



Kirkby

Baseline Noise Survey

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Basis of Report

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A.1 Acoustic Terminology

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1.0 Introduction

It is understood that Pivoted Power is looking to develop land near National Grid's Kirkby Substation for a battery storage facility to include battery cubes, inverters, and transformers.

This Noise Impact Assessment presents the following:

- A baseline noise survey and summary report to inform the assessments.
- An assessment to determine the impact of commercial noise from the proposed development upon existing residential receptors. This assessment has been completed with reference to BS4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* (BS4142).

Whilst reasonable effort has been made to make this report easily understandable, it is technical in nature; to assist the reader, a glossary of terminology is included in **Appendix A**.



2.0 Site and Development Description

2.1 Existing Site

The proposed development site is located to the east of Kirkby, on land off Cut Lane.

The site is bounded:

- To the north by agricultural fields, with residential properties on Red Cut Lane beyond.
- To the east by Red Cut Lane, with agricultural fields beyond.
- To the south by agricultural fields, with residential properties on Cut Lane beyond.
- To the west by agricultural fields, with residential properties on Sandy Brow Cottages.

The location of the Site is shown in **Figure 2-1** below.

Figure 2-1 Site Location



3.0 Consultation and Guidance

3.1 Local Authority Consultation

Prior to completing the Survey, the survey locations and duration was agreed with Helen Bradshawe an Officer at Knowsley Council. It also was agreed that the assessment would be completed in accordance with BS4142.

With regards to the rating level, the following was received from the Environmental Health Officer.

“To note from your discussion – we would expect to achieve a rating level that is 5dB(A) below the baseline background level not above and would want to see an assessment with a full open window”.

SLR would however argue that a rating level of 5dB above the background noise level would be appropriate.

3.2 British Standard 4142:2014+A1:2019

British Standard 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound is generally used to assess the potential adverse impact of sound, of an industrial and/or commercial nature, at nearby noise-sensitive receptor locations.

Where the specific sound contains tonality, impulsivity and/or other sound characteristics, corrections are applied depending on the perceptibility. For tonality a correction of either 0, 2, 4 or 6 dB should be added and for impulsivity a correction of either 0, 3, 6 or 9 dB should be added. If the sound contains specific sound features which are neither tonal nor impulsive, a correction of 3 dB should be added.

In addition, if the sound contains identifiable operational and non-operational periods, that are readily distinguishable against the existing sound environment, a further correction of 3 dB may be applied.

The assessment of impact contained in BS4142 is undertaken by comparing the sound rating level, i.e. the specific sound level of the source plus any character corrections, to the measured representative background sound level immediately outside the noise-sensitive receptor location. Consideration is then given to the context of the existing sound environment at the noise-sensitive receptor location to assess the potential impact.

Once an initial estimate of the impact is determined, by subtracting the measured background sound level from the rating sound level, BS4142 states that the following should be considered:

- typically, the greater the difference, the greater the magnitude of the impact;
- a difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- a difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and,
- the lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. It is an indication that the specific sound source has a low impact, depending on the context.

Finally, BS4142 outlines guidance for the consideration of the context of the potential impact including consideration of the existing residual sound levels, location and/or absolute sound



levels. With specific reference to low background and rating noise levels, the standard states the following:

“Where background sound levels and rating levels are low, absolute levels might be as, or more relevant than the margin by which the rating level exceeds the background. This is especially true at night.”



4.0 Baseline Noise Survey

4.1 Survey Date

To determine baseline sound levels in the vicinity of the development, a baseline noise survey was undertaken between Friday 9th and Monday 12th September 2022. The survey was undertaken at two locations in the vicinity of the site, at locations representative of the nearest NSRs. Details of the survey are presented below.

4.2 Equipment

The noise monitoring equipment used during the survey is detailed in **Table 4-1**. All measurement instrumentation was calibrated before and after the survey. No significant drift was observed. The calibration chain is traceable via the United Kingdom Accreditation Service to National Standards held at the National Physical Laboratory.

Table 4-1: Survey Equipment

Location	Equipment	Serial Number
1 – Representative of Receptors to the south	Cirrus CR:831B Class 1 Sound Level Meter	C17175FF
	Cirrus CR:515 Acoustic Calibrator	81268
2 – Representative of Receptors to the west and north	Cirrus CR:171B Class 1 Sound Level Meter	G079816
	Cirrus CR:515 Acoustic Calibrator	81268

4.3 Weather Conditions

During the initial set up period, the prevailing weather conditions were noted as cloudy with light intermittent rain, with an ambient air temperature of 19°C. Wind speeds were noted as light with a slight southern direction. Cloud cover was noted at approximately 100% which continued throughout the measurement period.

In summary, the weather conditions were appropriate for the noise monitoring survey and, the meteorological conditions would have no detrimental impact on the recorded data. The full weather survey data is presented in **Appendix B** of the report.



4.4 Survey Locations

Ambient noise levels were measured at two locations (green pins) in the vicinity of the Site as shown on **Figure 4-1** (red pin). The locations are considered broadly representative of the background sound levels at the respective sensitive receptor locations (yellow pins). Photographs of each monitoring position can be seen in **Appendix C**.

Figure 4-1 Noise Monitoring (Green Pins) and Sensitive Receptor (NSR) Locations



For reference, the noise monitoring locations are detailed below.

Table 4-2: Noise Monitoring Locations

Location	Approximate OS Grid Reference	
	Easting	Northing
1	344565	397518
2	344480	397674

At both locations, road traffic was the dominant source of noise. Other audible noise sources included general environmental sounds such as birdsong, and light wind gusts in tress and undergrowth.

At each location, the microphone was placed at least 1.5m above the local ground level in free-field conditions, i.e., at least 3.5m from the nearest vertical, reflecting surface. The following noise level indices were recorded:

- $L_{Aeq,T}$: The A-weighted equivalent continuous noise level over the measurement period.



- L_{A90} : The A-weighted noise level exceeded for 90% of the measurement period. this parameter is often used to describe background noise.
- L_{A10} : The A-weighted noise level exceeded for 10% of the measurement period. This parameter is often used to describe road traffic noise.
- L_{AFmax} : The maximum A-weighted noise level during the measurement period.

4.5 Baseline Sound Level Results

A summary of the survey results at the monitoring locations are presented in the tables below. The full survey results are in **Appendix D**.

Table 4-3: Location 1 - Summary of Measured Sound Levels, free-field, dB

Date	Period, T	Average ¹ $L_{Aeq,T}$, dB	Maximum ² L_{AFmax} , dB	Mean ³ $L_{A10,15min}$, dB	Mean ³ $L_{A90,15min}$, dB
Friday 9th September	13:00 – 23:00	58	92	51	42
	23:00 – 07:00	36	63	37	32
Saturday 10th September	07:00 – 23:00	53	91	48	39
	23:00 – 07:00	43	70	45	36
Sunday 11th September	07:00 – 23:00	46	83	48	43
	23:00 – 07:00	45	73	45	40
Monday 12th September	07:00 – 12:45	54	78	54	49
	23:00 – 07:00	-	-	-	-
Notes					
	1)	Logarithmic Average of the $L_{Aeq,T}$ values presented			
	2)	Maximum recorded L_{AFmax} value presented			
	3)	Arithmetic Average of the percentiles presented			

Table 4-4: Location 2 - Summary of Measured Sound Levels, free-field, dB

Date	Period	Average ¹ $L_{Aeq,T}$, dB	Maximum ² L_{AFmax} , dB	Mean ³ $L_{A10,15min}$, dB	Mean ³ $L_{A90,15min}$, dB
Friday 9th September	12:30 – 23:00	42	77	43	36
	23:00 – 07:00	35	56	36	31
Saturday 10th September	07:00 – 23:00	39	65	39	31
	23:00 – 07:00	35	70	37	29
Sunday 11th September	07:00 – 23:00	42	73	41	34
	23:00 – 07:00	38	68	38	32
Monday 12th September	07:00 – 12:15	41	64	43	38
	23:00 – 07:00	-	-	-	-
Notes					
	1)	Logarithmic Average of the $L_{Aeq,T}$ values presented			
	2)	Maximum recorded L_{AFmax} value presented			
	3)	Arithmetic Average of the percentiles presented			



4.6 Representative Baseline Background Sound Levels

Histograms of the daytime and night-time baseline background sound levels can be seen in **Appendix E**.

From a review of the data, the following are considered to be the representative baseline background sound levels. As such, these will be used to inform the BS4142:2014+A1:2019 assessment for each location.

Table 4-5: Baseline Background Sound Levels for Assessment

Monitoring Location	NSRs	Period	$L_{A90,15min}$ Range, dB	Representative $L_{A90,15min}$, dB
1 – Representative of locations to the south	Sandy Lane Farm Coopers Moss Farm	Daytime	30 – 61	44
		Night-time	29 – 50	34
2 – Representative of locations to the west and north	Sandy Brow Cottages Sandy Brown Farm Red Cut Lane	Daytime	25 – 43	33
		Night-time	25 – 40	31

The distribution of background values for Location 1 shows a strong modal value at $L_{A90,15min}$ 44 dB, though this occurs towards centre of the overall distribution during the daytime, with over 50% of $L_{A90,15min}$ values falling below this level.

During the night-time period, the distribution of background values is more complex, with several peaks at $L_{A90,15min}$ 31 dB and 39 dB, and a lower peak at 34 dB. To represent a conservative assessment, a value of 34 dB $L_{A90,15min}$ is considered 'typical'.

As above, the distribution of $L_{A90,15min}$ values at Location 2, also shows a strong modal peak at 33 dB $L_{A90,15min}$. At this location, the range is largely centred between 30 dB and 36 dB $L_{A90,15min}$, with around 50% of values falling in this range, therefore, 33 dB $L_{A90,15min}$ is considered typical for this location during the daytime period.

During the night-time period, the modal value ($L_{A90,15min}$ 31 dB) is exceeded for most of the time therefore is considered to be typical.

4.7 Measurement Uncertainty

In accordance with BS4142, the uncertainty associated with measured baseline sound levels requires discussion. Baseline sound level measurement uncertainty was minimised using the following steps:

- measurement locations were representative of the nearest noise-sensitive receptors to the site;
- measurements were undertaken using a suitable logging period considered to provide representative background sound levels;
- the sound measurements included an extended period;
- measurements were rounded to the nearest one decimal place before the final calculations; and,
- instrumentation was appropriate and in accordance with Section 5 of BS4142.



5.0 Assessment

A layout of the proposed development has been provided, and a noise model has been produced to test the layout and determine the impact at each receptor.

5.1 Noise Model Assumptions

The sound predictions in this assessment have been undertaken using a proprietary software-based noise model, CadnaA, which implements the full range of UK noise-based calculation methods. The calculation algorithms set out in ISO 9613-2:2024 Acoustics – Attenuation of sound during propagation outdoors – Part 2 General method of calculation have been used, and the model assumes:

- a ground absorption map of 0.8;
- contour Data to include OS terrain data;
- A 3.5m high acoustic fence around the full site boundary (half of which is absorptive to prevent reflections of the parallel barrier; and
- a reflection factor of 3.

The noise specification for the proposed plant is shown in Table 5-1. It is understood that the plant would be procured on this basis.

Table 5-1: Specification of Plant Included in the Assessment, L_{WA} dB

Name	Sound Power Level (each)
Sungrow MVS –PCS and Transformer	83
Sungrow PT2 - Battery units (80% Capacity at 25 degrees ¹)	79
Sungrow PT2 - Battery units (50% Capacity at 25 degrees ²)	78
Transformer	83

For the battery units, the sides and roof have been modelled as area sources, with the noise model validated against the noise test report provided by the manufacturer.

The battery units have been modelled as an area source (i.e. building structure) and the following dimensions:

- Width – 6058 mm
- Depth – 2438 mm
- Height – 2896 mm (plus a 300 mm sub-base + 989 mm noise mitigation kit)

The noise model also includes the noise attenuation kit, which will be installed with the battery units and significantly reduces the noise output.

The MVS combines the PCS and transformer on a single 6m long skid base. Due to the complexities in modelling this setup, the MVS has been modelled a single point source, at a height of 1.5m. This approach aligns with the noise test report, which indicates that the PCS is the dominant noise source on the MVS.

¹ Assumed daytime typical operating capacity

² Assumed night-time typical operating capacity



5.2 Results

The predicted sound level of the proposed BSF at the receptor locations is shown in **Table 5-2** below.

Daytime sound levels have been predicted at 1.5m above local ground level, in the main amenity are for the Receptor. Night-time sound levels have been predicted at 4.0m above local ground level, which is the approximate height of a first-floor window facing the Site.

Table 5-2: Predicted Specific Sound Levels of Proposed BSF, free-field dB

NSR	Period	Predicted Specific Sound Level, $L_{Aeq,T}$
Coopers Moss Farm	Daytime	17.9
	Night-Time	23.1
Sandy Lane Farm Bungalow	Daytime	32.6
	Night-Time	34.0
Sandy Brow Cottages	Daytime	17.9
	Night-Time	33.9
Sandy Brow Farm	Daytime	29.9
	Night-Time	30.8
Sandy Brow Farm Bungalow	Daytime	30.7
	Night-Time	31.6
Red Cut Lane	Daytime	32.9
	Night-Time	33.6

A graphical image of the predicted specific sound level during the daytime can be seen in **Figure 5-1**, and the night-time in **Figure 5-2**. Please note that the model includes an acoustic barrier around the site (as identified by the blue line).



Figure 5-1: Daytime Specific Sound Level, at 1.5m dB(A)

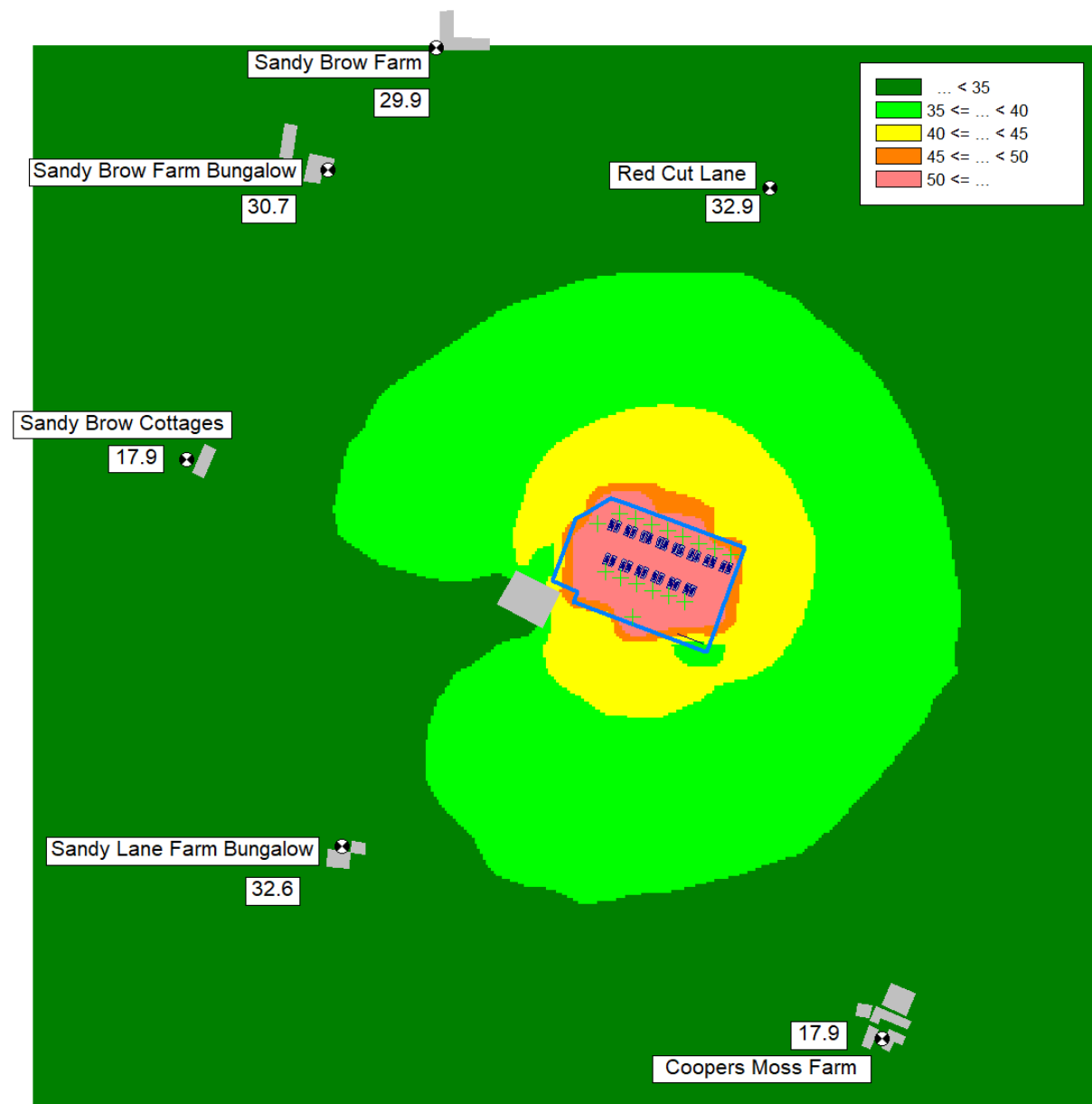
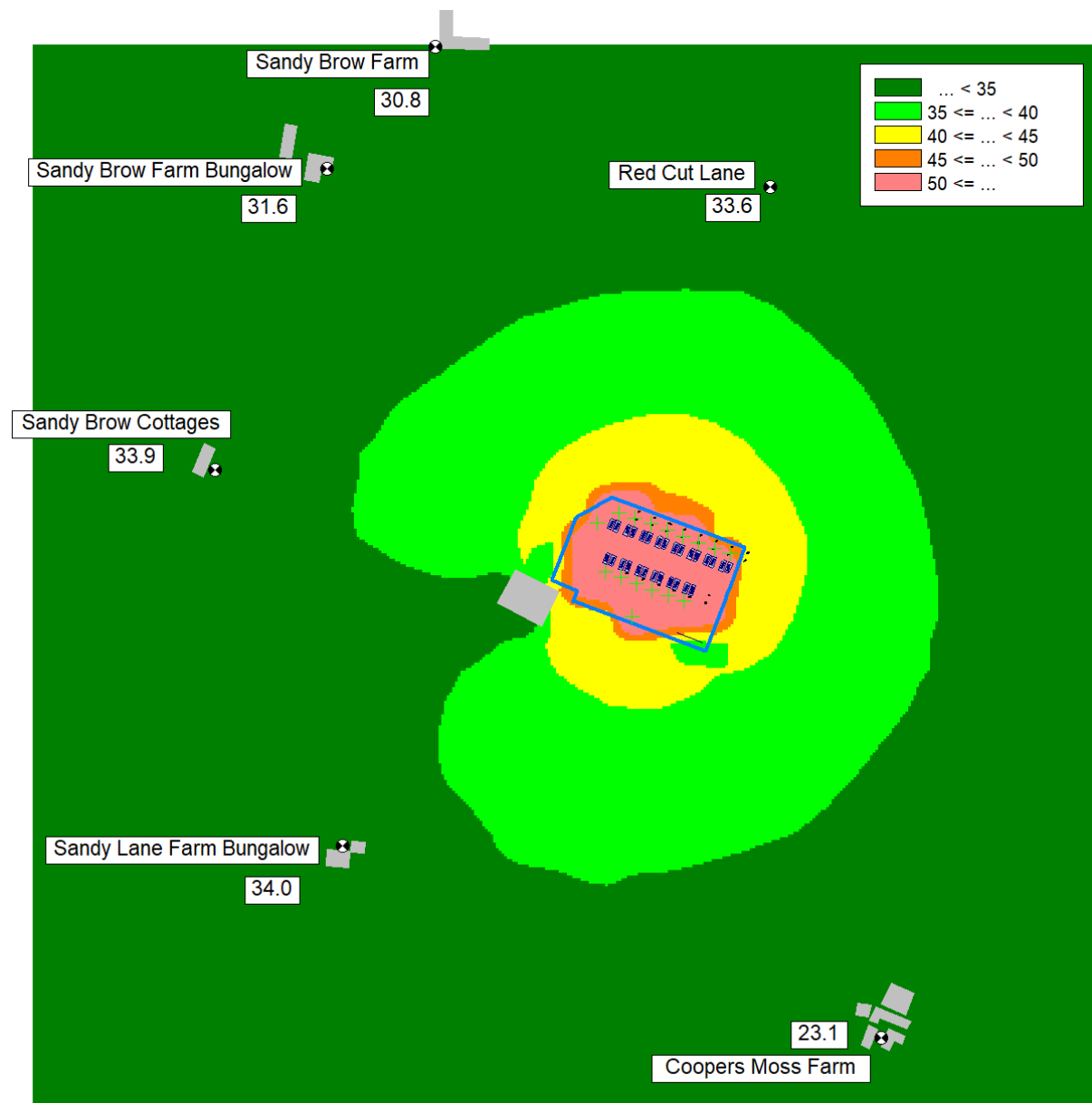


Figure 5-2: Night-Time Specific Sound Level, at 4m dB(A)



5.3 Sound Characteristics

The character of each noise source, and the sound correction that will be applied in the BS4142 assessment, is detailed below:

- **Tonality:** SLR has not been able to undertake the BS4142 Objective method for assessing the audibility of tones in sound: one third octave method. However, it is understood that the equipment would be broadband in nature, and tonal noise would be designed out of the Scheme. Therefore, no tonal correction is required.
- **Impulsivity:** It is not anticipated that the operation would produce any impulsive noise.
- **Other sound characteristics:** When operating, the proposals may be distinctive against the residual soundscape. Therefore, a precautionary 3 dB(A) correction will be applied.



- Intermittency: Over the BS4142 reference period of 1-hour in the daytime (07:00 – 23:00) and 15-minutes at night-time (23:00 – 07:00), it is anticipated that the noise sources would be constant; therefore, no intermittency correction is required.

Based on the above, a 3 dB acoustic character correction has been applied to the predicted specific sound level, to derive the corresponding rating levels.

5.4 BS4142 Assessment

The BS4142 assessment, including a 3 dB(A) character correction to the mitigated specific sound level is presented in Table 5-3.

Table 5-3: BS4142 Assessment dB(A)

NSR	Period	Specific	Predicted Rating Level, $L_{Ar,Tr}$ (dB)	Representative $L_{A90,15min}$, dB	Difference
Coopers Moss Farm	Daytime	18	21	44	- 23
	Night-Time	23	26	34	- 8
Sandy Lane Farm Bungalow	Daytime	33	36	44	- 8
	Night-Time	34	37	34	+3
Sandy Brow Cottages	Daytime	18	21	33	- 12
	Night-Time	34	37	31	+6
Sandy Brow Farm	Daytime	30	33	33	0
	Night-Time	31	34	31	+3
Sandy Brow Farm Bungalow	Daytime	31	34	33	+1
	Night-Time	32	35	31	+4
Red Cut Lane	Daytime	33	36	33	+3
	Night-Time	34	37	31	+6

5.4.1 Discussion

As shown in Table 5-3, predicted noise levels as follows would comply with the EHOs preference that noise from the Site is 5 dB below the background sound level:

- Coopers Moss Farm Day and night.
- Sandy Lane Farm Bungalow during the day.
- Sandy Brow Cottages during the day.

Whilst SLR acknowledge that the EHO's preference is not met under all scenarios, it must be noted that the baseline background sound level and rating levels are low. Where the EHOs preference is not meant the baseline background sound level is as low as 31dBA, and rating levels range between 33dBA and 37dBA.

This is relevant as the Working Group of the Association of Noise Consultants has produced guidance on the application of BS4142, which recommends that:

The WG suggest that similar values would not be unreasonable in the context of BS 4142, but that the assessor should make a judgement and justify it where appropriate.



The similar values they are referring to are a noise rating of 35dB and a background sound level of 30 dB.³

Not disregarding the EHO's preference, it must also be noted that BS4142 states a difference of around +5dB is likely to be an indication of an adverse impact, depending on the context. With reference to Table 5-3 it is only at Sandy Brow Cottages and Red Cut Lane at night that the rating level exceeds the baseline background sound level by 8dBA and 6dBA respectively.

Furthermore, it is clear from the wording of Section 11 of BS4142 that the difference between the rating level and the background sound level only provides an indication of the impact and that the context must be considered before any conclusions can be drawn about the magnitude of any impacts.

A context discussion for Sandy Brow Cottages and Red Cut Lane is provided below.

5.4.1.1 Context Discussion

At both receptors during the night-time period, the specific level has been predicted to be in the order of 34dB(A) at a first-floor window, meaning this section is pertinent to both receptors. If considering residents choosing to sleep with windows open during the summer months, a level difference of around 10 – 15 dB would be expected inside the dwelling through a partially open window. A potential specific level of 19 to 24dB(A) inside the receptor may therefore be expected, which in absolute terms may be considered low.

A further analysis is provided in Figure 5-3. In this graph the following can be seen:

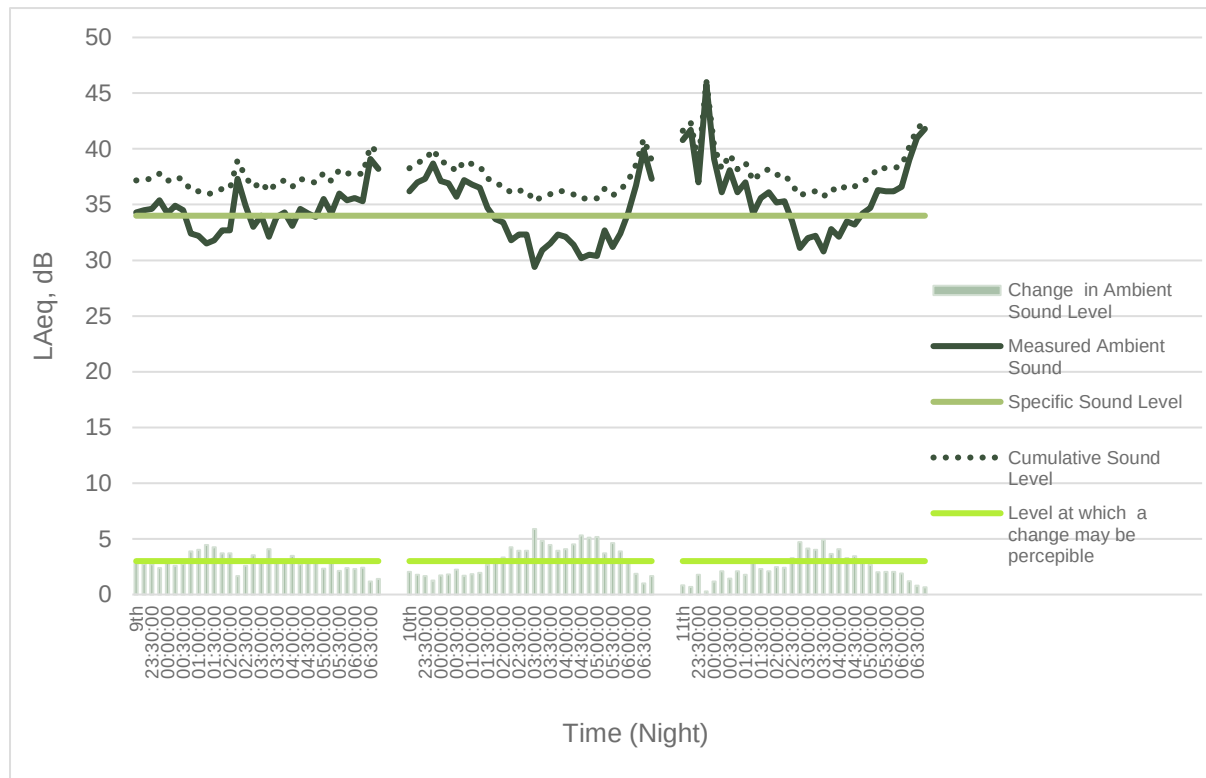
- A comparison between the specific sound level and the measured residual sound level.
- The resultant cumulative ambient sound level.
- The change in the ambient sound level, with a benchmark of 3dB(A) where a change may be perceived.

³ BS 4142:2014+A1:2019 Technical Note. ANC March 2020.

<https://www.association-of-noise-consultants.co.uk/wp-content/uploads/2020/05/ANC-BS-4142-Guide-March-2020.pdf>



Figure 5-3 Comparison of Measured External Residual Sound Level with Predicted Specific Sound Level



It is evident from Figure 5-3 that:

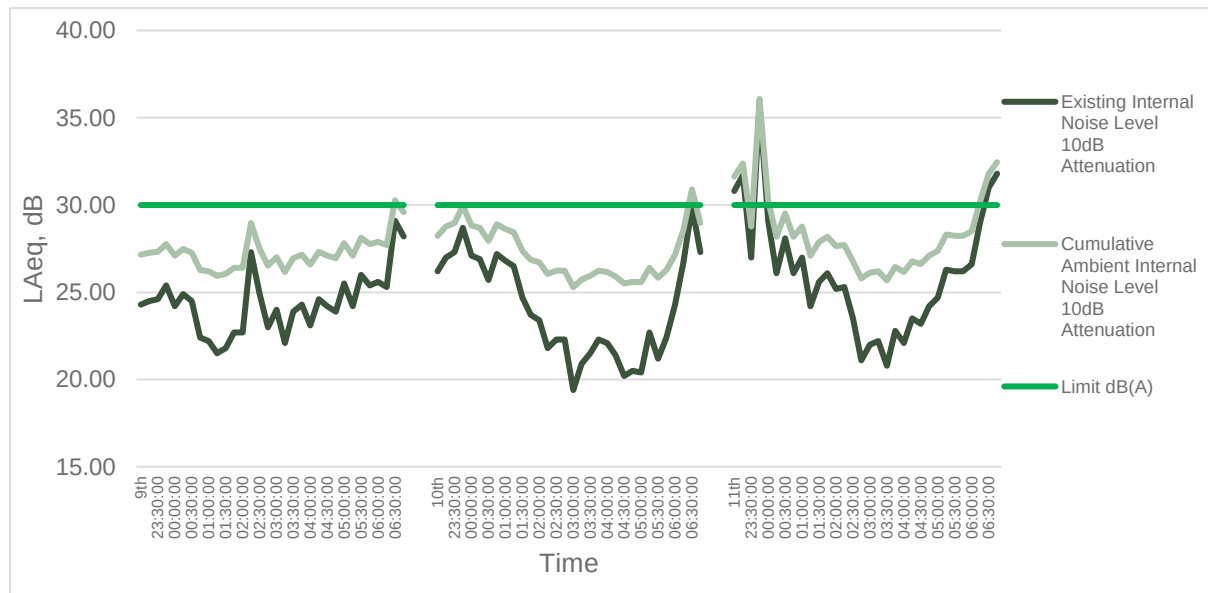
- A comparison between the specific sound level and the measured residual sound level highlights that there are periods of time where the existing ambient level is above the specific sound level. These occur at the start and end of the night-time period.
- Whilst the Site will elevate the total ambient noise level, for much of the time the change in the ambient sound level would be less than 3dBA, and the increase may not be perceptible to residents. Where the increase exceeds 3dBA, this is typically in the early hours when residents would most likely be asleep.

A further analysis is provided in Figure 5-4. In this graph the following can be seen:

- A comparison between the existing internal ambient noise level with an open window, reducing noise levels by 10dB, and the World Health Organisation recommended internal ambient noise level in a bedroom at night of 30dB(A). The 10dB reduction is based on a conservative interpretation of the AVO Guide 2020 Appendix C.
- A comparison between the cumulative internal ambient noise level with an open window, and the recommended internal ambient noise level in a bedroom at night of 30dB(A).



Figure 5-4 Comparison Between the Existing Internal Ambient Noise Level with a Partially Open Window



It is evident from Figure 5-4 that:

- Whilst the cumulative noise level is higher than the existing scenario, the Site would not cause an exceedance of the 30dBA limit.

In summary, whilst the EHO's preference is not met, when context is considered, at the most effected receptors, the background and rating levels are low, the change in the ambient sound level would, for the majority of the time, be imperceptible, and with an open window at night, total cumulative ambient sound level would not exceed the World health Organisation recommend limit of 30dBA.



6.0 Conclusion

This Noise Impact Assessment has presented the following:

- A baseline noise survey and summary report to inform the assessments.
- An assessment to determine the impact of commercial noise from the proposed development upon existing residential receptors. This assessment has been completed with reference to BS4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* (BS4142).

This assessment has shown that:

Predicted noise levels at the following locations and scenarios would comply with the EHOs preference that noise from the Site is 5 dB below the background sound level:

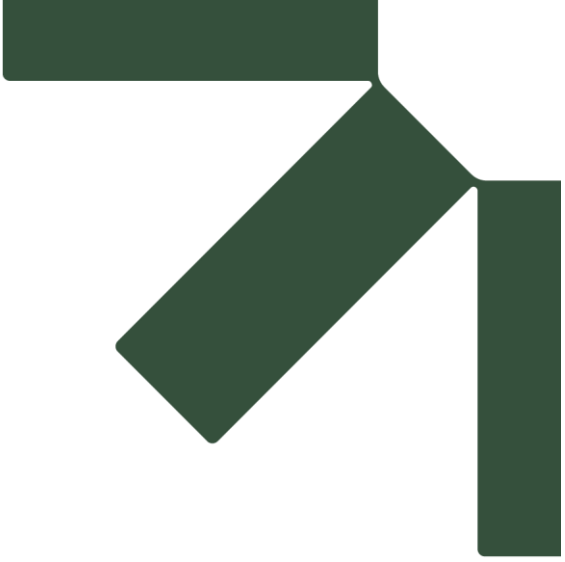
- Coopers Moss Farm Day and night.
- Sandy Lane Farm Bungalow during the day.
- Sandy Brow Cottages during the day.

Not disregarding the EHO's preference, it must also be noted that BS4142 states a difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context. It is only at Sandy Brow Cottages and Red Cut Lane at night that the rating level exceeds the baseline background sound level by 6dBA. However, the background and rating levels are low, the change in the ambient sound level would for most of the time be imperceptible, and with an open window at night, the total cumulative ambient sound level would not exceed the World health Organisation recommend limit of 30dBA.

SLR therefore conclude that noise at the Site should not be a constraint to the proposed use.

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Appendix A Glossary of Terminology

Kirkby

Baseline Noise Survey

Pivoted Power LLP

SLR Project No.: 402.v08525.00024

21 March 2025

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0 dB (the threshold of hearing) to over 120 dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A-1: Sound Levels Commonly Found in the Environment

Sound Level	Location
0 dB(A)	Threshold of hearing
20 to 30 dB(A)	Quiet bedroom at night
30 to 40 dB(A)	Living room during the day
40 to 50 dB(A)	Typical office
50 to 60 dB(A)	Inside a car
60 to 70 dB(A)	Typical high street
70 to 90 dB(A)	Inside factory
100 to 110 dB(A)	Burglar alarm at 1m away
110 to 130 dB(A)	Jet aircraft on take off
140 dB(A)	Threshold of Pain

A.1 Acoustic Terminology

dB (decibel) The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (of 20 μ Pa).

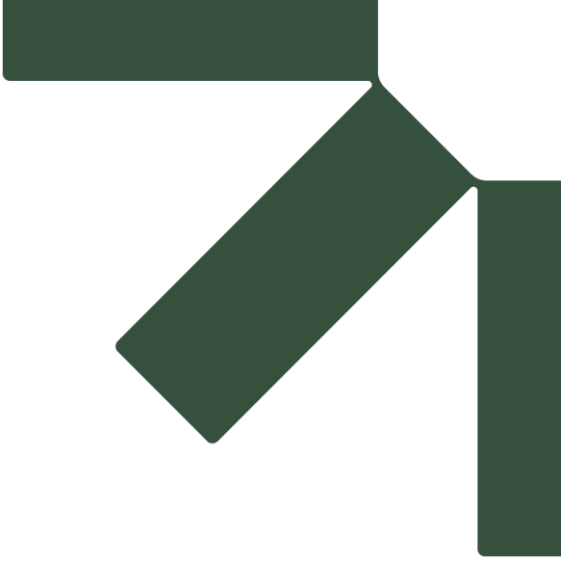
dB(A) A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

$L_{Aeq, T}$ $L_{Aeq, T}$ is defined as the notional steady sound level which, over a stated period T, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.

$L_{A10, T}$ & L_{A90} If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for $n\%$ of the time. Hence L_{A10} is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L_{A90} is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the L_{A10} index to describe road traffic noise.

$L_{Amax(F)}$ $L_{Amax(F)}$ is the maximum A-weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.





Appendix B Weather Data

Kirkby

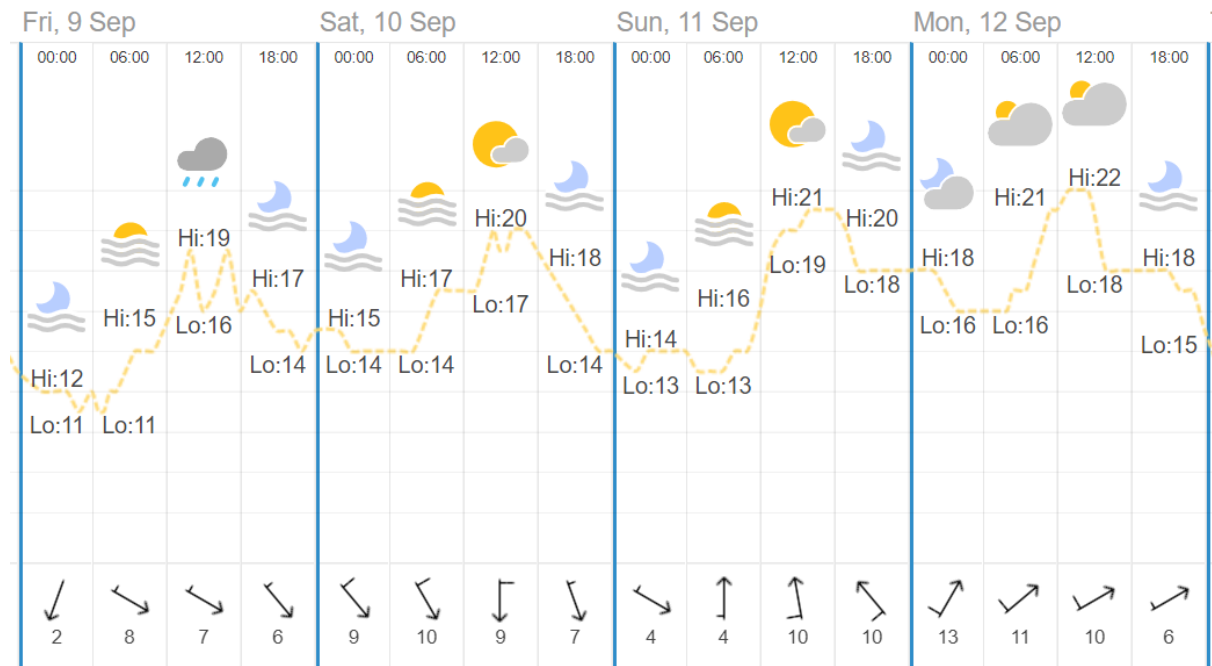
Baseline Noise Survey

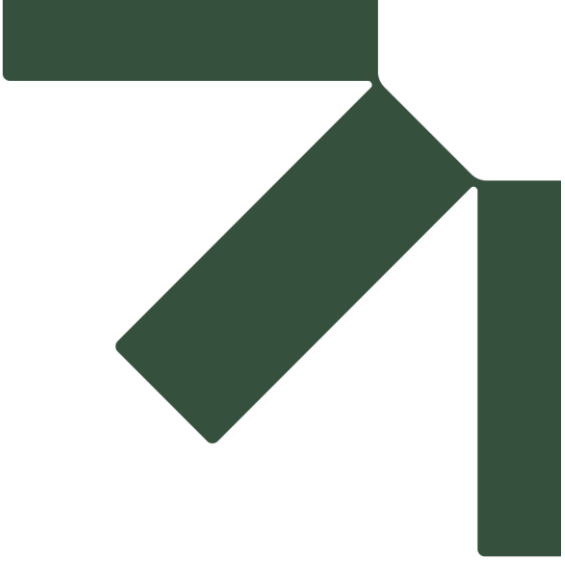
Pivoted Power LLP

SLR Project No.: 402.v08525.00024

21 March 2025

Figure B-1: Weather Data





Appendix C Site Photos

Kirkby

Baseline Noise Survey

Pivoted Power LLP

SLR Project No.: 402.v08525.00024

21 March 2025

Figure C-1: Location 1



Figure C-2: Location 1

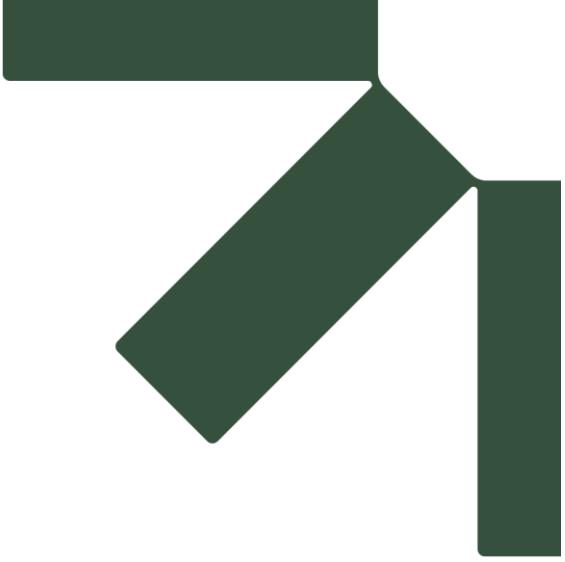


Figure C-3: Location 2



Figure C-4: Location 2





Appendix D Survey Results

Kirkby

Baseline Noise Survey

Pivoted Power LLP

SLR Project No.: 402.v08525.00024

21 March 2025

Table D-1: Location 1 Results (dB)A

Time/Date	LAeq	LAMax	LA10	LA90
09/09/2022 13:00	52.00	76.20	51.70	42.20
09/09/2022 13:15	45.70	55.10	47.70	43.10
09/09/2022 13:30	46.00	59.30	47.80	43.90
09/09/2022 13:45	46.20	58.50	48.40	43.30
09/09/2022 14:00	49.50	67.40	52.10	44.90
09/09/2022 14:15	49.30	61.40	52.30	44.00
09/09/2022 14:30	56.10	78.30	59.60	48.20
09/09/2022 14:45	50.00	58.90	52.40	46.60
09/09/2022 15:00	50.20	63.00	52.50	46.80
09/09/2022 15:15	50.00	60.50	52.30	45.60
09/09/2022 15:30	63.60	82.40	68.70	47.30
09/09/2022 15:45	68.50	91.80	70.90	57.90
09/09/2022 16:00	60.70	84.30	63.30	44.50
09/09/2022 16:15	50.80	63.90	53.00	47.70
09/09/2022 16:30	61.60	77.30	60.30	51.70
09/09/2022 16:45	64.00	77.00	67.90	54.80
09/09/2022 17:00	54.70	65.40	57.30	45.60
09/09/2022 17:15	44.90	63.30	46.40	42.00
09/09/2022 17:30	42.90	60.20	45.10	39.50
09/09/2022 17:45	56.80	66.70	61.60	53.60
09/09/2022 18:00	62.00	64.50	62.80	61.40
09/09/2022 18:15	63.40	77.70	63.50	48.50
09/09/2022 18:30	63.80	79.50	62.50	45.80
09/09/2022 18:45	53.50	60.00	58.50	38.90
09/09/2022 19:00	43.30	56.80	44.90	38.50
09/09/2022 19:15	41.50	54.90	43.70	37.80
09/09/2022 19:30	40.10	53.90	42.70	34.00
09/09/2022 19:45	40.10	50.70	42.50	36.30
09/09/2022 20:00	47.80	67.30	45.30	35.10
09/09/2022 20:15	41.60	63.80	41.60	34.20
09/09/2022 20:30	39.20	53.80	40.90	34.00
09/09/2022 20:45	37.00	51.60	39.10	34.00
09/09/2022 21:00	37.90	47.90	40.10	34.40
09/09/2022 21:15	39.50	52.30	41.00	34.70
09/09/2022 21:30	40.30	58.20	41.00	34.60



Time/Date	LAeq	LAMax	LA10	LA90
09/09/2022 21:45	37.30	52.20	39.10	34.20
09/09/2022 22:00	37.90	52.80	39.80	33.90
09/09/2022 22:15	36.60	46.80	38.20	34.50
09/09/2022 22:30	37.80	51.20	39.50	35.20
09/09/2022 22:45	40.10	55.40	42.70	34.40
09/09/2022 23:00	36.20	57.10	37.30	34.00
09/09/2022 23:15	36.90	51.50	38.50	32.50
09/09/2022 23:30	35.80	58.40	37.40	32.80
09/09/2022 23:45	35.90	57.90	36.80	33.50
10/09/2022 00:00	36.10	50.70	37.60	33.60
10/09/2022 00:15	35.80	50.10	37.70	33.00
10/09/2022 00:30	36.20	47.90	39.00	32.60
10/09/2022 00:45	34.10	41.90	36.10	31.80
10/09/2022 01:00	34.20	51.80	35.30	30.80
10/09/2022 01:15	33.40	46.90	35.40	30.10
10/09/2022 01:30	32.70	47.20	33.60	30.30
10/09/2022 01:45	33.10	44.70	34.60	31.20
10/09/2022 02:00	33.70	45.70	35.50	31.70
10/09/2022 02:15	33.80	43.30	35.20	31.70
10/09/2022 02:30	37.50	55.30	37.40	31.60
10/09/2022 02:45	35.30	48.10	37.90	31.40
10/09/2022 03:00	33.70	45.40	35.80	31.20
10/09/2022 03:15	33.50	48.40	35.40	30.60
10/09/2022 03:30	33.30	40.90	35.10	31.40
10/09/2022 03:45	35.00	49.80	37.40	30.90
10/09/2022 04:00	34.50	50.90	37.00	30.90
10/09/2022 04:15	34.90	49.50	37.50	31.30
10/09/2022 04:30	36.00	49.50	38.70	31.60
10/09/2022 04:45	34.00	46.20	35.80	30.90
10/09/2022 05:00	34.30	51.00	37.20	30.80
10/09/2022 05:15	35.70	50.70	37.80	32.80
10/09/2022 05:30	36.60	54.10	38.50	33.80
10/09/2022 05:45	37.40	48.90	39.40	35.00
10/09/2022 06:00	37.80	59.00	39.20	34.80
10/09/2022 06:15	37.90	50.60	40.10	34.70
10/09/2022 06:30	36.80	57.90	38.50	34.30



Time/Date	LAeq	LAMax	LA10	LA90
10/09/2022 06:45	41.60	62.90	41.80	35.60
10/09/2022 07:00	45.20	67.90	43.40	36.00
10/09/2022 07:15	43.20	61.00	45.80	35.90
10/09/2022 07:30	59.40	67.20	62.00	36.20
10/09/2022 07:45	60.20	62.90	61.20	59.30
10/09/2022 08:00	62.50	79.10	61.60	55.30
10/09/2022 08:15	57.60	73.10	58.20	52.50
10/09/2022 08:30	51.80	64.40	56.20	44.20
10/09/2022 08:45	53.40	62.30	56.00	48.70
10/09/2022 09:00	62.40	90.80	54.50	47.20
10/09/2022 09:15	45.70	63.70	50.70	37.60
10/09/2022 09:30	49.50	67.10	51.60	41.20
10/09/2022 09:45	50.10	67.30	52.30	46.50
10/09/2022 10:00	48.40	60.00	52.70	39.70
10/09/2022 10:15	57.90	70.00	59.50	42.50
10/09/2022 10:30	58.60	68.00	59.50	57.90
10/09/2022 10:45	57.80	69.30	59.10	42.10
10/09/2022 11:00	55.60	69.80	58.40	37.60
10/09/2022 11:15	56.60	66.70	58.90	52.80
10/09/2022 11:30	55.30	68.50	57.40	51.30
10/09/2022 11:45	55.50	65.00	58.10	51.00
10/09/2022 12:00	54.20	62.80	57.70	45.90
10/09/2022 12:15	46.60	52.70	48.50	44.00
10/09/2022 12:30	52.00	61.60	55.50	46.10
10/09/2022 12:45	53.60	67.60	55.40	48.40
10/09/2022 13:00	62.10	77.90	60.30	57.60
10/09/2022 13:15	50.00	62.50	54.60	35.90
10/09/2022 13:30	44.00	67.80	43.80	36.00
10/09/2022 13:45	42.30	66.50	43.80	32.30
10/09/2022 14:00	34.30	59.60	35.70	31.10
10/09/2022 14:15	35.60	53.30	38.40	31.60
10/09/2022 14:30	38.50	59.80	40.90	34.30
10/09/2022 14:45	40.00	50.30	42.20	36.20
10/09/2022 15:00	52.60	86.90	45.30	37.70
10/09/2022 15:15	40.10	50.80	42.60	36.00
10/09/2022 15:30	37.80	53.00	41.00	32.70



Time/Date	LAeq	LAMax	LA10	LA90
10/09/2022 15:45	44.40	58.40	48.70	33.80
10/09/2022 16:00	40.30	65.90	40.10	34.20
10/09/2022 16:15	38.80	61.00	39.80	31.30
10/09/2022 16:30	36.40	50.80	38.80	32.10
10/09/2022 16:45	39.10	58.50	40.90	31.70
10/09/2022 17:00	34.50	47.80	37.10	30.80
10/09/2022 17:15	32.70	53.30	34.50	29.50
10/09/2022 17:30	39.80	57.70	39.40	30.00
10/09/2022 17:45	37.80	51.20	41.00	31.30
10/09/2022 18:00	36.70	62.10	39.00	29.60
10/09/2022 18:15	58.50	90.90	39.00	30.30
10/09/2022 18:30	39.30	56.50	41.90	31.70
10/09/2022 18:45	35.40	46.60	38.20	31.70
10/09/2022 19:00	41.00	54.40	43.20	37.10
10/09/2022 19:15	42.50	69.90	43.70	36.70
10/09/2022 19:30	40.80	55.00	43.10	36.50
10/09/2022 19:45	39.70	56.40	41.30	35.80
10/09/2022 20:00	39.50	50.00	42.10	34.50
10/09/2022 20:15	42.90	57.80	46.50	37.30
10/09/2022 20:30	41.10	53.20	42.60	37.10
10/09/2022 20:45	38.60	49.80	41.10	35.20
10/09/2022 21:00	45.40	68.50	44.40	35.60
10/09/2022 21:15	40.20	47.40	42.70	35.90
10/09/2022 21:30	42.60	59.30	44.70	37.30
10/09/2022 21:45	42.10	52.90	44.40	38.60
10/09/2022 22:00	44.10	64.00	46.70	39.70
10/09/2022 22:15	43.80	65.90	45.40	39.90
10/09/2022 22:30	44.00	52.50	46.50	39.90
10/09/2022 22:45	44.50	52.50	46.70	40.90
10/09/2022 23:00	43.50	56.20	45.80	39.50
10/09/2022 23:15	44.40	56.50	46.80	40.60
10/09/2022 23:30	44.40	52.10	46.90	40.60
10/09/2022 23:45	43.50	52.80	45.80	40.00
11/09/2022 00:00	44.50	51.60	47.20	40.90
11/09/2022 00:15	43.80	52.50	46.40	40.10
11/09/2022 00:30	42.60	55.80	45.00	38.60



Time/Date	LAeq	LAMax	LA10	LA90
11/09/2022 00:45	42.60	51.00	45.60	37.60
11/09/2022 01:00	42.90	53.80	46.70	35.80
11/09/2022 01:15	42.50	54.50	45.30	36.90
11/09/2022 01:30	41.90	53.60	44.90	34.70
11/09/2022 01:45	41.40	52.20	44.40	35.60
11/09/2022 02:00	39.80	53.00	43.30	32.10
11/09/2022 02:15	41.20	63.70	44.40	33.10
11/09/2022 02:30	38.10	48.80	41.60	31.10
11/09/2022 02:45	40.50	55.90	43.80	33.40
11/09/2022 03:00	39.80	50.60	43.50	31.40
11/09/2022 03:15	36.60	49.00	40.60	28.90
11/09/2022 03:30	39.60	51.40	42.40	34.30
11/09/2022 03:45	40.10	53.30	43.30	31.20
11/09/2022 04:00	40.40	51.00	43.80	33.60
11/09/2022 04:15	40.10	53.40	43.20	34.30
11/09/2022 04:30	40.00	50.50	42.90	35.00
11/09/2022 04:45	41.40	51.50	44.60	35.10
11/09/2022 05:00	40.00	52.00	43.20	33.80
11/09/2022 05:15	41.00	50.60	44.30	34.80
11/09/2022 05:30	42.60	52.00	44.90	39.00
11/09/2022 05:45	43.00	52.30	45.10	40.30
11/09/2022 06:00	42.90	55.80	45.40	39.00
11/09/2022 06:15	46.60	68.80	47.80	40.30
11/09/2022 06:30	46.60	70.30	47.80	39.40
11/09/2022 06:45	45.90	66.20	48.20	42.00
11/09/2022 07:00	45.10	55.40	47.80	41.10
11/09/2022 07:15	45.50	62.00	48.40	41.40
11/09/2022 07:30	48.10	70.30	48.60	43.00
11/09/2022 07:45	47.30	67.90	48.60	42.30
11/09/2022 08:00	45.40	56.00	47.90	41.60
11/09/2022 08:15	45.40	57.90	47.70	41.40
11/09/2022 08:30	52.80	82.90	48.20	41.70
11/09/2022 08:45	43.70	51.50	46.00	40.50
11/09/2022 09:00	43.50	61.00	45.80	40.00
11/09/2022 09:15	43.30	62.50	45.20	40.10
11/09/2022 09:30	44.00	57.40	46.70	39.30



Time/Date	LAeq	LAMax	LA10	LA90
11/09/2022 09:45	44.10	56.20	46.00	41.40
11/09/2022 10:00	45.00	56.80	47.10	41.20
11/09/2022 10:15	44.30	63.40	46.10	41.10
11/09/2022 10:30	44.50	53.80	46.50	41.80
11/09/2022 10:45	45.00	58.00	47.00	42.20
11/09/2022 11:00	44.80	61.00	46.40	41.60
11/09/2022 11:15	45.20	66.10	47.00	42.00
11/09/2022 11:30	45.60	60.50	47.70	42.30
11/09/2022 11:45	45.60	56.90	47.70	42.50
11/09/2022 12:00	48.50	64.30	51.20	43.50
11/09/2022 12:15	46.10	55.80	47.90	43.90
11/09/2022 12:30	45.90	55.70	47.60	43.60
11/09/2022 12:45	47.20	65.60	48.70	44.00
11/09/2022 13:00	46.30	58.70	48.40	43.60
11/09/2022 13:15	46.30	58.00	48.20	42.90
11/09/2022 13:30	46.10	55.10	48.10	43.00
11/09/2022 13:45	45.90	59.60	47.70	42.80
11/09/2022 14:00	47.30	60.60	49.20	44.20
11/09/2022 14:15	46.60	60.50	48.50	43.90
11/09/2022 14:30	45.80	60.30	47.60	43.40
11/09/2022 14:45	46.00	57.80	47.90	43.40
11/09/2022 15:00	46.20	57.50	48.20	43.40
11/09/2022 15:15	46.50	60.20	48.50	43.00
11/09/2022 15:30	46.00	62.50	47.90	43.20
11/09/2022 15:45	46.40	73.70	48.10	43.00
11/09/2022 16:00	46.80	64.30	48.60	43.90
11/09/2022 16:15	47.00	64.90	49.00	43.50
11/09/2022 16:30	47.00	62.80	48.80	44.20
11/09/2022 16:45	46.50	64.00	48.10	44.00
11/09/2022 17:00	47.00	57.80	49.00	43.90
11/09/2022 17:15	46.80	64.50	48.70	44.20
11/09/2022 17:30	46.90	62.60	48.90	44.30
11/09/2022 17:45	46.60	54.80	48.40	44.70
11/09/2022 18:00	46.10	52.90	48.10	43.20
11/09/2022 18:15	46.50	52.30	48.40	44.00
11/09/2022 18:30	46.70	54.70	49.00	44.10



Time/Date	LAeq	LAMax	LA10	LA90
11/09/2022 18:45	47.30	56.20	48.90	45.40
11/09/2022 19:00	46.00	53.80	48.20	42.40
11/09/2022 19:15	46.60	60.70	48.30	44.30
11/09/2022 19:30	46.10	55.10	48.20	43.20
11/09/2022 19:45	49.60	71.30	49.00	43.90
11/09/2022 20:00	45.80	55.60	47.30	43.90
11/09/2022 20:15	46.20	65.80	48.10	42.90
11/09/2022 20:30	46.80	57.00	48.50	44.40
11/09/2022 20:45	44.80	53.10	46.70	42.60
11/09/2022 21:00	46.20	53.90	48.00	43.40
11/09/2022 21:15	45.30	55.50	47.30	42.50
11/09/2022 21:30	44.80	57.60	47.20	41.30
11/09/2022 21:45	46.30	66.10	48.30	40.30
11/09/2022 22:00	44.00	56.10	45.70	40.50
11/09/2022 22:15	43.90	52.30	46.40	39.70
11/09/2022 22:30	43.30	51.50	45.30	40.70
11/09/2022 22:45	44.30	62.00	46.50	41.10
11/09/2022 23:00	44.00	54.40	46.00	41.10
11/09/2022 23:15	41.90	51.90	44.50	37.90
11/09/2022 23:30	43.50	58.60	45.30	38.50
11/09/2022 23:45	42.50	52.60	45.20	38.70
12/09/2022 00:00	42.40	52.40	44.90	38.60
12/09/2022 00:15	42.10	50.60	44.70	38.60
12/09/2022 00:30	42.20	53.40	44.90	37.80
12/09/2022 00:45	41.10	54.30	43.90	37.30
12/09/2022 01:00	39.90	51.00	42.20	36.90
12/09/2022 01:15	40.10	50.50	42.50	37.00
12/09/2022 01:30	41.20	51.40	44.00	37.10
12/09/2022 01:45	40.50	51.00	43.90	35.40
12/09/2022 02:00	39.50	47.60	41.90	36.70
12/09/2022 02:15	40.10	54.00	42.90	36.40
12/09/2022 02:30	40.60	52.30	43.40	36.50
12/09/2022 02:45	40.30	50.60	43.30	36.10
12/09/2022 03:00	40.90	53.90	43.80	36.80
12/09/2022 03:15	41.00	51.40	44.20	36.10
12/09/2022 03:30	42.10	53.30	44.70	38.40



Time/Date	LAeq	LAMax	LA10	LA90
12/09/2022 03:45	40.70	55.50	42.80	37.80
12/09/2022 04:00	42.00	51.30	44.60	38.80
12/09/2022 04:15	43.50	58.80	45.70	39.50
12/09/2022 04:30	42.70	53.40	45.30	38.80
12/09/2022 04:45	43.70	54.40	46.20	40.50
12/09/2022 05:00	44.10	51.10	46.20	41.50
12/09/2022 05:15	44.50	50.50	46.40	42.10
12/09/2022 05:30	45.90	51.60	47.40	44.00
12/09/2022 05:45	46.90	52.50	48.70	44.80
12/09/2022 06:00	46.60	51.60	48.40	44.40
12/09/2022 06:15	47.70	58.00	49.40	45.50
12/09/2022 06:30	49.40	58.20	50.80	48.10
12/09/2022 06:45	55.90	72.60	54.20	50.30
12/09/2022 07:00	51.10	64.00	52.10	50.00
12/09/2022 07:15	52.40	61.10	53.60	51.10
12/09/2022 07:30	52.50	56.30	53.90	51.20
12/09/2022 07:45	62.70	76.10	64.10	51.70
12/09/2022 08:00	55.30	59.60	57.00	53.10
12/09/2022 08:15	54.40	64.20	56.10	51.50
12/09/2022 08:30	55.10	78.00	55.50	52.00
12/09/2022 08:45	53.00	73.80	54.50	51.00
12/09/2022 09:00	53.10	63.40	54.90	49.80
12/09/2022 09:15	53.80	76.00	54.20	49.50
12/09/2022 09:30	53.60	58.40	56.00	50.20
12/09/2022 09:45	54.50	65.90	56.20	51.90
12/09/2022 10:00	52.00	57.30	54.90	46.80
12/09/2022 10:15	49.00	77.10	49.70	45.60
12/09/2022 10:30	47.70	60.50	49.00	45.40
12/09/2022 10:45	50.00	56.30	52.30	46.40
12/09/2022 11:00	52.90	57.50	55.30	49.30
12/09/2022 11:15	51.90	65.90	54.80	47.80
12/09/2022 11:30	50.90	58.90	53.60	46.70
12/09/2022 11:45	51.70	65.00	54.80	47.10
12/09/2022 12:00	51.20	61.50	54.10	46.70
12/09/2022 12:15	49.70	56.70	52.30	46.70
12/09/2022 12:30	50.00	57.00	52.50	47.00



Time/Date	LAeq	LAMax	LA10	LA90
12/09/2022 12:45	48.20	61.90	51.30	44.00

Table D-2: Location 2 Results (dB)A

Time	LAeq	LA10	LA90	LAFMax
09/09/2022 12:30	48.5	44.9	37.8	77.2
09/09/2022 12:45	40.7	42.5	38.2	50.9
09/09/2022 13:00	43.4	45.8	39.7	54.4
09/09/2022 13:15	43	44.7	40.8	51.4
09/09/2022 13:30	43.4	45.1	40.2	60.5
09/09/2022 13:45	45.6	47.9	40.7	66
09/09/2022 14:00	42.6	44.5	39.9	51.3
09/09/2022 14:15	44.7	46.7	41	60.4
09/09/2022 14:30	43.4	45.6	40.2	54.6
09/09/2022 14:45	42	43.8	39.7	51
09/09/2022 15:00	43.7	45.4	40.7	56.1
09/09/2022 15:15	43.2	44.9	40.8	55.5
09/09/2022 15:30	46.9	46.8	40.3	63.7
09/09/2022 15:45	43.7	46	39.7	58.3
09/09/2022 16:00	42.2	44.2	39.5	51.8
09/09/2022 16:15	42.7	45.2	38.7	54.9
09/09/2022 16:30	41.7	43.8	38.8	51
09/09/2022 16:45	41	43.2	37.9	50.8
09/09/2022 17:00	42.3	44.8	37.7	58.1
09/09/2022 17:15	40.2	42.2	36.5	54.6
09/09/2022 17:30	42.1	45.2	35.7	56.2
09/09/2022 17:45	40.7	42.4	38.1	52.2
09/09/2022 18:00	40.4	42.6	37.2	47.8
09/09/2022 18:15	39.5	42	35.2	53.1
09/09/2022 18:30	39.8	42.6	32.4	57.2
09/09/2022 18:45	40	41.2	30.8	56
09/09/2022 19:00	36	38.7	31.6	49.8
09/09/2022 19:15	36.9	39	31.8	52.9
09/09/2022 19:30	34.6	36.5	32	46.2
09/09/2022 19:45	37.2	39.8	32.7	50.8
09/09/2022 20:00	45.1	42.3	32.9	65.3
09/09/2022 20:15	41.4	41.7	32.4	72.6



Time	LAeq	LA10	LA90	LAFMax
09/09/2022 20:30	36.7	39	32.8	54.8
09/09/2022 20:45	36	38.3	32.5	51.4
09/09/2022 21:00	39.8	42.9	33.4	54
09/09/2022 21:15	37.2	39.5	33.4	51.5
09/09/2022 21:30	40.6	40.8	33.4	57.7
09/09/2022 21:45	37.2	38.7	32.7	52.1
09/09/2022 22:00	35.5	36.9	32.5	50.3
09/09/2022 22:15	36	38.1	33.1	44.1
09/09/2022 22:30	37.2	39.9	33.2	47
09/09/2022 22:45	40	40.3	32.8	57.2
09/09/2022 23:00	34.3	35.8	32	45.6
09/09/2022 23:15	34.5	36.6	32	46.4
09/09/2022 23:30	34.6	36	32.6	43.4
09/09/2022 23:45	35.4	36.2	32.2	51.2
10/09/2022 00:00	34.2	36	31.6	44.7
10/09/2022 00:15	34.9	37.4	31.4	49.8
10/09/2022 00:30	34.5	36.4	31.7	46.8
10/09/2022 00:45	32.4	33.9	30.6	39.3
10/09/2022 01:00	32.2	34.6	29.3	40.6
10/09/2022 01:15	31.5	32.7	29.8	44.8
10/09/2022 01:30	31.8	33.1	30.2	44.2
10/09/2022 01:45	32.7	34	30.7	45.9
10/09/2022 02:00	32.7	34.2	30.8	42.1
10/09/2022 02:15	37.3	36.6	30.9	53.5
10/09/2022 02:30	34.9	37.3	31.3	47.1
10/09/2022 02:45	33	34.5	30.4	47.6
10/09/2022 03:00	34	36.1	30.5	49.8
10/09/2022 03:15	32.1	34.2	29.9	42.6
10/09/2022 03:30	33.9	36.1	30.6	47.6
10/09/2022 03:45	34.3	37.1	30	54.1
10/09/2022 04:00	33.1	35.4	30.5	43.8
10/09/2022 04:15	34.6	37.3	30.6	45.7
10/09/2022 04:30	34.2	37	30.8	46.5
10/09/2022 04:45	33.9	36.3	30.2	49.9
10/09/2022 05:00	35.5	36.8	31.9	53.2
10/09/2022 05:15	34.2	35.7	32.1	45.2



Time	LAeq	LA10	LA90	LAFMax
10/09/2022 05:30	36	38.2	33.1	47.3
10/09/2022 05:45	35.4	37	33.2	43.5
10/09/2022 06:00	35.6	37.6	32.7	56
10/09/2022 06:15	35.3	37.1	32.8	51.5
10/09/2022 06:30	39.1	41.3	33.8	52.8
10/09/2022 06:45	38.2	40.2	34.3	54
10/09/2022 07:00	43.7	45.8	34.2	59.3
10/09/2022 07:15	39.3	41.3	34.6	55.7
10/09/2022 07:30	37.4	39.1	35.4	48.1
10/09/2022 07:45	38	39.6	35.2	52
10/09/2022 08:00	39.3	41.5	36.5	51.1
10/09/2022 08:15	38.1	40.4	35.2	51.3
10/09/2022 08:30	41.2	44.2	35.4	56.7
10/09/2022 08:45	41.9	40.1	34.2	59
10/09/2022 09:00	37	38.9	32.8	55.8
10/09/2022 09:15	46.3	46.1	33.1	65.3
10/09/2022 09:30	38.7	41.3	34.8	54.2
10/09/2022 09:45	41.6	44.2	32.2	58.8
10/09/2022 10:00	36.4	39.6	31.8	48.2
10/09/2022 10:15	42	42.5	31.7	62.2
10/09/2022 10:30	37.6	40.6	32	56.3
10/09/2022 10:45	37.3	40.3	31.3	49.1
10/09/2022 11:00	40.1	43.4	34.2	54.1
10/09/2022 11:15	40.8	42.8	34.4	61.3
10/09/2022 11:30	39	41.8	34.4	53.8
10/09/2022 11:45	41.7	42.9	33.5	60.8
10/09/2022 12:00	36.2	39.2	30.7	55.1
10/09/2022 12:15	37.6	40.5	31.8	52.6
10/09/2022 12:30	37.8	39.6	30.2	55.3
10/09/2022 12:45	37.5	40.8	30.5	51.4
10/09/2022 13:00	39.2	41.5	28.7	56.1
10/09/2022 13:15	38.1	40.9	28.5	55.6
10/09/2022 13:30	35.8	39.4	28.5	52
10/09/2022 13:45	33.8	36	28.1	48.7
10/09/2022 14:00	32.7	34.7	26.9	51.2
10/09/2022 14:15	31.2	32.6	26.6	55.4



Time	LAeq	LA10	LA90	LAFMax
10/09/2022 14:30	36.3	39.2	29.8	49.4
10/09/2022 14:45	34	36.3	29.3	45
10/09/2022 15:00	32.3	35.2	27.8	44
10/09/2022 15:15	35.6	37.8	28.4	52.3
10/09/2022 15:30	45	48.3	29.1	62.1
10/09/2022 15:45	41.9	44.8	33.6	61.2
10/09/2022 16:00	36.1	38.9	30.8	49.1
10/09/2022 16:15	37.5	41.3	27.7	52.8
10/09/2022 16:30	40.5	41.9	31.9	58.6
10/09/2022 16:45	34.3	37.8	28.4	49.4
10/09/2022 17:00	30.2	31.9	25.6	56
10/09/2022 17:15	34.1	37.2	26.3	49.5
10/09/2022 17:30	36.8	36.4	27.4	54.7
10/09/2022 17:45	36.8	38.9	26.5	58.9
10/09/2022 18:00	33.6	34.6	27.5	54.1
10/09/2022 18:15	38.5	41.8	24.8	58.5
10/09/2022 18:30	30.9	33.5	26.2	46.1
10/09/2022 18:45	31.6	34.4	27.4	44.6
10/09/2022 19:00	32.4	34.4	27.8	51.2
10/09/2022 19:15	33.1	34.6	29	49.7
10/09/2022 19:30	35	37.3	29	56.9
10/09/2022 19:45	34.9	38.2	28.3	52.3
10/09/2022 20:00	38.3	40.6	28.9	53.2
10/09/2022 20:15	39.4	42.5	29.5	53.4
10/09/2022 20:30	33.1	35.3	28.4	48.2
10/09/2022 20:45	37.8	42.1	28.3	55.6
10/09/2022 21:00	32.3	34.1	29.7	38.2
10/09/2022 21:15	35.5	38.7	30.9	48.1
10/09/2022 21:30	36.5	38.7	32.3	50.3
10/09/2022 21:45	36.8	39.4	32.6	44.3
10/09/2022 22:00	36.3	37.9	32.8	54.1
10/09/2022 22:15	37	39.3	33.9	47.2
10/09/2022 22:30	37.5	39.8	33.9	48.3
10/09/2022 22:45	36.5	38.8	33	46.7
10/09/2022 23:00	36.2	38.6	32.4	44.2
10/09/2022 23:15	37	39.2	33.8	46



Time	LAeq	LA10	LA90	LAFMax
10/09/2022 23:30	37.3	39.6	34.1	45.5
10/09/2022 23:45	38.7	40.8	34.4	49.4
11/09/2022 00:00	37.1	39.7	33.2	47.5
11/09/2022 00:15	36.9	39.5	31.7	46.7
11/09/2022 00:30	35.7	38.4	29.9	47.9
11/09/2022 00:45	37.2	40.3	29.8	47
11/09/2022 01:00	36.8	39.4	32.1	50.2
11/09/2022 01:15	36.5	39	32	46.8
11/09/2022 01:30	34.7	38	27.5	47.3
11/09/2022 01:45	33.7	36.2	28.3	48.2
11/09/2022 02:00	33.4	36.2	28.2	44.9
11/09/2022 02:15	31.8	34.2	27.7	45.9
11/09/2022 02:30	32.3	35.1	27.2	45.3
11/09/2022 02:45	32.3	35	28.2	45.7
11/09/2022 03:00	29.4	32.2	24.7	45.5
11/09/2022 03:15	30.9	33.8	25.3	45
11/09/2022 03:30	31.5	34.6	24.6	45
11/09/2022 03:45	32.3	35.5	25	43.2
11/09/2022 04:00	32.1	35.5	25.3	46.4
11/09/2022 04:15	31.4	34.5	26.7	42.3
11/09/2022 04:30	30.2	32.3	27	43.4
11/09/2022 04:45	30.5	33.1	26.4	45.7
11/09/2022 05:00	30.4	32.7	26.2	44.1
11/09/2022 05:15	32.7	35.2	28.1	43.9
11/09/2022 05:30	31.2	33.4	28.6	44.3
11/09/2022 05:45	32.4	34.8	28.9	40.9
11/09/2022 06:00	34.3	37.3	29.1	46.4
11/09/2022 06:15	36.7	38.4	31.9	56.4
11/09/2022 06:30	39.9	40.4	33.8	69.6
11/09/2022 06:45	37.3	39.1	33.4	58
11/09/2022 07:00	37.6	38.9	32.6	57.3
11/09/2022 07:15	39.2	40.9	33.8	52.6
11/09/2022 07:30	37.1	39.5	33.5	52.2
11/09/2022 07:45	40.3	42.5	32.9	53.8
11/09/2022 08:00	36.4	38.7	31.6	53.6
11/09/2022 08:15	34.9	36.9	31.3	45



Time	LAeq	LA10	LA90	LAFMax
11/09/2022 08:30	33.8	35.5	31.5	45.4
11/09/2022 08:45	34.9	36.5	30.6	52.8
11/09/2022 09:00	32.8	34.6	29.6	52.8
11/09/2022 09:15	34.5	36.6	30.2	59.1
11/09/2022 09:30	35	36.4	29.6	52.7
11/09/2022 09:45	41.4	43.7	31.7	57.8
11/09/2022 10:00	33.4	35.4	30.6	44.2
11/09/2022 10:15	35.1	36.4	30.9	50.7
11/09/2022 10:30	34.1	36.9	30.8	45.1
11/09/2022 10:45	36	38.5	30.7	51.6
11/09/2022 11:00	38	38.8	31.3	56.6
11/09/2022 11:15	37.7	41	32.1	51.6
11/09/2022 11:30	35.6	37.9	32.8	47
11/09/2022 11:45	42.1	43.9	33	61.5
11/09/2022 12:00	36.7	39.9	32.7	47.5
11/09/2022 12:15	37.3	39.7	32.3	51.4
11/09/2022 12:30	38.3	40.8	32.8	54.1
11/09/2022 12:45	36.4	39.5	32.4	49.2
11/09/2022 13:00	36.6	36.7	32.2	54.9
11/09/2022 13:15	36.2	37.9	32.6	51.3
11/09/2022 13:30	39.7	42.2	34.2	57.3
11/09/2022 13:45	41.7	44.3	33.5	60.7
11/09/2022 14:00	39.5	42	34.8	53.5
11/09/2022 14:15	37.7	39.8	34.2	51.8
11/09/2022 14:30	39.7	42.4	35.1	53.3
11/09/2022 14:45	37.6	39.3	33.5	52.5
11/09/2022 15:00	38.1	40.2	34.3	48.7
11/09/2022 15:15	37.7	39.8	33.8	53.4
11/09/2022 15:30	38.1	40.2	33.9	53.1
11/09/2022 15:45	39.5	40.1	33.3	57.1
11/09/2022 16:00	40	42	35.1	59.8
11/09/2022 16:15	37.6	39.5	34.2	50.9
11/09/2022 16:30	37.5	39.6	34	50.9
11/09/2022 16:45	37.8	39.9	32.8	51.8
11/09/2022 17:00	39	41.2	34.9	52.5
11/09/2022 17:15	39.6	40.3	35	57.3



Time	LAeq	LA10	LA90	LAFMax
11/09/2022 17:30	41	42.6	36.1	64.7
11/09/2022 17:45	37.8	39.7	35.1	48.4
11/09/2022 18:00	39.5	41.4	36.3	57
11/09/2022 18:15	39.5	41.1	36.8	52.1
11/09/2022 18:30	42.3	44.2	38.9	58.1
11/09/2022 18:45	39.9	41.9	36.7	55.1
11/09/2022 19:00	46.7	44.3	36.4	71.9
11/09/2022 19:15	41.8	44.5	36.6	55.9
11/09/2022 19:30	39.8	41.7	36.9	53.3
11/09/2022 19:45	48.8	47	39.4	69.7
11/09/2022 20:00	40.3	42.3	37.2	58.2
11/09/2022 20:15	46.6	49.5	39.8	67.2
11/09/2022 20:30	44.5	47.5	37.6	63.1
11/09/2022 20:45	51.2	54.2	42.7	70
11/09/2022 21:00	48.7	51.2	39.7	68.4
11/09/2022 21:15	47.5	49.5	38.1	73
11/09/2022 21:30	48	50.4	35.4	70.9
11/09/2022 21:45	41.9	42.8	35.2	62.1
11/09/2022 22:00	38.8	41	33.8	60.9
11/09/2022 22:15	41	43	36.3	63.8
11/09/2022 22:30	48.5	49.7	40.9	72.3
11/09/2022 22:45	44	45.5	39.4	68.3
11/09/2022 23:00	40.8	42.7	35.1	62.5
11/09/2022 23:15	41.7	40.2	32.8	60.3
11/09/2022 23:30	37	38.6	33.4	58.6
11/09/2022 23:45	45.8	49.1	35.4	68
12/09/2022 00:00	39.1	41.3	33.5	58.2
12/09/2022 00:15	36.1	37.8	32.2	56.4
12/09/2022 00:30	38.1	39.6	31.3	61.8
12/09/2022 00:45	36.1	37.9	31.7	55.7
12/09/2022 01:00	37	39.6	32.6	54.7
12/09/2022 01:15	34.2	35.9	31.4	52.3
12/09/2022 01:30	35.6	37.8	30.3	53
12/09/2022 01:45	36.1	38.3	31.1	58.3
12/09/2022 02:00	35.2	37	30.6	53.2
12/09/2022 02:15	35.3	37	29.4	54.4

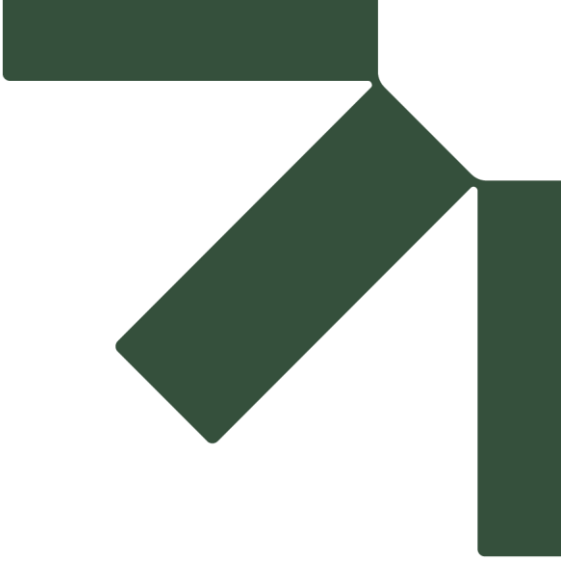


Time	LAeq	LA10	LA90	LAFMax
12/09/2022 02:30	33.5	35.1	28.7	50.5
12/09/2022 02:45	31.1	32.4	28.7	44.6
12/09/2022 03:00	32	34	29.1	42.1
12/09/2022 03:15	32.2	33.8	29.6	45.1
12/09/2022 03:30	30.8	32.2	28.9	37
12/09/2022 03:45	32.8	35	29.8	43.9
12/09/2022 04:00	32.1	34	29.9	40.5
12/09/2022 04:15	33.5	34.6	31.2	48.7
12/09/2022 04:30	33.2	34.4	31.4	40.1
12/09/2022 04:45	34.2	35.5	32.4	43.9
12/09/2022 05:00	34.7	36	32.3	46.7
12/09/2022 05:15	36.3	37.5	34.4	46
12/09/2022 05:30	36.2	37.7	34.2	45.9
12/09/2022 05:45	36.2	37.4	34.5	45
12/09/2022 06:00	36.6	38.2	34.2	48
12/09/2022 06:15	39	40	37.4	45.6
12/09/2022 06:30	41	41.9	39.6	54.3
12/09/2022 06:45	41.8	41.9	39.3	60.8
12/09/2022 07:00	43.3	44	39.3	60.8
12/09/2022 07:15	40.6	41.8	38.5	60.3
12/09/2022 07:30	41.8	42.8	40	60.2
12/09/2022 07:45	43.8	44.9	41.8	57
12/09/2022 08:00	42.2	43.4	40	51.5
12/09/2022 08:15	41	42.1	39.5	48.8
12/09/2022 08:30	40.1	41.2	37.5	63.7
12/09/2022 08:45	44.6	44.2	38.2	63.3
12/09/2022 09:00	42.1	44.7	36.8	55.8
12/09/2022 09:15	38.2	40	35.8	49.7
12/09/2022 09:30	38.1	39.4	35.8	51.7
12/09/2022 09:45	38.2	39.4	35.5	52
12/09/2022 10:00	36.5	38.6	33.5	46.7
12/09/2022 10:15	37.3	40	33.5	51.5
12/09/2022 10:30	40.9	43.5	37.3	56.7
12/09/2022 10:45	42	44.5	38.2	57.7
12/09/2022 11:00	40.8	43	37.6	51.7
12/09/2022 11:15	40.7	42.6	37.8	48.9



Time	LAeq	LA10	LA90	LAFMax
12/09/2022 11:30	41.9	44	38.2	57.7
12/09/2022 11:45	42	43.9	39.2	52.3
12/09/2022 12:00	42.1	44	39.2	55.5
12/09/2022 12:15	42.8	44.6	39.9	55.1





Appendix E Histograms

Kirkby

Baseline Noise Survey

Pivoted Power LLP

SLR Project No.: 402.v08525.00024

21 March 2025

Figure E-2: Location 1 Histogram Daytime dB(A)

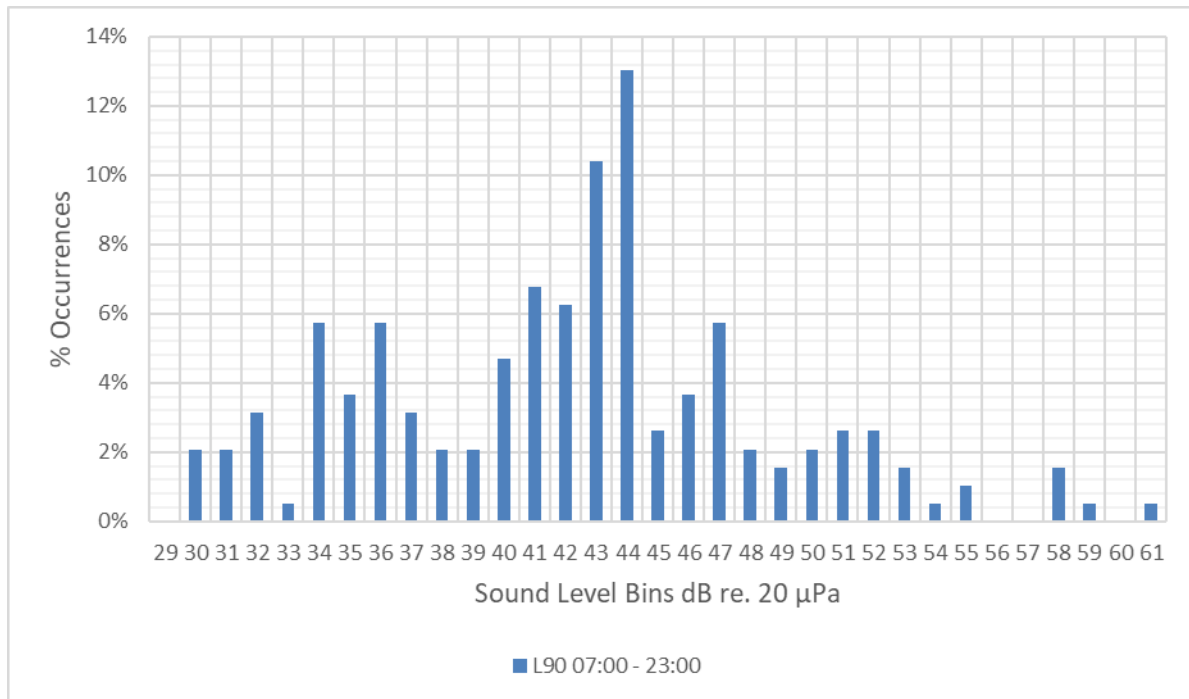


Figure E-3: Location 1 Histogram Night Time dB(A)

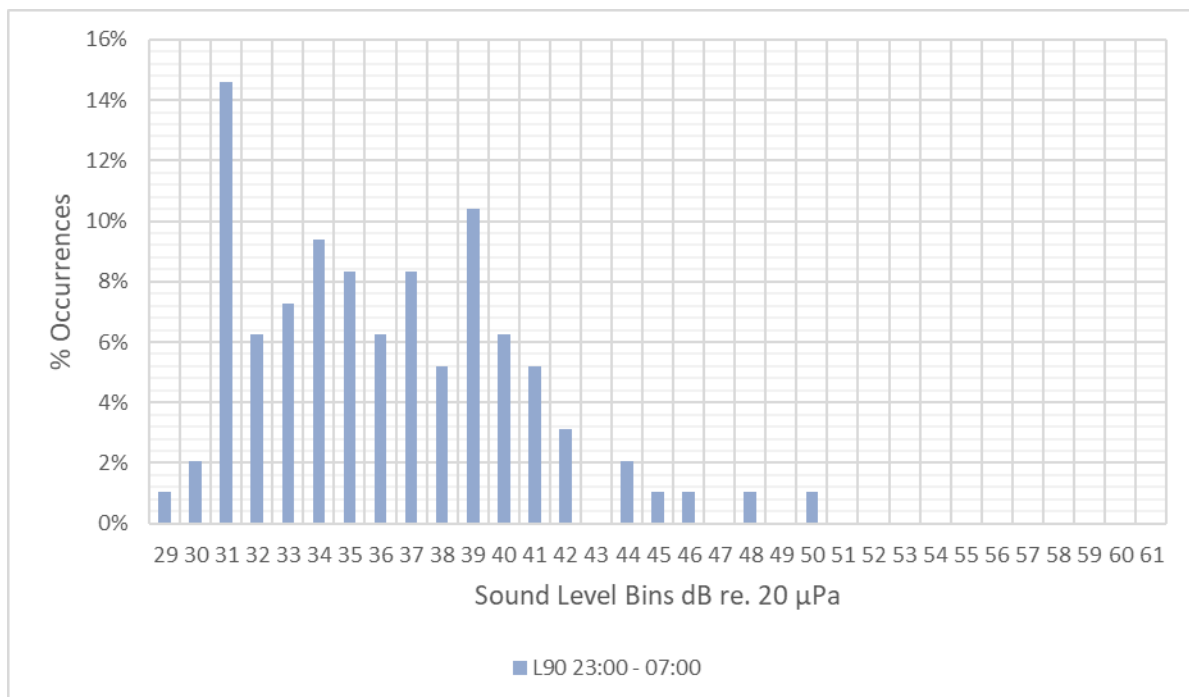


Figure E-4: Location 2 Histogram Daytime dB(A)

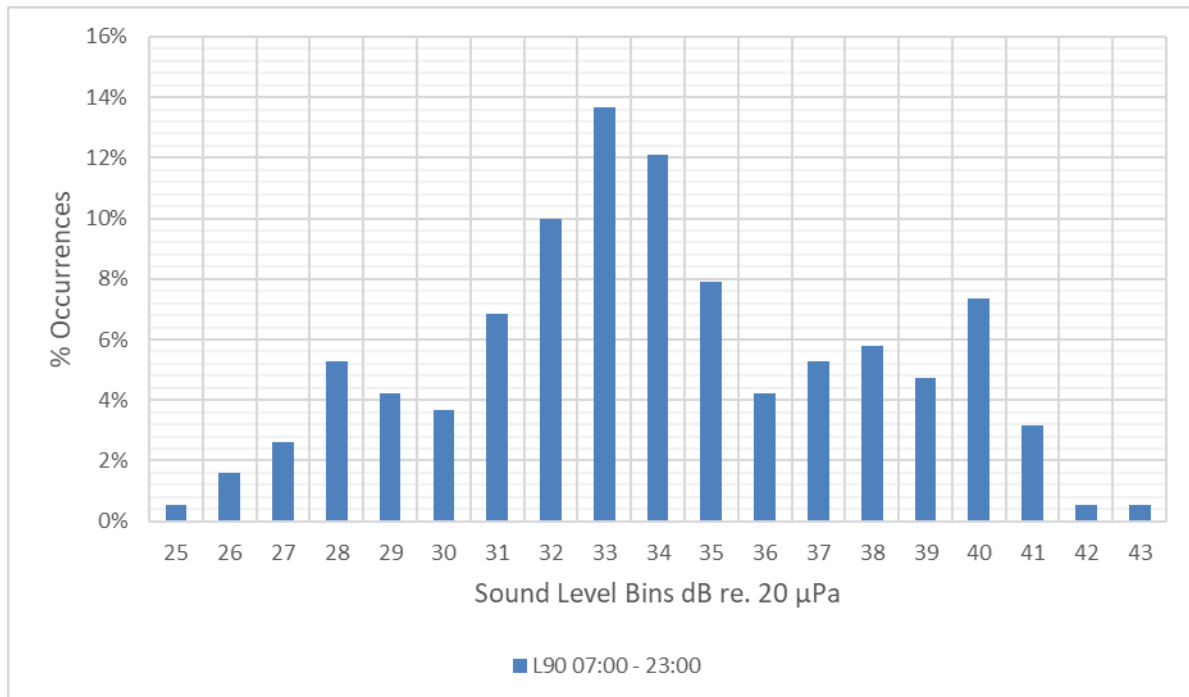
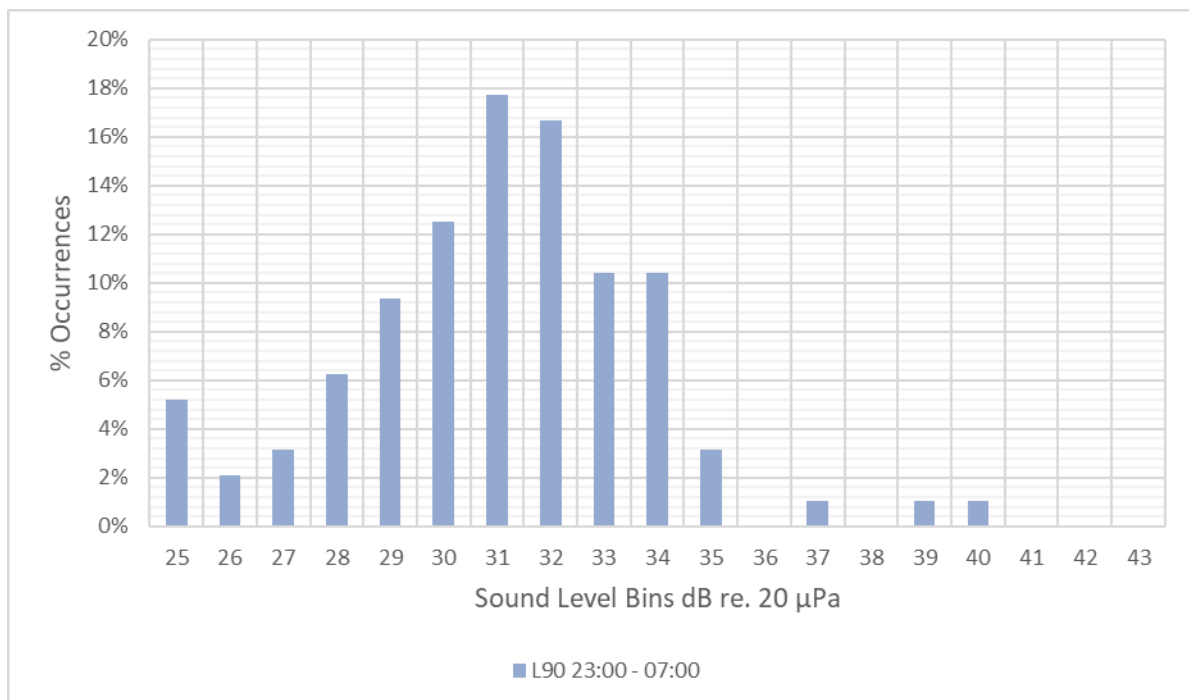


Figure E-5: Location 2 Histogram Night Time dB(A)





Making Sustainability Happen