Note that no separate criteria are provided for Local roads in Table 3, point 6.			

From Table 3. *NSW DECCW, 2011: NSW Road Noise Policy.*

The original Traffic noise impact assessment was conducted by applying the *NSW EPA, 1999: Environmental criteria for road traffic noise,* which remain the same in the updated *NSW DECCW 2011: NSW Road Noise Policy*. Nine residential locations along the major transport routes were selected and are listed below with the road type and noise criteria for day and night time, Table 10.0.

Table 10.0 Road category and traffic noise criteria

Residential Location	Route No	Road Name	Road Type	Criteria	
				Day	Night
Sullivan	1	Snowy Mountains Highway (Adelong)	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Kelly	2	Wondalga Road via Batlow	Sub arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Dallas	3	Gocup Road via Gundagai	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Barton	3	Gocup Road via Gundagai	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Thompson	4	Bombowlee Road	Sub arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Steunkel (East)	5	Snowy Mtn Hwy, west of Batlow Rd	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Steunkel (West)	5	Snowy Mtn Hwy west of Batlow Rd	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Beale	5	Snowy Mtn Hwy west of Batlow Rd	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Glengarry	5	Snowy Mtn Hwy west of Batlow Rd	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA
Michael	6	Snowy Mountains Highway (Tumut)	Arterial	$L_{Aeq(15\ hour)}$ 60dBA	$L_{Aeq(9\ hour)}$ 55dBA

The assessment involved measuring the existing levels of road traffic noise, using noise monitors, at nine residential locations along each of the main truck routes to the mill site and to the destinations of the finished product, Table 11.0 Predicted levels of traffic and traffic noise were then calculated at typical residences along the major transport routes and compared to these criteria. The assessment was based on predicted day and night daily traffic movements for each of the designated routes presented below in Table 12.0.

Table 11.0 Measured Traffic Noise Levels(1)

Residential Location	Route no.	$L_{Aeq(Day)}$ dB(A)	$L_{Aeq(1\ hour)}$ min dB(A)	$L_{Aeq(1\ hour)}$ max dB(A)	$L_{Aeq(Night)}$ dB(A)	$L_{Aeq(1\ hour)}$ min dB(A)	$L_{Aeq(1\ hour)}$ max dB(A)
Sullivan	1	60.0	38	68	52.7	33	62
Kelly	2	55.0	32	68	49.4	26	57
Dallas	3	58.0	46	63	54.1	24	61
Barton	3	53.0	38	64	49.6	24	62
Thompson	4	55.0	38	71	52.0	28	62
Steunkel (East)	5	56.8	40	73	52.1	32	61
Steunkel (West)	5	56.8	41	61	52.6	32	60
Beale	5	62.8	49	67	58.3	32	66
Glengarry	5	46.5	31	57	44.4	27	51
Michael	6	62.9	50	68	57.0	33	66

(1) Information sourced from Table 4-1, Appendix O Visy Tumut Expansion Environmental Assessment 2007.

The predicted noise level contributions due to additional trucks for both Phase 1 and 2 were calculated and added to measured traffic noise from Table 11.0 above. These predicted noise levels are shown in Table 12.0 below.

Table 12.0 Predicted Traffic Noise Levels after Expansion(1)

Residential Location	Route No.	Phase 1		Phase 2	
		$L_{Aeq(Day)}$ dB(A)	$L_{Aeq(Night)}$ dB(A	$L_{Aeq(Day)}$ dB(A)	$L_{Aeq(Night)}$ dB(A
Sullivan	1	60.6	52.7	60.6	52.7
Kelly	2	55.4	50.2	55.4	50.2
Dallas	3	58.2	54.5	58.2	54.6
Barton	3	53.8	51	53.9	51.2
Thompson	4	55.3	52.2	55.3	52.2
Steunkel (East)	5	59.9	56.6	60.1	56.8
Beale	5	63.5	59.4	63.6	59.5

Glengarry	5	46.9	44.4	46.9	44.4
Michael	6	63.4	58.3	63.5	58.4

(1) Information sourced from Table 5-3, 5-4, Appendix O Visy Tumut Expansion Environmental Assessment 2007

The existing background traffic noise levels at these locations are high and in some locations, already exceeding the DEC criteria due to the volume of heavy vehicles currently utilising these routes. The predicted noise impact from the additional heavy vehicles will result in a slight increase above the background levels from between 0.2 to 4.8 dB(A). In the event that an upper LAmax noise level of 65dBA was reached at night time, 10:00pm – 7:00am it is recommended that a Voluntary Night time Truck Noise Management Plan be instigated with a view to reducing sleep disturbance from maximum levels of noise generated by the passage of traffic as per EA 2007, Appendix O. If the LAmax levels are less than 60dBA, the adoption of the plan would be optional. The LAmax noise level is set at the facade of the residence and has the aim of reducing the internal noise levels to a LAmax of 50 – 55dBA.

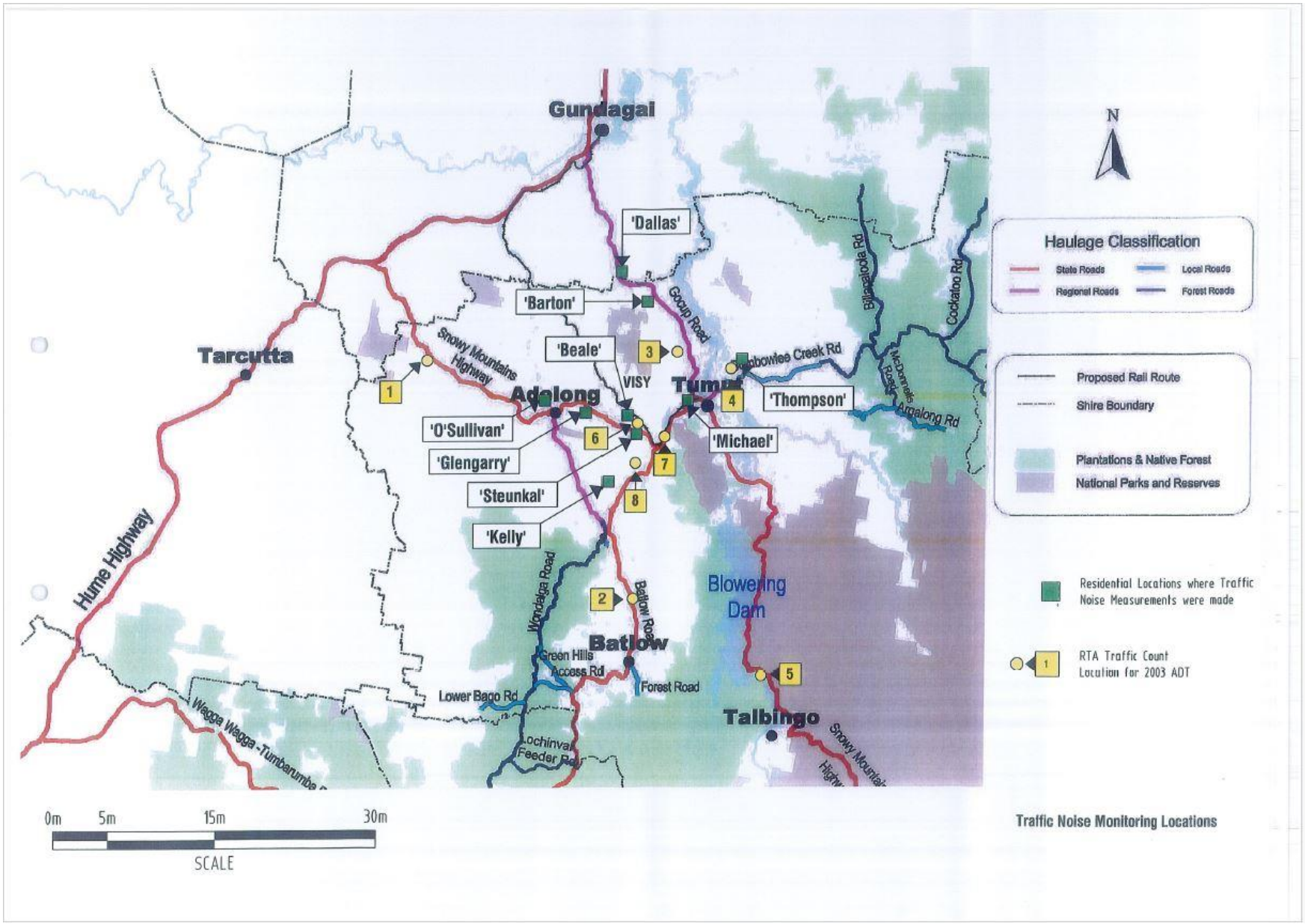

Figure 4.0 Traffic Monitoring Locations

5.0 Criteria and Guidelines

5.1 Operational Noise

Allowable noise levels which apply to plant operations in accordance with consent conditions and Environment Protection Licence conditions are detailed below in Table 13.0. Modification approval was granted on 21 August 2020 – Modification 4 (to the project approval, now development consent). MP06_0159- Mod 4: Inclusion of noise limit exemptions for Sensitive receivers with noise agreements. As per the modification, the noise limits do not apply to any residence where a noise agreement is in place (Condition 2.16A). Visy has completed negotiated agreements (as per Section 8 of the NSW Industrial Noise Policy (EPA 2000)) in place with eight residences. The locations of residential receptors referred to in Table 13.0 where limits apply are presented in Figure 3.0.

Table 13.0 Maximum Allowable Noise Contribution

Location	Day 7.00am to 6.00pm Mondays to Saturdays 8.00am to 6.00pm Sundays and Public holidays	Evening 6.00pm to 10.00pm on any day	Night 10.00pm to 7.00am Mondays to Saturdays 10.00pm to 8.00am Sundays and Public holidays	
	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	L_{Amax}
Pleasant View	40	40	40	45
Deep Creek	39	39	39	45
Reka & Glengarry	36	36	36	45
Any other residence	35	35	35	45

The above limits apply under meteorological conditions of wind speeds of up to 3 m/s at 10 metres above ground level and inversions of up to 3 °C/100m at wind speeds of up to 2 m/s.

The $L_{Aeq\ (15\ minute)}$ is taken as the 'equivalent noise level' which is the summation of noise events and integrated over a selected period of time. The L_{Amax} is the maximum sound pressure level over a period and only applies during night time periods.

Further to the above, where the character of the noise in question is assessed as annoying (i.e. if it has an inherently tonal, low frequency, impulsive or intermittent character), then an adjustment of 5 dB(A) for each annoyance aspect, up to a total of 10 dB(A), is to be added to the measured value to penalise the noise for its potential increase in annoyance.

Table C1 of the Noise Policy for Industry provides definitive procedures for determining whether a penalty or adjustment should be applied for increased annoyance. Specifically for tonal noise, a one-third octave (or narrow band analysis) is required and a 5 dB(A) penalty is applied to the measured or predicted level when the level of one-third octave band exceeds the level of the adjacent bands on both sides by:

- 5 dB(A) or more if the centre frequency of the band containing the tone is in the range 500 - 10,000 Hz;
- 8 dB(A) or more if the centre frequency of the band containing the tone is in the range 160 - 400 Hz; and
- 15 dB(A) or more if the centre frequency of the band containing the tone is below 160 Hz.
  - A penalty of 5 dB(A) is applied to noise that is predominantly low frequency. A noise is considered to be low frequency noise if the difference between A-weighted and C-weighed noise levels is 15 dB(A) or more and; where any of the one-third octave noise levels in Table C2 are exceeded by up to and including 5 dB and cannot be mitigated, a 2-dB(A) positive adjustment to measured/predicted A-weighted levels applies for the evening/night period, and;
  - Where any of the one-third octave noise levels in Table C2 are exceeded by more than 5 dB and cannot be mitigated, a 5-dB(A) positive adjustment to measured/predicted A-weighted levels applies for the evening/night period and a 2-dB(A) positive adjustment applies for the daytime period.

5.2 Traffic Noise

The criterion for traffic noise adopted in the EA 2007 is based on the *NSW DECCW, 2011: NSW Road Noise Policy, Table 3* sets out the traffic noise level criteria for proposed road or residential land use developments, Type of development number 3. Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments.

Table 14.0 Traffic Noise Criteria

	Day (7:00am – 10:00pm) $L_{Aeq(15\ hour)}$	Night (10:00pm – 7:00am) $L_{Aeq(9\ hour)}$
Limit	60 dB(A)	55dB(A)

Where existing noise levels are within 2 dB(A) of above criteria, a 2 dB(A) allowance may be applied for additional traffic. Where existing measured noise is already at the above levels and a further increase is predicted, than feasible and reasonable mitigation measures are needed.

Background measurements of existing noise levels at residential locations on various major product flow routes as well as predicted levels are provided in Section 4.

6.0 Management Safeguards and Controls

6.1 Operational Noise

Noise control measures have been incorporated into design of the various process areas of the mill. Especially noisy equipment have either been housed inside buildings with walls constructed from either corrugated sheets, concrete filled block-work or 150mm thick precast concrete walls. Shielding and orientation of vents away from sensitive receptors has also been considered to reduce noise impacts.

Other measures included silencers, speed limits and construction of earthen berms on western and southern perimeters of the site. A more detailed list of noise sources and control measures for the site is provided in Appendix B.

Woodyard noise, short duration maximum noise levels and the ongoing reduction in noise levels at site are discussed below.

6.1.1 Woodyard Noise

The noise contribution from the Log handling and processing has been assessed during the Visy EA 2007. The major noise source is from placing of logs into the hopper and the noise generated by the De-barker and chipper breaking out through the opening in the end wall of the building. These noise sources are considered as impulsive and can exceed the L_{Amax} limit for sleep disturbance. The options for noise control are limited due to the orientation of the noise sources to sensitive receivers and the process activities.

Noise modelling indicates that these impacts are more likely to occur during adverse meteorological conditions of strong temperature inversion conditions mainly experienced at night or early morning in late Autumn and through-out Winter. The design throughput of the De-barker/chipper system of 350 tonnes per hour allows the average daily chip production requirement for the mill to be met in a 12-to-14-hour period. Operation of the chipper/De-barker will normally be restricted during the night between 10pm and 7am, to allow the mill to satisfy the EP licence limits and sleep disturbance criteria.

Other noise control measures in the Woodard have been included in Appendix B.

6.1.2 Short Duration Maximum Noise Level Events

During planned events such as shutdowns, nearby residents are informed of potential for such maximum short duration noise levels.

The annual maintenance shutdown is typically scheduled from October to early November during meteorological conditions that are more favourable and less likely to cause annoyance due to the presence of temperature inversions.

6.1.3 Response to Unplanned Events

The preventative maintenance program on all plant and equipment is the primary control management safeguard to minimise the frequency of unplanned interruptions and shutdowns. The program includes undertaking:

- Daily maintenance checks and inspections;
- condition monitoring (ensures that there are no imbalances on items of equipment, e.g. pumps, that lubrication of machinery correct);
- Distributed Control system (DCS) controls e.g. vibration, temperature sensors located throughout the plant on high and low level alarms to provide online monitoring of critical equipment;
- Systematic work order request system, whereby personnel on site can raise a request for work to be undertaken to specific pieces of equipment, for example if it seems to be noisier than usual. All work requests are reviewed at daily production meetings and once request is raised it stays active in the system until the work is complete and the request is closed out;
- Routine calibration of critical field instrumentation;
- Formalised continuous improvement program (Visy Improvement program) that involves process engineers and operational personnel on identifying areas for improvement;
- Purchase of equipment, noise levels specified in design criteria, equipment designed to meet standards; and
- Scheduled routine maintenance shutdowns which allow for preventative maintenance to be undertaken on equipment.

Other safeguards to mitigate against unplanned loss of power from the grid is the functional control system that allows the mill's generated power to maintain operation of critical plant and equipment. In this mode emergency load shedding occurs to ensure there is sufficient power available to maintain operation of plant required to generate sufficient steam to continue to generate electricity. The mill is able to sustain operation in this mode until power form the grid is restored.

When these unplanned events do occur, it is essential to stabilise the plant immediately to return back to normal noise levels. This is undertaken by following the start-up procedures and operational instructions.

Procedures are instigated in the event of an unplanned shut. Operators are trained in procedures and a number of these specifically related to emergency shutdowns are reviewed by both internal and external auditors annually. In addition manuals have troubleshooting guides. Operational procedures are tested annually for major pieces of equipment in the case of an unplanned event.

In the event of a noise complaint due to unplanned events the complaints response as documented in Section 6.3 is followed.

6.1.4 Compliance with Noise Objectives

The criteria for noise levels are stated in the EP Licence and are provided in Section 5 for both residential locations near the site as well as potentially heavy traffic impacted residences along the main transport routes.

Visy have already demonstrated a commitment to achieving these objectives by the following measures and as per measures detailed in Appendix B:

- Acquisition of nearby residential premises (Woomera) identified as a location where the mill will not be able to meet the noise criteria;
- Updating the comprehensive noise model to include supplier data on equipment identified as potentially noisy;
- Consideration of noise in selecting building materials; and

- Installation of noise reducing equipment/materials i.e. silencers, insulation etc.

Furthermore, through the compliance noise monitoring program outlined in Section 7, it shall be demonstrated whether the noise objectives are being met. Should the monitoring program demonstrate any noise issues, Visy will put in place a noise mitigation plan whereby issues will be further investigated, options considered, actions identified and prioritised and included in the mill's continuous improvement program. The noise mitigation plan will be implemented in consultation with the VCCC, EPA and DPE.

Additionally Modification approval was granted on 21 August 2020 – Modification 4 (to the project approval, now development consent). MP06_0159- Mod 4: Inclusion of noise limit exemptions for Sensitive receivers with noise agreements. As per the modification, the noise limits do not apply to any residence where a noise agreement is in place (Condition 2.16A). Visy has completed negotiated agreements (as per Section 8 of the NSW Industrial Noise Policy (EPA 2000)) in place with eight residences. These agreements include acoustic treatments to dwellings, where accepted by the resident/owner, and in all instances, the resultant noise levels contributed by the site operations are accepted by the affected resident.

6.1.5 Compliance with Noise Objectives

To maintain a continuing noise reduction program any noise issues identified from a community complaints or routine noise monitoring will be assessed against the noise objectives and entered into the Visy Improvement Program.

The Visy Continuous Improvement Program is established to focus continual improvement across all functional areas including productivity, maintenance, occupational health and safety, and environment. Issues that are identified that can include outcomes from audits or of monitoring are entered into the Visy Improvement Program system where they are rated against the Visy Risk Management Matrix. The Site's Continuous Improvement Manager in consultation with, Production and Reliability Manager and HSE Representatives prioritises any work that's required to be undertaken and ensures resources are allocated. Progress on continuous improvement projects are reported to the site and divisional senior management on a monthly basis.

6.2 Traffic Noise Management

Traffic noise management measures focuses on driver awareness and education. All new heavy vehicle drivers currently undergo Site Heavy Vehicle Operators HSE Induction Training. Information provided to transport operators encourages drivers to reduce speed and use of compression breaking while passing residences along transport routes at night. Other measures include restrictions on Snowy Mountain Highway through Adelong at night between the hours of 10.00pm to 7.00am.

The noise management control measures that will be adopted to minimise sleep disturbance are summarised below:

- Driver education program to include that noisy heavy vehicle practices are not unnecessarily used near sensitive receivers;
- Route curfews are respected;
- Best noise practice in the selection and maintenance of heavy vehicle fleets;
- Movement scheduling where practicable to reduce impacts during sensitive time periods; and

- Specific measures at identified sensitive receptors.

These measures have been included in the Traffic Management Plan and will be implemented through a communication and awareness program with all transport operators and as part of the traffic noise monitoring program as outlined in Section 7.2.

6.3 Community Information and Complaints Protocol

Information is provided to neighbours, the Visy Community Consultative Committee (who represent the demographic sections of the community from both Tumut and Adelong) and all employees in relation to the Annual Maintenance Shutdown dates. This information also includes details of the free call 24 hour hotline phone number on 1800 117 910. This allows for complaints to be received at any time and where possible investigated immediately. This phone is located in the main control room and in the event of a complaint the following details are recorded:

- Date and time of complaint;
- Name and address of the complainant or where the complaint occurred if not at the persons address, if no personal details are supplied a note to that effect;
- Nature and duration of the complaint;
- Investigation and any actions taken by operating personnel in relation to the complaint, including follow up contact with the complainant.

On receiving a complaint, the Pulp Mill Shift Supervisor on shift instigates an investigation into the likely cause. In the event of a noise complaint the Environmental Manager will undertake attended noise monitoring as soon as practically possible at the location of the complaint. Additional noise measurements and observations may also be made closer to the site to determine the reasons leading to noise levels triggering a complaint.

All complaints received via the hotline are recorded in the complaints system. When complaints are received they are recorded either, on a complaint form (paper copy and then entered into the electronic system) or directly into the Visy reporting system. The complaints are ranked against the Visy Risk Management Matrix that prioritises further investigation and corrective actions. The information is stored on an electronic database that allows retrieval of information on each of the complaints and to track progress on corrective actions. A Complaints Register is kept at site and all records of complaints are kept for four (4) years as per the requirements of the site EP Licence and are available for review by any authorised officer of the EPA. A quarterly audit is undertaken of the complaints system as detailed in Section 9.2.2.

PROC-TUM-ENV-003 Environmental Complaint Response Procedure of the Operational Environmental Management Plan (OEMP) describes the procedure for complaints management during operation.

Community members are at all times encouraged to call at the time of the recorded observation to assist the operational personnel in the investigation process. On occasions other complaints may be received through regular communications with Community Consultative Committee members, Visy neighbours, Snowy Valleys Council and the regional office of the NSW EPA. These are subsequently recorded on the Complaints Register.

6.4 Training and Responsibility

A competency based training system for the operation of plant and equipment has been well established for existing operations. This program will be extended to cover new plant and equipment as they come on line. Training will cover the basic operations and include the roles and responsibilities in achieving conformance with the Noise Management Plan, Visy Environment Policy and Environmental Management System.

In order to ensure compliance with the Noise Management Plan and relevant regulatory requirements, it requires each person within the organisation to be aware of their responsibilities in regards to the Management Plan. The key roles and responsibilities of the relevant personnel are as follows:

General Manager

- Ensure provisions are made to provide adequate resources and training.

Area Manager (Pulp Mill and Paper Mill Manager)

- Ensure Operational Personnel are trained in their responsibilities for implementing the Noise Management Plan; and
- Management and implementation of Noise Management Plan.

Operations Managers

- Support Area Managers in ensure Operational Personnel are trained in their responsibilities for implementing the Noise Management Plan;
- Support to Area Managers in the management and implementation of the Noise Management Plan;
- Liaison with Shift Supervisors in operation of the plant and equipment in accordance with the Noise Management Plan; and
- Investigation of environmental incidents and complaints.

Shift Supervisors:

- The operation of plant and equipment in accordance with Standard Operating Procedures and the EP Licence, and in order to meet the noise criteria limits specified in the Licence.

Reliability Managers:

- Scheduling and carrying out routine maintenance of equipment and machinery; and
- Maintaining maintenance records.

Dispatch Supervisor:

- Review daily automatic electronic Adelong curfew reports and instigate notification and disciplinary action in relation to any breaches; and
- Notify HSE Manager of any incidents related to noise in relation to Dispatch trucks.

Resources Manager:

- Ensure that all contractors involved in the transport of fibre resource product have been advised of the obligations under the Noise Management Plan; and
- Reporting and follow up of any off-site traffic incidents/accidents.

HSE Manager:

- Acting as interface between Community, government authorities and mill Operational Management;
- Preparation and submission of reports as required by the Noise Management Plan;

- Update and review of Noise Management Plan;
- Co-ordination of external/internal audits on the implementation of the Noise Management Plan;
- Scheduling and co-ordination of noise criteria and traffic noise criteria monitoring and assessment program as per the Noise Management Plan; and
- Follow-up and close-out of environmental complaints and incidents.

Visy Logistics Manager

- To ensure all heavy vehicle operator education includes traffic noise control measures as identified in the Traffic and Noise Management Plan.

7.0 Monitoring

7.1 Operational Noise Management

7.1.1 Noise Emission Performance Testing Program

Within 90 days of the commencement in operation of each phase, during a period in which the mill is operating under design loads and normal operating conditions, a noise monitoring program shall be undertaken to confirm the noise emission performance of the mill in accordance with the *Project Approval condition no. 3.7*.

Measurements of operational noise will be conducted on site and at three potentially most affected residential receivers by short term (operator attended) monitoring method during day-time and night-time periods. Additional long-term continuous unattended monitoring at residential receivers will be undertaken over a two week period to establish if any changes have occurred to background noise levels from previous recordings. Data collected will be used to characterise the noise sources and correlated with meteorological data at time of measurement to confirm noise modeling predictions under all meteorological conditions.

Based on the results of the monitoring program, further compliance testing and/or monitoring locations may be required.

The noise monitoring is to include the results of the program (both attended and unattended monitoring), comparison to the noise levels established in the approval outlined in *Section 6.4.2.1*) and recommendations for further compliance monitoring.

Where measured noise levels exceed the design objectives, the reason for the exceedance will be investigated and determined. Measures for ameliorating the noise levels and a plan to implement will be prepared in consultation with EPA and DPE and in accordance with *Project Consent Condition no. 3.8.*

The Environmental Noise Compliance Assessment was carried out in 2012 and involved both long-term unattended and short-term attended noise monitoring at several residential locations in the vicinity of the site.

7.1.2 Noise Emission Performance Testing Program

To ensure compliance to noise emission limits, an ongoing noise monitoring program will be undertaken on a periodic basis. The noise monitoring will be conducted at nearby residential receivers using a combination of

short and long term monitoring methods. The monitoring data will be recorded and correlated to operational and meteorological conditions.

Annual follow-up Noise Compliance Assessments are carried out which involve short-term attended noise monitoring at several residential locations in the vicinity of the site.

Appendix A shows the current Noise Mitigation Action Plan developed in response to the findings from the recent Noise Compliance Assessments. The plan will be routinely reviewed and updated as part the mill's continuous improvement program.

7.2 Traffic Noise Monitoring

Within 12 months of commencement of operations of the first phase of the Visy Expansion, noise monitoring assessments will be conducted on a quarterly basis at all locations identified in the Traffic Noise Assessment report in Appendix O of the EA 2007 and as shown in Figure 4.0. The traffic noise assessment will be undertaken in accordance with *DECC's Environmental Criteria for Road and Traffic Noise* and with *Project Consent Condition No. 3.9*.

Results of assessment will be compared back to predictions during the *EA 2007* and should noise impacts from additional traffic exceed levels predicted, details of mitigation methods with a timetable for implementation will be prepared in consultation with the EPA and submitted to the DPIE.

A report providing results of traffic noise assessment including details of proposed mitigation measures shall be submitted to the Director General and EPA no later than 28 days after completion of testing.

8.0 Reporting and Review

8.1 Legal Reporting Requirements

8.1.1 Complaint and Incident Reports

The Pulp Mill Shift Supervisor or HSE Manager is informed immediately of any community complaints or incidents to ensure that appropriate and immediate actions are undertaken to mitigate the issue.

All complaints and incidents are ranked from 1 to 5 in accordance with Visy Incident Classification (refer Table VP9-10-10.4-005-01 in VP9-10-10.4-005 Complaint Response Procedure) and reported to relevant personnel and agencies in accordance with Visy Reporting Requirements (refer VP9-10-10.4-004 Environmental Incident Reporting Procedure) and with *DCC15*, *Concept Approval 6.1* and *EP licence clause R2*.).

In accordance with the Visy Environmental Reporting Procedure, all incidents and complaints are recorded on Vault, an electronic reporting database system that automatically notifies relevant personnel and senior management and is used for review and tracking results of investigations and corrective actions.

8.1.2 Annual Return

An Annual Return in the approved format in accordance with Condition R1 Annual Return Documents in the *EP Licence 10232* must be completed and supplied to the NSW EPA. The Annual Return comprises of

monitoring and complaints summary along with all non-compliances that have occurred through-out the reporting period.

This Annual Return must include a Statement of Compliance signed by a delegated authority and submitted to the NSW EPA by registered post within 60 days of the end of the Reporting Period.

8.1.3 Annual Environmental Compliance and Monitoring Report

An Environmental Compliance and Monitoring report to satisfy *Condition 12* of the *Development Consent Conditions (Oct 1998)* and *Condition 6.3* of the *Concept Approval Conditions (May 2007)* must be submitted to the NSW Department of Planning and Infrastructure (NSW DPIE). This report is to provide a summary of all environmental monitoring, the Environmental Complaints register for the preceding 12 months period and an annual review of operational environment management plans, the conditions of consent and other licenses and approvals relating to the operation of the plant as well as comparisons with the *EIS (1996)* and *EA (2007)* predictions.

This report is submitted annually to the Department of Planning, Industry and Environment and copies provided to the EPA in accordance with *Condition R1.10* of the EPL, Snowy Valleys Council and Visy Community Consultative Committee (VCCC).

8.1.4 Operational Noise Monitoring Program Report

A report is to be prepared and submitted to the EPA and Director General providing results of noise monitoring program on the noise emission performance of the mill as outlined in Section 7.1.1 and in accordance with Project Consent Condition no. 3.7. The report is to be submitted within 28 days after completion of noise monitoring program. The final report was submitted to the EPA and Department of Planning and Infrastructure on 5 December 2012.

8.1.5 Traffic Noise Monitoring Program Report

A report is to be prepared and submitted to the EPA and Director General providing results of traffic noise assessment as outlined in Section 7.2 and in accordance with Project Consent Condition no. 3.9. The report is to be submitted within 28 days after completion of noise monitoring program. The final report was submitted to the EPA and Department of Planning and Infrastructure on 5 December 2012.

8.2 Community Consultation

8.2.1 Visy Community Consultative Committee

The Visy Community Consultative Committee made up of representatives of council and local community members meet with Visy Management and Environmental personnel on a regular basis to review and monitor Visy compliance with conditions of consent in accordance with Development Consent Condition 72 and Concept Approval Condition 4.1.

A review of all environmental monitoring and investigations into community complaints are presented at each meeting. Committee members are provided opportunity to raise any specific concerns or issues. Meeting minutes are recorded and distributed to all those present and representatives of EPA and DPE.

8.2.2 Local Community Consultation

Visy Management and Environmental personnel partake in a more informal consultation program with the local community that are most affected by the mill's operations. The consultation program is taken in the form of shutdown notifications, electronic mail, telephone conversations and routine visits to residences. Regular updates on the mill's environmental performance are provided and community members are encouraged to raise issues or concerns.

9.0 Auditing

A program of internal and external audits exists for the site to determine whether the site meets environmental objectives and statutory requirements. The internal and external program is outlined in the Organiser section of electronic database, Vault.

9.1 Legal Requirements and External Audits

9.1.1 Annual Audit

An Independent Environmental Audit is to be undertaken in accordance with Condition *71* of *DCC (1998)* and *Condition 3.16* of *PAC (2007)*. This audit covers all aspects of monitoring and environmental performance and compliance with *DCC (1998), PAC (2007)* and predictions in the *EIS (1998)* and the *EA (2007)*.

The audit report is submitted to the Department of Planning and Environment, Snowy Valleys Council, and Visy Community Consultative Committee. In addition a copy is supplied to the NSW EPA in accordance with *Condition R1.10* of the *EPL No. 10232*.

9.2 Internal Environmental Audits

9.2.1 Annual Audit

An internal EMS and Compliance Audit of the site is undertaken in accordance with Visy Corporate Procedure 1102 – HSE Audit System. The Visy Group Manager Safety and Environment co-ordinates and implements the audit program and which is conducted in accordance with Corporate EMS Audit Protocol.

9.2.2 Complaints Register Audit

A register of all community complaints as required by *DCC No. 74* and *Concept Approval Condition No. 4.3* is maintained electronically in the Vault database. The status of all entries are reviewed by the Environmental Manager and closed off if all actions have been completed. The complaints register and results of internal Audit Review is included in the quarterly report provided to Visy Community Consultative Committee, DPIE, EPA and Snowy Valleys Council in accordance with *DCC No. 76.*

9.3 Environmental Management System Audit

Triennial Re-certification and annual Surveillance audits of the Integrated Management System, which incorporates the quality, environment and safety management systems, are undertaken in accordance with requirements of international standards relating to audit practice such as ISO 19011 by a certified Auditing

Organisation. The purpose of the audit is to assess the sites compliance to the principles of the Management System Standards (i.e. ISO 14001, ISO 45001, ISO 9001).

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NSW Department of Planning - *Concept Approval 2007 – Application No. 06_0159 Schedule 1 & Schedule 2*

NSW Department of Planning - *Project Approval 2007 – Application No. 06_0159 Schedule 1 & Schedule 2*

NSW Department of Environment and Climate Change, 1999 - *Environmental Criteria for Road and Traffic Noise*

NSW Environment Protection Authority - *Environment Protection Licence No. 10232*

NSW Environment Protection Authority – *Noise Policy for Industry 2017*

NSW Legislation *Protection of the Environment Operations Act 1997*

NSW Legislation *Protection of the Environment Operations (General) Regulation 1998*

Visy Pulp and Paper Pty Ltd – *Environmental Assessment for Major Project Tumut Mill Expansion, January 2007, Appendix N: Noise Impact Assessment*

Visy Pulp and Paper Pty Ltd – *Environmental Assessment for Major Project Tumut Mill Expansion, January 2007, Appendix O: Truck Noise Report*

Wikepedia, 2009. *Air pollution dispersion terminology.* www.en.wikepedia.org/wiki/air_ pollution_dispersion_terminology. Accessed 15th October 2009.

Appendix A – Noise Mitigation Action Plan

Visy Tumut - Noise Mitigation Action Plan

Item/Issue	Proposed Action	Person Responsible	Target Date	Status	Comments
Site Noise Acoustic Assessment and acoustic treatment recommendations	Engage an external company to carry out a site noise acoustic assessment and recommend acoustic treatments and their estimated cost if there is non-compliance found during the Noise Compliance Monitoring	Matt O'Donovan	Aug-14	Complete	
Acoustic treatment/noise reduction	Review the feasibility of any recommended acoustic treatments/noise control measures	Management Team	Mar-17	Complete	
Acoustic treatment/noise reduction	Seal wall and roof openings in the Vacuum Blower room	External contractor	TBC	On hold	Purchase Order was raised on the 20/11/15. Work was delayed, then an internal meeting with the Engineering team discussed the potential affects of sealing the Blower room. This would cause issues with over heating motors. It was decided to put this work on hold until measures to reduce heat were implemented.
Acoustic treatment/noise reduction	Insulation and colourbond cladding to Blower discharge pipes for both heat and noise reduction	External contractor	TBC	On hold	Quotation received on the 6/06/16. Purchase order has not been placed yet.
Acoustic treatment/noise reduction	It was originally proposed by Benbow Environmental to install rubber dampers in the Reclaimer chain guides to reduce noise generation. A review identified that this wouldn't be feasible and that a Wood Yard Reclaimer chain pitch modification to lower the noise generated by the octagonal sprockets may be the better option	External contractor	TBC	On hold	A meeting was held with the Engineering team on the 27/11/15 to discuss and it was decided not to go with the damper option, as it wouldn't be cost effective to continually shut down and change out, due to their expected short lifespan. A quote received on the 16/10/15 for Reclaimer sprocket and chain replacement was reviewed at the meeting and it was decided that this may be the best option. The chains are replaced every few years and this could be done when the next one is due.
Acoustic treatment/noise reduction	Implement/install acoustic treatments/noise control measures if required and assessed as being reasonable and feasible	Matt O'Donovan/ Maintenance Team/ External contractor	May-22	Not started	No planned action at this stage.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Glengarry'	Matt O'Donovan	Aug-17	Complete	Following consultation with the EPA, Visy has initiated Negotiated Agreements between them and 3 affected residents. A Negotiated Agreement was signed between Visy and the Glengarry resident on 17 May 2017. The building treatment of the residence was completed in August 2017.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Reka'	Matt O'Donovan	Jan-20	Complete	A Negotiated Agreement was signed between Visy and the 'Reka' residents in January 2020. No acoustic treatment works were requested.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Whispering Pine'	Matt O'Donovan	Jan-20	Complete	A negotiated Agreement was signed between Visy and the 'Whispering Pine' residents and acoustic treatment works were completed in January 2020.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Pleasant View'	Matt O'Donovan	Mar-20	Complete	A Negotiated Agreement was signed between Visy and the 'Pleasant View' residents in March 2020 and acoustic treatment works were completed in May 2020.

Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Brentwood'	Matt O'Donovan	Aug-20	**Complete**	A Negotiated Agreement was signed between Visy and the 'Brentwood' resident and acoustic treatment works were completed in August 2020.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Nolte'	Matt O'Donovan	Aug-20	**Complete**	A Negotiated Agreement was signed between Visy and the 'Nolte' residents and acoustic treatment works were completed in August 2020.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Poverty Lane'	Matt O'Donovan	Mar-21	**Complete**	A Negotiated Agreement was signed between Visy and the 'Poverty Lane' resident and acoustic treatment works were completed in March 2021.
Acoustic treatment/noise reduction at the affected residents	Investigate and formalise Negotiated Agreements between the proponent and 'Deep Creek'	Matt O'Donovan	Mar-21	**Complete**	A Negotiated Agreement was signed between Visy and the 'Deep Creek' residents and acoustic treatment works were completed in March 2021.
Noise Consent Conditions Update	Submit Modification application to the NSW Department of Planning, Industry & Environment to update the site noise compliance limits	Matt O'Donovan	Aug-20	**Complete**	Approval granted on the 21 August 2020 - Modification 4 (to the Project Approval, now Development Consent). MP06_0159-Mod-4: Inclusion of Noise Limit Exemptions for Sensitive Receivers with Noise Agreements.
EP Licence Noise Conditions Update	Submit Environment Protection Licence amendment application to the NSW EPA, to update the licence noise conditions to reflect the DPIE Modification	Matt O'Donovan	Feb-22	Underway	EP Licence variation application was submitted in March 2022. The draft amended conditions are currently under review.
Noise Compliance Monitoring at nearby Residences	Engage an external company to carry out attended and unattended noise compliance monitoring at nearby residences annually (2 yearly when compliance achieved)	Matt O'Donovan	Jan-23	On-going (Last completed January-22)	Monitoring will be undertaken earlier in the year to avoid potential temperature inversion conditions.
Acoustic treatment/noise reduction	Review the effectiveness of noise control measures annually (2 yearly when compliance achieved)	Matt O'Donovan	May-23	Underway	
Noise Mitigation Action Plan	Review and update this plan annually	Matt O'Donovan	Oct-23	On-going (Last completed Oct-22)	Reviewed and updated annually.

Note - Specific acoustic treatments/noise control measures will be added to this plan when identified

* Plan was last updated October 2022

Appendix B – Register of Noise Control Measures on Site

Area	Noise Issues	Control Measures
Woodyard	Loading logs into Log Hopper	➢ **Precast concrete walls surrounding hopper structure** ➢ **Log crane operators lower logs into hopper to reduce drop height** ➢ **Restrictions on night time operations (10pm to 7am)**
	Noise from operations of Drum Debarker and Chipper	➢ **North west wall is constructed of pre-cast concrete panels** ➢ **Debarker and chipper are enclosed in a building** ➢ **Roller shutter door is to remain shut at all times while chipper/debarker are operating** ➢ **Rubber stays on inside of debarker drum** ➢ **Restrictions on night time operations (10pm to 7am)**
	Mobile Plant reversing beeper	➢ **Minimise usage of mobile plant at night** ➢ **Reduce reversing beeper tone to minimal levels**
	Noise from chain conveyors on chip reclaimers	➢ **Tighten chains during routine maintenance** ➢ **Noise mound constructed on southern side of reclaimers**
Fibreline	Noise from operating refiners	➢ **Refiners locations are located either inside building or acoustically shielded by adjoining buildings**
	Noise from operation of Fibre line pumps and screens	➢ **Majority of equipment located either inside building or acoustically shielded by adjoining buildings**
Paper Machine **(VP9 and 10)**	Noise from Vacuum Pumps(VP9 only)	➢ **Fans located in Paper Machine Basement with walls constructed of precast concrete** ➢ **Vacuum pump vents are acoustically shielded by Paper Machine Building structure**
	Noise from pumps, tank agitators and compressors (VP9)	➢ **Equipment located in Paper Machine Basement with walls constructed of precast concrete**
	Noise from pumps, tank agitators and compressors (VP10)	➢ **Equipment located in Paper Machine Basement, are acoustically shielding by adjoining annexes constructed of precast concrete panels, Evaporator Tanks and Cooling Towers**

	Noise from Vacuum blowers (VPP10 only)	➢ **Vacuum blowers located in annexe constructed of precast concrete walls and roof.** ➢ **Silencer provided on Vacuum blower vent to atmosphere (included in noise modelling)**
	Noise from operating Paper Machine equipment including refiners, drives and fans on first floor	➢ **Paper machine drives are located inside Paper Machine Building enclosed with steel corrugated cladding and partially acoustically shielded by adjacent annexes constructed with precast concrete walls**
	Noise from Paper Machine Hood Fans and ducting	➢ **VP9 hood fans located on North side of Paper Machine building and are acoustically shielded by building** ➢ **VP10 hood fans and duct are located on South side of Paper Machine Building. Noise levels from fans have been included in Noise modelling and no noise treatment is required**
	Noise from steam venting on paper break	➢ **Steam vents are located on North side of building acoustically shielded by building** ➢ **Control on steam pressure reduction after extended paper break period** ➢ **Steam directed to dump condenser**
Waste Paper and RCF	Noise from mobile plant	➢ **Waste paper yard area acoustically shielded from sensitive receivers** ➢ **Process equipment located inside building**
Recovery Boiler A and B	Noise from Combustion air fans, FD and Dilute NCG Fans, pumps, and Smelt Tank	➢ **Precast Concrete Wall enclosure** ➢ **Keep all large doors and Roller Shutter Doors closed at night** ➢ **Daily inspections/checks of equipment by maintenance personnel**
	Steam venting	➢ **Process automation and control to minimise steam venting**
	ID fans and ducting	➢ **Silencer installed on Recovery boiler A flue gas duct prior to stack 1** ➢ **ID fan sound and power level data provided on Recovery Boiler B for various operational levels. Data included in model. No noise control required at normal operating level (approx 70% of maximum fan output)**
Evaporation Area	Noise from operation of Vapour Compression Evaporator Fan	➢ **VCE fan and outlet ducting insulated with 100mm thick rock-wool and 0.48mm steel casing** ➢ **Fan sound levels and pressure data included in noise modelling**
Cooling Water system	Noise from operation of Cooling Tower Fans	➢ **Cooling water pumps are acoustically shielded by large Tanks in evaporation area** ➢ **Noise levels measured from outlet of fans included in noise model**

Recausticising and Lime Kiln area	Noise from operation of process equipment	➢ **Vacuum pumps located inside building and acoustically shielded**
Power Boiler	Noise from ID fans	➢ **ID fans located inside building enclosure** ➢ **Silencer installed in flue gas duct between ID fan and Stack 1**
	Noise from Combustion air fans, FD fan, pumps etc	➢ **Equipment located inside building enclosure and walls are constructed of precast concrete**
Steam Turbine	Noise from operation of steam turbine	➢ **Steam turbines are located inside building enclosures providing acoustic shielding** ➢ **Roller shutter doors are located away from sensitive receptors and are to be closed at all times**
Compressed air system	Noise from operating air compressors and from venting blow off air	➢ **Main air compressors are located inside building enclosure adjacent to Recovery Boiler A and inside VPP9 Paper Machine basement area. These locations are acoustically shielded**

Appendix C – Control Measures for Heavy Vehicle Traffic Noise Impacts

Objective	Control Measures	
Heavy Vehicles are appropriately operated and maintained to minimise excessive noise	Maintenance programme for heavy vehicles	➢ **Check vehicles are regularly maintained** ➢ **Report any heavy vehicles with excessive noise**
	Driver awareness program	➢ **Association and participation with relevant industry organisation (ie. Forest Industry Group,) and transport contractors** ➢ **Site induction and training**
	Where practicable all Heavy Vehicles to be fitted with air bag suspension	➢ **Include in heavy vehicle specification for VL fleet** ➢ **Communicate requirements to all transport contractors**
Heavy vehicle operators to comply with route curfews	Awareness and training	➢ **Site induction and training**
	Undertake audits/reviews of routes during curfew periods	➢ **Report breaches to transport managers and contractors** ➢ **site entry restrictions for repeated offences**
	GPS tracking system	➢ **Undertake audits/review of GPS tracking system for breaches**
Restrict the use of compression breaks or excessive speeds in built up areas and sensitive receivers	Awareness and training	➢ **Site induction and training** ➢ **Identify sensitive receivers**
	Signage	➢ **Warning signs located on approaches to built up areas**
	Toll free phone number to be displayed on Heavy Vehicles	➢ **Investigation of noise complaints from general public**
	Routine Noise monitoring along main transport routes	➢ **Assessment of noise levels to relevant traffic noise criteria**
Scheduling of loads to reduce Transporting during 'night-time'	Where practicable loads to be scheduled to minimise impacts on sleep disturbance	➢ **Select alternate routes during night time to avoid sensitive receivers or route curfews**

Tumut Noise Model
Octave spectra of the sources in dB(A)

Legend

Source		Source name
SrcType		Type of source (point, line, area)
l or S	m,m²	Size of source (length or area)
Lw	dB(A)	Sound power per unit
Lw'	dB(A)	Sound power per m,m²
63 Hz	dB(A)	Octave level 63 Hz
125 Hz	dB(A)	Octave level 125 Hz
250 Hz	dB(A)	Octave level 250 Hz
500 Hz	dB(A)	Octave level 500 Hz
1 kHz	dB(A)	Octave level 1 kHz
2 kHz	dB(A)	Octave level 2 kHz
4 kHz	dB(A)	Octave level 4 kHz
8 kHz	dB(A)	Octave level 8 kHz

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	Lw	Lw'	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
	Point		108.2	108.2	85.8	98.9	105.4	102.8	98.0	85.2
External Steam Turbine Wesern Facade	Area	31.20	99.9	85.0	73.4	89.4	92.4	93.4	94.4	91.4
Steam Turbine Roof	Area	50.00	85.0	68.0	58.5	74.5	77.5	78.5	79.5	76.5
External Steam Turbine Southern Facade	Area	60.60	102.8	85.0	76.3	92.3	95.3	96.3	97.3	94.3
External Steam Turbine Eastern Facade	Area	31.20	85.0	70.1	58.5	74.5	77.5	78.5	79.5	76.5
External Steam Turbine Northern Facade	Area	59.40	85.0	67.3	58.5	74.5	77.5	78.5	79.5	76.5
Blower Building Western Wall	Area	88.00	85.6	65.2	76.6	78.8	78.8	77.5	77.5	76.8
Blower Building Roof	Area	232.00	89.6	66.2	80.7	83.0	83.0	81.7	81.7	81.0
Blower Building Southern Wall	Area	330.00	91.3	66.2	82.3	84.5	84.5	83.3	83.3	82.5
Blower Building Eastern Wall	Area	88.00	85.6	65.2	76.5	78.8	78.8	77.5	77.5	76.8
Blower Building Northern Wall	Area	319.00	91.2	66.2	82.1	84.4	84.4	83.1	83.1	82.4
Blower Exhaust	Point		95.9	95.9	73.8	89.9	92.4	86.8	86.0	94.2
New Turbine Hall South	Area	34.80	42.2	26.8	28.0	34.0	39.1	35.6	31.1	25.2
New Turbine Hall Roof	Area	36.00	74.9	59.4	53.4	69.4	65.7	69.8	69.2	67.7
New Turbine Hall East	Area	34.80	42.2	26.8	28.0	34.0	39.1	35.6	31.1	25.2
New Turbine Hall North	Area	34.80	42.2	26.8	28.0	34.0	39.1	35.6	31.1	25.2
New Turbine Hall West	Area	37.20	42.5	26.8	28.3	34.3	39.4	35.9	31.3	25.4
New Gas Turbine South	Area	116.40	82.4	61.8	68.4	70.3	75.4	77.2	75.2	74.4
New Gas Turbine Roof	Area	254.60	85.8	61.8	71.8	73.7	78.8	80.6	78.6	77.8
New Gas Turbine East	Area	80.40	80.8	61.8	66.8	68.7	73.8	75.6	73.6	72.8
New Gas Turbine North	Area	116.40	82.4	61.8	68.4	70.3	75.4	77.2	75.2	74.4
New Gas Turbine West	Area	80.40	80.8	61.8	66.8	68.7	73.8	75.6	73.6	72.8
New CCGT Cooling Tower Fan 2	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
New CCGT Cooling Tower Fan 1	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
New Waste Heat Boiler	Point		-0.9	-0.9	-12.2	-4.3	-4.6	-15.6		
CCGT Stack Exit	Point		89.4	89.4	84.0	83.0	79.0	77.0	73.0	84.0
Cooling Tower Fan 1	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
Cooling Tower Fan 2	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
Cooling Tower Fan 3	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
Cooling Tower Fan 4	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
Cooling Tower Fan 5	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
Cooling Tower Inlet 1 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 1 West	Point		94.9	94.9	73.8	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 2 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 2 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 3 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Coolint Tower Inlet 3 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 4 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 4 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 5 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower Inlet 5 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
Cooling Tower End Wall North	Point		104.9	104.9	83.9	93.4	95.9	96.8	97.8	97.8
Cooling Tower End Wall South	Point		104.9	104.9	83.9	93.4	95.9	96.8	97.8	97.8
Digester Area Ground Right	Point		106.8	106.8	79.4	89.8	94.0	100.1	100.0	100.3
Digester Area Ground Left	Point		106.8	106.8	79.4	89.8	94.0	100.1	100.0	100.3
Digester Area Level 1 Right	Point		102.4	102.4	77.6	86.2	92.9	97.0	96.5	95.1
Digester Area Level 1 Left	Point		102.4	102.4	77.6	86.2	92.9	97.0	96.5	95.1
Digester Area Level 2 Right	Point		104.1	104.1	74.9	85.6	90.1	100.0	99.3	96.4
Digester Area Level 2 Left	Point		104.1	104.1	74.9	85.6	90.1	100.0	99.3	96.4
Digester Area Level 3 Left	Point		104.1	104.1	74.9	85.6	90.1	100.0	99.3	96.4
Digester Area Conveyor Drive	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
Digester Top	Point		88.1	88.1	68.9	69.6	74.1	84.0	83.3	80.4
Big Fat Thingy Near Digester	Point		88.1	88.1	68.9	69.6	74.1	84.0	83.3	80.4
S1-1	Point		106.5	106.5	83.0	88.4	91.8	99.0	103.6	99.3

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	Lw	Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
S1-2	Point		104.8	104.8	83.2	87.5	90.9	96.8	100.0	99.1
S1-3	Point		104.8	104.8	83.2	87.5	90.9	96.8	100.0	99.1
S1-4	Point		109.5	109.5	88.0	79.9	84.9	91.0	100.1	105.5
S1-5	Point		108.9	108.9	88.4	77.1	82.1	88.6	98.9	104.8
S1-6	Point		105.2	105.2	83.9	74.3	78.7	84.4	96.2	101.5
S1-7	Point		103.4	103.4	76.1	77.6	85.2	92.4	100.3	96.8
Truck near Carpark #1	Point		95.2	95.2		83.3	83.6	87.0	90.6	88.8
Chip Stacker Reclaimer West Discharge #1	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
Chip Stacker Reclaimer East Discharge #1	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
Chip Stacker Reclaimer East Discharge #2	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.6	96.3
Chip Stacker Reclaimer West Discharge #2	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.6	96.3
Fuel Stacker Reclaimer Discharge #1	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.6	96.3
Fuel Stacker Reclaimer Discharge #2	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
Lime Kiln Firing Building Ground West	Area	241.80	81.6	57.8	61.1	69.2	75.8	75.4	73.6	74.6
Lime Kiln Firing Building Ground South	Area	278.20	82.2	57.8	61.7	69.8	76.4	76.0	74.2	75.2
Lime Kiln Firing Building Ground East	Area	236.60	100.2	76.5	71.3	82.0	90.4	91.3	92.6	95.1
Lime Kiln Firing Building Ground North	Area	275.60	82.2	57.8	61.7	69.7	76.4	76.0	74.2	75.1
Lime Kiln Firing Building Level 1 East	Area	37.00	72.7	57.1	49.5	67.6	63.8	67.2	65.7	61.2
Lime Kiln Firing Building Level 1 North	Area	107.00	75.6	55.3	52.9	64.0	66.6	68.1	67.6	68.8
Lime Kiln Firing Building Level 1 West	Area	30.00	70.1	55.3	47.4	58.5	61.0	62.5	62.0	63.3
Lime Kiln Firing Building Level 1 South	Area	107.00	75.6	55.3	52.9	64.0	66.6	68.1	67.6	68.8
Lime Kiln Firing Building Level 2 East	Area	24.00	75.1	61.3	51.0	62.4	64.8	69.1	71.1	67.4
Lime Kiln Firing Building Level 3 East	Area	38.40	78.7	62.9	51.4	63.9	68.4	72.8	73.7	72.4
Lime Kiln Firing Building Level 2 North	Area	41.60	71.8	55.6	47.9	58.2	61.1	62.3	66.0	67.9
Lime Kiln Firing Building Level 3 North	Area	31.20	69.4	54.5	49.1	55.5	58.4	60.8	64.0	65.2
Lime Kiln Firing Building Level 2 West	Area	24.00	69.4	55.6	45.5	55.8	58.7	59.9	63.6	65.5
Lime Kiln Firing Building Level 3 West	Area	18.00	67.1	54.5	46.8	53.1	56.0	58.4	61.6	62.8
Lime Kiln Firing Building Level 2 South	Area	41.60	71.8	55.6	47.9	58.2	61.1	62.3	66.0	67.9
Lime Kiln Firing Building Level 3 South	Area	31.20	69.4	54.5	49.1	55.5	58.4	60.8	64.0	65.2
Lime Kiln Charging Building Ground South	Area	144.00	81.7	60.1	60.1	80.1	70.5	72.7	70.1	65.6
Lime Kiln Charging Building Level 1 Sout	Area	148.80	78.8	57.1	55.6	73.7	69.8	73.3	71.7	67.2
Lime Kiln Charging Building Level 2 Sout	Area	108.00	75.9	55.6	52.0	62.4	65.2	66.5	70.1	72.0
Lime Kiln Charging Building Level 3 Sout	Area	108.00	74.8	54.5	54.5	60.9	63.8	66.2	69.4	70.6
Lime Kiln Charging Building Ground West	Area	64.80	78.2	60.1	46.6	76.7	67.0	69.3	66.7	62.1
Lime Kiln Charging Building Level 1 West	Area	66.96	75.3	57.1	52.1	70.2	66.4	69.8	68.2	63.8
Lime Kiln Charging Building Level 2 West	Area	48.60	78.2	61.3	54.1	66.5	67.9	72.1	74.2	70.5
Lime Kiln Charging Building Level 3 West	Area	48.60	71.4	54.5	51.1	57.4	60.3	62.7	66.0	67.1
Lime Kiln Charging Building Ground North	Area	144.00	81.7	60.1	60.1	80.1	70.5	72.7	70.1	65.6
Lime Kiln Charging Building Level 1 Nort	Area	148.80	78.8	57.1	55.6	73.7	69.8	73.3	71.7	67.2
Lime Kiln Charging Building Level 2 Nort	Area	108.00	75.9	55.6	52.0	62.4	65.2	66.5	70.1	72.0
Lime Kiln Charging Building Level 3 Nort	Area	108.00	74.8	54.5	54.5	60.9	63.8	66.2	69.4	70.6
Lime Kiln Charging Building Ground West	Area	63.60	75.8	57.8	55.3	63.4	70.0	69.6	67.8	63.8
Lime Kiln Charging Building Level 1 West	Area	66.34	73.5	55.3	50.8	62.0	64.5	66.0	65.5	66.7
Lime Kiln Charging Building Level 2 West	Area	48.15	78.2	61.3	54.0	66.5	67.9	72.1	74.2	70.4
Lime Kiln Charging Building Level 3 West	Area	48.15	71.3	54.5	51.0	57.4	60.3	62.7	65.9	67.1
Lime Kiln Bucket Elevator	Point		89.7	89.7	77.6	80.0	82.1	82.2	82.0	81.3
Front end Loader at Woodyard	Point		103.4	103.4	70.3	87.9	89.3	94.4	99.0	98.8
Front End Loader Recycling Material Area	Point		103.4	103.4	70.3	87.9	89.3	94.4	99.0	98.8
Grabber Forklift at Recycling Marerial A	Point		97.6	97.6	78.6	90.4	91.2	90.2	91.2	88.6
Grabber Forklift at Recycling Marerial A	Point		97.6	97.6	78.6	90.4	91.2	90.2	91.2	88.6
Boomlift at Log Storage	Point		102.7	102.7	23.4	53.8	76.5	90.8	94.8	100.0
Forklift at Maintenance Workshop	Point		97.6	97.6	78.6	90.4	91.2	90.2	91.2	88.6
Forklift at Wastewater Ponds	Point		97.6	97.6	78.6	90.4	91.2	90.2	91.2	88.6
New Front end Loader at Woodyard	Point		103.4	103.4	70.3	87.9	89.3	94.4	99.0	98.8

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	Lw	Lw'	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
New Front End Loader Recycling Material	Point		103.4	103.4	70.3	87.9	89.3	94.4	99.0	98.8
New Grabber Forklift at Recycling Mareti	Point		97.6	97.6	78.8	90.4	91.2	90.2	91.2	88.6
New Grabber Forklift at Recycling Mareti	Point		97.6	97.6	78.8	90.4	91.2	90.2	91.2	88.6
New Front end Loader at Woodyard	Point		103.4	103.4	70.3	87.9	89.3	94.4	99.0	98.8
New Front end Loader at Woodyard	Point		103.4	103.4	70.3	87.9	89.3	94.4	99.0	98.8
New Recovery Boiler (ID fan) Stack Exit	Point		97.9	97.9	91.8	94.9	90.4	82.8	72.0	65.2
New Chip Stacker Reclaimer East Discharg	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
New Chip Stacker Reclaimer East Discharg	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
New Chip Stacker Reclaimer West Discharg	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
New Chip Stacker Reclaimer West Discharg	Point		100.1	100.1	34.8	34.8	77.3	91.6	94.5	96.3
New Log Hopper	Point		115.2	115.2	75.4	94.0	104.4	114.3	103.0	99.4
Paper Machine Roof Sector 1	Area	1200.00	99.3	68.5	77.0	88.7	91.5	94.8	92.8	90.0
Paper Machine Roof Sector 2	Area	1200.00	105.7	74.9	75.7	82.9	91.4	92.4	93.1	102.8
Paper Machine Roof Sector 3	Area	1200.00	105.7	74.9	75.7	82.9	91.4	92.4	93.1	102.8
Paper Machine Roof Sector 4	Area	1200.00	92.8	62.0	78.8	84.9	84.9	87.7	85.9	82.8
Paper Machine West Fibre Level 1	Area	404.60	92.9	66.8	66.8	77.4	81.6	87.9	87.5	86.5
Paper Machine West Fibre Ground	Area	72.00	51.9	33.4	34.0	43.8	47.7	47.0	41.9	36.8
Paper Machine South Sector 1 Ground	Area	150.00	50.5	28.7	40.8	43.0	47.8	40.8	37.2	30.5
Paper Machine South Sector 2 Ground	Area	150.00	50.9	29.1	42.7	44.7	48.9	42.4	38.5	31.3
Paper Machine South Sector 3 Ground	Area	150.00	56.3	36.5	42.0	50.1	56.3	49.9	43.8	37.3
Paper Machine South Sector 4 Ground	Area	150.00	56.2	34.6	43.7	48.0	53.7	48.8	43.0	37.1
Paper Machine South Sector 1 Level 1	Area	850.00	97.8	68.5	75.5	87.2	90.0	93.1	91.1	88.5
Paper Machine South Sector 2 Level 1	Area	850.00	104.2	74.9	74.2	81.4	89.9	90.9	91.7	101.3
Paper Machine South Sector 3 Level 1	Area	850.00	104.2	74.9	74.2	81.4	89.9	90.9	91.7	101.3
Paper Machine South Sector 4 Level 1	Area	850.00	91.3	62.0	77.3	83.4	83.4	86.2	84.4	81.3
Paper Machine Fibre Line Ground Level So	Area	72.00	54.7	36.1	42.0	47.8	50.9	48.7	41.8	36.1
Paper Machine Fibre Line Level 1 South	Area	408.00	94.2	68.1	74.0	81.6	84.8	89.8	87.5	86.1
Paper Machine East Wall Ground Level	Area	72.00	52.1	33.6	40.4	44.1	49.1	44.9	39.7	34.0
Paper Machine East Wall Level 1	Area	408.00	84.0	57.9	70.9	72.7	72.6	72.4	70.2	69.6
Paper Machine North Sector 4 Ground	Area	150.00	56.2	34.5	43.7	48.0	53.7	48.8	43.0	37.1
Paper Machine North Sector 3 Ground	Area	150.00	56.3	36.5	42.0	50.1	56.3	49.9	43.8	37.3
Paper Machine North Sector 2 Ground	Area	150.00	50.9	29.1	42.7	44.7	48.9	42.4	38.5	31.3
Paper Machine North Sector 1 Ground	Area	150.00	50.5	28.7	40.8	43.0	47.8	40.8	37.2	30.5
Paper Machine North Sector 4 Level 1	Area	850.00	91.3	62.0	77.3	83.4	83.4	86.2	84.4	81.3
Paper Machine North Sector 3 Level 1	Area	850.00	104.2	74.9	74.2	81.4	89.9	90.9	91.7	101.3
Paper Machine North Sector 2 Level 1	Area	850.00	104.2	74.9	74.2	81.4	89.9	90.9	91.7	101.3
Paper Machine North Sector 1 Level 1	Area	850.00	97.8	68.5	75.5	87.2	90.0	93.1	91.1	88.5
Paper Machine North Fibre Line Ground	Area	72.00	50.7	32.2	34.6	43.5	47.2	45.0	39.0	31.6
Paper Machine North Fibre Level 1	Area	408.00	90.4	64.3	67.0	77.2	81.2	86.3	84.7	81.6
Vacuum Pump Building West Facade	Area	39.20	84.9	69.0	64.0	82.7	74.9	76.1	74.7	72.0
Vacuum Pump Building East Facade	Area	39.20	84.9	69.0	64.0	82.7	74.9	76.1	74.7	72.0
Vacuum Pump Building North Facade	Area	165.60	91.7	69.0	70.7	89.5	81.6	82.9	81.4	78.7
Paper Machine Vent Fan Exhaust S7-10	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-11	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-12	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-13	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-14	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-15	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-16	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-17	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Ventilation Duct S7-20	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-21	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-22	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-23	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	Lw	LW	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
Paper Machine Ventilation Duct S7-24	Point		102.7	102.7	82.5	95.1	96.6	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-25	Point		102.7	102.7	82.5	95.1	96.6	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-26	Point		102.7	102.7	82.5	95.1	96.6	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-27	Point		102.7	102.7	82.5	95.1	96.6	97.3	95.4	90.0
Paper Machine Open Louvres	Point		94.0	94.0	74.8	84.0	88.4	87.7	86.6	85.9
Paper Machine Rooftp Drum	Point		96.6	96.6	74.4	81.0	84.2	86.5	89.7	87.6
Vacuum Pump S8-4	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-5	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-6	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-7	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-8	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-9	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-10	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Vacuum Pump S8-11	Point		97.6	97.6	71.5	92.7	86.6	89.3	90.8	89.7
Aerothermic #1 Fan	Point		97.6	97.6	43.6	62.1	75.5	86.2	91.7	92.9
Aerothermic #2 Fan	Point		97.6	97.6	43.6	62.1	75.5	86.2	91.7	92.9
Aerothermic #3 Fan	Point		97.6	97.6	43.6	62.1	75.5	86.2	91.7	92.9
Aerothermec #1 Exhaust	Point		108.2	108.2	74.1	89.7	93.9	98.0	102.9	101.9
Aerothermic #2 Exhaust	Point		108.2	108.2	74.1	89.7	93.9	98.0	102.9	101.9
Aerothermic #3 Exhaust	Point		108.2	108.2	74.1	89.7	93.9	98.0	102.9	101.9
Aerothermic #1 Panel	Point		97.7	97.7	67.3	76.6	83.7	89.3	91.7	91.8
Aerothermic #2 Panel	Point		97.7	97.7	67.3	76.6	83.7	89.3	91.7	91.8
Aerothermic #3 Panel	Point		97.7	97.7	67.3	76.6	83.7	89.3	91.7	91.8
New Fuel Conveyor Transfer Idler End	Point		102.7	102.7	78.4	88.0	92.3	94.9	95.6	97.6
New Conveyor Fuel to Debaiker Idler	Point		102.7	102.7	78.4	88.0	92.3	94.9	95.6	97.6
New Conveyor Fuel to Stacker Idler	Point		102.7	102.7	78.4	88.0	92.3	94.9	95.6	97.6
New Conveyor Idler Fuel to Stacker Trans	Point		102.7	102.7	78.4	88.0	92.3	94.9	95.6	97.6
New Conveyor Fuel to Stacker Drive	Point		102.5	102.5	78.4	86.3	89.5	93.9	98.4	97.7
New Conveyor Fuel to Stacker Transfer Dr	Point		102.5	102.5	78.4	86.3	89.5	93.9	98.4	97.7
New Conveyor Fuel to Screens Transfer Dr	Point		102.5	102.5	78.4	86.3	89.5	93.9	98.4	97.7
Power Boiler Level Ground South Concrete	Area	54.60	52.8	35.5	39.9	44.4	50.8	44.9	38.1	33.9
Power Boiler Level Ground South Steel	Area	54.60	84.0	66.6	65.5	70.6	77.1	76.9	76.2	76.4
Power Boiler Level 1 South	Area	36.40	82.2	66.6	63.7	68.8	75.3	77.1	74.4	74.7
Power Boiler Level 2 South	Area	50.96	63.3	46.2	45.1	54.3	57.9	58.4	55.9	51.2
Power Boiler Level 3 South	Area	80.08	82.2	63.2	62.1	71.4	77.3	77.7	73.5	71.7
Power Boiler Level 4 South	Area	72.80	78.9	60.3	58.9	68.2	73.7	74.2	71.0	68.8
Power Boiler Level 5 South	Area	78.26	77.4	58.4	56.1	63.6	71.6	73.0	69.9	68.3
Power Boiler Level 6 South	Area	100.10	77.8	57.8	55.7	63.6	71.3	73.3	70.7	69.6
Power Boiler Level 3 West	Area	373.12	71.9	46.2	53.7	62.9	66.5	67.0	64.5	59.9
Power Boiler Level Ground North Concrete	Area	54.60	52.8	35.5	39.9	44.4	50.8	44.9	38.1	33.9
Power Boiler Level Ground North Steel	Area	54.60	84.0	66.6	65.5	70.6	77.1	76.9	76.2	76.4
Power Boiler Level 1 North	Area	36.40	82.2	66.6	63.7	68.8	75.3	77.1	74.4	74.7
Power Boiler Level 2 North	Area	50.96	63.3	46.2	45.1	54.3	57.9	58.4	55.9	51.2
Power Boiler Level 3 North	Area	80.08	82.2	63.2	62.1	71.4	77.3	77.7	73.5	71.7
Power Boiler Level 4 North	Area	72.80	78.9	60.3	58.9	68.2	73.7	74.2	71.0	68.8
Power Boiler Level 5 North	Area	78.26	77.4	58.4	56.1	63.6	71.6	73.0	69.9	68.3
Power Boiler Level 6 North	Area	100.10	77.8	57.8	55.7	63.6	71.3	73.3	70.7	69.6
Power Boiler Level Ground West Concrete	Area	64.80	53.6	36.5	40.7	45.2	51.3	45.6	38.9	34.7
Power Boiler Level Ground West Steel	Area	64.80	84.7	66.8	66.2	71.4	77.8	79.6	76.9	77.2
Power Boiler Level 1 West	Area	43.20	82.9	66.6	64.4	69.6	76.0	77.9	75.2	75.4
Power Boiler Level 2 West	Area	60.48	64.0	46.2	45.6	55.0	58.6	59.1	56.6	52.0
Power Boiler Level 3 West	Area	95.04	83.0	63.2	62.6	72.2	78.0	78.4	74.3	72.5
Power Boiler Level 4 West	Area	86.40	79.7	60.3	59.7	68.9	74.5	74.9	71.7	69.5
Power Boiler Level 5 West	Area	92.88	78.1	58.4	56.8	64.4	72.3	73.7	70.7	69.0

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	Lw	Lw'	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
Power Boiler Level 6 West	Area	116.64	78.5	57.8	56.4	64.3	72.0	73.9	71.3	70.2
Power Boiler ID Fan	Point		87.0	87.0	80.2	87.8	73.3	79.0	77.6	81.3
Fuel Conveyor Drive/Discharge	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
Stack Exit	Point		92.5	92.5	84.2	86.3	82.3	77.3	82.2	87.2
New Fibre Line Ground South	Area	72.00	64.7	36.1	42.0	47.8	50.9	48.7	41.8	36.1
New Fibre Line Level 1 South	Area	408.00	90.4	64.3	67.0	77.2	81.2	86.3	84.7	81.5
New Paper Machine Sector 1 Ground South	Area	150.00	60.5	28.7	40.8	43.0	47.8	40.8	37.2	30.6
New Paper Machine Sector 1 Level 1 South	Area	850.00	97.8	68.5	75.5	87.2	90.0	93.1	91.1	88.5
New Paper Machine Sector 2 Level 1 South	Area	850.00	104.2	74.9	74.2	81.4	89.9	90.9	91.7	101.3
New Paper Machine Sector 2 Ground South	Area	150.00	60.5	28.7	40.8	43.0	47.8	40.8	37.2	30.6
New Paper Machine Sector 3 Ground South	Area	153.00	58.4	26.5	42.1	50.2	56.4	50.0	43.9	37.4
New Paper Machine Sector 3 Level 1 South	Area	867.00	104.3	74.9	74.3	81.5	89.9	91.0	91.7	101.4
New Fibre Line Roof	Area	461.20	93.4	66.8	67.1	77.9	82.0	88.4	86.0	87.0
New Paper Machine Sector 1 Roof	Area	940.00	96.6	66.8	70.3	81.1	85.2	91.6	91.2	90.2
New Paper Machine Sector 2 Roof	Area	940.00	104.6	74.9	74.6	81.8	90.3	91.3	92.1	101.7
New Paper Machine Sector 3 Roof	Area	958.80	104.7	74.9	74.7	81.9	90.4	91.4	92.2	101.8
New Paper Machine East Ground	Area	66.40	51.0	33.6	39.3	43.1	48.0	43.8	38.6	33.0
New Paper Machine East Level 1	Area	319.60	82.9	57.9	69.9	71.6	71.6	71.4	69.2	68.5
New Fibre Line Ground North	Area	72.00	64.7	36.1	42.0	47.8	50.9	48.7	41.8	36.1
New Fibre Line Level 1 North	Area	408.00	90.4	64.3	67.0	77.2	81.2	86.3	84.7	81.5
New Maper Machine Sector 1 Level 1 North	Area	850.00	97.8	68.5	75.5	87.2	90.0	93.1	91.1	88.5
New Maper Machine Sector 2 Level 1 North	Area	850.00	104.2	74.9	74.2	81.4	89.9	90.9	91.7	101.3
New Maper Machine Sector 3 Level 1 North	Area	867.00	104.3	74.9	74.3	81.5	89.9	91.0	91.7	101.4
New Maper Machine Sector 3 Ground North	Area	153.00	58.4	26.5	42.1	50.2	56.4	50.0	43.9	37.4
New Maper Machine Sector 2 Ground North	Area	150.00	60.9	29.1	42.7	44.7	48.9	42.4	38.5	31.3
New Maper Machine Sector 1 Ground North	Area	150.00	60.5	28.7	40.8	43.0	47.8	40.8	37.2	30.6
Fibre Line West Ground	Area	66.40	50.9	33.4	33.0	42.7	46.6	45.9	40.9	35.7
Fibre Line West Level 1	Area	319.60	91.9	66.8	65.8	76.4	80.5	86.9	86.5	85.5
New Lime Kiln Firing Building Ground Wes	Area	241.80	81.6	57.8	61.1	69.2	75.8	75.4	73.6	74.6
New Lime Kiln Firing Building Ground Sou	Area	278.20	82.2	57.8	61.7	69.8	76.4	76.0	74.2	75.2
New Lime Kiln Firing Building Ground Eas	Area	236.60	100.2	76.5	71.3	82.0	90.4	91.3	92.6	95.1
New Lime Kiln Firing Building Ground Nor	Area	275.60	82.2	57.8	61.7	69.7	76.4	76.0	74.2	75.1
New Lime Kiln Firing Building Level 1 Ea	Area	37.00	72.7	57.1	49.5	67.6	63.8	67.2	65.7	61.2
New Lime Kiln Firing Building Level 1 No	Area	107.00	75.6	55.3	52.9	64.0	68.6	68.1	67.6	68.8
New Lime Kiln Firing Building Level 1 We	Area	30.00	70.1	55.3	47.4	58.5	61.0	62.5	62.0	63.3
New Lime Kiln Firing Building Level 1 So	Area	107.00	75.6	55.3	52.9	64.0	68.6	68.1	67.6	68.8
New Lime Kiln Firing Building Level 2 Ea	Area	24.00	69.4	55.6	45.5	55.8	58.7	59.9	63.6	65.5
New Lime Kiln Firing Building Level 3 Ea	Area	18.00	67.1	54.5	46.8	53.1	56.0	58.4	61.6	62.8
New Lime Kiln Firing Building Level 2 No	Area	41.80	71.8	55.6	47.9	58.2	61.1	62.3	66.0	67.9
New Lime Kiln Firing Building Level 3 No	Area	31.20	69.4	54.5	49.1	55.5	58.4	60.8	64.0	65.2
New Lime Kiln Firing Building Level 2 We	Area	24.00	69.4	55.6	45.5	55.8	58.7	59.9	63.6	65.5
New Lime Kiln Firing Building Level 3 We	Area	18.00	67.1	54.5	46.8	53.1	56.0	58.4	61.8	62.8
New Lime Kiln Firing Building Level 2 So	Area	41.60	71.8	55.6	47.9	58.2	61.1	62.3	66.0	67.9
Lime Kiln Firing Building Level 3 South	Area	31.20	69.4	54.5	49.1	55.5	58.4	60.8	64.0	65.2
Lime Kiln Charging Building Ground South	Area	144.00	81.7	60.1	50.1	80.1	70.5	72.7	70.1	65.6
Lime Kiln Charging Building Level 1 Sout	Area	148.80	78.8	57.1	55.6	73.7	69.8	73.3	71.7	67.2
Lime Kiln Charging Building Level 2 Sout	Area	108.00	75.9	55.6	52.0	62.4	65.2	66.5	70.1	72.0
Lime Kiln Charging Building Level 3 Sout	Area	108.00	74.8	54.5	54.5	60.9	63.8	66.2	69.4	70.6
Lime Kiln Charging Building Ground West	Area	64.80	78.2	60.1	46.6	76.7	67.0	69.3	66.7	62.1
Lime Kiln Charging Building Level 1 West	Area	66.96	75.3	57.1	52.1	70.2	66.4	69.8	68.2	63.8
Lime Kiln Charging Building Level 2 West	Area	48.60	78.2	61.3	54.1	65.5	67.9	72.1	74.2	70.5
Lime Kiln Charging Building Level 3 West	Area	48.60	71.4	54.5	51.1	57.4	60.3	62.7	66.0	67.1
Lime Kiln Charging Building Ground North	Area	144.00	81.7	60.1	50.1	80.1	70.5	72.7	70.1	65.6
Lime Kiln Charging Building Level 1 Nort	Area	148.80	78.8	57.1	55.6	73.7	69.8	73.3	71.7	67.2

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	for S	Lw	Lw'	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
Lime Kiln Charging Building Level 2 Nort	Area	108.00	75.9	55.6	52.0	62.4	65.2	66.5	70.1	72.0
Lime Kiln Charging Building Level 3 Nort	Area	108.00	74.8	54.6	54.6	60.9	63.8	66.2	69.4	70.6
Lime Kiln Charging Building Ground West	Area	63.60	75.8	57.8	55.3	63.4	70.0	69.6	67.8	68.8
Lime Kiln Charging Building Level 1 West	Area	68.34	73.5	55.3	60.8	62.0	64.6	66.0	65.5	66.7
Lime Kiln Charging Building Level 2 West	Area	48.15	78.2	61.3	54.0	65.5	67.9	72.1	74.2	70.4
Lime Kiln Charging Building Level 3 West	Area	48.15	71.3	54.5	51.0	57.4	60.3	62.7	65.9	67.1
New Recovery Boiler Level Ground East	Area	108.41	51.9	31.5	36.1	41.9	49.0	45.8	41.2	35.4
New Recovery Boiler Level Ground East Op	Area	8.00	94.4	85.4	59.8	69.6	78.7	84.5	86.9	87.1
New Recovery Boiler Level Ground East Ro	Area	8.00	73.9	64.9	48.9	56.8	64.0	68.5	68.1	66.5
New Recovery Boiler Level 1 East	Area	68.64	50.0	31.6	35.9	40.6	46.5	44.5	39.3	33.7
New Recovery Boiler Level 2 East	Area	89.32	83.7	64.2	57.2	66.1	73.3	78.3	77.4	76.8
New Recovery Boiler Level 2 East Vent 1	Area	1.21	86.0	85.2	49.5	60.3	69.2	75.8	77.6	78.7
New Recovery Boiler Level 2 East Vent 2	Area	1.21	86.0	85.2	49.5	60.3	69.2	75.8	77.6	78.7
New Recovery Boiler Level 2 East Vent 3	Area	1.21	86.0	85.2	49.5	60.3	69.2	75.8	77.6	78.7
New Recovery Boiler Level 3 East	Area	180.18	88.0	65.5	60.4	69.4	76.1	81.3	83.3	82.6
New Recovery Boiler Level 4 East	Area	126.70	83.5	62.4	55.3	65.5	72.0	76.8	76.6	77.8
New Recovery Boiler Level 5 East	Area	114.40	82.8	62.2	51.7	61.4	68.7	75.2	75.7	78.4
New Recovery Boiler Level 6 East	Area	91.52	84.8	65.2	9.5	58.1	67.6	74.7	76.7	80.8
New Recovery Boiler Level 7 East	Area	85.80	87.7	68.4	9.2	58.0	66.6	73.8	77.8	83.4
New Recovery Boiler Level 8 East	Area	171.60	91.6	69.3	52.0	58.9	69.4	78.1	82.7	87.4
New Recovery Boiler Level 9 East	Area	263.77	85.8	61.7	52.7	61.1	70.6	76.7	81.2	81.5
New Recovery Boiler Level 9 East Air Ven	Area	1.21	84.0	83.2	40.5	50.7	62.2	69.8	77.2	79.1
New Recovery Boiler Level 9 East Air Ven	Area	1.21	84.0	83.2	40.5	50.7	62.2	69.8	77.2	79.1
New Recovery Boiler Level 9 East Air Ven	Area	1.21	84.0	83.2	40.5	50.7	62.2	69.8	77.2	79.1
New Recovery Boiler Roof	Area	549.12	72.2	44.8	17.2	59.2	65.0	67.4	66.0	64.1
New Recovery Boiler Level Ground North	Area	82.65	50.7	31.5	34.9	40.7	47.8	44.6	40.1	34.2
New Recovery Boiler Level 1 North	Area	45.60	48.2	31.6	34.2	38.8	44.7	42.7	37.5	31.9
New Recovery Boiler Level 2 North	Area	61.75	82.1	64.2	55.6	64.5	71.7	76.7	75.8	75.2
New Recovery Boiler Level 3 North	Area	119.70	86.2	65.5	58.6	67.6	74.3	79.6	81.5	80.8
New Recovery Boiler Level 4 North	Area	85.50	81.8	62.4	53.5	63.7	70.2	75.0	74.8	76.0
New Recovery Boiler Level 5 North	Area	76.00	81.0	62.2	49.9	59.7	66.9	73.5	73.9	76.6
New Recovery Boiler Level 6 North	Area	60.80	83.0	65.2	7.7	56.3	65.9	73.0	74.9	79.1
New Recovery Boiler Level 7 North	Area	57.00	85.8	68.4	7.4	56.2	64.8	72.0	76.0	81.6
New Recovery Boiler Level 8 North	Area	114.00	89.9	69.3	50.3	57.1	67.6	76.3	80.9	85.6
New Recovery Boiler Level 9 North	Area	171.00	84.1	61.7	51.0	59.3	68.9	75.0	79.4	79.8
New Recovery Boiler Level 9 West	Area	193.20	84.6	61.7	51.6	59.9	69.5	75.5	80.0	80.4
New Recovery Boiler Level Ground West	Area	27.84	46.0	31.5	30.2	36.0	43.1	39.9	35.3	29.5
New Recovery Boiler Level 1 West	Area	16.36	43.5	31.6	29.4	34.1	40.0	36.0	32.8	27.2
New Recovery Boiler Level 2 West	Area	20.60	77.3	64.2	50.9	59.8	66.9	72.0	71.1	70.4
New Recovery Boiler Level 3 West	Area	40.32	81.5	65.5	53.9	62.9	69.8	74.8	76.8	76.1
New Recovery Boiler Level 4 West	Area	28.80	77.0	62.4	48.8	59.0	65.5	70.3	70.1	71.3
New Recovery Boiler Level 5 West	Area	25.60	76.3	62.2	45.2	54.9	62.2	68.7	69.2	71.9
New Recovery Boiler Level 6 West	Area	20.48	78.3	65.2	3.0	51.6	61.1	68.2	70.2	74.3
New Recovery Boiler Level 7 West	Area	19.20	81.2	68.4	2.7	51.5	60.1	67.3	71.3	76.9
New Recovery Boiler Level 8 West	Area	38.40	85.1	69.3	45.5	52.4	62.9	71.6	76.2	80.9
New Recovery Boiler Level Ground South	Area	83.52	50.8	31.5	35.0	40.8	47.8	44.7	40.1	34.3
New Recovery Boiler Level 1 South	Area	46.08	48.3	31.6	34.2	38.9	44.8	42.8	37.6	32.0
New Recovery Boiler Level 2 South Alsyni	Area	13.00	85.1	73.9	58.6	67.8	74.9	79.9	79.0	78.4
New Recovery Boiler Level 3 South Alsyni	Area	25.20	89.4	75.4	61.7	70.8	77.8	82.8	84.7	84.1
New Recovery Boiler Level 4 South Alsyni	Area	18.00	84.7	72.2	56.8	67.0	73.5	78.2	78.1	79.3
New Recovery Boiler Level 5 South Alsyni	Area	16.00	84.0	71.9	53.1	62.9	70.1	76.7	77.1	79.8
New Recovery Boiler Level 6 South Alsyni	Area	12.80	85.8	74.7	10.2	59.5	69.1	76.2	78.1	82.3
New Recovery Boiler Level 7 South Alsyni	Area	12.00	88.4	77.6	9.9	59.4	68.1	75.3	79.3	84.9
New Recovery Boiler Level 8 South Alsyni	Area	24.00	92.4	78.6	53.5	60.3	70.9	79.5	84.1	88.9

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	Lw	Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
New Recovery Boiler Level 9 South Alsyni	Area	36.00	87.2	71.6	54.3	62.6	72.2	78.2	82.7	83.1
New Recovery Boiler Level 2 South Steel	Area	49.40	81.1	64.2	54.6	63.6	70.7	75.7	74.8	74.2
New Recovery Boiler Level 3 South Steel	Area	95.76	85.3	65.5	57.6	66.6	73.4	78.6	80.5	79.9
New Recovery Boiler Level 4 South Steel	Area	68.40	80.8	62.4	52.6	62.7	69.3	74.0	73.9	75.1
New Recovery Boiler Level 5 South Steel	Area	60.80	80.0	62.2	48.9	58.7	65.9	72.5	72.9	75.6
New Recovery Boiler Level 6 South Steel	Area	48.64	82.0	65.2	6.7	56.3	64.9	72.0	73.9	78.1
New Recovery Boiler Level 7 South Steel	Area	45.60	85.0	68.4	6.4	56.2	63.9	71.1	75.1	80.7
New Recovery Boiler Level 8 South Steel	Area	91.20	88.9	69.3	49.3	58.1	68.7	75.3	79.9	84.7
New Recovery Boiler Level 9 South Steel	Area	136.80	83.1	61.7	50.1	58.4	68.0	74.0	78.5	78.9
New Recovery Boiler Ducting	Line	30.91	99.5	84.6	92.8	94.9	94.4	88.8	82.0	74.2
Portal Crane at Woodyard #1	Point		102.4	102.4	23.1	53.5	76.2	90.5	94.5	99.7
Portal Crane at Woodyard #2	Point		102.7	102.7	23.4	53.8	76.5	90.8	94.8	100.0
New Paper Machine Vent Fan Exhaust S7-10	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-11	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-12	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-13	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-14	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-15	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
Paper Machine Vent Fan Exhaust S7-16	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Vent Fan Exhaust S7-17	Point		93.0	93.0	74.1	84.5	87.6	85.7	85.1	82.4
New Paper Machine Ventilation Duct S7-20	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Ventilation Duct S7-21	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Ventilation Duct S7-22	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Ventilation Duct S7-23	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Ventilation Duct S7-24	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Ventilation Duct S7-25	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
Paper Machine Ventilation Duct S7-26	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Ventilation Duct S7-27	Point		102.7	102.7	82.5	95.1	96.8	97.3	95.4	90.0
New Paper Machine Open Louvres	Point		94.0	94.0	74.8	84.0	86.4	87.7	86.8	86.9
New Paper Machine Rooftp Drum	Point		96.8	96.8	74.4	81.0	84.2	88.6	89.7	87.6
New Aerothermic #1 Fan	Point		97.8	97.8	43.6	62.1	75.5	86.2	91.7	92.9
New Aerothermic #2 Fan	Point		97.8	97.8	43.6	62.1	75.5	86.2	91.7	92.9
New Aerothermic #3 Fan	Point		97.8	97.8	43.6	62.1	75.5	86.2	91.7	92.9
New Aerothermec #1 Exhaust	Point		108.2	108.2	74.1	89.7	93.9	98.0	102.9	101.9
New Aerothermic #2 Exhaust	Point		108.2	108.2	74.1	89.7	93.9	98.0	102.9	101.9
New Aerothermic #3 Exhaust	Point		108.2	108.2	74.1	89.7	93.9	98.0	102.9	101.9
New Aerothermic #1 Panel	Point		97.7	97.7	67.3	76.6	83.7	89.3	91.7	91.8
New Aerothermic #2 Panel	Point		97.7	97.7	67.3	76.6	83.7	89.3	91.7	91.8
New Aerothermic #3 Panel	Point		97.7	97.7	67.3	76.6	83.7	89.3	91.7	91.8
New S1-3	Point		104.8	104.8	83.2	87.5	90.9	96.8	100.0	99.1
New S1-4	Point		109.5	109.5	88.0	79.9	84.9	91.0	100.1	105.5
New S1-5	Point		108.9	108.9	88.4	77.1	82.1	88.8	98.9	104.8
New S1-6	Point		105.2	105.2	83.9	74.3	78.7	84.4	96.2	101.5
New Cooling Tower Fan 1	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
New Cooling Tower Fan 2	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
New Cooling Tower Fan 3	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
New Cooling Tower Fan 4	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
New Cooling Tower Fan 5	Point		108.9	108.9	92.5	98.5	102.0	102.6	104.0	98.0
New Cooling Tower Inlet 1 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 1 West	Point		94.9	94.9	73.6	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 2 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 2 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 3 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Coolint Tower Inlet 3 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	1 or S	Lw	Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
Cooling Tower Inlet 4 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 4 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 5 East	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower Inlet 5 West	Point		94.9	94.9	73.9	83.4	85.9	86.8	87.8	87.8
New Cooling Tower End Wall North	Point		104.9	104.9	83.9	93.4	95.9	96.8	97.8	97.8
New Cooling Tower End Wall South	Point		104.9	104.9	83.9	93.4	95.9	96.8	97.8	97.8
New S1-1	Point		106.5	106.5	83.0	88.4	91.8	99.0	103.6	99.3
New Woodchip Stacker/Reclaimer East	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
New Woodchip Stacker/Reclaimer West	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
Adeco Drive Unit Transfer Point S3-1	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
New Adeco Trasnser Unit at New Woodchip	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
New CC10 Drive & Discharge End	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
New Wood Screens Facade South	Point		103.1	103.1	75.2	85.7	88.3	96.2	96.0	98.0
Screens Facade West	Point		108.5	108.5	79.3	91.5	95.7	102.8	101.2	102.7
Screens Facade North	Point		105.6	105.6	76.4	88.0	91.7	99.5	98.3	100.2
Screens Facade East	Point		104.3	104.3	74.4	84.0	88.2	96.5	97.5	99.7
Screens Roof	Point		105.6	105.6	76.4	88.0	91.7	99.5	98.3	100.2
Screens Facade West	Point		108.5	108.5	79.3	91.5	95.7	102.8	101.2	102.7
New Screens West Facade	Point		108.5	108.5	79.3	91.5	95.7	102.8	101.2	102.7
New Screens South Facade	Point		103.1	103.1	75.2	85.7	88.3	96.2	96.0	98.0
New screens North Facade	Point		103.1	103.1	75.2	85.7	88.3	96.2	96.0	98.0
New BC2 Drive & Discharge	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
New Scalper Screen Facade West	Point		96.1	96.1	73.0	84.7	84.8	85.8	87.3	89.3
New Scalper Screens Facade North	Point		90.5	90.5	72.9	84.0	83.1	83.5	82.8	82.0
New Scalper Screens Facade East	Point		86.3	86.3	69.6	78.3	80.4	79.8	78.3	76.8
New Scalper Screens Facade South	Point		104.3	104.3	74.4	84.0	88.2	96.5	97.5	99.7
New Recovery Boiler Precipitator West	Point		97.6	97.6	72.1	77.4	83.7	87.8	90.8	92.4
New Recovery Boiler Precips East	Point		97.6	97.6	72.1	77.4	83.7	87.8	90.8	92.4
New Boiler Precips North	Point		95.5	95.5	68.0	72.5	81.2	86.3	88.7	88.7
New Boiler Precips North	Point		95.5	95.5	68.0	72.5	81.2	86.3	88.7	88.7
New Recovery Cooling Tower Fan 2	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
New Recovery Cooling Tower Fan 1	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
New Recovey Boiler CW Pumps	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
New Recovery Boiler ID Fan casing	Point		108.2	108.2	85.8	96.9	105.4	102.8	96.0	95.2
New Fuel Conveyor Drive/Discharge	Point		86.5	86.5	62.4	70.2	73.5	77.8	80.4	81.7
Recovery Boiler Level Ground East	Area	108.41	51.9	31.5	36.1	41.9	49.0	45.8	41.2	35.4
Recovery Boiler Level Ground East Open A	Area	8.00	94.4	85.4	59.8	69.6	78.7	84.5	85.9	87.1
Recovery Boiler Level Ground East Roller	Area	8.00	73.9	64.9	48.9	56.8	64.0	68.5	68.1	66.5
Recovery Boiler Level 1 East	Area	68.64	50.0	31.6	35.9	40.8	46.5	44.5	39.3	33.7
Recovery Boiler Level 2 East	Area	89.32	63.7	64.2	57.2	66.1	73.3	76.3	77.4	76.8
Recovery Boiler Level 2 East Vent 1	Area	1.21	86.0	85.2	49.6	60.3	69.2	75.8	77.6	78.7
Recovery Boiler Level 2 East Vent 2	Area	1.21	86.0	85.2	49.6	60.3	69.2	75.8	77.6	78.7
Recovery Boiler Level 2 East Vent 3	Area	1.21	86.0	85.2	49.6	60.3	69.2	75.8	77.6	78.7
Recovery Boiler Level 3 East	Area	180.18	88.0	65.5	60.4	69.4	78.1	81.3	83.3	82.6
Recovery Boiler Level 4 East	Area	128.70	83.5	62.4	55.3	65.5	72.0	76.8	76.8	77.8
Recovery Boiler Level 5 East	Area	114.40	82.8	62.2	51.7	61.4	68.7	75.2	75.7	78.4
Recovery Boiler Level 6 East	Area	91.52	84.8	65.2	9.5	58.1	67.6	74.7	76.7	80.8
Recovery Boiler Level 7 East	Area	85.80	87.7	66.4	9.2	58.0	66.6	73.8	77.8	83.4
Recovery Boiler Level 8 East	Area	171.60	91.6	69.3	52.0	58.9	69.4	78.1	82.7	87.4
Recovery Boiler Level 9 East	Area	253.77	85.6	61.7	52.7	61.1	70.6	76.7	81.2	81.5
Recovery Boiler Level 9 East Air Vent 1	Area	1.21	84.0	83.2	40.5	50.7	62.2	69.8	77.2	79.1
Recovery Boiler Level 9 East Air Vent 2	Area	1.21	84.0	83.2	40.5	50.7	62.2	69.8	77.2	79.1
Recovery Boiler Level 9 East Air Vent 3	Area	1.21	84.0	83.2	40.5	50.7	62.2	69.8	77.2	79.1
Recovery Boiler Roof	Area	549.12	72.2	44.8	17.2	59.2	65.0	67.4	66.0	64.1

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	I or S	Lw	Lw'	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
Recovery Boiler Level Ground North	Area	82.65	60.7	31.5	34.9	40.7	47.6	44.6	40.1	34.2
Recovery Boiler Level 1 North	Area	45.80	48.2	31.6	34.2	38.8	44.7	42.7	37.5	31.9
Recovery Boiler Level 2 North	Area	61.75	82.1	64.2	55.8	64.5	71.7	76.7	75.8	75.2
Recovery Boiler Level 3 North	Area	119.70	86.2	65.5	58.6	67.8	74.3	79.6	81.5	80.8
Recovery Boiler Level 4 North	Area	85.50	81.8	62.4	53.5	63.7	70.2	75.0	74.8	76.0
Recovery Boiler Level 5 North	Area	76.00	81.0	62.2	49.9	59.7	66.9	73.5	73.9	76.6
Recovery Boiler Level 6 North	Area	60.80	83.0	65.2	7.7	56.3	65.9	73.0	74.9	79.1
Recovery Boiler Level 7 North	Area	57.00	85.9	68.4	7.4	56.2	64.8	72.0	76.0	81.8
Recovery Boiler Level 8 North	Area	114.00	89.9	69.3	50.3	57.1	67.6	76.3	80.9	85.6
Recovery Boiler Level 9 North	Area	171.00	84.1	61.7	51.0	59.3	68.9	75.0	79.4	79.8
Recovery Boiler Level 9 West	Area	193.20	84.6	61.7	51.6	59.9	69.5	75.5	80.0	80.4
Recovery Boiler Level Ground West	Area	27.84	46.0	31.8	30.2	36.0	43.1	39.9	35.3	29.5
Recovery Boiler Level 1 West	Area	15.38	43.5	31.6	29.4	34.1	40.0	38.0	32.8	27.2
Recovery Boiler Level 2 West	Area	20.80	77.3	64.2	50.9	59.6	66.9	72.0	71.1	70.4
Recovery Boiler Level 3 West	Area	40.32	81.5	65.5	53.9	62.9	69.6	74.8	76.8	76.1
Recovery Boiler Level 4 West	Area	28.80	77.0	62.4	48.8	59.0	65.5	70.3	70.1	71.3
Recovery Boiler Level 5 West	Area	25.60	76.3	62.2	45.2	54.9	62.2	68.7	69.2	71.9
Recovery Boiler Level 6 West	Area	20.48	78.3	65.2	3.0	51.6	61.1	68.2	70.2	74.3
Recovery Boiler Level 7 West	Area	19.20	81.2	68.4	2.7	51.5	60.1	67.3	71.3	76.9
Recovery Boiler Level 8 West	Area	38.40	85.1	69.3	45.5	52.4	62.9	71.6	76.2	80.9
Recovery Boiler Level Ground South	Area	83.52	60.8	31.5	35.0	40.8	47.8	44.7	40.1	34.3
Recovery Boiler Level 1 South	Area	46.08	48.3	31.6	34.2	38.9	44.8	42.8	37.6	32.0
Recovery Boiler Level 2 South Alsynite	Area	13.00	85.1	73.9	58.8	67.8	74.9	79.9	79.0	78.4
Recovery Boiler Level 3 South Alsynite	Area	25.20	89.4	75.4	61.7	70.8	77.6	82.8	84.7	84.1
Recovery Boiler Level 4 South Alsynite	Area	18.00	84.7	72.2	56.8	67.0	73.5	78.2	78.1	79.3
Recovery Boiler Level 5 South Alsynite	Area	16.00	84.0	71.9	53.1	62.9	70.1	76.7	77.1	79.8
Recovery Boiler Level 6 South Alsynite	Area	12.80	85.8	74.7	10.2	59.5	69.1	76.2	78.1	82.3
Recovery Boiler Level 7 South Alsynite	Area	12.00	88.4	77.6	9.9	59.4	68.1	75.3	79.3	84.9
Recovery Boiler Level 8 South Alsynite	Area	24.00	92.4	78.6	53.5	60.3	70.9	79.5	84.1	88.9
Recovery Boiler Level 9 South Alsynite	Area	36.00	87.2	71.6	54.3	62.6	72.2	78.2	82.7	83.1
Recovery Boiler Level 2 South Steel	Area	49.40	81.1	64.2	54.6	63.6	70.7	75.7	74.8	74.2
Recovery Boiler Level 3 South Steel	Area	95.76	85.3	65.5	57.6	66.6	73.4	78.6	80.5	79.9
Recovery Boiler Level 4 South Steel	Area	66.40	80.8	62.4	52.6	62.7	69.3	74.0	73.9	75.1
Recovery Boiler Level 5 South Steel	Area	60.80	80.0	62.2	48.9	58.7	65.9	72.5	72.9	75.6
Recovery Boiler Level 6 South Steel	Area	48.64	82.0	65.2	6.7	55.3	64.9	72.0	73.9	78.1
Recovery Boiler Level 7 South Steel	Area	45.60	85.0	68.4	6.4	55.2	63.9	71.1	75.1	80.7
Recovery Boiler Level 8 South Steel	Area	91.20	88.9	69.3	49.3	56.1	66.7	75.3	79.9	84.7
Recovery Boiler Level 9 South Steel	Area	136.80	83.1	61.7	50.1	58.4	68.0	74.0	78.5	78.9
Turbine Hall East Facade	Area	37.20	42.5	26.8	26.3	34.3	39.4	35.9	31.3	25.4
Turbine Hall North Facade	Area	43.20	43.2	26.8	26.9	35.0	40.1	36.6	32.0	26.1
Turbine Hall West Facade	Area	34.80	42.2	26.8	26.0	34.0	39.1	35.6	31.1	25.2
Recovery Boiler Precipitator West	Point		97.6	97.6	72.1	77.4	83.7	87.8	90.8	92.4
Recovery Boiler Precips East	Point		97.6	97.6	72.1	77.4	83.7	87.8	90.8	92.4
Boiler Precips North	Point		95.5	95.5	68.0	72.5	81.2	86.3	88.7	88.7
Recovery Boiler Precips North	Point		95.5	95.5	68.0	72.5	81.2	86.3	88.7	88.7
Recovery Cooling Tower Fan 2	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
Recovery Cooling Tower Fan 1	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
Recovey Boiler CW Pumps	Point		109.1	109.1	84.8	93.2	100.8	103.4	103.0	101.2
Recovery Boiler Fans & Compressors	Point		106.4	106.4	73.0	78.7	86.7	90.4	96.2	96.5
Recrystallisation Plant	Point		105.6	105.6	73.0	84.5	93.3	102.5	99.2	97.5
Water Treatment Plant	Point		98.7	98.7	69.2	76.1	82.0	97.4	89.2	88.7
New Recovery Boiler Ducting	Line	31.98	99.5	84.4	92.8	94.9	94.4	88.8	82.0	74.2
Log Truck Unloading #1	Point		102.3	102.3	87.1	90.8	86.6	93.7	98.1	96.5
Log Truck Unloading #2	Point		102.3	102.3	87.1	90.8	86.6	93.7	98.1	96.5

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	l or S	lw	Lw	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
Truck Unloading Woodchips #1	Point		103.7	103.7	76.8	92.1	96.2	95.6	97.8	97.4
Truck Unloading Woodchips #2	Point		103.7	103.7	76.8	92.1	96.2	95.6	97.8	97.4
Truck Unloading Boiler Fuel #1	Point		103.7	103.7	76.8	92.1	96.2	95.6	97.8	97.4
Truck Unloading Boiler Fuel #2	Point		103.7	103.7	76.8	92.1	96.2	95.6	97.8	97.4
Truck Idling at Weighbridge Out	Point		98.1	98.1	87.3	85.1	82.9	89.9	93.4	92.6
Truck Idling at Weighbridge In	Point		95.2	95.2		83.3	83.6	87.0	90.6	88.8
Truck near Carpark $2	Point		98.1	98.1	87.3	85.1	82.9	89.9	93.4	92.6
Truck in Standing Area #1	Point		98.1	98.1	87.3	85.1	82.9	89.9	93.4	92.6
Truck in standing Area #2	Point		95.2	95.2		83.3	83.6	87.0	90.6	88.8
Truck on Woodyard Road #1	Point		102.3	102.3	87.1	90.8	96.6	93.7	98.1	96.5
Truck on Woodyard Road #2	Point		102.3	102.3	87.1	90.8	96.6	93.7	98.1	96.5
Truck on Woodyard Road #3	Point		102.3	102.3	87.1	90.8	96.6	93.7	98.1	96.5
Truck on Woodyard Road #4	Point		102.3	102.3	87.1	90.8	96.6	93.7	98.1	96.5
Truck Idling at Reel Store #1	Point		98.1	98.1	87.3	85.1	82.9	89.9	93.4	92.6
Truck Idling at Reel Store #2	Point		95.2	95.2		83.3	83.6	87.0	90.6	88.8
Truck Approaching Reel Store	Point		95.2	95.2		83.3	83.6	87.0	90.6	88.8
Truck Departing Reel Store	Point		98.1	98.1	87.3	85.1	82.9	89.9	93.4	92.6
B Double on Access Road	Point		95.2	95.2		83.3	83.6	87.0	90.6	88.8
VCE Fan inlet duct	Line	33.32	105.2	90.0	88.8	94.9	98.4	100.8	98.0	94.2
VCE fan outlet	Line	13.22	100.1	88.9	83.8	89.9	91.4	95.8	93.0	89.2
VCE Fan Casing	Point		108.2	108.2	77.8	83.9	91.4	101.8	105.0	102.2
Adeco Drive Unit Transfer Point S3-1	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
Existing Woodchip Stacker/Reclaimer West	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
Existing Woodchip Stacker/Reclaimer East	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
Existing Fuel Stacker/Reclaimer S3-5	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
CC5 Drive end	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
BC2 Drive & Discharge	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
Diverter S3-4	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
CC10 Drive & Discharge End	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
BC1 Drive & Discharge End	Point		102.5	102.5	78.4	86.3	89.5	93.9	96.4	97.7
CC5 Idler & Loading End	Point		102.7	102.7	78.4	88.0	92.3	94.9	95.6	97.6
BC2 Idler & Loading end	Point		102.7	102.7	78.4	88.0	92.3	94.9	95.6	97.6
Screens Facade South	Point		103.1	103.1	75.2	85.7	88.3	96.2	96.0	98.0
Screens Facade West	Point		108.5	108.5	79.3	91.5	95.7	102.8	101.2	102.7
Screens Facade North	Point		105.6	105.6	76.4	88.0	91.7	99.5	98.3	100.2
Screens Facade East	Point		104.3	104.3	74.4	84.0	88.2	96.5	97.5	99.7
Screens Roof	Point		105.6	105.6	76.4	88.0	91.7	99.5	98.3	100.2
Bark Hog Facade South	Point		95.1	95.1	73.0	84.7	84.8	85.6	87.3	89.3
Bark Hog Facade West	Point		90.5	90.5	72.9	84.0	83.1	83.5	82.8	82.0
Bark Hog Facade North	Point		86.3	86.3	69.6	78.3	80.4	79.8	78.3	76.8
Bark Hog Facade East	Point		104.3	104.3	74.4	84.0	88.2	96.5	97.5	99.7
Partition beside debarker input	Point		98.7	98.7	77.2	87.3	93.2	95.7	88.2	84.0
Partition beside debarker output	Point		98.7	98.7	77.2	87.3	93.2	95.7	88.2	84.0
Partition beside debarker drum - south	Point		98.7	98.7	77.2	87.3	93.2	95.7	88.2	84.0
Debarker - Panel Adjacent Debarker Input	Point		98.7	98.7	77.2	87.3	93.2	95.7	88.2	84.0
Debarker - Panel Adjacent Debarker Input	Point		98.7	98.7	77.2	87.3	93.2	95.7	88.2	84.0
Debarker - Panel Beside Debarker Drum -	Point		100.0	100.0	79.8	88.3	94.7	97.1	88.9	86.0
Debarker - Panel Adjacent deparker Drum	Point		101.0	101.0	80.2	85.1	95.2	98.0	92.3	88.8
Debarker - Panel Adjacent deparker Drum	Point		101.0	101.0	80.2	85.1	95.2	98.0	92.3	88.8
Screens Facade South	Point		103.1	103.1	75.2	85.7	88.3	96.2	96.0	98.0
Transfer Unit CC10	Point		102.3	102.3	69.5	82.3	89.4	94.5	96.8	97.6
Debarker Conical Inlet	Point		110.0	110.0	76.4	86.1	93.9	102.3	105.1	105.3
VCE Vessel	Area	170.00	106.0	83.7	79.2	85.3	92.8	96.2	94.4	94.6
VCE Vessel	Area	170.00	106.0	83.7	79.2	85.3	92.8	96.2	94.4	94.6

Tumut Noise Model
Octave spectra of the sources in dB(A)

Source	SrcType	Lo*S	LW	LW'	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz
VCE Vessel	Area	173.40	108.0	83.6	79.2	85.3	92.8	96.2	94.4	94.6
VCE Vessel	Area	170.00	108.0	83.7	79.2	85.3	92.8	96.2	94.4	94.6