RAPT CONSULTING

Noise Assessment – 423 Maitland Vale Road Maitland Vale, NSW.

Prepared for

Frank Hupp C/O AMS Design & Drafting

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Document Details

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Prepared For:

Frank Hupp C/O AMS Design & Drafting

Prepared By:

RAPT Consulting

18&19 / 10 Kenrick Street

The Junction, NSW 2291

ABN: 30330220290

www.raptconsulting.com.au

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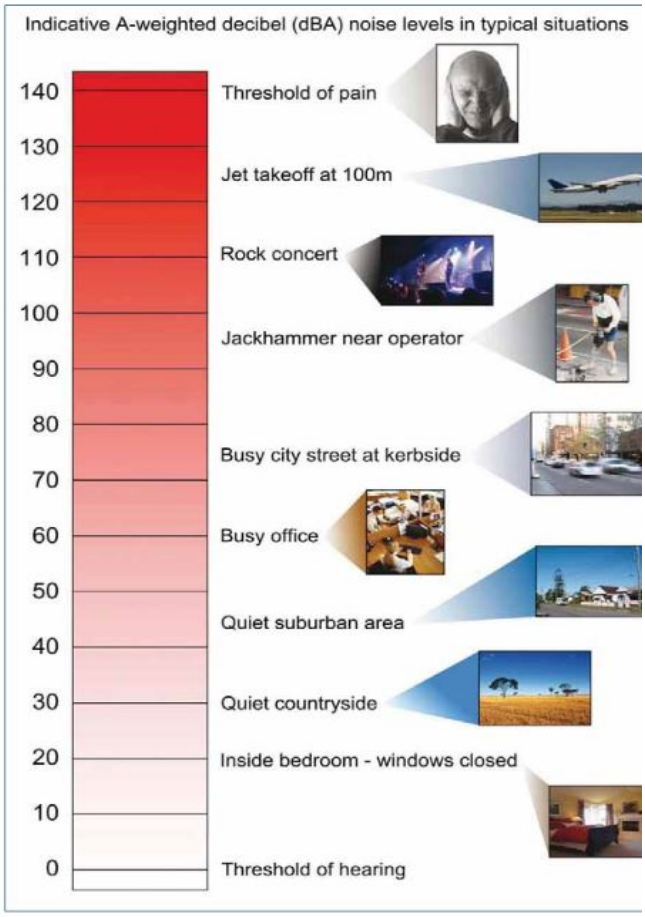
Glossary of Acoustic Terms

Term	Definition
dB	Decibel is the unit used for expressing the sound pressure level (SPL) or power level (SWL) in acoustics. The picture below indicates typical noise levels from common noise sources. 
dB(A)	Frequency weighting filter used to measure 'A-weighted' sound pressure levels, which conforms approximately to the human ear response, as our hearing is less sensitive at very low and very high frequencies.
$L_{Aeq(period)}$	Equivalent sound pressure level: the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring.
$L_{A10(period)}$	The sound pressure level that is exceeded for 10% of the measurement period.

$L_{A90(period)}$	The sound pressure level that is exceeded for 90% of the measurement period.
L_{Amax}	The maximum sound level recorded during the measurement period.
Noise sensitive receiver	◗ An area or place potentially affected by noise which includes: ◗ A residential dwelling. ◗ An educational institution, library, childcare centre or kindergarten. ◗ A hospital, surgery or other medical institution. ◗ An active (e.g. sports field, golf course) or passive (e.g. national park) recreational area. ◗ Commercial or industrial premises. ◗ A place of worship.
Rating Background Level (RBL)	The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period.
Feasible and Reasonable (Noise Policy for Industry Definition)	**Feasible** mitigation measure is a noise mitigation measure that can be engineered and is practical to build and/or implement, given project constraints such as safety, maintenance and reliability requirements. Selecting **Reasonable** measures from those that are feasible involves judging whether the overall noise benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the mitigation measure. To make a judgement, consider the following: ◗ Noise impacts ◗ Noise mitigation benefits ◗ Cost effectiveness of noise mitigation ◗ Community views.
Sound power level (SWL)	The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in dB(A).

1. Introduction

1.1 Background

RAPT Consulting has been engaged to undertake a noise assessment to inform a Development Application (DA) for a Tourist and Visitor Accommodation and Alterations and Additions to Existing Building.

Based on information provided, it is understood the proposed development involves a total of 8 villas to function as Proposed Farm Stay including:

- New 7 villas with a bedroom, kitchenette, ensuite and a deck and one of the villas being accessible.
- Removal of the existing bath and doors in the existing shed and altered use to be villa #8.
- New driveway access to the property.

The site and surrounding area is shown in Figure 1-1 and overall site plan is shown in Figure 1-2.

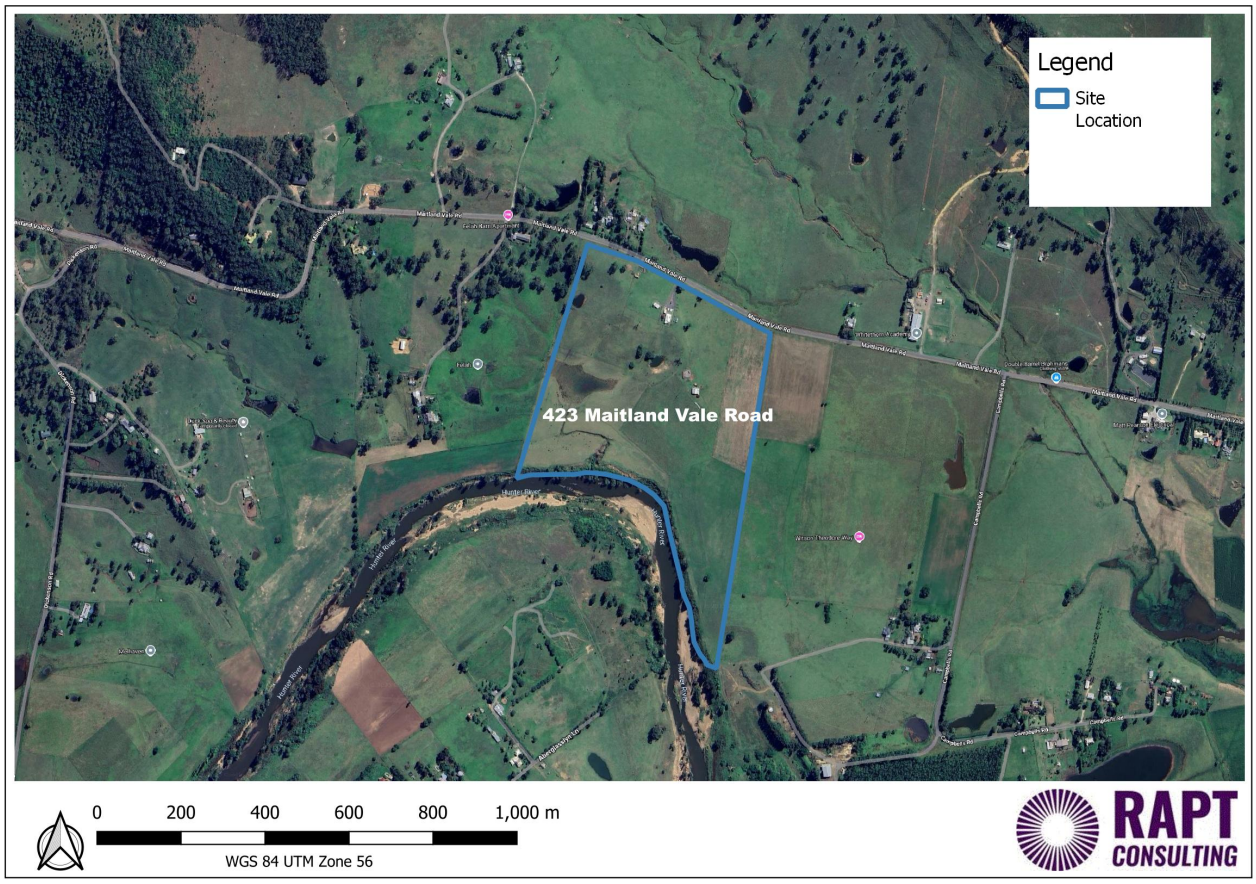


Figure 1-1 Site and Surrounding Area

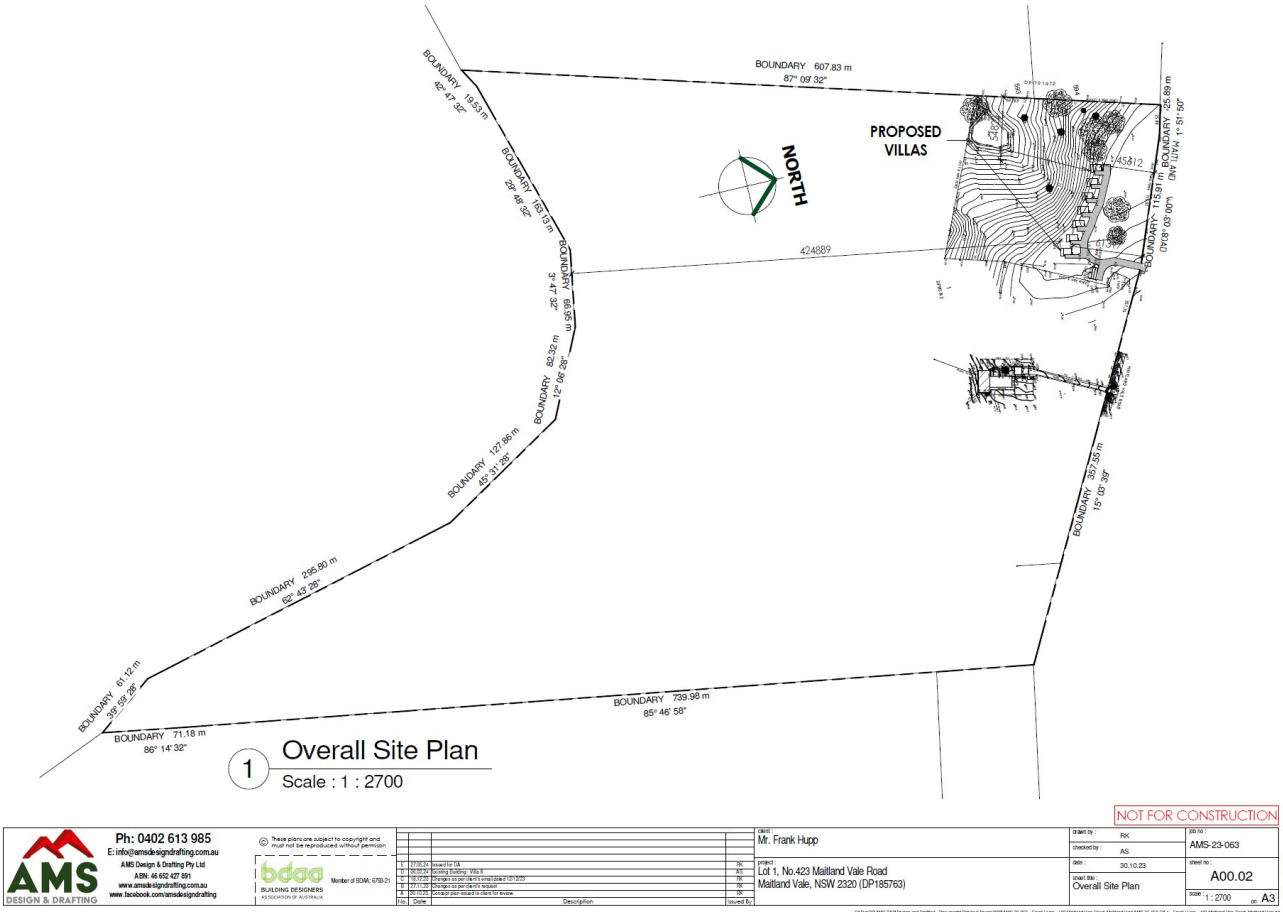


Figure 1-2 Site Plan (Source: AMS)

3 dimensional renders are shown in Figure 1-3.

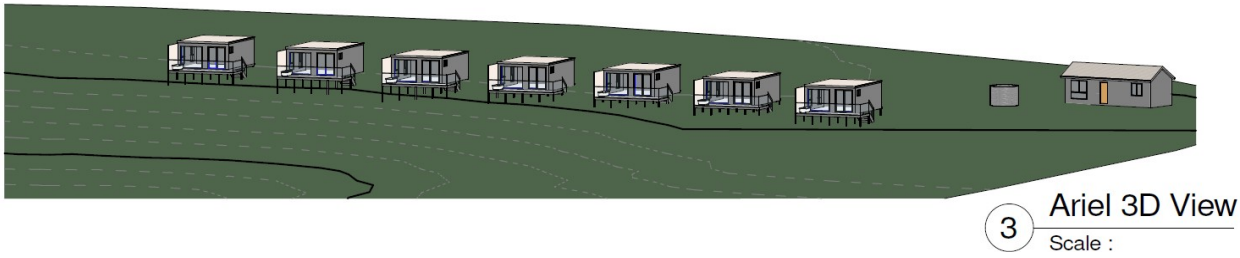


Figure 1-3 3D Renders (Source: AMS)

1.2 Assessment Objectives

This acoustic assessment considers the potential noise emissions of the operation of the proposal. The purpose is to assess potential noise from the proposal and to recommend mitigation measures where required.

The outcomes of this assessment include recommendations where necessary for potential noise mitigation and management measures designed to achieve an acceptable noise amenity for residential (dwelling) occupants and other sensitive receivers surrounding the study area.

1.3 Scope

The acoustic assessment scope of work included:

- Initial desk top review to identify noise sensitive receptors from aerial photography
- Undertake noise measurements to determine ambient and background noise levels
- Establish project noise goals for the operation of the proposal
- Identify the likely principal noise sources during operation and their associated noise levels
- assessment of potential noise impacts associated with operation aspects of the project
- provide recommendations for feasible and reasonable noise mitigation and management measures, where noise objectives may be exceeded.

1.4 Relevant Guidelines

The relevant policies and guidelines for noise and vibration assessments in NSW that have been considered during the preparation of this assessment include:

- Noise Policy for Industry (NPfI), Environment Protection Authority (EPA), 2017
- Road Noise Policy (RNP), Environment Protection Authority (EPA), 2009
- Noise Guide for Local Government (NGfLG) Environment Protection Authority (EPA), 2013

1.5 Limitations

The purpose of this report is to provide an independent noise assessment for the proposal.

It is not the intention of the assessment to cover every element of the acoustic environment, but rather to conduct the assessment with consideration to the prescribed work scope.

The findings of the noise assessment represent the findings apparent at the date and time of the assessment undertaken. It is the nature of environmental assessments that all variations in environmental conditions cannot be assessed and all uncertainty concerning the conditions of the ambient environment cannot be eliminated. Professional judgement must be exercised in the investigation and interpretation of observations.

In conducting this assessment and preparing the report, current guidelines for noise were referred to. This work has been conducted in good faith with RAPT Consulting's understanding of the client's brief and the generally accepted consulting practice.

No other warranty, expressed or implied, is made as to the information and professional advice included in this report. It is not intended for other parties or other uses.

2. Existing Environment

The area surrounding the proposal is zoned RU1 Primary Production. A map showing the land use zonings in the vicinity of the proposal are shown in Figure 2-1.

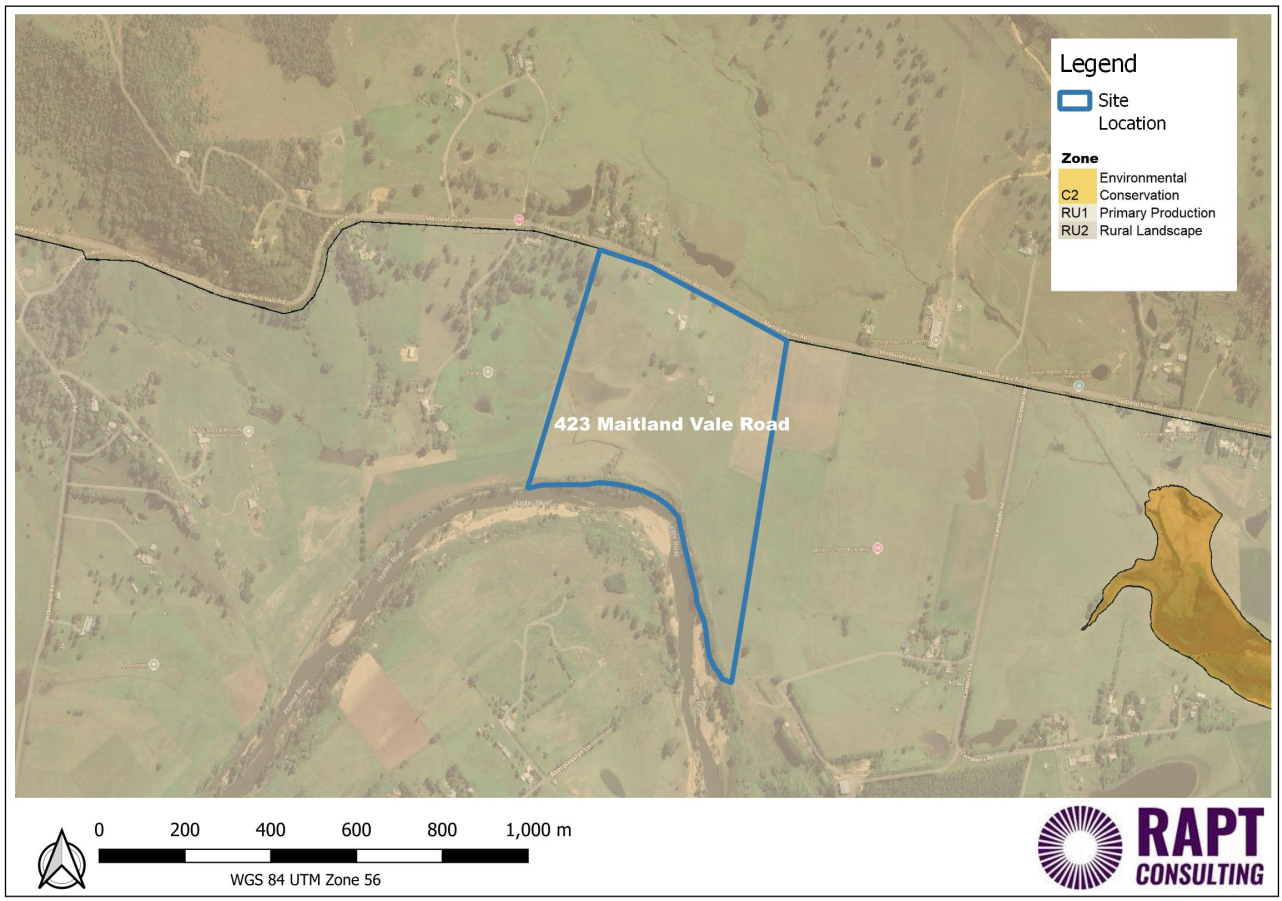


Figure 2-1 Land Use Zonings

Closest receptors to the proposal assessed in this acoustic assessment are identified in Table 2-1 and Figure 2-2. Other receptors are located in these areas however the locations selected are considered representative of the localised noise environment in the vicinity of the locations selected.

Table 2-1 Nearest Assessed Receptors to Study Area

Receiver ID	Location	Receptor Type	Easting	Northing
R1	434 Maitland Vale Road	Residential	363267	6384074
R2	463 Maitland Vale Road	Residential	363033	6384066
R3	467 Maitland Vale Road	Residential	362799	6383669
R4	20 Aberglasslyn Lane	Residential	362951	6382973
R5	64 Campbells Road	Residential	363916	6383164
R6	380 Maitland Vale Road	Residential	363761	6383859

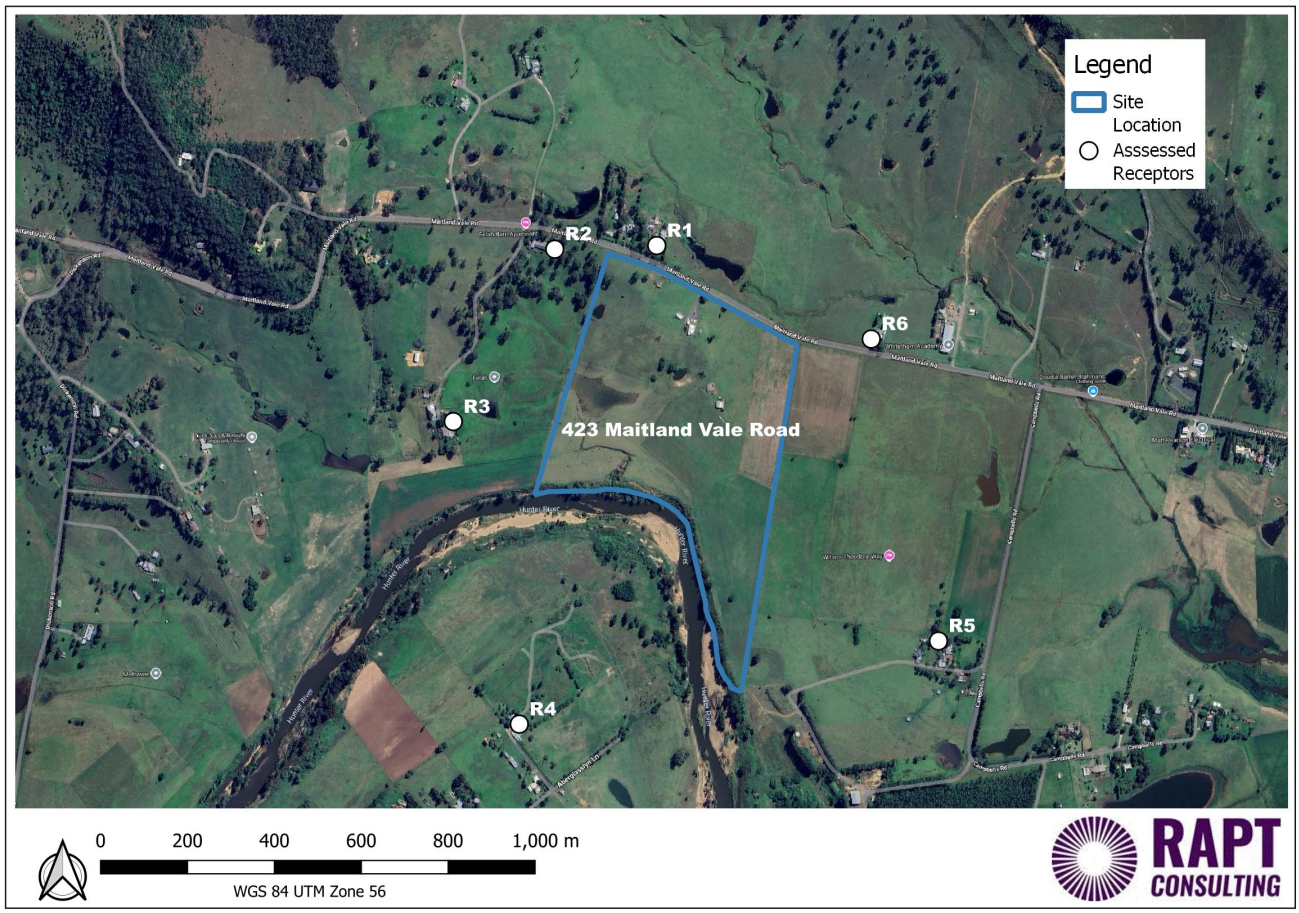


Figure 2-2 Nearest Assessed Receptors to the Proposal

2.1 Background and Ambient Noise

To establish background and ambient noise levels, noise monitoring was undertaken by RAPT Consulting from 6 March to 12 March 2025. The monitoring was undertaken at 423 Maitland Vale Road in the near vicinity of R1.

Site observations noted the location was considered indicative of the local ambient noise environment and the sites also presented as secure locations whereby minimising the risk of theft or vandalism to the monitoring equipment. Additionally, they are considered as acceptable locations for determination of the background noise with consideration to the NSW Environment Protection Authority's (EPA's) – Noise Policy for Industry (NPfI). During site visits it was noted that local traffic and natural wildlife primarily described the ambient noise environment and is indicative of a rural noise environment.

The monitoring locations are shown in Figure 2-2 and 2-3.

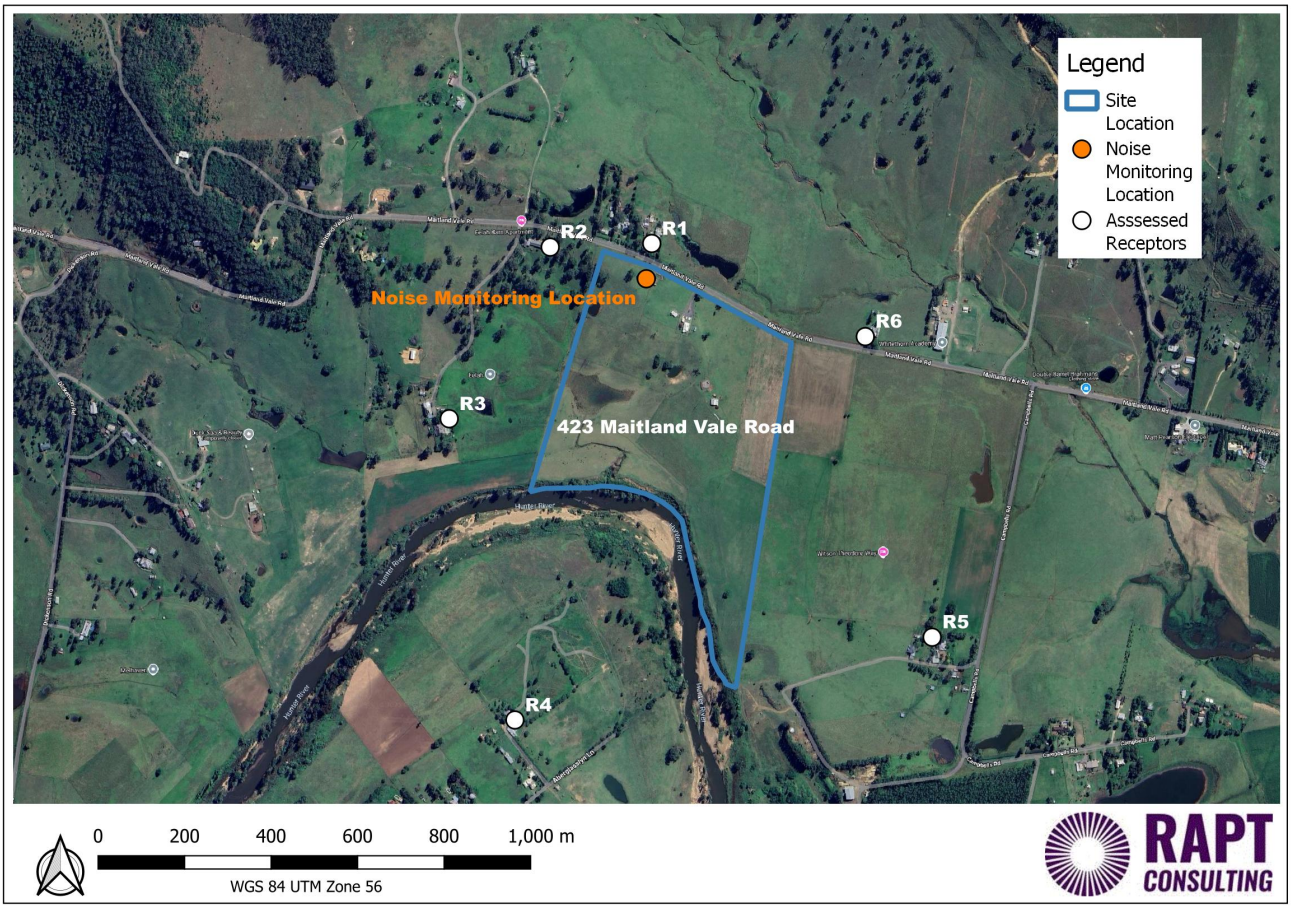


Figure 2-3 Noise Monitoring Location

Figure 2-4 Noise Monitoring Location

Monitoring was undertaken using a RION NL-43 noise logger Serial Number 00430289 with Type 2 Precision. The instrument was programmed to fast time weighting and A frequency weighting. Calibration was checked prior to and at the conclusion of the measurements with no significant drift. These loggers are capable of measuring continuous sound pressure levels and are able to record L_{Amin}, L_{A90}, L_{A10}, L_{Amax} and L_{Aeq} noise descriptors. The instrument was programmed to accumulate environmental noise data continuously over sampling periods of 15 minutes for the entire monitoring period.

The noise surveys were conducted with consideration to the procedures described in Australian Standard AS 1055:2018, "Acoustics – Description and Measurement of Environmental Noise" and the NSW Noise Policy for Industry (NPfI). Calibration was checked before and after each measurement and no significant drift occurred. The acoustic instrumentation used carries current NATA calibration and complies with AS/NZS IEC 61672.1-2019-Electroacoustics – Sound level meters – Specifications. The calibration certificate is provided in Appendix B.

The L_{A90} descriptor is used to measure the background noise level. This descriptor represents the noise level that is exceeded for 90 percent of the time over a relevant period of measurement. In line with the procedures described in the EPA's NPfI, the assessment background level (ABL) is established by determining the lowest tenth-percentile level of the L_{A90} noise data acquired over each period of interest. The background noise level or rating background level (RBL) representing the day, evening and night-time assessment periods is based on the median of individual ABL's determined over the entire monitoring duration. The RBL is representative of the average minimum background sound level, or simply the background level.

The L_{Aeq} is the equivalent continuous noise level which would have the same total acoustic energy over the measurement period as the varying noise actually measured, so it is in effect an energy average.

Weather information for the unattended noise logging was obtained from the Bureau of Meteorology Maitland AWS for the monitoring period and any data adversely affected by rain, wind (more than 5 m/s as per NPfI) or extraneous noise were discarded. Noise monitoring charts are provided in Appendix A

The RBL and ambient LAeq levels are provided in Table 2-2 and 2-3 below.

Table 2-2 Background LA90 Noise Monitoring Results

Date	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 7am
6/03/2025	37.5	32.7	30.9
7/03/2025	34.5	31.1	31.0
8/03/2025	31.1	31.3	33.9
9/03/2025	31.1	35.2	36.4
10/03/2025	29.7	28.5	28.6
11/03/2025	29.6	30.8	29.2
Rating Background Level	**35* (31)**	**31**	**31**

Note 1 Day: 7:00 to 18:00 Monday to Saturday and 8:00 to 18:00 Sundays & Public Holidays Evening: 18:00 to 22:00 Monday to Sunday & Public Holidays Night: 22:00 to 7:00 Monday to Saturday and 22:00 to 8:00 Sundays & Public Holidays (night 10pm – 11pm for this assessment inline with intended operations)
Note 2 Table 2.1 of the NPfI specifies a minimum assumed rating background noise level of 35dB(A) for day and 30 dB(A) for evening and night time. Number in brackets (XX) represents actual measured RBL determined for assessment period.

Table 2-3 Ambient LAeq Noise Monitoring Results

Date	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 7am
6/03/2025	54.1	52.4	49.6
7/03/2025	53.9	46.3	44.7
8/03/2025	55.4	45.1	47.0
9/03/2025	51.6	51.7	52.3
10/03/2025	53.3	51.5	52.0
11/03/2025	53.1	52.7	51.1
Log Average	**54**	**51**	**50**

Note 2 Day: 7:00 to 18:00 Monday to Saturday and 8:00 to 18:00 Sundays & Public Holidays Evening: 18:00 to 22:00 Monday to Sunday & Public Holidays Night: 22:00 to 7:00 Monday to Saturday and 22:00 to 8:00 Sundays & Public Holidays (night 10pm – 11pm for this assessment inline with intended operations)

3. Noise Objectives

3.1 Noise Guide for Local Government

Section 2.10 of the NGLG provides guidance for amplified music and parties at residential premises. However there is no specific guidance for a tourist and visitor accommodation site which is un-licensed. Section 2.10 of the NGLG refers to Section 4.2.1 Offensive Noise in these situations and Table 19 for factors to be considered for assessing offensive noise.

In the absence of specific noise 'goals' for this circumstance, the NPfI will be referred to as a 'yardstick'.

3.2 Operational Noise – NSW Noise Policy for Industry

The NPfI doesn't contain specific procedures for the assessment of noise emissions from tourist and accommodation sites. However, it is provided as a guide for ascertaining potential noise impacts and applicable criteria.

The New South Wales *Noise Policy for Industry* (NPfI) provides guidance on the assessment of operational noise impacts. The guidelines include both intrusive and amenity criteria that are designed to protect receivers from noise significantly louder than the background level and to limit the total noise level from all sources near a receiver.

Intrusive noise levels set by the NPfI control the relative audibility of operational noise compared to the background level. Amenity criteria limit the total level of extraneous noise. Both sets of criteria are calculated and the lower of the two in each time period normally apply. Intrusive criteria are simply 5 decibels above the measured (or adopted) background level with a minimum of 40 dB(A) for daytime and 35 dB(A) for evening and night time.

Amenity noise levels are determined based on the overall acoustic characteristics of the receiver area and the existing level of noise excluding other noises such as traffic and insects. Residential receiver areas are characterised into 'urban', 'suburban', 'rural' or other categories based on land uses, the existing level of noise from industry, commerce, and road traffic. Project amenity noise levels are the recommended amenity noise level (Table 2.1 of the NPfI) minus 5 dB(A) and plus 3 dB(A) to convert from a period level to a 15-minute level. The project noise trigger level is the lower value between the intrusive and the amenity noise levels.

The NPfI noise criteria are planning levels and are not mandatory limits required by legislation however the noise criteria assist the regulatory authorities to establish licensing conditions. Where noise criteria are predicted to be exceeded, feasible and reasonable noise mitigation strategies should be considered. In circumstances where noise criteria cannot be achieved negotiation is required to evaluate the economic, social and environmental costs and benefits of the development against the noise impacts.

Based on site observations and guidance in the NPfI, Nearest residential receptors are considered rural. Target noise levels for day, evening and night time are provided for residences and commercial premises in Table 3-1.

Table 3-1 Project Noise Trigger Levels

	Day 7am to 6pm	Evening 6pm to 10pm	Night 10pm to 7am
Rating Background Level $L_{A90(Period)}$	35	31	31
Project Intrusive Noise Level, $L_{Aeq(15min)}$	40	36	36
Project Amenity Noise Level (Rural), $L_{Aeq(Period)}$	45	40	35
Project Amenity Noise Level $L_{Aeq(15min)}$	48	43	38
Project Trigger Level Residential $L_{Aeq(15min)}$	**40**	**36**	**36**

Maximum Noise Level Assessment

The NPfI requires the potential for sleep disturbance to be assessed by considering maximum noise levels events during the night-time period.

Where the subject development/premises night-time noise levels at a residential location exceed the following screening levels a detailed maximum noise level event assessment should be undertaken:

- LAeq,15min 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or
- LAFmax 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater,

The detailed assessment should cover the maximum noise level, the extent to which the maximum noise level exceeds the rating background noise level, and the number of times this happens during the night-time period.

Based on the adopted background noise levels during the night, the sleep disturbance criteria for the nearest noise sensitive residential receivers are provided in Table 3-2.

Table 3-2 Night-Time Sleep Disturbance Screening Levels

Receiver type	Assessment Level $L_{Aeq,15min}$	Assessment Level L_{AFmax}
Residential	40	52

The NSW Road Noise Policy (RNP) (DECCW 2011) provides additional information on sleep disturbance and concludes that:

- *Maximum internal noise levels below 50–55 dB(A) are unlikely to awaken people from sleep*
- *One or two noise events per night, with maximum internal noise levels of 65–70 dB(A), are not likely to affect health and wellbeing significantly.*

The above references identify that internal noise levels of 50 to 55 dB(A), are unlikely to cause awakenings. On the assumption that there is a 10 dB(A) outside-to-inside noise loss through an open window (see Section 2.6 of the NPfI, p15), this indicates that external noise levels of LAmax 60 to 65 dB(A) are unlikely to cause awakening reactions. LAmax 65 dB(A) has then been used as the assessment noise level to determine the potential for awakening reactions.

3.3 NSW Road Noise Policy (RNP)

The NSW Road Noise Policy (RNP) recommends various criteria for different road and residential developments and uses. Although it is not mandatory to achieve the noise assessment criteria in the RNP, proponents will need to provide justification if it is not considered feasible or reasonable to achieve them. Based on the definitions in the RNP, Maitland Vale Road is considered to be a sub-arterial road. Based on this, the following noise goals for residences taken from Table 3 of the RNP are provided in Table 3-3 Below.

Table 3-3 Road Noise Policy Goals

Road Category	Day	Night
Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use development	60 $L_{Aeq(15hr)}$ External	55 $L_{Aeq(9hr)}$ External
Existing residences affected by additional traffic on existing local roads generated by land use developments	55 $L_{Aeq(1hr)}$ External	50 $L_{Aeq(1hr)}$ External

For existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level should be limited to 2 dB above that of the corresponding ‘no build option’.

4. Assessment of Potential Impacts

4.1 Operational Noise

Assessment approach

Acoustic modelling was undertaken using Bruel and Kjaer's "Predictor" to predict the effects of site noise. Predictor is a computer program for the calculation, assessment and prognosis of noise propagation. Predictor calculates environmental noise propagation according to ISO 9613-2, "Acoustics – Attenuation of sound during propagation outdoors". The method predicts the sound pressure level under meteorological conditions favourable to propagation from sources of known sound emission. These conditions are for downwind propagation or equivalently under a well-developed moderate ground based temperature inversion. Terrain topography, ground absorption, atmospheric absorption and relevant shielding objects are taken into account in the calculations.

Enhancing Weather Conditions

Fact Sheet D of the NPfI provides guidance for accounting for noise-enhancing weather conditions. Two options are available to consider meteorological effects:

1. Adopt the noise-enhancing meteorological conditions for all assessment periods for noise impact assessment purposes without an assessment of how often these conditions occur – a conservative approach that considers source-to-receiver wind vectors for all receivers and F class temperature inversions with wind speeds up to 2 m/s at night. Or

2. Determine the significance of noise-enhancing conditions. This involves assessing the significance of temperature inversions (F and G class stability categories) for the night-time period and the significance of light winds up to and including 3 m/s for all assessment periods during stability categories other than E, F or G. Significance is based on a threshold of occurrence of 30% determined in accordance with the provisions in this policy. Where noise-enhancing meteorological conditions occur for less than 30% of the time, standard meteorological conditions may be adopted for the assessment.

As a detailed analysis of the significance of noise enhancing conditions has not been undertaken, option 1 has been utilised. Table D1 from the NPfI is reproduced in Table 4-1 and shows the noise enhancing meteorological conditions that have been adopted for this assessment

Table 4-1Noise Enhancing Meteorological Conditions

Meteorological Conditions	Meteorological Parameters
Noise-enhancing meteorological conditions	Daytime/evening: stability category D with light winds (up to 3 m/s at 10 m AGL). Night-time: stability category F with winds up to 2 m/s at 10 m AGL.

Note 3 m/s = metres per second; m = metres; AGL = above ground level; where a range of conditions is nominated, the meteorological condition delivering the highest-predicted noise level should be adopted for assessment purposes. However, feasible and reasonable noise limits in consents and licences derived from this process would apply under the full range of meteorological conditions nominated under standard or noise-enhancing conditions as relevant. All wind speeds are referenced to 10 m AGL. Stability categories are based on the Pasquill–Gifford stability classification scheme.

Other Key assumptions in the model include:

- topographical information was obtained from NSW Government Spatial Services
- all areas were modelled considering a ground factor of 0.8 to account for mixed surfaces
- all receivers were modelled at 1.5 metres above the ground surface.

Site layout and building structures were based on information provided at the time of the assessment.

Noise Sources

Primary onsite environmental noise sources will be in the form of patrons conversing on the outdoor decks and possibly background music which could be in the form of a personal portable self-powered speaker such as something one would play blue-tooth via a mobile phone.

A review of the drawing set indicates eight accommodation structures, seven having decks. The structures appear to have occupancy room for two persons however four persons have been assumed to be in each of the structures.

Campers noise in the form of human raised voice has been sourced from RAPT Consulting's database and has been assessed with a sound power level of 73 dB(A). a total of two persons on each deck have been modelled with raised voices as it is assumed that only 50% of persons would be speaking simultaneously.

Music emanating from each deck also been conservatively modelled with a sound power level of 75 SWL dB(A) which would allow for conversation at raided vocal effort.

As there are eight car spaces, it has also been assumed that eight automobiles are entering or exiting the site in a 15-minute period each with a 10 km/hr sound power level of 81dB(A).

To simulate a reasonable worst-case scenario, these activity noise levels have been assumed to be operating. Table 4-4 and Figure 4-1 shows the results of the assessment. Any predicted exceedances are highlighted in RED in Table 4-4.

Table 4-2 Operational Noise Results dB(A) Leq(15min)

Receiver	Site Automobiles	Outdoor Patrons with Music	Cumulative Result	Project Noise Trigger Level Day/Evening/Night
R1	26	18	27	40 / 36 / 36
R2	15	28	28	40 / 36 / 36
R3	3	21	21	40 / 36 / 36
R4	0	13	13	40 / 36 / 36
R5	0	12	12	40 / 36 / 36
R6	4	12	13	40 / 36 / 36

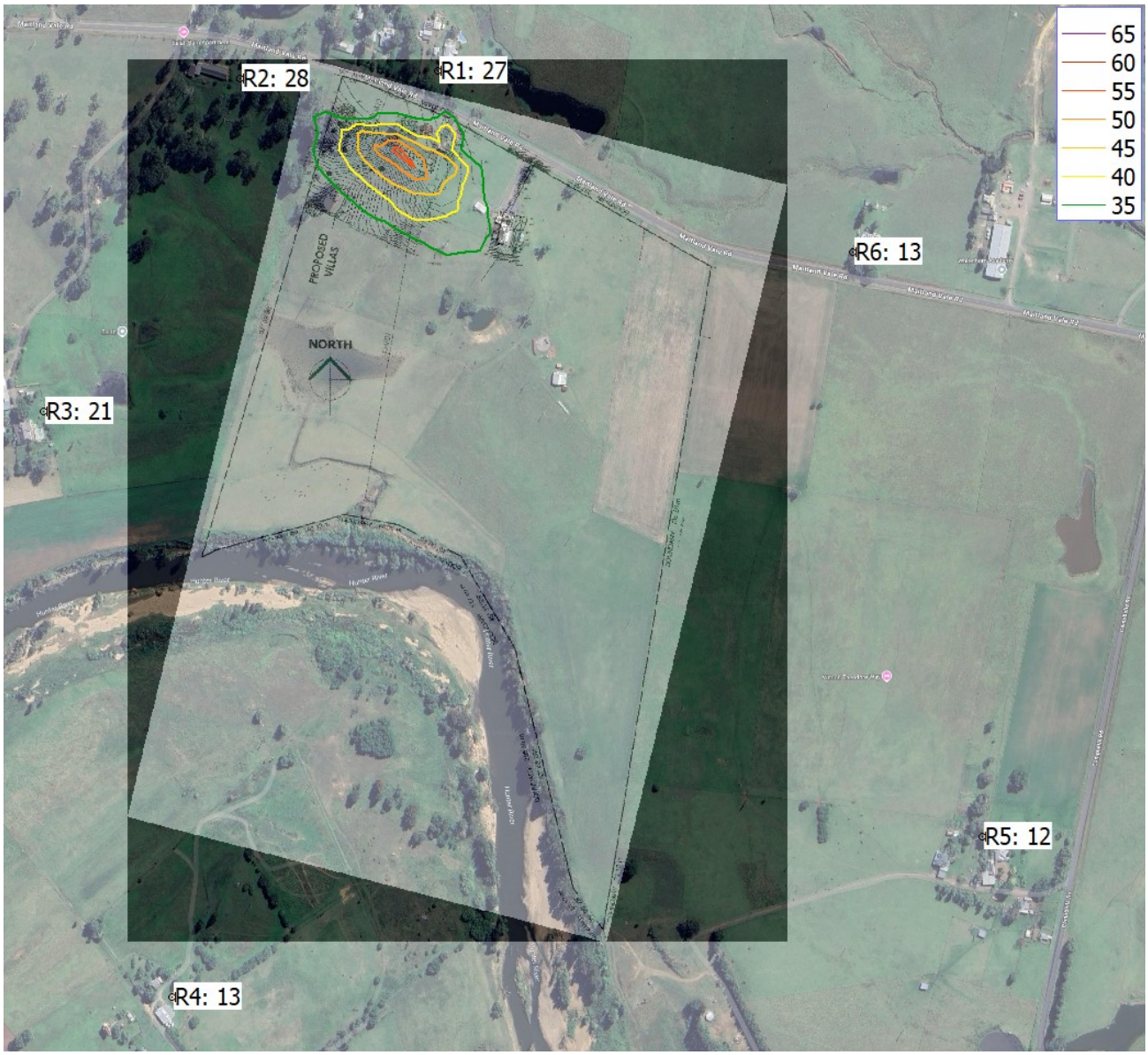


Figure 4-1 Cumulative Noise Modelling Results Leq(15min) dB(A)

The results of the assessment indicate compliance is expected at all assessed receptors even in the unlikely event of all outlined items operating simultaneously.

While compliance with operational project noise trigger levels is expected, it is recommended the site as part of its plan of management have measures in place to particularly to deal with any unexpected excessive noise from patrons.

Maximum Noise Level Assessment

A maximum noise level assessment was undertaken for the proposal. The primary noise sources outlined previously inclusive of site traffic were assessed. The maximum noise level for operations were assessed at their sound power levels as they were assessed continuous noise sources. The automobiles movement maximum level was assessed as the overall sound power level adopted rather than the limited movements occurring at each assessed location over a 15-minute period. Maximum noise level assessment results are provided in Table 4-3 and Figure 4-2.

Table 4-3 Maximum Noise Level Assessment

Location	Sleep Disturbance Screening Level LAmax dB(A)	Awakening Reaction Level LAmax dB(A)	Automobile Predicted Noise Level LAmax dB(A)	Compliance With Awakening Reaction Level
R1	52	65	38	Yes
R2	52	65	27	Yes
R3	52	65	15	Yes
R4	52	65	9	Yes
R5	52	65	7	Yes
R6	52	65	16	Yes

Figure 4-2 LAMax Predicted Results

The results of the maximum noise level assessment indicate the sleep disturbance awakening reaction level adopted for the assessment of 65 dB(A) is expected to be complied with.

The RNP (DECCW 2011) provides additional information on sleep disturbance and concludes that:

- Maximum internal noise levels below 50–55 dB(A) are unlikely to awaken people from sleep
- One or two noise events per night, with maximum internal noise levels of 65–70 dB(A), are not likely to affect health and wellbeing significantly.

The above references identify that internal noise levels of 50 to 55 dB(A), are unlikely to cause awakenings. On the assumption that there is a 10 dB(A) outside-to-inside noise loss through an open window (see Section 2.6 of the NPfI, p15), this indicates that external noise levels of LAmax 60 to 65 dB(A) are unlikely to cause awakening reactions

Road Noise

To increase noise levels by 2dB(A) one would have to increase the cumulative traffic volume by 60%.

Peak hour traffic information obtained from the TTPS traffic report *423 Maitland Vale Rd, Maitland Vale Proposed Tourist and Visitor Accommodation Traffic Impact Assessment N451 10 March 2025* is reproduced in Table 4-4.

Table 4-4 Additional Traffic Demands on Maitland Vale Road

Maitland Vale Road	AM	PM
Peak Hour	70 (62 + 8) = 13%	68 (60 + 8) = 13%

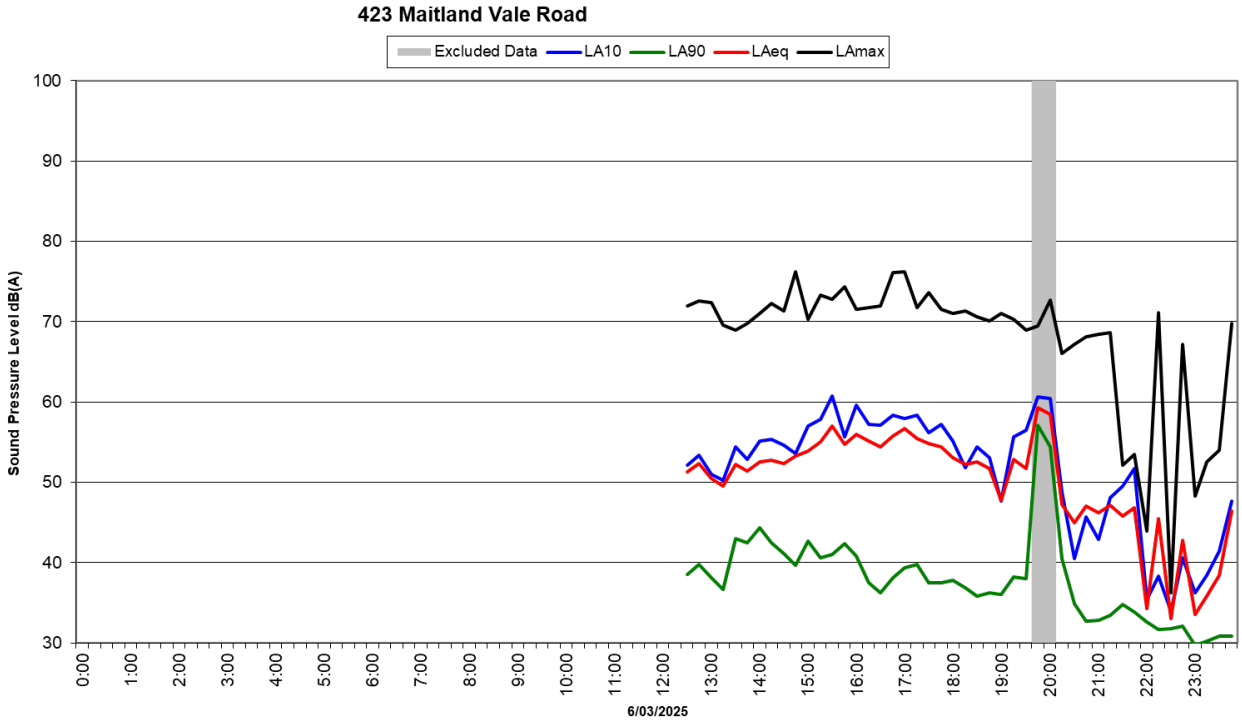
As can be seen in Table 4-4, additional traffic on Maitland Vale Road is less than 60% and therefore compliance is expected.

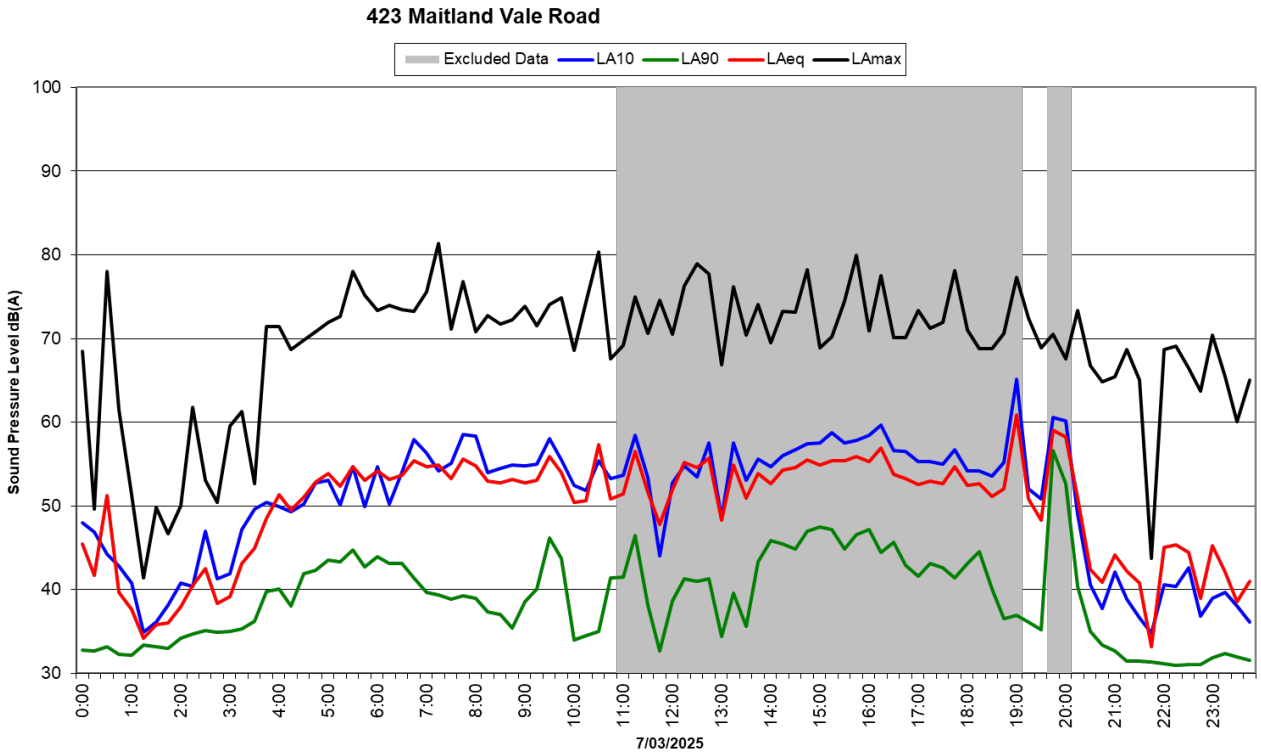
5. Conclusion

This noise assessment has been undertaken to inform a DA for a Tourist and Visitor Accommodation and Alterations and Additions to Existing Building at 423 Maitland Vale Road Maitland Vale, NSW.

Based on the results and the information provided regarding the development, compliance with all noise goals is expected for the development on neighbouring residences. Recommendations have been made for management to have measures in place to particularly to deal with any unexpected excessive noise from patrons. Therefore, from an acoustics perspective the findings suggest the proposal is acceptable.

6. Appendix A Noise Monitoring Charts




423 Maitland Vale Road
Excluded Data
LA10
LA90
LAeq
LAmax
Sound Pressure Level dB(A)
100
90
80
70
60
50
40
30
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
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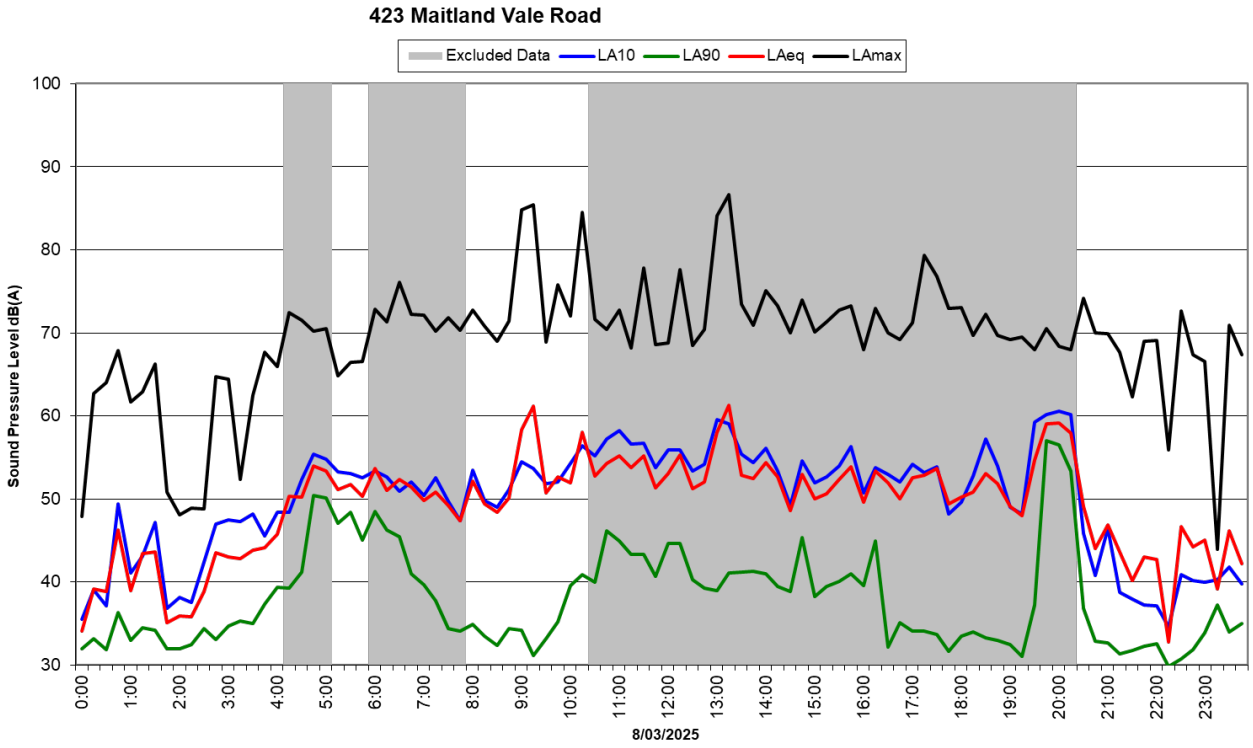
423 Maitland Vale Road
Excluded Data
LA10
LA90
LAeq
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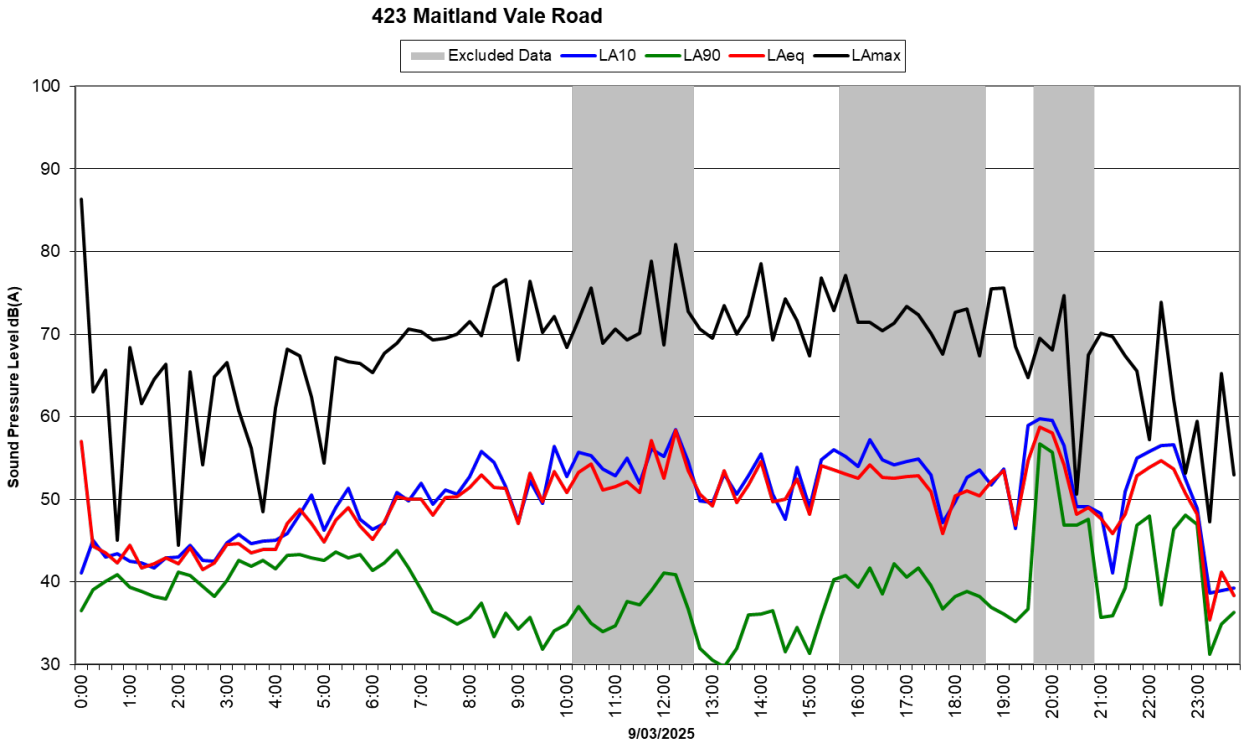
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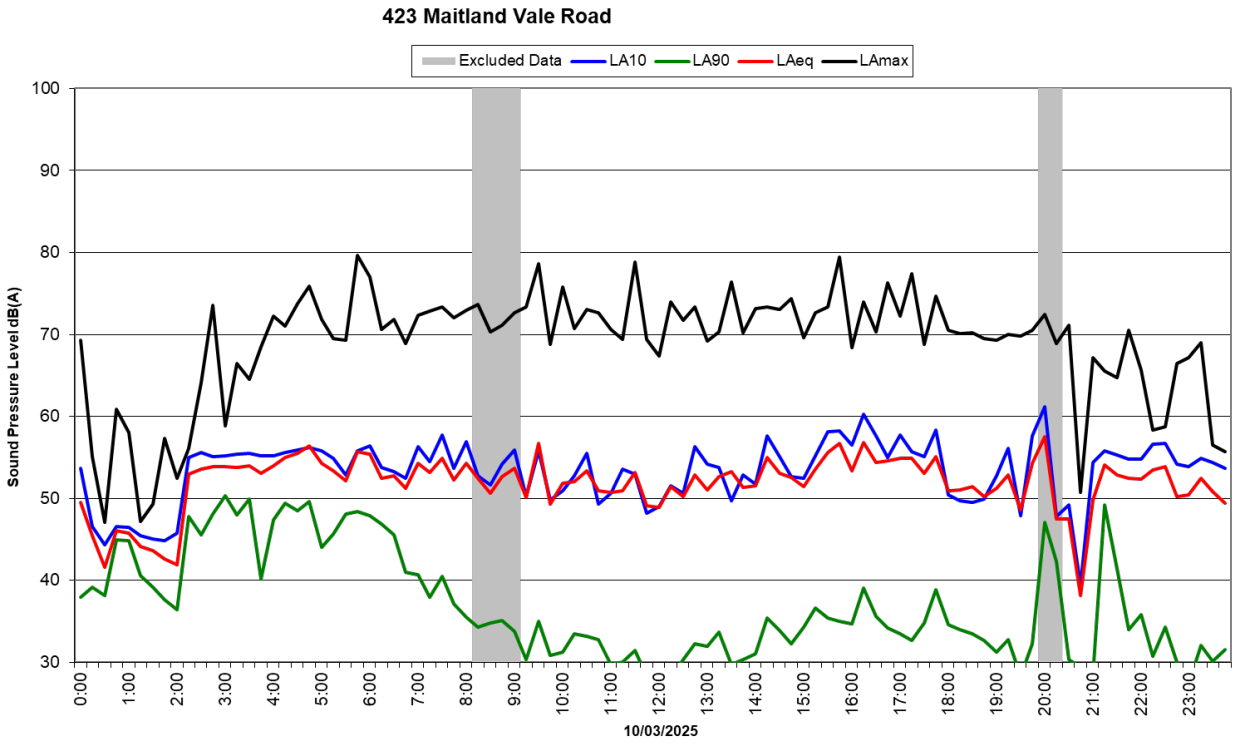
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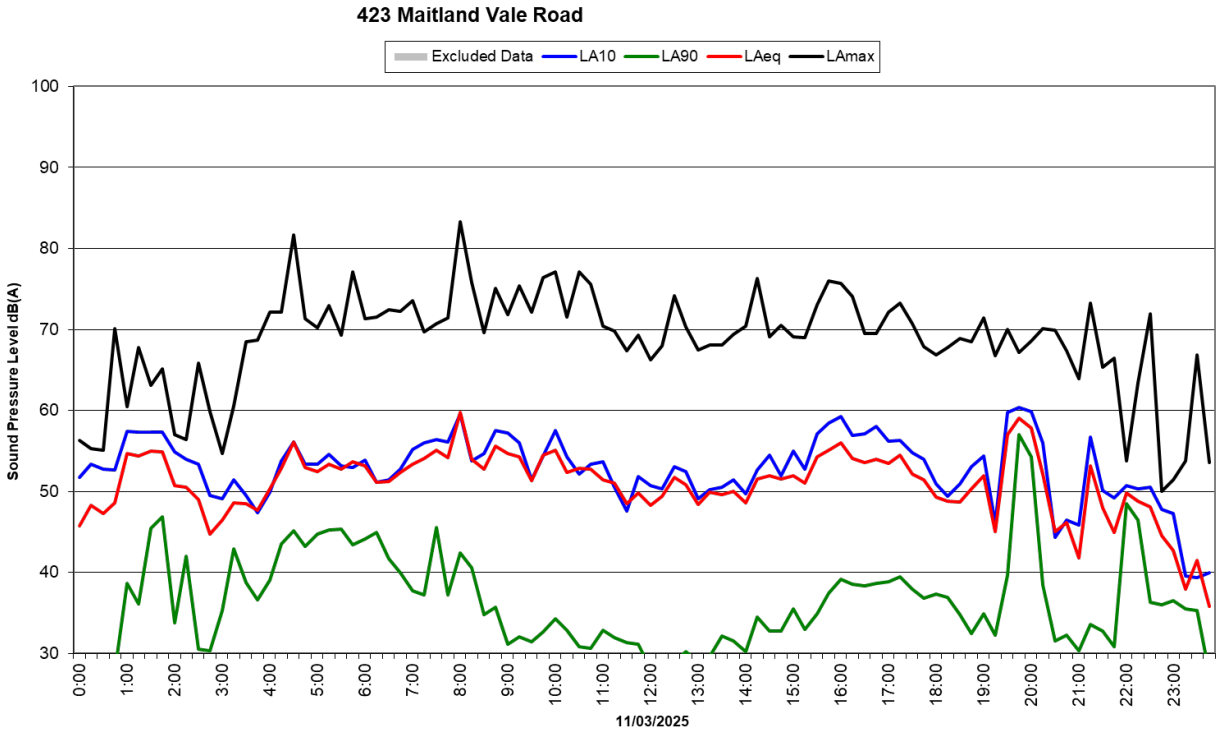
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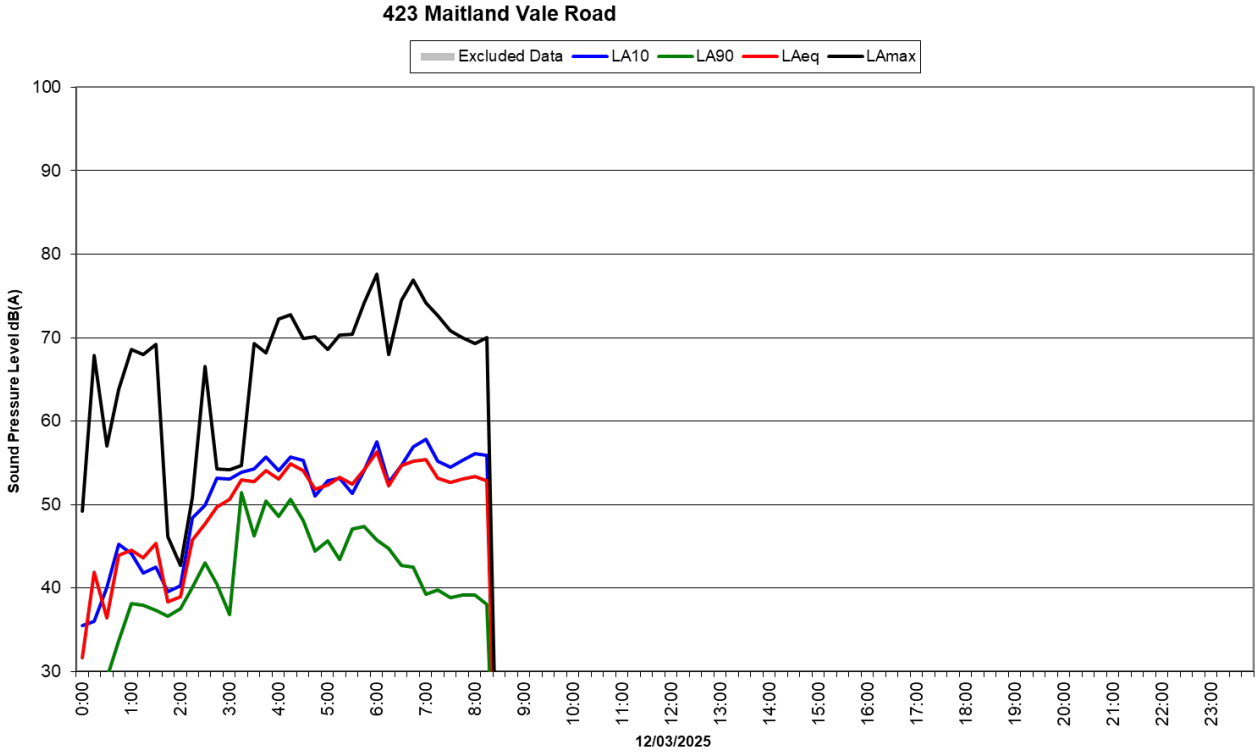
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7. Appendix B Calibration Certificate

Acoustic Research Labs Pty Ltd
Unit 36/14 Loyalty Rd
North Rocks NSW AUSTRALIA 2151
Ph: +61 2 9484 0800 A.B.N. 65 160 399 119
www.acousticresearch.com.au

Sound Level Meter
IEC 61672-3:2013

Calibration Certificate

Calibration Number C23826

Client Details	Rapt Consulting 18-19/10 Kenrick Street The Junction NSW 2291
Equipment Tested/ Model Number :	NL-43EX
Instrument Serial Number :	00430289
Microphone Serial Number :	202712
Pre-amplifier Serial Number :	28139
Firmware Version :	01.00

Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature :	23.6 °C	**Ambient Temperature :**	24 °C
Relative Humidity :	45.1 %	**Relative Humidity :**	44.4 %
Barometric Pressure :	100.37 kPa	**Barometric Pressure :**	100.34 kPa

Calibration Technician :	Max Moore	**Secondary Check:**	Rhys Gravelle
Calibration Date :	14 Nov 2023	**Report Issue Date :**	15 Nov 2023

Approved Signatory : Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	*Pass*	17: Level linearity incl. the level range control	*N/A*
13: Electrical Sig. tests of frequency weightings	*Pass*	18: Toneburst response	*Pass*
14: Frequency and time weightings at 1 kHz	*Pass*	19: C Weighted Peak Sound Level	*Pass*
15: Long Term Stability	*Pass*	20: Overload Indication	*Pass*
16: Level linearity on the reference level range	*Pass*	21: High Level Stability	*Pass*

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -

Acoustic Tests		Environmental Conditions	
125Hz	*±0.13 dB*	*Temperature*	*±0.1 °C*
1kHz	*±0.13 dB*	*Relative Humidity*	*±1.9 %*
8kHz	*±0.14 dB*	*Barometric Pressure*	*±0.11 kPa*
Electrical Tests	*±0.13 dB*		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - Calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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