KLF Holdings Pty Ltd Recycling Facility

Noise Compliance Report Asquith Facility 2024

Prepared for KLF Holdings Pty Ltd

February 2024

KLF Holdings Pty Ltd Recycling Facility

Noise Compliance Report Asquith Facility 2024

KLF Holdings Pty Ltd

E240031 RP1

February 2024

Version	Date	Prepared by	Reviewed by	Comments
1	16 February 2024	Jared Blackburn	Najah Ishac	

Approved by

Najah Ishac
Director, National Acoustics Leader
16 February 2024

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Tables

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1 Introduction

1.1 Background

EMM Consulting Pty Limited (EMM) has been engaged to complete annual attended compliance noise monitoring for the Asquith Waste Recycling Facility (the site), located at 7-9 Brennan Close, Asquith NSW on behalf of KLF Holdings Pty Limited (KLF). The survey purpose was to quantify the acoustic environment and compare site noise levels against specified limits.

Attended environmental noise monitoring described in this report was done during the day period of 30 January 2024 at two monitoring locations.

1.2 Attended monitoring locations

Site monitoring locations are detailed in Table 1.1 and shown on Figure 1.1. It should be noted that Figure 1.1 shows actual monitoring positions, not necessarily the location of residences.

Table 1.1 Attended noise monitoring locations

Monitoring location	Description	Location	GDA94/MGA56	
			Easting (m)	Northing (m)
A1	Approximately 120 m northwest of the site	7 Wilkinson Close, Hornsby	324726	6269887
A2	Approximately 150 m southwest of the site	3/13 King Road, Hornsby	324765	6269723

KEY

- (A) Noise monitoring location
- Site boundary
- Minor road
- Named watercourse
- Cadastral boundary

INSET KEY

- Major road
- NPWS reserve
- State forest

\\emmsvr1\EMM2\2022\E221350 - KLF Asquith 2023\8 GIS\02 Maps\N001 SiteAndNoiseMonitoringLocations 20230220 02.mxd 20/02/2023

Source: EMM (2023); ABS (2021); DCSSS (2023); GA (2009); MetroMap (2023)

0 25 50 m

GDA2020 MGA Zone 56

N

Site locality and attended noise monitoring locations

KLF Holdings Pty Ltd Recycling Facility
Noise Compliance Report Asquith Facility 2023
Figure 1.1

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1.3 Terminology and abbreviations

Some definitions of terms and abbreviations which may be used in this report are provided in Table 1.2.

Table 1.2 Terminology and abbreviations

Term/descriptor	Definition
dB(A)	Noise level measurement units are decibels (dB). The "A" weighting scale is used to approximate how humans hear noise.
L_{Amax}	The maximum root mean squared A-weighted noise level over a time period.
L_{A1}	The A-weighted noise level which is exceeded for 1%of the time.
$L_{A1,1minute}$	The A-weighted noise level which is exceeded for 1% of the specified time period of 1 minute.
L_{A10}	The A-weighted noise level which is exceeded for 10% of the time.
L_{Aeq}	The energy average A-weighted noise level.
L_{A50}	The A-weighted noise level which is exceeded for 50% of the time, also the median noise level during a measurement period.
L_{A90}	The A-weighted noise level exceeded for 90% of the time, also referred to as the "background" noise level and commonly used to derive noise limits.
L_{Amin}	The minimum A-weighted noise level over a time period.
L_{Ceq}	The energy average C-weighted noise energy during a measurement period. The "C" weighting scale is used to take into account low-frequency components of noise within the audibility range of humans.
SPL	Sound pressure level. Fluctuations in pressure measured as 10 times a logarithmic scale, with the reference pressure being 20 micropascals.
Hertz (Hz)	The frequency of fluctuations in pressure, measured in cycles per second. Most sounds are a combination of many frequencies together.
AWS	Automatic weather station used to collect meteorological data, typically at an altitude of 10 metres
VTG	Vertical temperature gradient in degrees Celsius per 100 metres altitude.
Sigma-theta	The standard deviation of the horizontal wind direction over a period of time.
IA	Inaudible. When site noise is noted as IA then there was no site noise at the monitoring location.
NM	Not Measurable. If site noise is noted as NM, this means some noise was audible but could not be quantified.
Day	Monday – Saturday: 7 am to 6 pm, on Sundays and Public Holidays: 8 am to 6 pm.
Evening	Monday – Saturday: 6 pm to 10 pm, on Sundays and Public Holidays: 6 pm to 10 pm.
Night	Monday – Saturday: 10 pm to 7 am, on Sundays and Public Holidays: 10 pm to 8 am.

Appendix A provides further information that gives an indication as to how an average person perceives changes in noise level, and examples of common noise levels.

2 Noise limits

2.1 Environmental Protection Licence

This annual monitoring is a requirement as detailed in the site's Environment Protection Licence (EPL, 20582), licence version date 9 November 2023.

Noise assessment criteria for the site are provided in the site's EPL. These are specified for the day period at locations which are representative of residences potentially most impacted by site noise. Pages from the site's EPL pertaining to noise are shown in Appendix B.

2.2 Noise limits

Noise impact limits from condition L3.1 of EPL are provided in Table 2.1.

Table 2.1 Noise impact limits, dB

Location	Day $L_{Aeq,15minute}$
All residences on Sherbrook Rd and Wilkinson Close, Hornsby	49
All other residences	52

2.3 Meteorological conditions

Condition L3.4 of the EPL states the meteorological conditions which the noise limits apply under:

> L3.4 a) The noise limits set out in condition L3.1 apply under meteorological conditions listed in the table below.
>
> b) For those meteorological conditions not referred to in condition L3.4(a), the noise limits that apply are the noise limits in condition L3.1 table plus 5 dB.

The table from Condition L3.4 is reproduced in Table 2.2 below.

Table 2.2 Applicable meteorological conditions

Assessment period	Meteorological conditions
Day	Stability Categories A, B, C and D with wind speeds up to and including 0.5 m/s at 10 m above ground level.
Evening	Stability Categories A, B, C and D with wind speeds up to and including 0.5 m/s at 10 m above ground level.
Night	Stability Categories A, B, C and D with wind speeds up to and including 0.5 m/s at 10 m above ground level.

Condition L3.5 specifies the source of meteorological data to be used and method for determining stability categories:

> L3.5 For the purpose of condition L3.4:
>
> a) The meteorological conditions are to be determined from meteorological data obtained from the meteorological weather station identified as Bureau of Meteorology AWS at Terrey Hills, NSW (Station ID 066059).

b) Stability category shall be determined using the following method from Fact Sheet D of the Noise Policy for Industry (NSW EPA, 2017):

i. Use of sigma-theta data (section D1.4).

2.4 Other considerations

Monitoring and reporting have been done in accordance with the NSW EPA 'Noise Policy for Industry' (NPfI) issued in October 2017 and the 'Approved methods for the measurement and analysis of environmental noise in NSW' (Approved Methods) issued in January 2022.

3 Methodology

3.1 Overview

Attended environmental noise monitoring was done in general accordance with Australian Standard AS1055 'Acoustics, Description and Measurement of Environmental Noise' and relevant NSW requirements. Meteorological data was obtained from the Terrey Hills BoM automatic weather station (AWS) (Station ID 066059) which allowed correlation of atmospheric parameters with measured site noise levels.

3.2 Attended noise monitoring

During this survey, attended noise monitoring was conducted during the day period at each location. The duration of each measurement was 15 minutes. Atmospheric conditions were measured at each monitoring location.

Measured sound levels from various sources were noted during each measurement and particular attention was paid to the extent of site's contribution (if any) to measured levels. At each monitoring location, the site-only $L_{Aeq,15minute}$ were measured directly or determined by other methods detailed in Section 7.1 of the NPfI.

The terms 'Inaudible' (IA) or 'Not Measurable' (NM) may be used in this report. When site noise is noted as IA, it was inaudible at the monitoring location. When site noise is noted as NM, this means it was audible but could not be quantified. All results noted as IA or NM in this report were due to one or more of the following:

- Site noise levels were very low, typically more than 10 dB below the measured background (L_{A90}), and unlikely to be noticed.
- Site noise levels were masked by more dominant sources that are characteristic of the environment (such as breeze in foliage or continuous road traffic noise) that cannot be eliminated by monitoring at an alternate or intermediate location.
- It was not feasible or reasonable to employ methods, such as to move closer and back calculate. Cases may include rough terrain preventing closer measurement, addition/removal of significant source to receiver shielding caused by moving closer, and meteorological conditions where back calculation may not be accurate.

If exact noise levels from site could not be established due to masking by other noise sources in a similar frequency range but were determined to be at least 5 dB lower than relevant limits, then a maximum estimate of site may be provided. This is expressed as a 'less than' quantity, such as <20 dB or <30 dB.

3.3 Modifying factors

All measurements were evaluated for potential modifying factors in accordance with the NPfI. Assessment of modifying factors is undertaken at the time of measurement if the site was audible and directly quantifiable. If applicable, modifying factor penalties have been reported and added to measured site-only L_{Aeq}.

Low-frequency modifying factor penalties have only been applied to site-only L_{Aeq} levels if the site was the only contributing low-frequency noise source. Specific methodology for assessment of each modifying factor is outlined in Fact Sheet C of the NPfI.

3.4 Instrumentation

Equipment used to measure environmental noise levels is detailed in Table 3.1. Calibration certificates are provided in Appendix C.

Table 3.1 Measurement equipment

Item	Serial number	Calibration due date	Relevant standard
Brüel & Kjær Type 2250 sound level meter	3008201	12 July 2025	IEC 61672-1:2002
Svantek SV36 calibrator	138019	1 August 2024	IEC 60942:2003

4 Results

4.1 Total measured noise levels and atmospheric conditions

Total noise levels measured during each 15-minute attended measurement are provided in Table 4.1.

Table 4.1 Total measured noise levels, dB – January 2024 [1]

Location	Start date and time	L_{Amax}	L_{A1}	L_{A10}	L_{Aeq}	L_{A50}	L_{A90}	L_{Amin}
A1	30/01/2024 11:17	68	61	54	53	51	50	49
A1	30/01/2024 11:31	65	58	54	52	51	49	48
A2	30/01/2024 11:53	65	62	56	55	55	54	49
A2	30/01/2024 12:08	70	59	55	55	54	54	53

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

Atmospheric condition data measured by the operator during each measurement using a hand-held weather meter is shown in Table 4.2. The wind speed, direction and temperature were measured at approximately 1.5 metres above ground. Attended noise monitoring is not done during rain, hail, or wind speeds above 5 m/s at microphone height.

Table 4.2 Measured atmospheric conditions – January 2024

Location	Start date and time	Temperature °C	Wind speed m/s	Wind direction ° magnetic north [1]	Cloud cover 1/8s
A1	30/01/2024 11:17	26	0.6	159	8
A1	30/01/2024 11:31	26	0.4	155	8
A2	30/01/2024 11:53	26	-	-	8
A2	30/01/2024 12:08	27	-	-	8

Notes: 1. "-" indicates calm conditions at monitoring location.

4.2 Site only noise levels

4.2.1 Modifying factors

There were no modifying factors, as defined in the NPfI, applicable during the survey.

4.2.2 Monitoring results

Table 4.3 provides site noise levels in the absence of other sources, where possible, and includes weather data from the Terrey Hills BoM AWS. Noise limits are applicable under all weather conditions but are adjusted during noise-enhancing weather conditions in accordance with the EPL.

Table 4.3 Site noise levels and limits – January 2024

Location	Start date and time	Wind		Stability class	Noise enhancing limits apply [1]	Limits, dB	Site levels, dB	Exceedances, dB [1]
		Speed m/s	Direction [3]			$L_{Aeq,15minute}$	$L_{Aeq,15minute}$ [2]	$L_{Aeq,15minute}$
A1	30/01/2024 11:17	2.1	171	A	Y	54[1]	50	Nil
A1	30/01/2024 11:31	2.1	171	A	Y	54[1]	50	Nil
A2	30/01/2024 11:53	1.8	173	A	Y	57[1]	48	Nil
A2	30/01/2024 12:08	1.8	173	A	Y	57[1]	49	Nil

Notes: 1. In accordance with Condition L3.5, where meteorological conditions exceed those specified in Condition L3.4, the EPL limits for these periods are those listed in Condition L3.1 plus 5 dB.

2. Site-only $L_{Aeq,15minute}$, includes modifying factor penalties if applicable.

3. Degrees magnetic north, "-" indicates calm conditions.

5 Summary

EMM was engaged by KLF Holdings Pty Ltd to conduct an annual noise survey of operations at their Hornsby NSW site. The survey purpose was to quantify the acoustic environment and compare site noise levels against specified EPL limits.

Attended environmental noise monitoring described in this report was done during the day period of 30 January 2024 at two monitoring locations.

Noise levels from site complied with relevant limits at all monitoring locations during the January 2024 survey.

Appendix A
Noise perception and examples

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A.1 Noise levels

Table A.1 gives an indication as to how an average person perceives changes in noise level. Examples of common noise levels are provided in Figure A.1.

Table A.1 Perceived change in noise

Change in sound pressure level (dB)	Perceived change in noise
up to 2	Not perceptible
3	Just perceptible
5	Noticeable difference
10	Twice (or half) as loud
15	Large change
20	Four times (or quarter) as loud

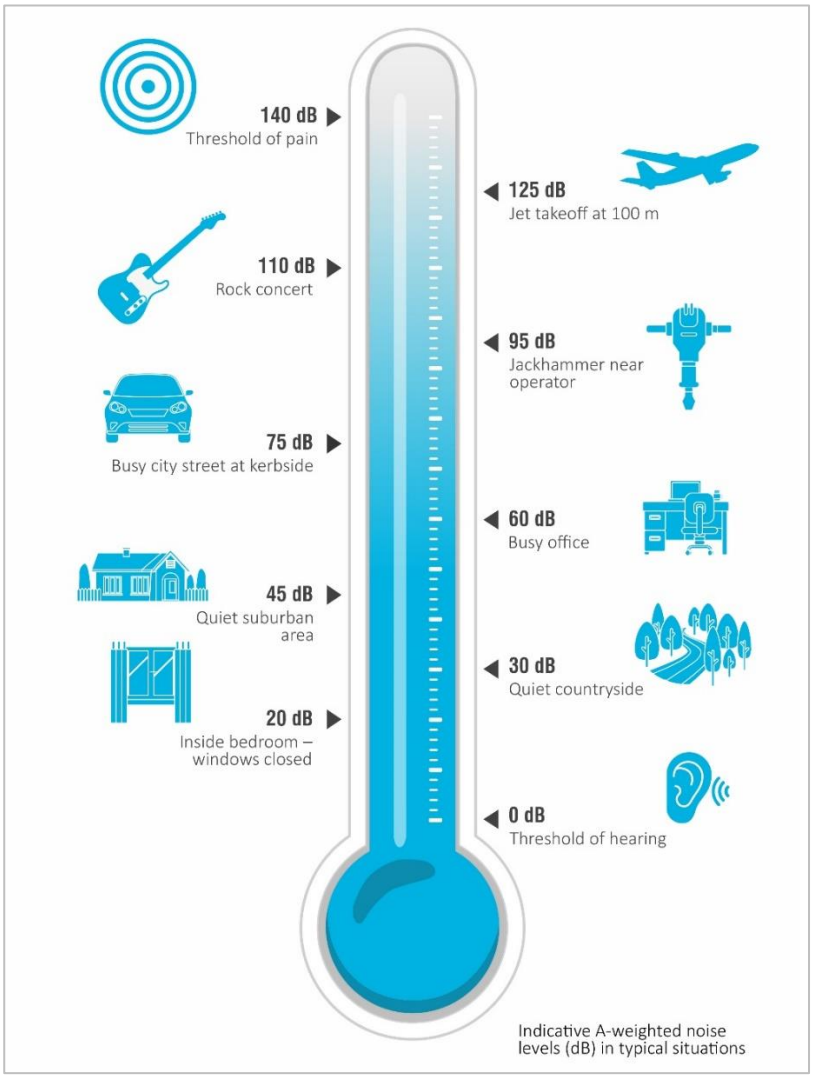

Figure A.1 Common noise levels

Appendix B
Regulator documents

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Environment Protection Licence

P1.1 The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
1	Noise monitoring	7 Wilkinson Close, Hornsby 2077
2	Noise monitoring	3/13 King Road, Hornsby 2077

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Soils	Soils meeting CT1 threshold as defined in the Waste Classification Guidelines	Waste storage	N/A
NA	Office and packaging waste (e.g. paper, cardboard, plastics, glass, metal and timber) that is not mixed with any other type of waste	As defined in Schedule 1 of the POEO Act as in force from time to time	Waste storage	N/A
NA	Garden waste	As defined in Schedule 1 of the POEO Act as in force from time to time	Waste storage	N/A
NA	Wood waste	As defined in Schedule 1 of the POEO Act as in	Waste storage	N/A

Environment Protection Licence

		force from time to time		
NA	Building and demolition waste	As defined in Schedule 1 of the POEO Act as in force from time to time	Waste storage	N/A
NA	Virgin excavated natural material	As defined in Schedule 1 of the POEO Act as in force from time to time	Waste storage	N/A

L2.2 The quantity of waste that may be accepted at the premises must not exceed 39,000 tonnes per calendar year.

L2.3 The authorised amount of waste permitted on the premises cannot exceed 3,000 tonnes at any one time.

L2.4 The licensee must install and maintain a visible permanent stockpile marker that shows the permitted height of stockpiles, being 5 metres (m).

L2.5 Stockpile heights must not exceed 5 metres (m).

L2.6 No asbestos waste is to be accepted or stored at the premises.

L3 Noise limits

L3.1 Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.

POINT 1

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	LAeq (15 minute)	Yearly	49

POINT 2

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	LAeq (15 minute)	Yearly	52

L3.2 a) The noise level limits listed for Point 1 in Condition L3.1 apply to all residential receivers on Sherbrook Road and Wilkinson Close, Hornsby 2077.

b) The noise level limits listed for Point 2 in Condition L3.1 apply to all other residential receivers.

Environment Protection Licence

L3.3 For the purposes of condition L3.1 day means the period from:
a) 7am to 6pm Monday to Friday
b) 8am to 1pm Saturday, Sunday and public holidays.

L3.4 a) The noise limits set out in condition L3.1 apply under meteorological conditions listed in the table below.

b) For those meteorological conditions not referred to in condition L3.4 a), the noise limits that apply are the noise limits in condition L3.1 plus 5dB.

Assessment Period	Meteorological Conditions
Day	Stability Categories A, B, C and D with wind speeds up to and including 0.5m/s at 10m above ground level
Evening	Stability Categories A, B, C and D with wind speeds up to and including 0.5m/s at 10m above ground level
Night	Stability Categories A, B, C and D with wind speeds up to and including 0.5m/s at 10m above ground level

L3.5 For the pusposes of condition L3.4:

a) the meteorological conditions are to be determined from meteorological data obtained from the meteorological weather station identified as Bureau of Meteorology AWS at Terrey Hills (Station ID 066059).

b) Stability category shall be determined using the following method from Fact Sheet D of the Noise Policy for Industry (NSW EPA, 2017):
i Use of sigma-theta data (section D1.4).

L3.6 To assess compliance:
a) with the LAeq(15 minutes) noise limits in condition L3.1 and L3.4, the noise measurement equipment must be located:
(i) approximately on the property boundary, where any residence is situated 30 metres or less from the property boundary closest to premises;
(ii) in an area within 30 metres of a residence façade, but not closer than 3 metres where any residence on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable,
(iii) in an area within 50 metres of the boundary of a National Park or Nature Reserve, or
(iv) at any other location identified in condition L3.1
b) with the LAeq(15 minutes) noise limits in condition L3.1 and L3.4, the noise measurement equipment must be located:
(i) at the reasonably most affected point at a location where there is no residence at the location; or,
(ii) at the reasonably most affected point within an area at a location prescribed by condition L3.6 (a).

L3.7 A non-compliance of condition L3.1 and L3.4 will still occur where noise generated from the premises is measured in excess of the noise limit at a point other than the reasonably most affected point at the locations referred to in condition L3.6 a) or L3.6 b).

NOTE to L3.6 and L3.7: The reasonably most affected point is a point at alocation or within an area at a location experiencing or expected to experiencethe highest sound pressure level from the premises.

L3.8 For the purpose ofdetermining the noise generated from the premises, the modifying factorcorrections in Table C1 in Fact Sheet C of the Noise Policy for Industry (NSWEPA, 2017) may be applied, if appropriate, to the noise measurements by thenoise monitoring equipment.

L3.9 Noise measurements must not be undertaken where rain or wind speed at microphone level will affect the acquisition of valid measurements.

L4 Hours of operation

L4.1 The hours of operation at the premises are restricted to the following:

7:00am to 5:00pm - Monday to Friday
8:00am to 1:00pm - Saturday, Sunday and Public Holidays

Please note: These hours also apply to the movements of vehicles to and from the premises for the receipt and dispatch of recycled materials.

L5 Potentially offensive odour

L5.1 No condition of this licence identifies a potentially offensive odour for the purpose of Section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potenitally offensive odour and the odour was emitted in accordance with conditions of licence directed at minimising odour.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and

Appendix C
Calibration certificates

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Sound Level Meter
IEC 61672-3:2013
Calibration Certificate

Calibration Number C23471

Client Details	EMM Consulting Ground Floor Suite 01, 20 Chandos Street
Equipment Tested/ Model Number :	Type 2250
Instrument Serial Number :	3008201
Microphone Serial Number :	2888134
Pre-amplifier Serial Number :	16037
Firmware Version :	N/A

Pre-Test Atmospheric Conditions		**Post-Test Atmospheric Conditions**	
Ambient Temperature :	23.1 °C	**Ambient Temperature :**	24.3 °C
Relative Humidity :	44 %	**Relative Humidity :**	44.1 %
Barometric Pressure :	101.6 kPa	**Barometric Pressure :**	101.3 kPa

Calibration Technician :	Max Moore	**Secondary Check:**	Rhys Gravelle
Calibration Date :	12 Jul 2023	**Report Issue Date :**	17 Jul 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 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation test performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 requirements of 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*	*±0.014 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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Sound Level Meter
IEC 61672-3:2013
Calibration Test Report

Calibration Number C23471

Client Details EMM Consulting
Ground Floor
Suite 01, 20 Chandos Street

Equipment Tested/ Model Number : Type 2250
Instrument Serial Number : 3008201
Microphone Serial Number : 2888134
Pre-amplifier Serial Number : 16037
Firmware Version : N/A

Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature :	23.1 °C	**Ambient Temperature :**	24.3 °C
Relative Humidity :	44 %	**Relative Humidity :**	44.1 %
Barometric Pressure :	101.6 kPa	**Barometric Pressure :**	101.3 kPa

Calibration Technician : Max Moore
Calibration Date : 12 Jul 2023
Secondary Check: Rhys Gravelle
Report Issue Date : 17 Jul 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 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation test performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 requirements of 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*	*±0.014 kPa*
Electrical Tests	*±0.13 dB*		

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

CERTIFICATE OF CALIBRATION

CERTIFICATE NO: C36957

EQUIPMENT TESTED : Sound Level Calibrator

Manufacturer: Svantek
Type No: SV36 **Serial No:** 138019
Owner: EMM Consulting
Suite 01, 20 Chandos St
St Leonards NSW 2065
Tests Performed: Measured Output Pressure level, Frequency & Distortion
Comments: See Details overleaf. All Test Passed.

Parameter	Pre-Adj	Adj Y/N	Output: (dB re 20 µPa)	Frequency (Hz)	THD&N (%)
Level1:	NA	N	93.94 dB	999.97 Hz	0.63 %
Level2:	NA	N	113.97 dB	999.97 Hz	0.40 %
Uncertainty			±0.11 dB	±0.05%	±0.20 %
Uncertainty (at 95% c.l.) k=2					

CONDITION OF TEST:

Ambient Pressure 1012 hPa ±1 hPa
Temperature 23 °C ±1° C
Relative Humidity 40 % ±5%

Date of Receipt : 28/07/2023
Date of Calibration : 01/08/2023
Date of Issue : 01/08/2023

Acu-Vib Test Procedure: AVP02 (Calibrators)
Test Method: AS IEC 60942 - 2017

CHECKED BY: .....

AUTHORISED SIGNATURE: .....

Hein Soe

Accredited for compliance with ISO/IEC 17025 - Calibration
Results of the tests, calibration and/or measurements included in this document are traceable to SI units through reference equipment that has been calibrated by the Australian National Measurement Institute or other NATA accredited laboratories demonstrating traceability.

This report applies only to the item identified in the report and may not be reproduced in part.

The uncertainties quoted are calculated in accordance with the methods of the ISO Guide to the Uncertainty of Measurement and quoted at a coverage factor of 2 with a confidence interval of approximately 95%.

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