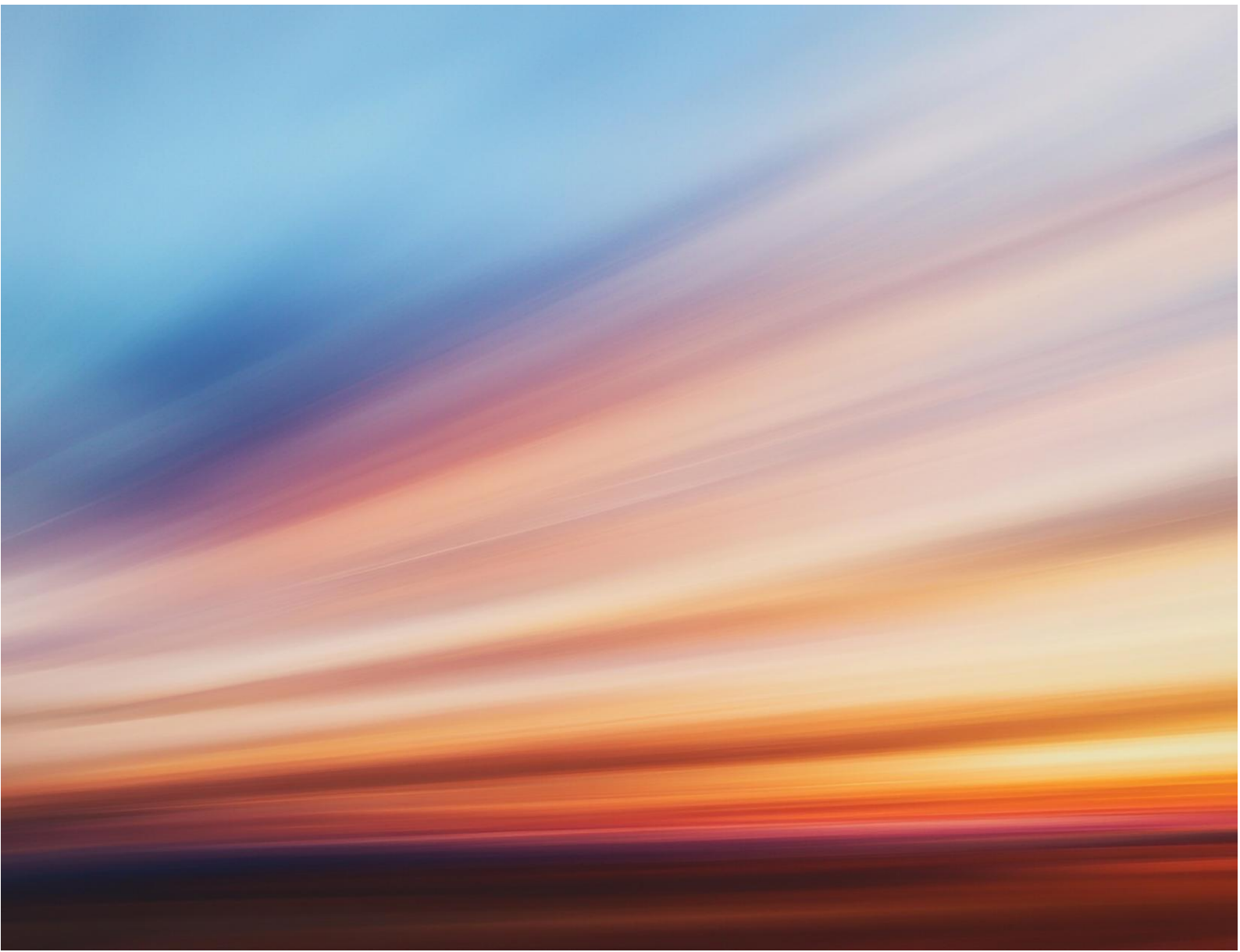


Mysten Leah Solar Farm
Preliminary Environmental
Information Report (PEIR)

Volume 3

Appendix 12.1: Operational Noise
Impact Assessment

April 2026



Contents

1.	Introduction	1
1.1	Overview	1
2.	Project Description.....	3
2.1	Proposed Layout.....	3
2.2	Study Area	3
2.3	Consultation	4
3.	Methodology	5
3.1	Calculation Method	5
3.2	Assessment Method	6
4.	Baseline Sound Level Survey	9
4.1	Monitoring Locations.....	9
4.2	Survey Equipment.....	10
4.3	Meteorological Conditions.....	11
4.4	Existing Noise Environment	11
5.	Operational Noise Impacts.....	12
5.1	Modelling of Noise Sources	12
5.2	Source Noise Levels	13
5.3	Incorporation of Additional Mitigation Measures	14
5.4	Potential Substation Locations.....	14
5.5	Calculated Immission Levels	14
6.	Noise Impact Assessment	19
6.1	BS 4142 Rating Level	19
6.2	BS 4142 Stage 1 Assessment – Initial Estimate of Impact	22
6.3	BS 4142 Stage 2 Assessment – Consideration of Context.....	25
6.4	BS 4142 Assessment Summary	28
7.	Discussion and Requirements for Mitigation.....	29
8.	Summary	29
	Appendix A – Baseline Survey Data.....	30
	Appendix B – Environmental Health Officer Consultation.....	31
	Appendix C – Noise Modelling Data	32

1. Introduction

1.1 Overview

- 1.1.1 TNEI was commissioned by Mylen Leah Solar Farm Limited (a company wholly owned by Statkraft UK Limited) to undertake a Noise Impact Assessment for the proposed development (referred to as 'Mylen Leah Solar Farm' throughout).
- 1.1.2 Mylen Leah Solar Farm would be located to the south of the village of Melbourne, within the administrative area of East Riding of Yorkshire Council, at approximate Ordnance Survey coordinates 474589, 441648.
- 1.1.3 The Site is rural in nature, surrounded immediately by agricultural fields and small areas of woodland, but with a number of scattered residential properties located around each of the five Land Parcels, which make up the Site.
- 1.1.4 The aims of this Noise Impact Assessment are to:
- Identify potential noise sensitive receptors in the vicinity of Mylen Leah Solar Farm;
 - Describe the existing noise environment around the noise sensitive receptors;
 - Identify the dominant sound sources associated with the operation of Mylen Leah Solar Farm;
 - Calculate the likely levels of operational noise at the nearest noise sensitive receptors to determine the noise impacts associated with Mylen Leah Solar Farm; and,
 - Indicate any requirements for mitigation measures, if required, to provide sufficient levels of protection for nearby receptors.
- 1.1.5 All work undertaken to produce this report has been carried out by members of the TNEI Environment and Engineering Team, all of whom are affiliated with the Institute of Acoustics. Specifically, the following members of staff have been involved in the project:
- [REDACTED], AMIOA, BEng (Hons), MSc, Institute of Acoustics Postgraduate Diploma in Acoustics and Noise Control: **Baseline Sound Level Survey**;
 - [REDACTED], AMIOA, BEng (Hons), Institute of Acoustics Postgraduate Diploma in Acoustics and Noise Control: **Noise Propagation Modelling, Assessment and Reporting**; and,
 - [REDACTED], MIOA, BSc (Hons), Institute of Acoustics Postgraduate Diploma in Acoustics and Noise Control: **Quality Assurance**.
- 1.1.6 Please note the following terms and definitions, which are used throughout this report:
- Emission refers to the noise level emitted from a noise source, expressed as either a sound power level or a sound pressure level;
 - Immission refers to the sound pressure level received at a specific location from a noise source;

- Rating Level refers to the immission level after consideration of the character of the sound. The Rating Level is the Immission Level plus any required character corrections, if this is deemed necessary.
- Sound Power Level indicates the sound power level in decibels (dB);
- Sound Pressure Level indicates the sound pressure level in decibels (dB);
- Noise Monitoring Location refers to any location where noise levels have been measured;
- Noise Sensitive Receptors are all identified receptors that are sensitive to noise; and,
- Noise Assessment Location refers to any location where the immission levels are calculated and assessed.

1.1.7 All figures referenced within the report can be found in **Volume 2**.

1.1.8 Unless otherwise stated, all noise levels refer to free field levels i.e. noise levels without influence from any nearby reflective surfaces.

1.1.9 All grid coordinates refer to the Ordnance Survey grid using Eastings and Northings.

2. Project Description

2.1 Proposed Layout

- 2.1.1 An indicative layout plan of Mylen Leah Solar Farm is provided as **Figure 3.2: Indicative Operational Layout Plan** in **Volume 2**. The layout used to inform the assessment, which is preliminary and is likely to change at the Environmental Statement (ES) stage, is based on a 'decentralised' site design.
- 2.1.2 A decentralised layout utilises a large number of small inverter units (string inverters), as opposed to a 'centralised' layout, which typically uses a small number of much larger inverters.
- 2.1.3 In a centralised layout, each row of photovoltaic (PV) panels is typically connected into a string inverter unit, which is usually located at the end of the PV row.
- 2.1.4 The string inverters feed collectively into a smaller number of Medium Voltage (MV) transformer stations, which in turn connect into MV collector stations, and ultimately connect into two High Voltage (HV) grid transformers, for export to the grid.
- 2.1.5 With due regard to the indicative layout, the primary sound sources identified for inclusion within the Noise Impact Assessment are as follows;
- 1785 of, Sungrow SG350HX String Inverter;
 - 81 of, Sungrow MVS8850-LV Transformer Station; and,
 - 2 of, ABB HV Grid Transformer.
- 2.1.6 The MV collector stations have minimal cooling requirements and therefore, a negligible level of noise output. Similarly, the sound level output of any auxiliary infrastructure included within Mylen Leah Solar Farm, for example switch gear or control buildings, would have an insignificant sound level output in comparison to the primary sound sources detailed above. Accordingly, no other items of plant have been considered.
- 2.1.7 For clarity, the plant listed above is considered candidate only, which has been chosen to appropriately represent the proposed size and class of development.
- 2.1.8 Final plant specifications for Mylen Leah Solar Farm will be chosen at a post-consent stage through a formal tendering process. Notwithstanding, it should be noted that regardless of the final plant specifications, Mylen Leah Solar Farm would be required to meet the noise level limits developed through the EIA process and included in any noise related planning conditions.

2.2 Study Area

- 2.2.1 Noise Sensitive Receptors are properties, people or fauna that are sensitive to noise and, therefore, may require protection from nearby noise sources. The assessment of noise attributable to Mylen Leah Solar Farm considers the nearest and most sensitive Noise Sensitive Receptors only, on the assumption that if sound levels at these receptors are within the defined limits, then sound levels at Noise Sensitive Receptors at greater distances should also be within acceptable levels.

- 2.2.2 This assessment considers the impact of operational noise on high-sensitivity human receptors only, which are existing residential properties located in proximity to Mylen Leah Solar Farm.
- 2.2.3 Where it is not currently clear if a property is a dwelling, it has been included in the assessment assuming that it is, as a conservative approach.
- 2.2.4 Prior to the production of the ES, detailed consultation will be undertaken with ERYC to determine whether any other human receptor types of lower sensitivities should be included in the assessment, and clarification will be sought on the residential status (or otherwise) of identified receptors, where required.
- 2.2.5 At the ES stage, operational noise contour plots will also be provided for reference within relevant chapters for any required assessment of operational noise on ecological receptors, for example, breeding birds, where necessary.
- 2.2.6 The nearest identified residential Noise Sensitive Receptors used to inform the operational noise assessment can be seen on **Figure 12.1: Preliminary Noise Assessment Study Area** in **Volume 2**.

2.3 Consultation

- 2.3.1 Consultation was undertaken with the Environmental Health Service of East Riding of Yorkshire Council (ERYC), and a letter, which is included within **Appendix B**, was issued on 4 February 2025 detailing the proposed assessment methodology and suggested baseline survey monitoring locations.
- 2.3.2 It was proposed to undertake an unattended baseline survey for a period of seven to ten days at 15 Noise Monitoring Locations (Noise Monitoring Locations) and that representative background levels would be calculated in accordance with in British Standard (BS) 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound*¹, hereafter referred to as BS 4142. ERYC responded via email on 6 March 2025, agreeing the proposed methodology and Noise Monitoring Locations.
- 2.3.3 For clarity, the monitoring locations ultimately chosen for the baseline survey varied slightly from those locations proposed within the Environmental Health Officer letter (detailed in section 4 of this report) due to revisions in the draft Order Limits made after the Environmental Health Officer letter was submitted.

3. Methodology

3.1 Calculation Method

International Organization for Standardization (ISO) 9613-2:2024

- 3.1.1 To predict the noise immission levels attributable to Mylen Leah Solar Farm, a noise propagation model was created using the propriety noise modelling software, CadnaA. Within the software, complex models can be produced to simulate the propagation of noise according to a range of international calculation standards.
- 3.1.2 For this assessment noise propagation was calculated in accordance with ISO9613-2:2024 Acoustics — Attenuation of sound during propagation outdoors: Engineering method for the prediction of sound pressure levels outdoors², using the following input parameters;
- Temperature is assumed to be 10°C and relative humidity as 70%;
 - A ground attenuation factor of 1 (soft ground) has been used to represent the rural environment, with reflecting three-dimensional (3D) panels modelled to account for reflections from the PV arrays; and,
 - Receiver heights have been set at 4m.

Uncertainties and Limitations

- 3.1.3 The noise propagation model is designed to give a good approximation of the specific sound level and the contribution of each individual sound source; however, it is expected that measured levels are unlikely to be matched exactly with modelled values. As such, the following limitations in the model should be considered:
- In accordance with ISO 9613, all assessment locations are modelled as downwind of all sound sources, and propagation calculations are based on a moderate ground-based temperature inversion, such as commonly occurs at night. These conditions are favourable to noise propagation;
 - The predicted barrier attenuation provided by local topography, embankments, walls, buildings and other structures in the intervening ground between source and receiver can only be approximated, and not all barrier attenuation will have been accounted for;
 - The model assumes all sound sources are operating continuously and simultaneously.
- 3.1.4 With due regard to the above, noise level predictions are likely to be higher than what will occur during normal operation.
- 3.1.5 Note that the modelled sound sources represent candidate plant and an associated Site layout. The location, operating conditions, noise output and number of individual items of plant may vary from what is presented in this report after final plant specification. As such, it is expected that an additional noise impact assessment will be undertaken during the tendering process.

3.2 Assessment Method

3.2.1 A number of standards and guidelines are available for the assessment of environmental noise from proposed new developments on residential receptors.

3.2.2 There are no fixed noise level limits for industrial noise in the UK, and consideration of the context in which the noise generation occurs is considered with more importance than simply meeting an absolute noise level to determine the likelihood of an adverse impact. This form of assessment is set out in BS 4142.

BS 4142 Assessment Method

3.2.3 The BS 4142 form of assessment is based on the predicted or measured levels of an assessed sound source compared to the measured background sound levels without the specific sound source present and uses, *“outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident”*.

3.2.4 In reference to the existing baseline conditions i.e. before any development, BS 4142 uses the following terms:

- **Residual Sound Level:** The sound level of all noise sources in an area, except the sound source to be assessed, over a given time interval, t . Described using the metric $L_{Aeq}(t)$.
- **Background Sound Level:** This is also the sound level of all noise sources in an area except the sound source to be assessed, however, it is quantified by determining the sound level that is exceeded for 90% of the given time interval. Described using the metric $L_{A90}(t)$.

3.2.5 The next two BS 4142 noise descriptors (below) represent noise attributable to the proposed or assessed sound source only.

- **Specific Sound Level:** The equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, i.e. the sound level of just the sound source to be assessed. Described using the metric $L_{Aeq}(t)$.
- **Rating Level:** The Specific Sound Level adjusted for the characteristics of the sound. The Rating Level is calculated by adding a character correction(s), if required, to the Specific Sound Level when the sound source contains audible characteristics at the receptor location, such as tonal, impulsive or intermittent components. Described using the metric, $L_{Aeq}(t)$.

3.2.6 The final BS 4142 descriptor represents the future noise level during the operational phase of a development and can be thought of as the ‘Total Sound’ i.e. the existing baseline + Mylen Leah Solar Farm.

- **Ambient Sound Level:** Totally encompassing sound in a given situation at a given time, usually composed of sound from many sources, both near and far i.e. the sound level of all noise sources in an area, including the sound source to be assessed. Described using the metric, $L_{Aeq}(t)$.

- 3.2.7 Section 11 of BS 4142 requires that the assessment considers the context in which the sound occurs, and as such there is no definitive pass/fail element to the standard. Rather, the assessment outcome is an indication as to the likelihood for adverse impact.
- 3.2.8 The assessment is a two-stage process.
- Initially, an estimate of the impact is made by subtracting the measured Background Sound Level from the calculated or measured Rating Level.
 - The second part of the assessment is to consider the context in which the sound occurs, which may modify the findings of the initial estimate.
- 3.2.9 The standard states:
- “Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level from the rating level, and consider the following...*
- a) Typically, the greater this difference, the greater the magnitude of the impact.*
- b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.*
- d) 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. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.”*
- 3.2.10 For the second stage of the assessment there are many elements of context that can be considered. The following list, which is not exhaustive, gives some examples that could be relevant to the assessment:
- the absolute level of sound;
 - the character and level of the residual sound compared to the character and level of the specific sound;
 - whether specific sound insulation and noise control measures have already been incorporated into a receptor (which would lower the sensitivity of the receptor);
 - former uses, at or close to the proposed development;
 - the legitimacy of the industrial use, e.g. planning permissions or environmental permits;
 - implementation of best practicable means for a given process or activity; and
 - whether the Rating Level represents typical levels, realistic worst case, unlikely worst case etc.

- 3.2.11 Additional guidance on the BS 4142 assessment methodology is provided in the Association of Noise Consultants' (ANC) *BS 4142: Technical Note*³, which has been authored by the ANC Good Practice Working Group (ANC, 2020). The guide is "*designed to assist readers with a reasonable interpretation and application of BS 4142 as a whole.*"

Guideline Noise Levels

- 3.2.12 It is acknowledged that some Local Planning Authorities refer to fixed guideline noise levels for different receptor types, which can be useful to assess noise impacts on non-residential receptors or to provide additional context for the BS 4142 qualitative assessment stage. In particular it is noted that BS 8233 *Guidance on Sound Insulation and Noise Reduction for Buildings*⁴ is often referred to, however, BS 8233 is a standard that provides advice on how to design buildings with regards to internal acoustics – it is not a standard for the assessment of external environmental noise.
- 3.2.13 Accordingly, this assessment of operational noise levels is undertaken in accordance with BS 4142 only.

4. Baseline Sound Level Survey

4.1 Monitoring Locations

- 4.1.1 A baseline sound level survey was undertaken to characterise the noise environments around the nearest Noise Sensitive Receptors and determine representative daytime and night-time background sound levels. To this end 13 Noise Monitoring Locations were chosen, which are detailed in **Table 4.1** and shown on **Figure 12.1: Preliminary Noise Assessment Study Area** in **Volume 2**. Monitoring was undertaken at each NML for a minimum of seven days and logged in 15-minute periods.
- 4.1.2 Details of the monitoring periods at each Noise Monitoring Location are summarised within the Field Data Sheets included in **Appendix A**.

Table 4.1: Noise Monitoring Locations

Noise Monitoring Location		OS Coordinates	
ID	Descriptor	Eastings	Northings
NML01	Representative of Noise Sensitive Receptors to the south of Mylen Leah Solar Farm [red]	473720	440350
NML02	Representative of Noise Sensitive Receptors to the south-west of Mylen Leah Solar Farm [orange]	472637	439735
NML03	Representative of Noise Sensitive Receptors to the south-west of Mylen Leah Solar Farm [yellow]	471501	440035
NML04	Representative of Noise Sensitive Receptors to the west of Mylen Leah Solar Farm [light green]	471540	440949
NML05	Representative of Noise Sensitive Receptors to the west of Mylen Leah Solar Farm [dark green]	472610	441506
NML06	Representative of Noise Sensitive Receptors to the north of Mylen Leah Solar Farm [dark blue]	473486	442781
NML07	Representative of Noise Sensitive Receptors in the centre of Mylen Leah Solar Farm [light blue]	474095	441683
NML08	Representative of Noise Sensitive Receptors to the centre of Mylen Leah Solar Farm [turquoise]	474458	441037
NML09	Representative of Noise Sensitive Receptors to the east of the centre of Mylen Leah Solar Farm [grey]	475504	442277
NML10	Representative of Noise Sensitive Receptors to the east and south-east of Mylen Leah Solar Farm [pink]	476322	441316

Noise Monitoring Location		OS Coordinates	
ID	Descriptor	Eastings	Northings
NML11	Representative of Noise Sensitive Receptors to the north-east and east of Mylen Leah Solar Farm [purple]	477390	441489
NML12	Representative of Noise Sensitive Receptors to the north-east of Mylen Leah Solar Farm [brown]	476642	442802
NML13	Additional monitoring location not required for the operational noise assessment but may be used later for the construction noise assessment of the grid connection route. Reported for completeness. [olive green]	476937	444150

4.2 Survey Equipment

4.2.1 All measurements were made with sound level meters mounted approximately 1.2m above the ground and away from nearby reflective surfaces i.e., building façades, fences etc. Photographs of the Noise Monitoring Locations are included in **Appendix A**.

4.2.2 The noise monitoring equipment consisted of Rion NL-52 and NL-53 sound level meters fitted with appropriate environmental wind shields. All noise monitoring equipment (calibrator, sound level meter and microphones) used for the study are categorised as Class 1, as specified in IEC 61672-1 ‘*Electroacoustics. Sound level meters. Specifications*’⁵. The equipment was calibrated on-site at the beginning and end of each measurement period, with no significant deviations noted. **Appendix A** contains the equipment and laboratory calibration details for the sound level meters and microphones.

4.2.3 The sound level meters were set to log in 15-minute measurement periods throughout the survey. It is noted that a 1-hour logging period is often reported for the daytime and a 15-minute period is used for night-time, however, this is typically for short duration attended surveys and it is not possible to set sound level meters to switch logging period durations midway through an unattended, longer duration survey. Accordingly, the 15-minute option was selected as night-time periods are typically the most sensitive. In this regard the ANC Technical Note’ states;

“BS 4142 is not prescriptive about the length of background sound measurement periods, only noting that the duration used should be adequate to represent the situation but not normally less than 15 minutes” and, “In this context, any measurement time interval is considered acceptable under the terms of BS 4142, providing the assessor can justify that it appropriately represents the background sound climate.”

4.2.4 Given that the survey ran for several days, the measured data obtained does appropriately represent the background sound climate.

4.3 Meteorological Conditions

4.3.1 Meteorological data was collected with a Kestrel portable weather station and a tipping bucket rain gauge.

4.3.2 Prior to analysis the measured data was filtered for wind and rain conditions that may result in higher-than-normal sound levels. In this respect BS 4142 states:

“Record the weather conditions that could affect measurements. Monitor wind speed at the measurement location, using an anemometer, and record the wind speed together with the wind direction. Exercise caution when making measurements in poor weather conditions such as wind speeds greater than 5 m/s.”

4.3.3 As a cautious approach, all data recorded with wind speeds above 3m/s or during periods of precipitation was removed from the datasets, as well as the 60 minutes immediately preceding, and the 60 minutes immediately following any recorded precipitation events. This filtering was undertaken as some Noise Monitoring Locations were located close to roads where noise levels could increase as a result of vehicles travelling on a wet road surface.

4.3.4 **Appendix A** provides a series of charts, including time series graphs, which detail the measured meteorological data alongside the measured baseline sound levels.

4.4 Existing Noise Environment

4.4.1 Subjective observations made during the installation and collection of the equipment and during site visits for equipment maintenance are included within the Field Data Sheets within **Appendix A**.

4.4.2 **Table 4.1** presents the derived representative Background Sound level and the Residual Sound Level for daytime and night-time at each Noise Monitoring Location.

4.4.3 The Background Sound Levels were determined with reference to the time-history charts, statistical analysis charts and distribution analysis charts included in **Appendix A**, following the guidance presented within the ANC Technical Note and BS 4142, which states:

“A representative level should account for the range of background sound levels and should not automatically be assumed to be either the minimum or modal value.”

4.4.4 The Residual Sound Levels were determined through consideration of the range, mean and median of the daytime and night-time measured LAeq values, which are detailed in **Appendix A**.

Table 4.2: Measured Sound Levels

NML ID	Background Sound Level, dB LA90(15mins)		Residual Sound Level, dB LAeq(15mins)	
	Day	Night	Day	Night
NML01	35	26	40	31
NML02	37	25	45	31
NML03	37	25	64	48

NML ID	Background Sound Level, dB L _{A90(15mins)}		Residual Sound Level, dB L _{Aeq(15mins)}	
	Day	Night	Day	Night
NML04	38	23	65	48
NML05	36	26	43	34
NML06	41	28	51	40
NML07	33	23	52	32
NML08	32	23	48	31
NML09	34	25	41	30
NML10	33	23	37	28
NML11	34	23	43	31
NML12	39	30	57	43
NML13	40	30	47	36

5. Operational Noise Impacts

5.1 Modelling of Noise Sources

- 5.1.1 The noise model considers all of the primary sound sources detailed within **Section 2** of this report. The following section describes how each of these sound sources has been incorporated into the model.
- 5.1.2 All sound sources are assumed to be operating concurrently, continually and with a constant sound level output.
- 5.1.3 In the absence of a preferred plant manufacturer at this stage, noise modelling is based on candidate plant that provides a realistic worst case scenario in terms of operational noise levels. It should be noted that final plant specifications will vary during the final tendering process and will include appropriate noise control measures where required.
- 5.1.4 Where possible, noise modelling data has been included as part of this report within **Appendix C**, however some datasheets are restricted due to non-disclosure agreements and cannot be included. If ERYC require further information regarding the source noise level data that cannot be published, a meeting can be arranged with the acousticians to discuss in more detail.

Sungrow SG350HX String Inverter

- 5.1.5 The solar string inverters have been modelled as point sources, located at the ends of the solar panel arrays at a height of 1.5 m.
- 5.1.6 Octave Band Sound Power Level data is available for the units working at 30%, 50%, 70%, 100% and 110% power ratings. The engineering team provided the predicted average hourly power level percentage for the Mylen Leah Solar Farm across each month of the year. The highest predicted percentage is 71%, which is predicted to occur (assuming appropriate weather conditions) for a maximum of one hour per day (10:00 – 11:00) during the month of May. For all other time periods, the average power output is predicted to be less than 70%. Accordingly, the string inverters have been modelled during the daytime assuming they are all

operating concurrently at 70% power output to represent a realistic worst-case scenario.

- 5.1.7 The BS 4142 night-time assessment period is 23:00 – 07:00 and Octave Band Sound Power Level data for ‘night-time’ operations i.e. during hours of darkness, is also available.
- 5.1.8 It is noted that during the BS 4142 night-time period there is the potential for some power output from Mylen Leah Solar Farm during the summer months i.e. due to increased hours of daylight, however, during these periods, the highest average hourly power level would be 38% (between the hours of 07:00 – 08:00 in May) and the noise level at this power output would be less than the noise level already anticipated during the night-time operations. Accordingly, the night-time noise level predictions also present a realistic worst-case scenario.
- 5.1.9 **Table 5.1** details the equivalent broadband Sound Power Level values used to model the individual solar string inverters for daytime and night-time. Due to the datasheet being confidential, it cannot be included within **Appendix C**.

Sungrow MVS8850-LV Transformer Station

- 5.1.1 The solar MV transformer stations have been modelled assuming the Sungrow MVS8850-LV as a candidate unit. Manufacturer provided data details the Sound Power Level for an enclosed version of the unit operating at an electrical frequency of 50 Hz. This Sound Power Level is shown in **Table 5.1**. Due to the datasheet being confidential, it cannot be included within **Appendix C**.
- 5.1.2 The unit has been modelled using area sources to represent four facades and a roof. Each area source has had 68dBA applied, but with an additional attenuation of 7dB so that the logarithmic addition of all facades equates to the overall Sound Power Level of 68dBA.

ABB HV Grid Transformer

- 5.1.3 Mylen Leah Solar Farm includes a HV substation compound, which includes two HV Grid Transformers. One-Third Octave Band Sound Power Level data for a representative ABB transformer has been used within the noise model. The data for the unit, which has a maximum overall Sound Power Level of 88 dBA, is included within **Appendix C** and is shown below in **Table 5.1**.
- 5.1.4 The unit has been modelled using area sources to represent four facades and a roof (as opposed to a simple point source).

5.2 Source Noise Levels

- 5.2.1 **Table 5.1** presents the octave band Sound Power Level used in the noise model for all noise sources.

Table 5.1: Octave Band Sound Power Levels of Modelled Noise Sources, dBA

Noise Source	dBA	Octave Band (Hz), dBA							
		63	125	250	500	1000	2000	4000	8000
Sungrow 350HX String Inverter (70% Power, Daytime)	76	52	54	57	63	74	67	67	66

Noise Source	dBA	Octave Band (Hz), dBA							
		63	125	250	500	1000	2000	4000	8000
Sungrow 350HX String Inverter (50% Power, Night-time)	67	43	45	48	53	64	57	58	57
Sungrow MVS8850-LV Transformer Station*	68	44	60	62	63	62	55	51	45
ABB HV Grid Transformer*	88	64	80	82	83	82	75	71	65

*Indicates a noise source that has been modelled using one-third octave data

5.3 Incorporation of Additional Mitigation Measures

5.3.1 The model assumes that no additional mitigation measures, for example, noise-attenuating fencing or bunds, will be included as part of Mylen Leah Solar Farm.

5.4 Potential Substation Locations

5.4.1 As part of the current design, Mylen Leah Solar Farm does not yet have a fixed substation location and that four options (Option A – D) for the location of the substation are under consideration. The potential locations are shown in **Figure 12.1: Preliminary Noise Assessment Study Area** in **Volume 2**, and also on **Figure 3.1: Indicative Construction Layout and Access Plan** in **Volume 2**.

5.4.2 For completeness, all four substation locations have been modelled, but having found that the predicted levels vary by a negligible amount at all receptors (maximum of 1dB variance between all locations), the assessment presented in this report assumes that the substation is located at Option A.

5.5 Calculated Immission Levels

5.5.1 Noise immission levels have been calculated at 49 Noise Assessment Locations, which have been selected to represent the closest Noise Sensitive Receptors to Mylen Leah Solar Farm. Each Noise Assessment Location has been set on the side of the property facing Mylen Leah Solar Farm. In instances where a single receptor is positioned with Mylen Leah Solar Farm adjacent to multiple facades, two Noise Assessment Locations have been included to assess the front and rear (or similar) of the property. This occurs for NAL 06 and 07, and NAL 11 and 12.

5.5.2 The Noise Assessment Locations are detailed in **Table 5.1** alongside the associated representative Noise Monitoring Location. Noise Assessment Locations are also shown on **Figure 12.2: Daytime Operational Noise Contour Plot** and **Figure 12.3: Night-time Operational Noise Contour Plot** in **Volume 2**.

Table 5.2: Noise Assessment Locations and Associated Noise Monitoring Location

Noise Assessment Location		OS Grid Reference		Noise Monitoring Location
ID	Descriptor	Easting	Northing	
NAL01	Blackberry Farm	471774	441104	NML04
NAL02	Spring House Farm	472445	441431	NML05
NAL03	Fox Covert Farm	472621	441489	NML05
NAL04	Bethell House	472920	441672	NML05
NAL05	Bridges Lane	473024	441672	NML05
NAL06	South Acre Farm A	473412	442276	NML06
NAL07	South Acre Farm B	473459	442176	NML06
NAL08	Caravan Site	473913	441507	NML07
NAL09	Laytham Park	474074	441681	NML07
NAL10	Whin Wood	473117	442884	NML06
NAL11	Acre Farm A	473694	442718	NML06
NAL12	Acre Farm B	473738	442670	NML06
NAL13	Ross Moor Park Farm	473412	443589	NML06
NAL14	Kidd Lane	474256	443505	NML06
NAL15	Melbourne Hall	475109	443208	NML09
NAL16	Park Farm	475112	442809	NML09
NAL17	Brickyard Farm	475544	442754	NML09
NAL18	Thoroughleys Lane	475565	442257	NML09
NAL19	Hawkwood	475575	442431	NML09
NAL20	Bibbill Farm	475816	442246	NML09
NAL21	Ryedale Farm	476258	442839	NML12
NAL22	Melrose Farm	476670	442585	NML12
NAL23	Dial Hall Farm	477286	442489	NML12
NAL24	Blackwood Gate	477379	442380	NML12
NAL25	Hallstone	477358	442194	NML12
NAL26	Mill Lane	477494	441869	NML11
NAL27	North End	477498	441657	NML11
NAL28	Holly House	477376	441579	NML11
NAL29	Breckstreet Farm	476794	441561	NML10
NAL30	Breckstreet Plantation	476489	441513	NML10
NAL31	Fosses Farm	476520	439836	NML10
NAL32	Laytham Grange	475850	440410	NML10
NAL33	Harthill Farm	474878	440271	NML01
NAL34	Laytham Green Farm	474557	440975	NML08
NAL35	Oakfield Farm	474376	441052	NML08

Noise Assessment Location		OS Grid Reference		Noise Monitoring Location
ID	Descriptor	Eastings	Northings	
NAL36	Ruddings Wood Farm	474352	439919	NML01
NAL37	White Farm A	475382	441925	NML09
NAL38	White Farm B	475303	442036	NML09
NAL39	Aughton House	473249	439453	NML02
NAL40	Blue States Farm	472966	440154	NML02
NAL41	Boland House	473047	439881	NML02
NAL42	Boland Lane	472941	439854	NML02
NAL43	Whitewynn	472935	439475	NML02
NAL44	Shortacre Lane	472188	439454	NML03
NAL45	Shortacre Farm	472080	439495	NML03
NAL46	Willow Lodge	471914	439698	NML03
NAL47	East Farm	471398	439827	NML03
NAL48	The Weres	471164	439907	NML03
NAL49	Mill House	471151	441440	NML02

5.5.3 The immission levels (Specific Sound Level) have been calculated assuming all plant is operating continuously and concurrently. The model assumes, as a worst case, that noise levels do not fluctuate and remain the same throughout the daytime and night-time assessment periods. In reality, this is unlikely, as the solar farm plant will likely vary in operation depending on sunlight exposure, resulting in reduced cooling and/or operational requirements and therefore lower noise levels during periods of no or low sunlight.

5.5.4 The noise immission levels are detailed in Table 5.3 and also illustrated as noise contour plots shown in **Figure 12.2: Daytime Operational Noise Contour Plot** and **Figure 12.3: Night-time Operational Noise Contour Plot** in **Volume 2**.

Table 5.3: Calculated Immission Levels, dB $L_{Aeq(t)}$

Noise Assessment Location		Immission Level, dB $L_{Aeq(t)}$	
ID	Descriptor	Daytime	Night-time
NAL01	Blackberry Farm	30	21
NAL02	Spring House Farm	30	20
NAL03	Fox Covert Farm	30	21
NAL04	Bethell House	30	21
NAL05	Bridges Lane	32	23
NAL06	South Acre Farm A	29	21

Noise Assessment Location		Immission Level, dB LAeq(t)	
ID	Descriptor	Daytime	Night-time
NAL07	South Acre Farm B	29	22
NAL08	Caravan Site	35	26
NAL09	Laytham Park	34	26
NAL10	Whin Wood	26	18
NAL11	Acre Farm A	30	22
NAL12	Acre Farm B	33	25
NAL13	Ross Moor Park Farm	24	16
NAL14	Kidd Lane	25	18
NAL15	Melbourne Hall	25	18
NAL16	Park Farm	29	21
NAL17	Brickyard Farm	27	19
NAL18	Thoroughleys Lane	32	23
NAL19	Hawkwood	30	22
NAL20	Bibbill Farm	33	24
NAL21	Ryedale Farm	28	19
NAL22	Melrose Farm	29	20
NAL23	Dial Hall Farm	25	15
NAL24	Blackwood Gate	24	15
NAL25	Hallstone	26	17
NAL26	Mill Lane	25	16
NAL27	North End	24	15
NAL28	Holly House	26	17
NAL29	Breckstreet Farm	32	23

Noise Assessment Location		Immission Level, dB LAeq(t)	
ID	Descriptor	Daytime	Night-time
NAL30	Breckstreet Plantation	34	25
NAL31	Fosses Farm	21	12
NAL32	Laytham Grange	27	18
NAL33	Harthill Farm	28	19
NAL34	Laytham Green Farm	32	23
NAL35	Oakfield Farm	33	24
NAL36	Ruddings Wood Farm	28	19
NAL37	White Farm A	35	26
NAL38	White Farm B	34	26
NAL39	Aughton House	27	18
NAL40	Blue States Farm	35	26
NAL41	Boland House	31	22
NAL42	Boland Lane	32	23
NAL43	Whitewynn	28	19
NAL44	Shortacre Lane	27	18
NAL45	Shortacre Farm	27	18
NAL46	Willow Lodge	29	20
NAL47	East Farm	27	18
NAL48	The Weres	25	16
NAL49	Mill House	22	14

6. Noise Impact Assessment

6.1 BS 4142 Rating Level

6.1.1 To assess the immission levels in accordance with BS 4142, the Specific Sound Level must be converted into a Rating Level. The Rating Level allows for character corrections to be added to account for particular characteristics of the sound that may be perceived as more annoying. In particular, the Rating Level considers tonality, impulsivity and intermittency of the sound, as well other sound characteristics that are neither tonal, impulsive, or intermittent, but are otherwise readily distinctive against the residual acoustic environment.

6.1.2 Note: Character corrections consider the noise at the receiver location, not the source location.

Tonality

6.1.3 With regards to tonality, BS 4142 states:

'For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible and 6 dB where it is highly perceptible.'

6.1.4 Electrical plant can be tonal at source, however, BS 4142 corrections are only applied if the noise characteristics are present at the receptor location, not at the source location.

6.1.5 Consideration of the predicted one-third octave band levels against BS 4142's informative 'One-Third Octave Band Objective Method of Assessment' indicates that no tonality is likely to be present. This method considers the dB difference in level across adjacent one-third octave bands to provide an indication of tonality.

6.1.6 Predicted levels were not classified as tonal at any of the Noise Assessment Locations, and as such, no tonal character correction has been applied.

Impulsivity

6.1.7 With regards to impulsivity, BS 4142 states:

'A correction of up to +9dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively this can be converted to a penalty of 3dB for impulsivity which is just perceptible at the noise receptor, 6dB where it is clearly perceptible, and 9dB where it is highly perceptible.'

6.1.8 Impulsivity is not considered to be a relevant sound characteristic of a solar farm as when operational, the noise level will be predictable and consistent.

Intermittency

6.1.9 The intermittency of the sound source needs to be considered when it has identifiable on/off conditions with regards to intermittency, BS 4142 states:

'If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.'

6.1.10 As with impulsivity, intermittency is not considered to be a relevant sound characteristic in this case. Once operational, noise levels may fluctuate by a small amount over long periods of time, but no step changes in noise level are anticipated.

Other Sound Characteristics

6.1.11 With regards to other sound characteristics, BS 4142 states:

‘Where the specific sound features characteristics that are neither tonal nor impulsive, nor intermittent, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.’

6.1.12 Based on experience of this type of plant, it is not anticipated that any additional sound characteristics would be considered readily distinctive against the residual acoustic environment as the sound is steady state with no distinguishing characteristics.

Calculation of the Rating Level

6.1.13 With due regard to the above, no character corrections are required. Therefore, the BS 4142 Rating Levels are equal to the Specific Sound Levels, as seen in **Table 6.1**.

Table 6.1: BS 4142 Rating Levels (dB)

Noise Assessment Location		Specific Sound Level, $L_{Aeq(t)}$, dB		Character Corrections, dB		Rating Level, dBA	
ID	Descriptor	Day	Night	Day	Night	Day	Night
NAL01	Blackberry Farm	30	21	0	0	30	21
NAL02	Spring House Farm	30	20	0	0	30	20
NAL03	Fox Covert Farm	30	21	0	0	30	21
NAL04	Bethell House	30	21	0	0	30	21
NAL05	Bridges Lane	32	23	0	0	32	23
NAL06	South Acre Farm A	29	21	0	0	29	21
NAL07	South Acre Farm B	29	22	0	0	29	22
NAL08	Caravan Site	35	26	0	0	35	26
NAL09	Laytham Park	34	26	0	0	34	26
NAL10	Whin Wood	26	18	0	0	26	18
NAL11	Acre Farm A	30	22	0	0	30	22
NAL12	Acre Farm B	33	25	0	0	33	25
NAL13	Ross Moor Park Farm	24	16	0	0	24	16
NAL14	Kidd Lane	25	18	0	0	25	18
NAL15	Melbourne Hall	25	18	0	0	25	18
NAL16	Park Farm	29	21	0	0	29	21

Mylen Leah Solar Farm

Noise Assessment Location		Specific Sound Level, $L_{Aeq(t)}$, dB		Character Corrections, dB		Rating Level, dBA	
ID	Descriptor	Day	Night	Day	Night	Day	Night
NAL17	Brickyard Farm	27	19	0	0	27	19
NAL18	Thoroughleys Lane	32	23	0	0	32	23
NAL19	Hawkwood	30	22	0	0	30	22
NAL20	Bibbill Farm	33	24	0	0	33	24
NAL21	Ryedale Farm	28	19	0	0	28	19
NAL22	Melrose Farm	29	20	0	0	29	20
NAL23	Dial Hall Farm	25	15	0	0	25	15
NAL24	Blackwood Gate	24	15	0	0	24	15
NAL25	Hallstone	26	17	0	0	26	17
NAL26	Mill Lane	25	16	0	0	25	16
NAL27	North End	24	15	0	0	24	15
NAL28	Holly House	26	17	0	0	26	17
NAL29	Breckstreet Farm	32	23	0	0	32	23
NAL30	Breckstreet Plantation	34	25	0	0	34	25
NAL31	Fosses Farm	21	12	0	0	21	12
NAL32	Laytham Grange	27	18	0	0	27	18
NAL33	Harthill Farm	28	19	0	0	28	19
NAL34	Laytham Green Farm	32	23	0	0	32	23
NAL35	Oakfield Farm	33	24	0	0	33	24
NAL36	Ruddings Wood Farm	28	19	0	0	28	19
NAL37	White Farm A	35	26	0	0	35	26
NAL38	White Farm B	34	26	0	0	34	26
NAL39	Aughton House	27	18	0	0	27	18
NAL40	Blue States Farm	35	26	0	0	35	26
NAL41	Boland House	31	22	0	0	31	22
NAL42	Boland Lane	32	23	0	0	32	23
NAL43	Whitewynn	28	19	0	0	28	19
NAL44	Shortacre Lane	27	18	0	0	27	18
NAL45	Shortacre Farm	27	18	0	0	27	18

Noise Assessment Location		Specific Sound Level, LAeq(t), dB		Character Corrections, dB		Rating Level, dBA	
ID	Descriptor	Day	Night	Day	Night	Day	Night
NAL46	Willow Lodge	29	20	0	0	29	20
NAL47	East Farm	27	18	0	0	27	18
NAL48	The Weres	25	16	0	0	25	16
NAL49	Mill House	22	14	0	0	22	14

6.2 BS 4142 Stage 1 Assessment – Initial Estimate of Impact

6.2.1 Stage 1 of the assessment compares the Rating Levels against the Background Sound Level, as detailed in **Table 6.2**.

Table 6.2: BS 4142 Initial Estimate of Impact

Noise Assessment Location		Rating Level, dB, LAeq(t)		Background Sound Level, dB LA90 (15-mins)		Difference (+/-), dB	
ID	Descriptor	Day	Night	Day	Night	Day	Night
NAL01	Blackberry Farm	30	21	38	23	-8	-2
NAL02	Spring House Farm	30	20	36	26	-7	-6
NAL03	Fox Covert Farm	30	21	36	26	-6	-5
NAL04	Bethell House	30	21	36	26	-6	-5
NAL05	Bridges Lane	32	23	36	26	-4	-3
NAL06	South Acre Farm A	29	21	41	28	-12	-7
NAL07	South Acre Farm B	29	22	41	28	-12	-6
NAL08	Caravan Site	35	26	33	23	2	3
NAL09	Laytham Park	34	26	33	23	1	3
NAL10	Whin Wood	26	18	41	28	-16	-11
NAL11	Acre Farm A	30	22	41	28	-11	-6
NAL12	Acre Farm B	33	25	41	28	-8	-3
NAL13	Ross Moor Park Farm	24	16	41	28	-17	-12
NAL14	Kidd Lane	25	18	41	28	-16	-10

Noise Assessment Location		Rating Level, dB, LAeq(t)		Background Sound Level, dB LA90 (15-mins)		Difference (+/-), dB	
ID	Descriptor	Day	Night	Day	Night	Day	Night
NAL15	Melbourne Hall	25	18	34	25	-9	-7
NAL16	Park Farm	29	21	34	25	-6	-4
NAL17	Brickyard Farm	27	19	34	25	-7	-6
NAL18	Thoroughleys Lane	32	23	34	25	-2	-2
NAL19	Hawkwood	30	22	34	25	-4	-4
NAL20	Bibbill Farm	33	24	34	25	-1	-1
NAL21	Ryedale Farm	28	19	39	30	-11	-11
NAL22	Melrose Farm	29	20	39	30	-10	-10
NAL23	Dial Hall Farm	25	15	39	30	-15	-15
NAL24	Blackwood Gate	24	15	39	30	-15	-15
NAL25	Hallstone	26	17	39	30	-13	-14
NAL26	Mill Lane	25	16	34	23	-9	-7
NAL27	North End	24	15	34	23	-10	-8
NAL28	Holly House	26	17	34	23	-8	-6
NAL29	Breckstreet Farm	32	23	33	23	-1	0
NAL30	Breckstreet Plantation	34	25	33	23	1	2
NAL31	Fosses Farm	21	12	33	23	-12	-11
NAL32	Laytham Grange	27	18	33	23	-6	-5
NAL33	Harthill Farm	28	19	35	26	-7	-7
NAL34	Laytham Green Farm	32	23	32	23	0	0
NAL35	Oakfield Farm	33	24	32	23	1	1
NAL36	Ruddings Wood Farm	28	19	35	26	-7	-7

Noise Assessment Location		Rating Level, dB, LAeq(t)		Background Sound Level, dB LA90 (15-mins)		Difference (+/-), dB	
ID	Descriptor	Day	Night	Day	Night	Day	Night
NAL37	White Farm A	35	26	34	25	1	1
NAL38	White Farm B	34	26	34	25	0	1
NAL39	Aughton House	27	18	37	25	-10	-7
NAL40	Blue States Farm	35	26	37	25	-2	1
NAL41	Boland House	31	22	37	25	-6	-3
NAL42	Boland Lane	32	23	37	25	-5	-2
NAL43	Whitewynn	28	19	37	25	-9	-6
NAL44	Shortacre Lane	27	18	37	25	-10	-7
NAL45	Shortacre Farm	27	18	37	25	-10	-7
NAL46	Willow Lodge	29	20	37	25	-8	-5
NAL47	East Farm	27	18	37	25	-10	-7
NAL48	The Weres	25	16	37	25	-12	-9
NAL49	Mill House	22	14	37	25	-15	-11

6.2.2 The initial estimate of impact during the daytime is as follows;

- The Rating Level does not exceed the Representative Background Sound Level at 44 of the 49 Noise Assessment Locations. This is an “indication of the specific sound source having a low impact, depending on the context.”
- The Rating Level is greater than the Representative Background Sound Level at five of the 49 Noise Assessment Locations by up to 2dB, which is below the level that may be considered “an indication of an adverse impact, depending on the context.”

6.2.3 The initial estimate of impact during the night-time is as follows:

- The Rating Level does not exceed the Representative Background Sound Level at 42 of the 49 Noise Assessment Locations. This is an “indication of the specific sound source having a low impact, depending on the context.”
- The Rating Level is greater than the Representative Background Sound Level at seven of the 49 Noise Assessment Locations by up to

3dB, which is below the level that may be considered “an indication of an adverse impact, depending on the context.”

6.2.4 **Table 6.3** summarises the outcome of stage 1 of the BS 4142 assessment:

Table 6.3: Summary of Initial Estimate of Impact, Daytime and Night-time

Margin between Rating Level and Background, dB	BS 4142 Initial Estimate of Impact	Number of Noise Assessment Locations	
		Daytime	Night-time
<= 0	Low Impact	44	42
1-3	Below Level of Adverse Impact	5	7
4-8	Adverse Impact	0	0
>=9	Significant Adverse Impact	0	0

6.3 BS 4142 Stage 2 Assessment – Consideration of Context

6.3.1 Although there are other elements of context that may be relevant to the assessment, BS 4142 requires the following three contextual elements to be considered:

- the absolute level of the sound;
- the character and level of the residual sound compared to the character and the level of the specific sound; and
- the sensitivity of the receptor.

6.3.2 Each of these is considered in turn below, alongside any other contextual elements that are relevant for Mylen Leah Solar Farm.

Context: Absolute Level of Sound

6.3.3 BS 4142 suggests that in instances where the existing sound environment is considered either particularly low or particularly high then absolute levels may be more relevant than the initial estimate of impact. The standard states:

“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.”

6.3.4 The ANC BS 4142 Technical Note provides additional guidance on this, providing indicative values that could be used to describe ‘low’ background sound levels and ‘low’ rating levels. Specifically, the ANC Technical Note states:

“BS 4142 does not define ‘low’ in the context of background sound levels nor rating levels. The note to the Scope of the 1997 version of BS 4142 defined very low background sound levels as being less than about 30 dB LA90, and low rating levels as being less than about 35 dB LAr, Tr”.

6.3.5 In this case the background sound levels range between mid-30’s to low 40’s dB LA90 (15mins) during the daytime but are below or equal to 30dB LA90 (15mins) during the night-time at all Noise Monitoring Locations. The night-time level, therefore, could be described as ‘very low’ at all NMLs.

6.3.6 The Rating Levels are similarly 'low' during the night-time, being below 35dB LAeq(15mins) at all of the 49 Noise Assessment Locations. As such, consideration of the absolute level of sound suggests that the initial estimate of impact is appropriate.

Context: Character and Level of Residual Sound

6.3.7 Both the daytime and night-time Residual Sound Levels measured at all NMLs is higher than the predicted Specific Sound Levels at all NALs. Accordingly, the specific sound level will have a negligible impact on the residual sound level.

Table 6.4 indicates the estimated level of change.

Table 6.4: Residual (Existing) and Ambient (Future) Sound Levels, dB

LAeq(15mins)

Noise Assessment Location		Specific Sound Level		Residual Sound Level		Ambient Sound Level		Change (+/-)	
ID	Descriptor	Day	Night	Day	Night	Day	Night	Day	Night
NAL01	Blackberry Farm	30	21	65	48	65	48	0	0
NAL02	Spring House Farm	30	20	43	34	43	34	0	0
NAL03	Fox Covert Farm	30	21	43	34	43	34	0	0
NAL04	Bethell House	30	21	43	34	43	34	0	0
NAL05	Bridges Lane	32	23	43	34	43	34	0	0
NAL06	South Acre Farm A	29	21	51	40	51	40	0	0
NAL07	South Acre Farm B	29	22	51	40	51	40	0	0
NAL08	Caravan Site	35	26	52	32	52	33	0	1
NAL09	Laytham Park	34	26	52	32	52	33	0	1
NAL10	Whin Wood	26	18	51	40	51	40	0	0
NAL11	Acre Farm A	30	22	51	40	51	40	0	0
NAL12	Acre Farm B	33	25	51	40	51	40	0	0
NAL13	Ross Moor Park Farm	24	16	51	40	51	40	0	0
NAL14	Kidd Lane	25	18	51	40	51	40	0	0
NAL15	Melbourne Hall	25	18	41	30	41	30	0	0
NAL16	Park Farm	29	21	41	30	41	31	0	1
NAL17	Brickyard Farm	27	19	41	30	41	30	0	0
NAL18	Thoroughleys Lane	32	23	41	30	42	31	1	1
NAL19	Hawkwood	30	22	41	30	41	31	0	1
NAL20	Bibbill Farm	33	24	41	30	42	31	1	1

Mysten Leah Solar Farm

Noise Assessment Location		Specific Sound Level		Residual Sound Level		Ambient Sound Level		Change (+/-)	
ID	Descriptor	Day	Night	Day	Night	Day	Night	Day	Night
NAL21	Ryedale Farm	28	19	57	43	57	43	0	0
NAL22	Melrose Farm	29	20	57	43	57	43	0	0
NAL23	Dial Hall Farm	25	15	57	43	57	43	0	0
NAL24	Blackwood Gate	24	15	57	43	57	43	0	0
NAL25	Hallstone	26	17	57	43	57	43	0	0
NAL26	Mill Lane	25	16	43	31	43	31	0	0
NAL27	North End	24	15	43	31	43	31	0	0
NAL28	Holly House	26	17	43	31	43	31	0	0
NAL29	Breckstreet Farm	32	23	37	28	38	29	1	1
NAL30	Breckstreet Plantation	34	25	37	28	39	30	2	2
NAL31	Fosses Farm	21	12	37	28	37	28	0	0
NAL32	Laytham Grange	27	18	37	28	37	28	0	0
NAL33	Harthill Farm	28	19	40	31	40	31	0	0
NAL34	Laytham Green Farm	32	23	48	31	48	32	0	1
NAL35	Oakfield Farm	33	24	48	31	48	32	0	1
NAL36	Ruddings Wood Farm	28	19	40	31	40	31	0	0
NAL37	White Farm A	35	26	41	30	42	32	1	2
NAL38	White Farm B	34	26	41	30	42	31	1	1
NAL39	Aughton House	27	18	45	31	45	31	0	0
NAL40	Blue States Farm	35	26	45	31	45	32	0	1
NAL41	Boland House	31	22	45	31	45	32	0	1
NAL42	Boland Lane	32	23	45	31	45	32	0	1
NAL43	Whitewynn	28	19	45	31	45	31	0	0
NAL44	Shortacre Lane	27	18	64	48	64	48	0	0
NAL45	Shortacre Farm	27	18	64	48	64	48	0	0
NAL46	Willow Lodge	29	20	64	48	64	48	0	0
NAL47	East Farm	27	18	64	48	64	48	0	0
NAL48	The Weres	25	16	64	48	64	48	0	0
NAL49	Mill House	22	14	45	31	45	31	0	0

- 6.3.8 At the vast majority of Noise Assessment Locations during both the daytime and night-time, the specific sound level does not contribute to an increase in ambient sound level.
- 6.3.9 Where the specific sound level does increase the ambient level, this is by a maximum of 1-2 dB, which is unlikely to be perceptible.
- 6.3.10 The character of the existing sound environment is typical of a rural location; with birdsong, wind induced foliage noise and animal noises noted, but is a largely steady state noise environment. The only characterful element of the residual sound level is attributable to road traffic, causing noise levels to change sporadically over short periods of time. The specific sound level from the Site will be similarly steady state, with no noticeable fluctuations in noise level expected during operation.
- 6.3.11 Consideration of the character and level of residual sound suggests that the initial estimate of impact is appropriate, particularly due to the anticipated imperceptible nature of the change in noise level.

Context: Sensitivity of Receptor

- 6.3.12 BS 4142 suggests that the sensitivity of the receptor may be lessened if design measures that secure good internal and/or outdoor acoustic conditions are already implemented within the receptor. An example of this could be where a residential building has been fitted with non-openable windows in an already high noise environment. This is not relevant to this assessment, where it is assumed that all nearby Noise Sensitive Receptors do not incorporate any specific noise control measures. As such, the sensitivity of the receptor remains high, and this contextual element does not materially affect the initial estimate of impact.

Context: Noise Modelling Assumptions

- 6.3.13 The calculated Rating Levels assume that all plant will be operating continually and concurrently at all times of the day and night. In reality, this is unlikely to occur as the operation of the Site will fluctuate depending on environmental factors, such as ambient temperature, and operational factors, such as sunlight exposure. For much of the time, some items of plant would not operate or would operate at a reduced level. As such, predicted noise levels are likely to be lower than presented in the assessment.

6.4 BS 4142 Assessment Summary

- 6.4.1 The Stage 1 Initial Estimate of Impact indicated that during the daytime, at the vast majority of receptors, there is a high likelihood of *“the specific sound source having a low impact, depending on the context.”* There were no indications of adverse impact at any receptor for any time period.
- 6.4.2 Consideration of the context in which the development also suggests that no adverse impacts would occur.
- 6.4.3 The BS4142 assessment concludes that at 42 NALs the Rating Level would be below the background sound level and, although the background sound level is exceeded at five NALs during the daytime and seven NALs at night, there would be no adverse impact at any residential receptor for any time periods.

7. Discussion and Requirements for Mitigation

- 7.1.1 The BS 4142 assessment outcome does not indicate a requirement for any mitigation measures, however, it should be noted that the assessment is based on candidate plant only, and noise level output may differ from that presented here. Accordingly, and with due regard to BS 4142 and the ANC Technical Report in respect of low background sound environments, it is recommended that a target fixed minimum limit of 35 dBA during the night-time is adopted and included as embedded mitigation as the design progresses. This will allow flexibility for plant specifications at the tender stage, whilst still affording appropriate levels of protection for residential receptors.

8. Summary

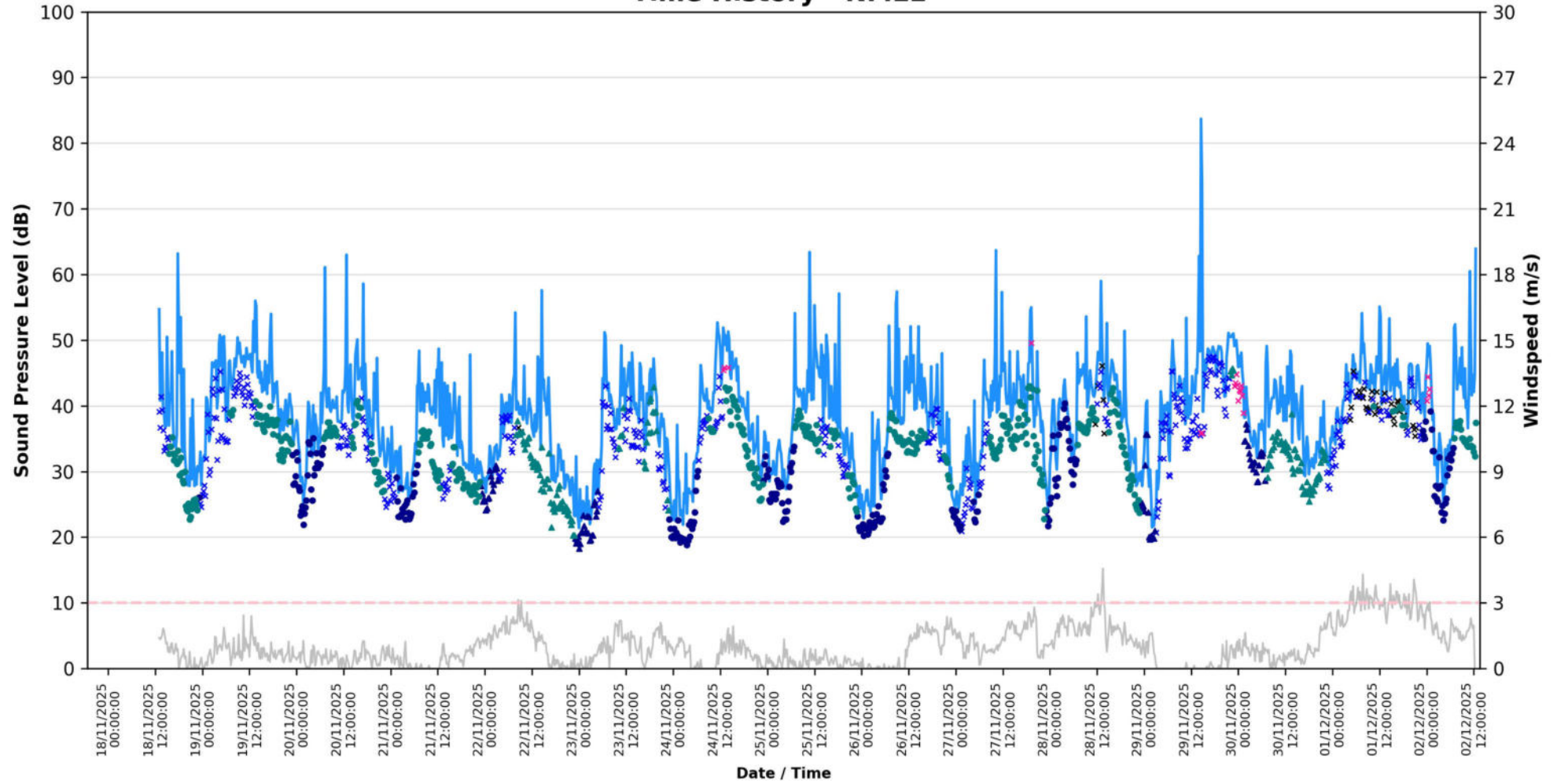
- 8.1.1 A BS 4142 assessment has been undertaken considering the nearest residential receptors to Mylen Leah Solar Farm.
- 8.1.2 In order to inform the assessment, a baseline sound level survey was undertaken at thirteen locations for a period of seven days at each location. The baseline survey was carried out at locations representative of the nearest Noise Sensitive Receptors.
- 8.1.3 A noise propagation model was produced in accordance with ISO 9613-2:2024 to calculate the realistic worst-case noise levels attributable to Mylen Leah Solar Farm that may be incident upon the nearest Noise Sensitive Receptors.
- 8.1.4 The character of the noise immission levels was considered to determine a BS 4142 Rating Level, which was then compared to the measured baseline sound levels to provide an initial estimate of impact. After consideration of the context of Mylen Leah Solar Farm and the local environment, it was found that the initial estimate of impact was appropriate.
- 8.1.5 The BS 4142 assessment concludes that operational noise from Mylen Leah Solar Farm would result in a Rating Level less than the “*indication of an adverse impact*” for all receptors during both the daytime and the night-time.
- 8.1.6 For the majority of the receptors, the rating level does not exceed the background sound level during both the daytime and night-time, which is “*an indication of the specific sound source having a low impact*”.
- 8.1.7 A night-time design limit Rating Level of 35dBA has been proposed to be included as embedded mitigation. Whilst no mitigation measures are necessary at this stage, it is acknowledged that the assessment is based on candidate plant and noise level output of individual items of plant may change during final plant specification.
- 8.1.8 Adopting a fixed minimum limit of 35 dBA during the night-time will provide appropriate levels of protection for all residential receptors, regardless of the final plant specifications.

Appendix A – Baseline Survey Data

- Field Data Sheets
- BS 4142 Baseline Analysis Charts
- SLM Calibration Certificates

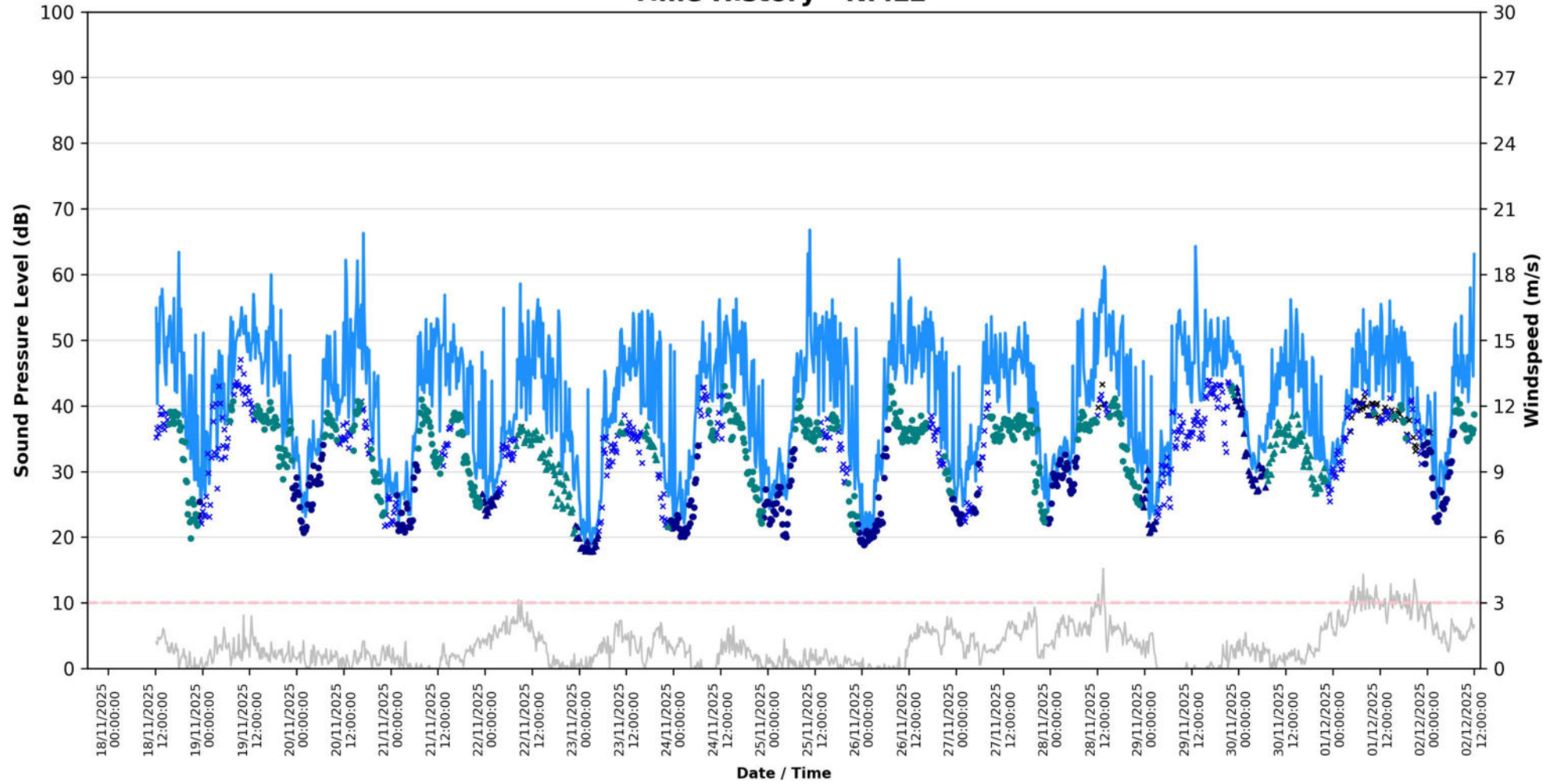
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML1



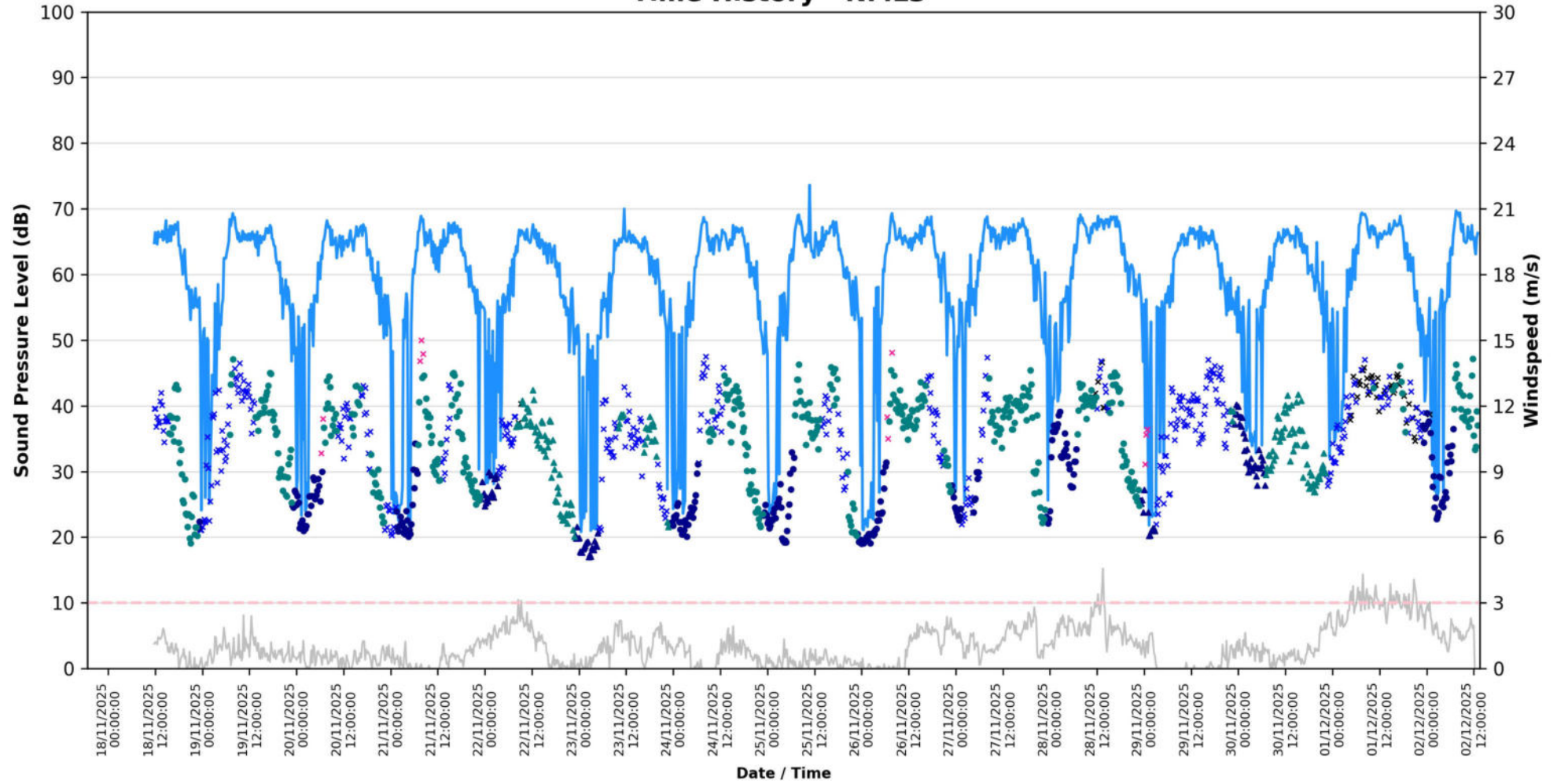
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML2



16549 - Mylen Leah - Measured Sound Levels:

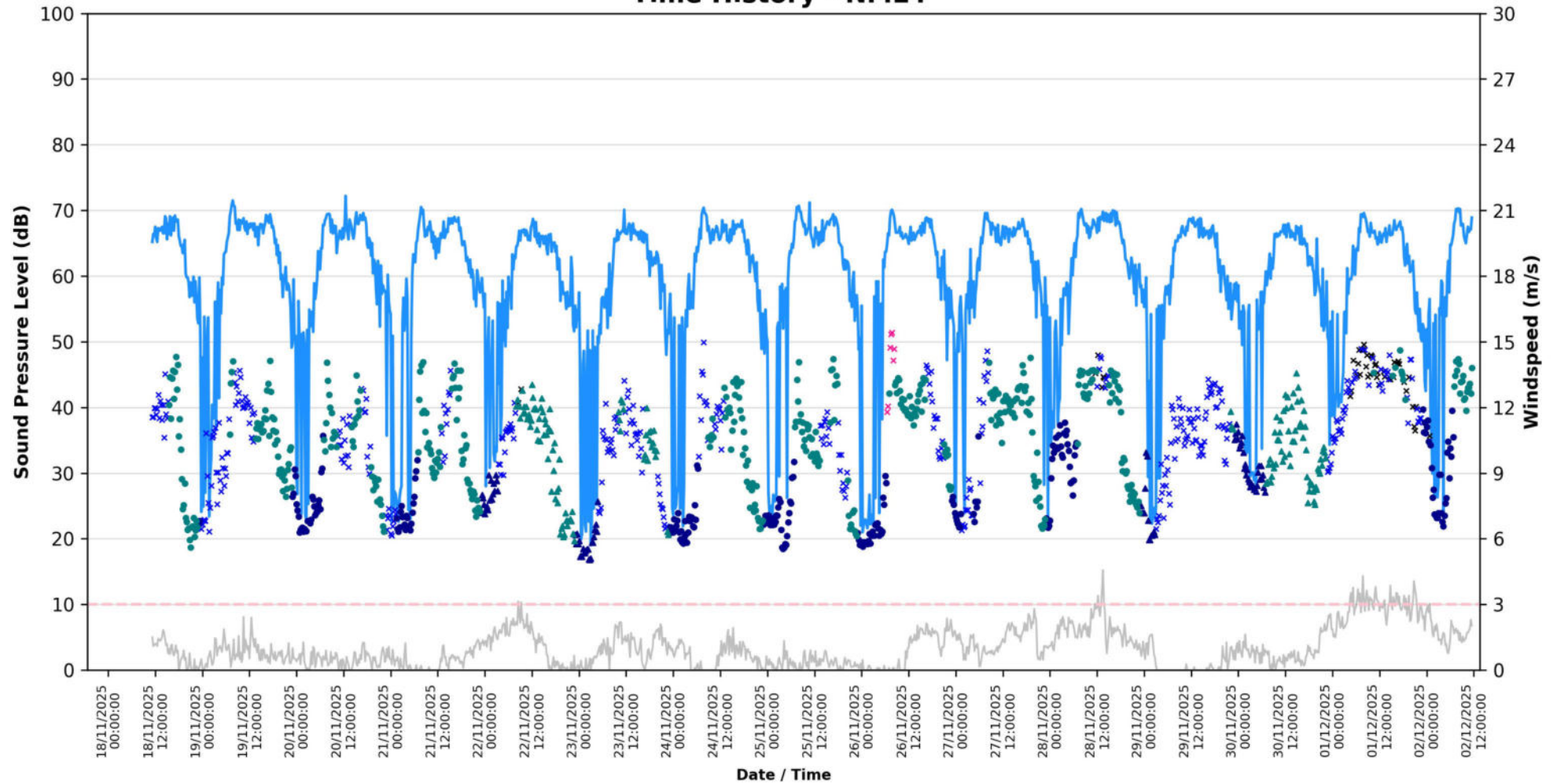
Time History - NML3



- | | |
|---|--------------------------------------|
| LA _{eq} (15 mins) | Auto Exclusion - Windspeed > 3.0 m/s |
| Weekday - Daytime LA ₉₀ (15 mins) | Manual Exclusion |
| Weekday - Night-time LA ₉₀ (15 mins) | Corrupt/Incomplete Data |
| Weekend - Daytime LA ₉₀ (15 mins) | Windspeed |
| Weekend - Night-time LA ₉₀ (15 mins) | Windspeed Cutoff |
| Auto Exclusion - Precipitation Event | |

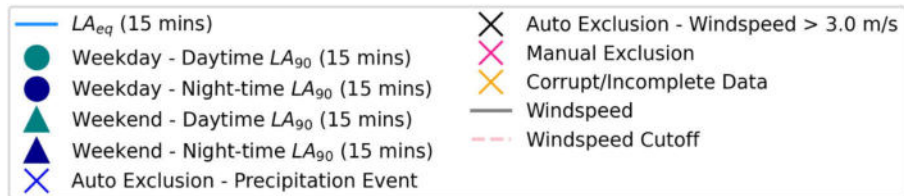
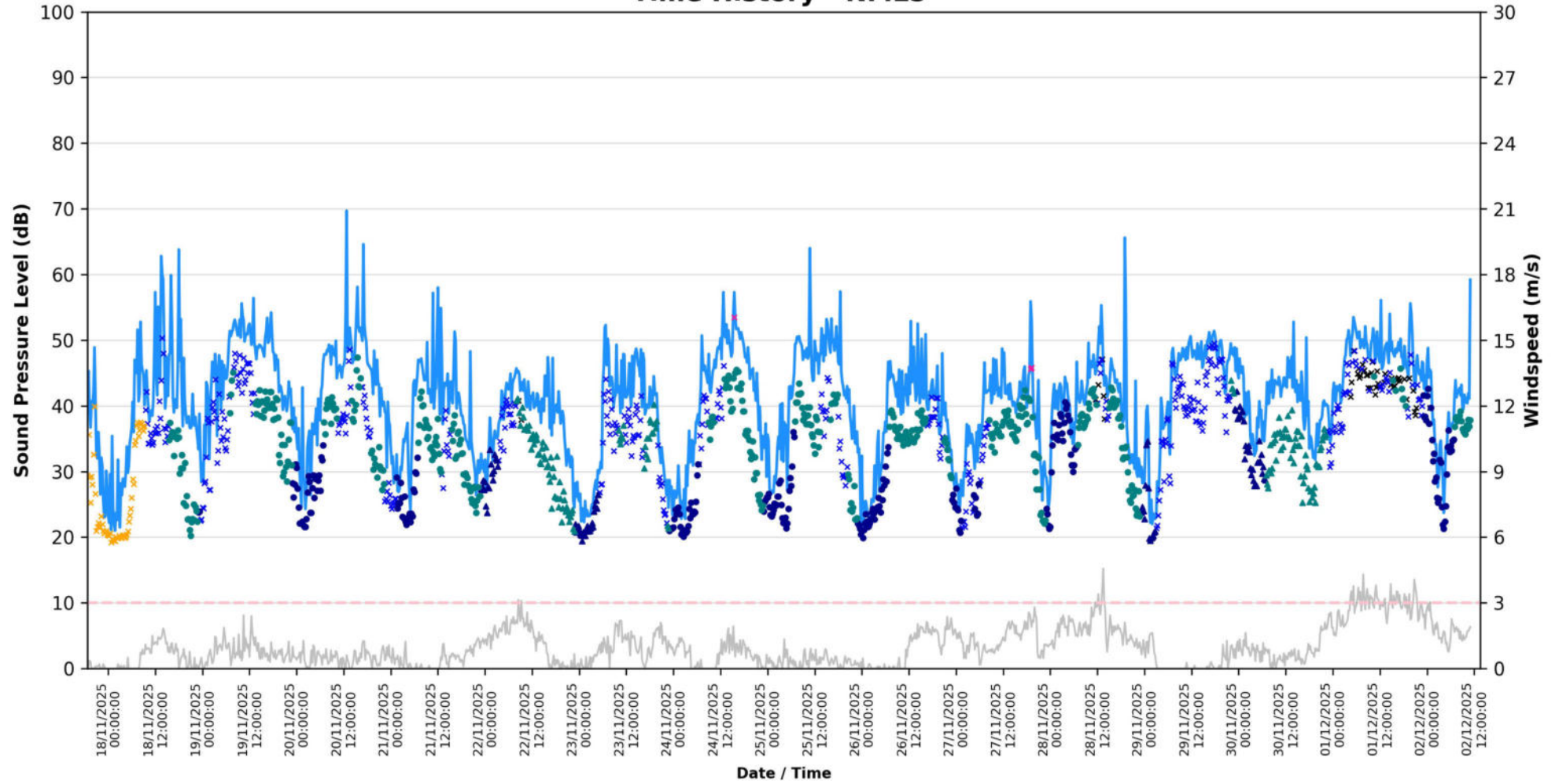
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML4



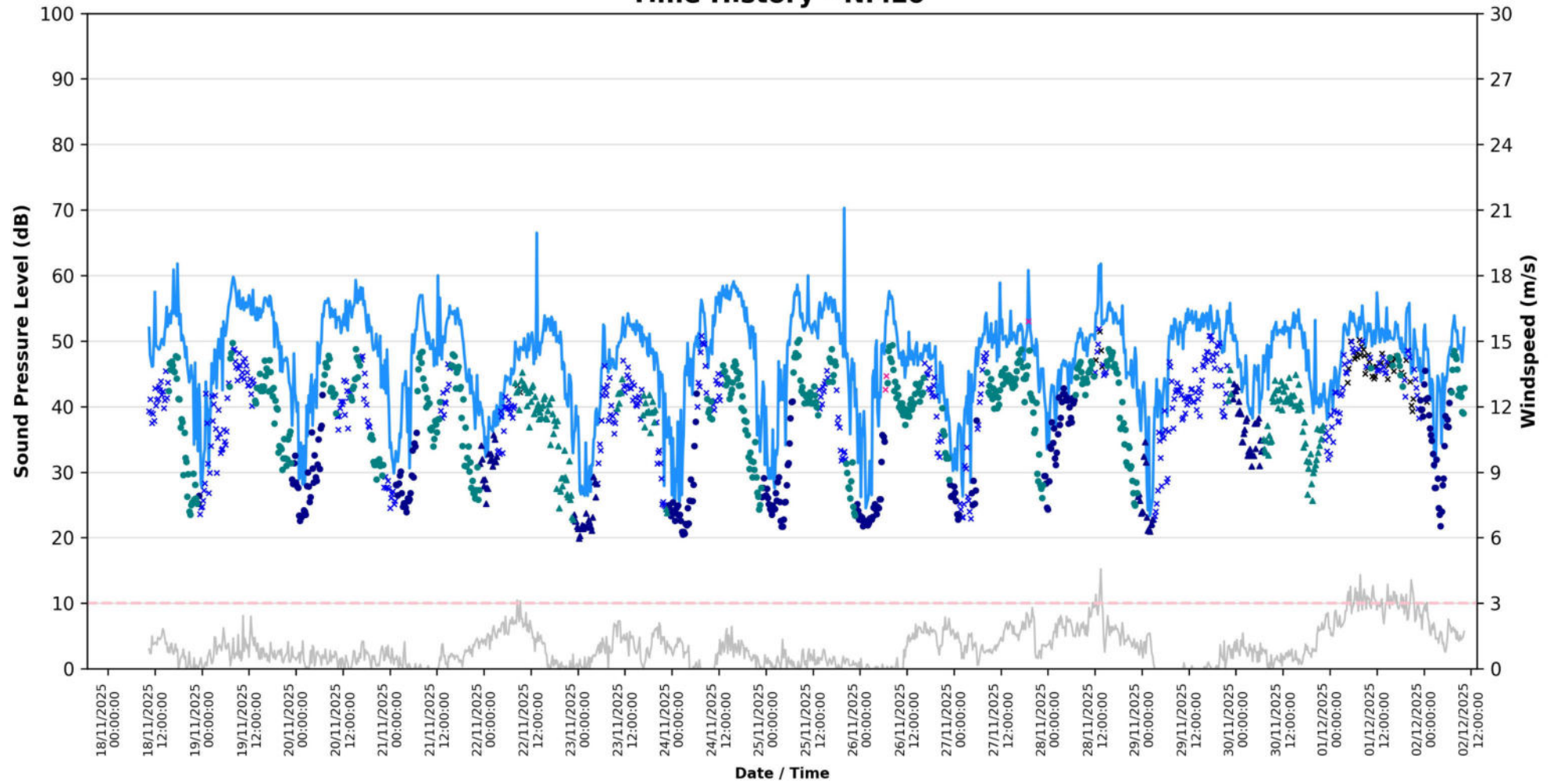
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML5



16549 - Mylen Leah - Measured Sound Levels:

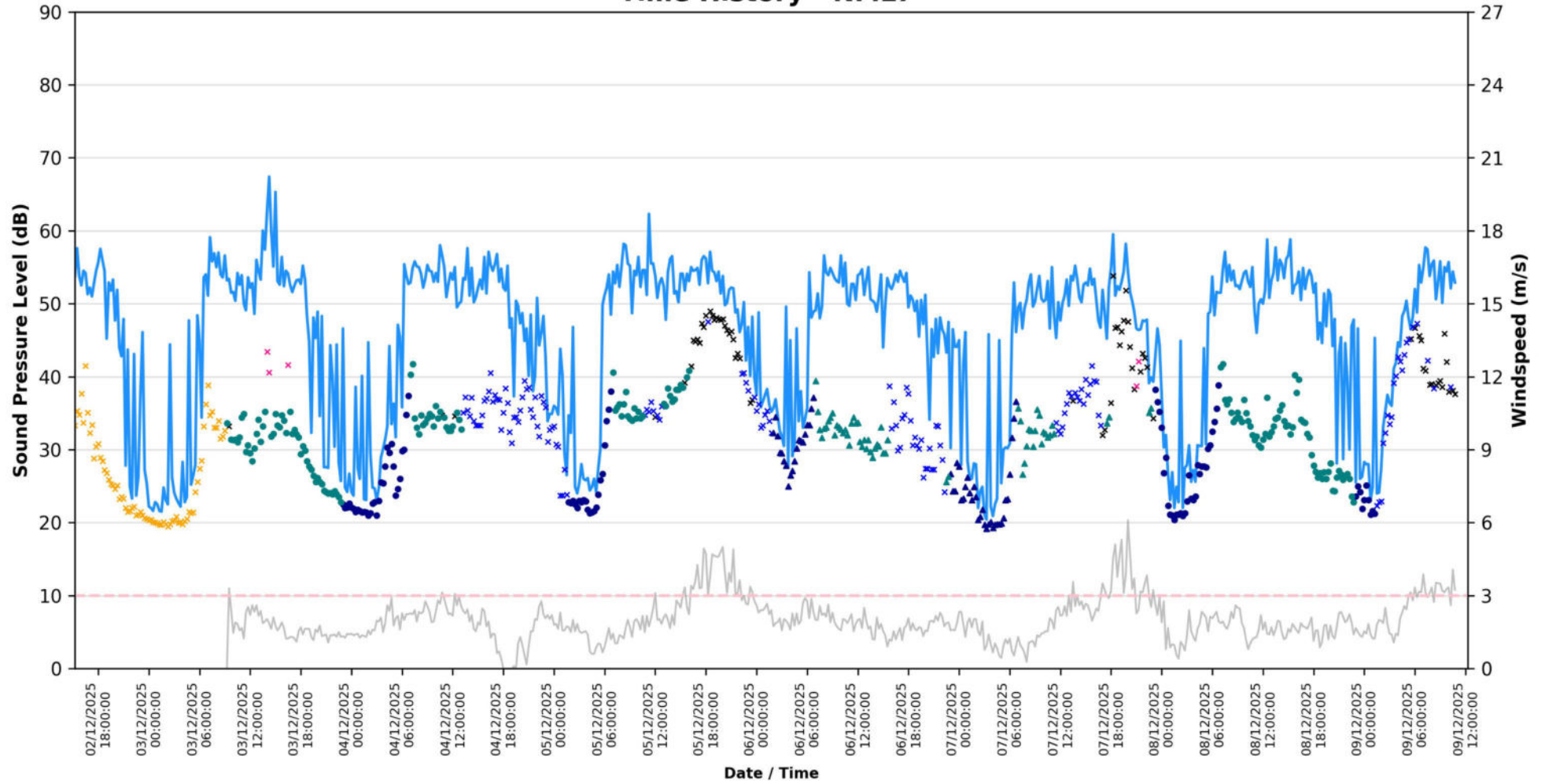
Time History - NML6



- | | |
|--|---|
| — LA_{eq} (15 mins) | X Auto Exclusion - Windspeed > 3.0 m/s |
| ● Weekday - Daytime LA_{90} (15 mins) | X Manual Exclusion |
| ● Weekday - Night-time LA_{90} (15 mins) | X Corrupt/Incomplete Data |
| ▲ Weekend - Daytime LA_{90} (15 mins) | — Windspeed |
| ▲ Weekend - Night-time LA_{90} (15 mins) | - - - Windspeed Cutoff |
| X Auto Exclusion - Precipitation Event | |

16549 - Mylen Leah - Measured Sound Levels:

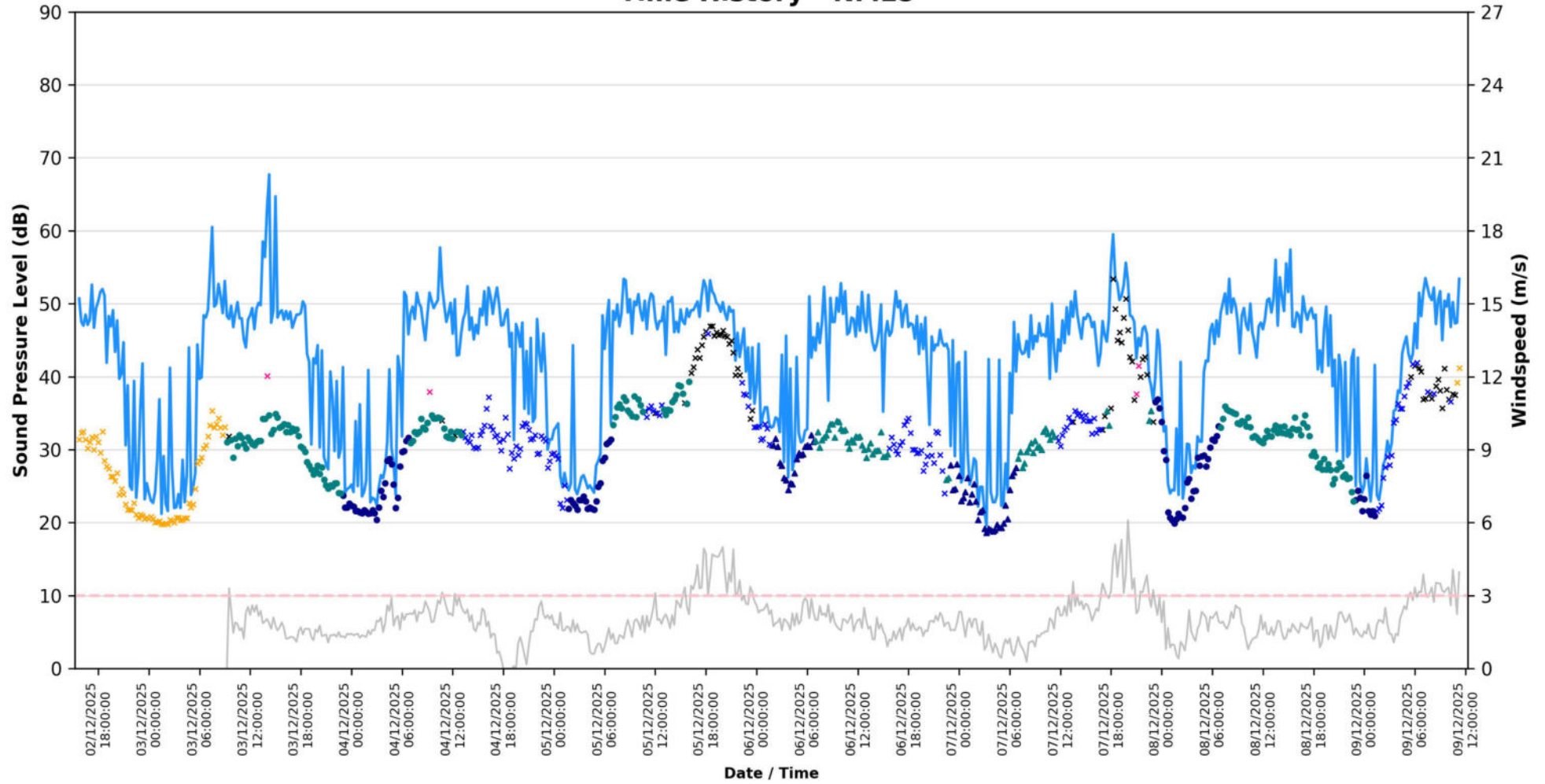
Time History - NML7



- | | |
|---|--------------------------------------|
| LA _{eq} (15 mins) | Auto Exclusion - Windspeed > 3.0 m/s |
| Weekday - Daytime LA ₉₀ (15 mins) | Manual Exclusion |
| Weekday - Night-time LA ₉₀ (15 mins) | Corrupt/Incomplete Data |
| Weekend - Daytime LA ₉₀ (15 mins) | Windspeed |
| Weekend - Night-time LA ₉₀ (15 mins) | Windspeed Cutoff |
| Auto Exclusion - Precipitation Event | |

16549 - Mylen Leah - Measured Sound Levels:

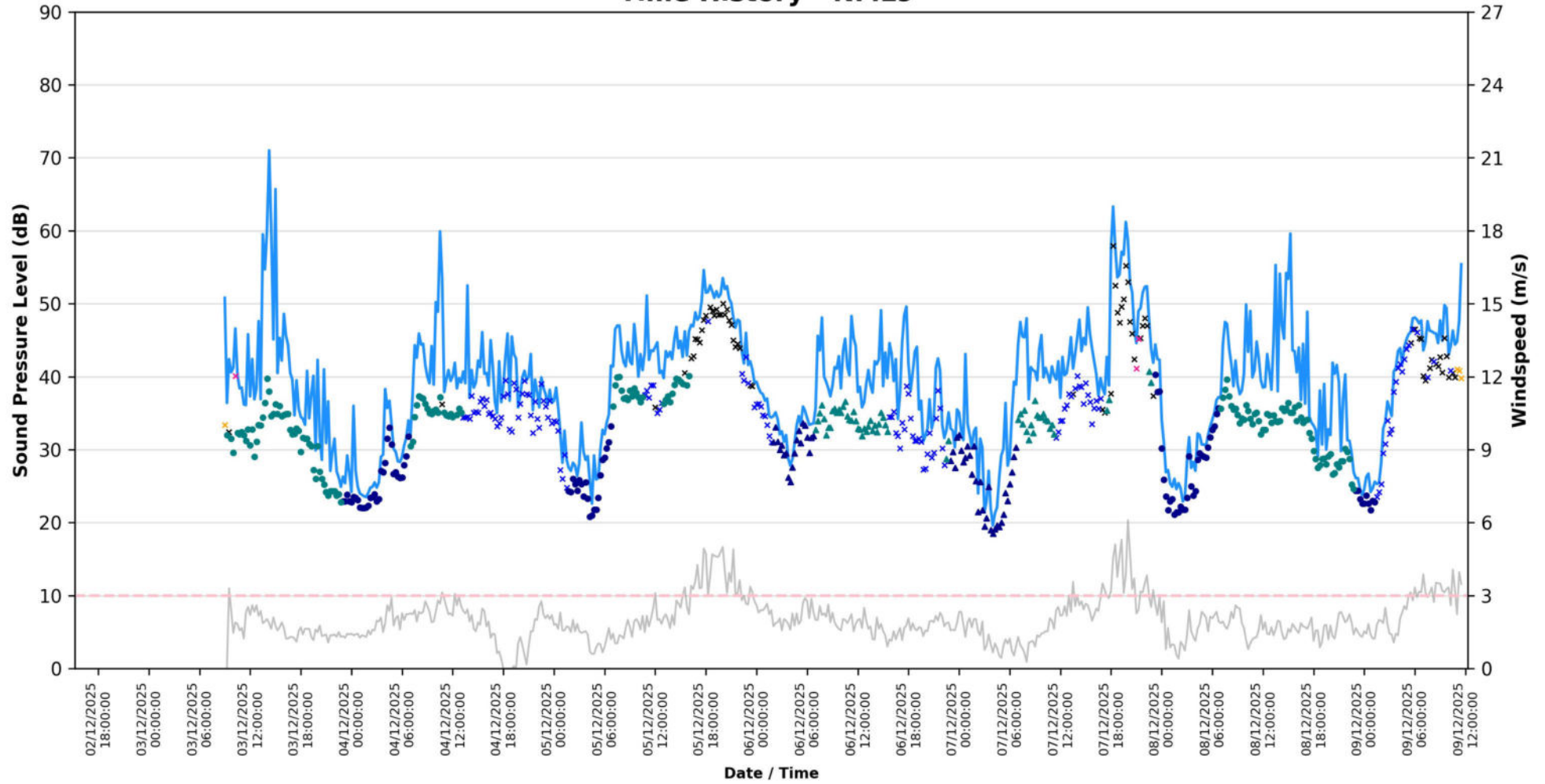
Time History - NML8



- | | | | |
|--|---|--|--------------------------------------|
| | LA _{eq} (15 mins) | | Auto Exclusion - Windspeed > 3.0 m/s |
| | Weekday - Daytime LA ₉₀ (15 mins) | | Manual Exclusion |
| | Weekday - Night-time LA ₉₀ (15 mins) | | Corrupt/Incomplete Data |
| | Weekend - Daytime LA ₉₀ (15 mins) | | Windspeed |
| | Weekend - Night-time LA ₉₀ (15 mins) | | Windspeed Cutoff |
| | Auto Exclusion - Precipitation Event | | |

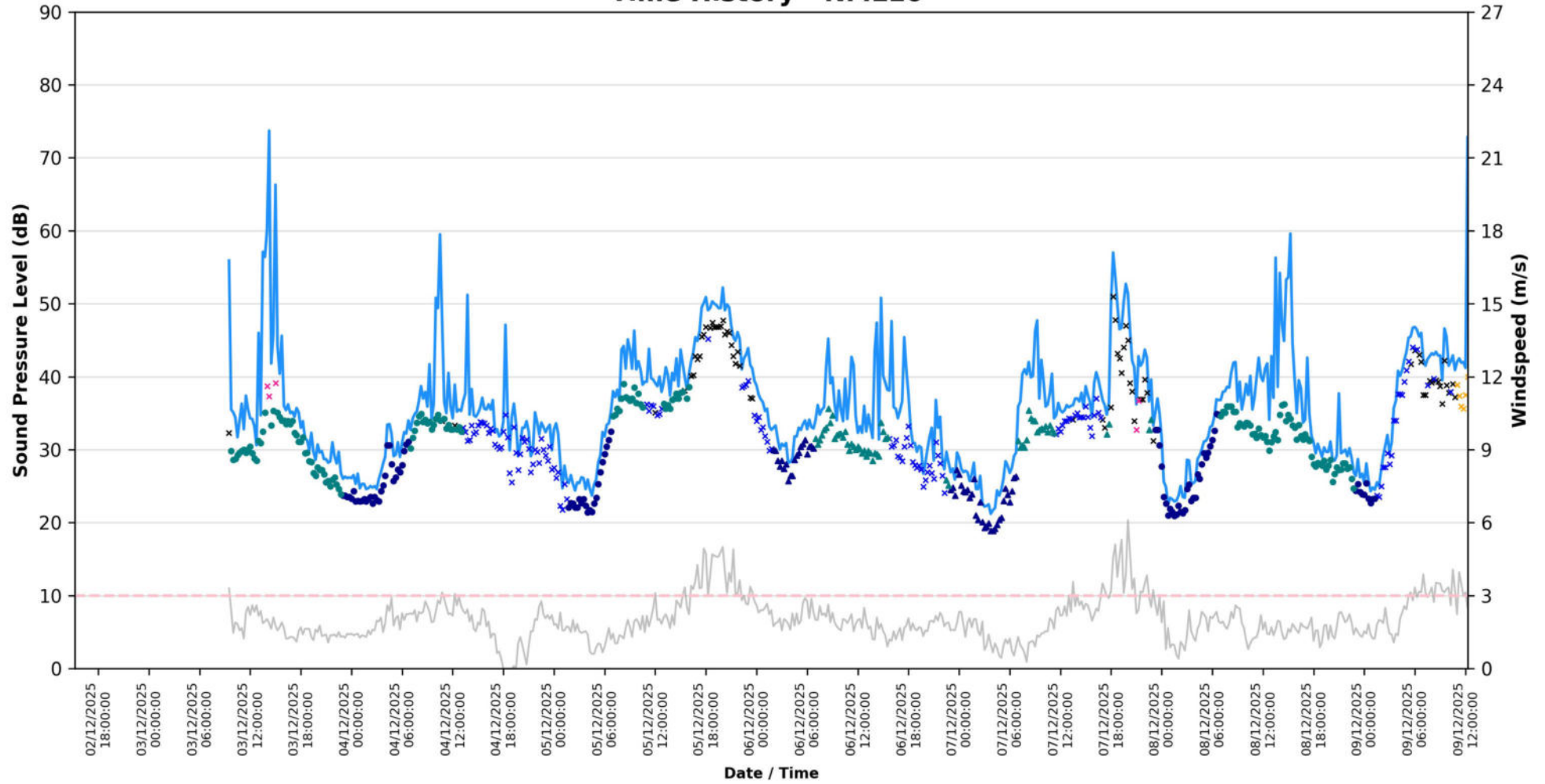
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML9



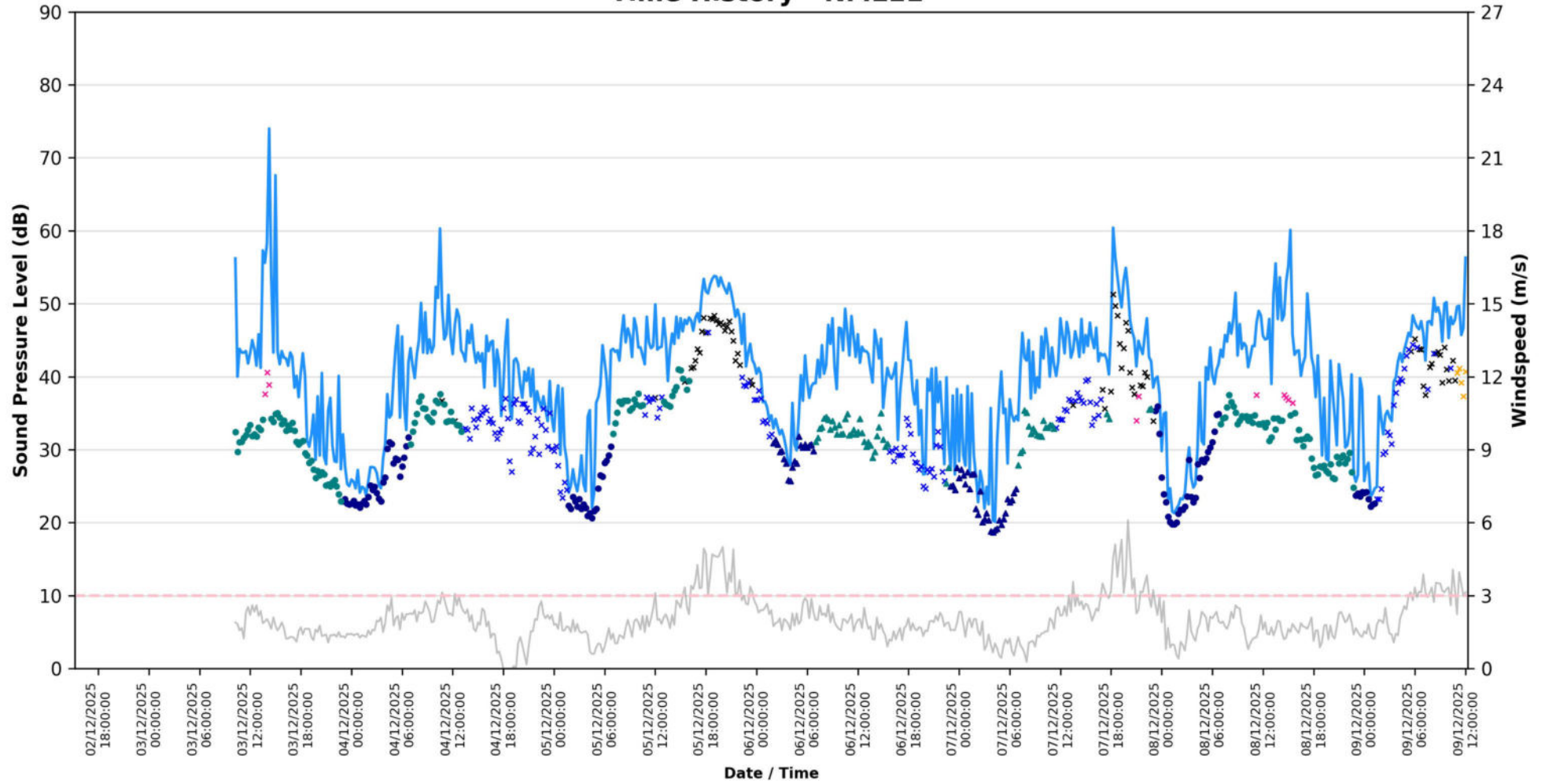
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML10



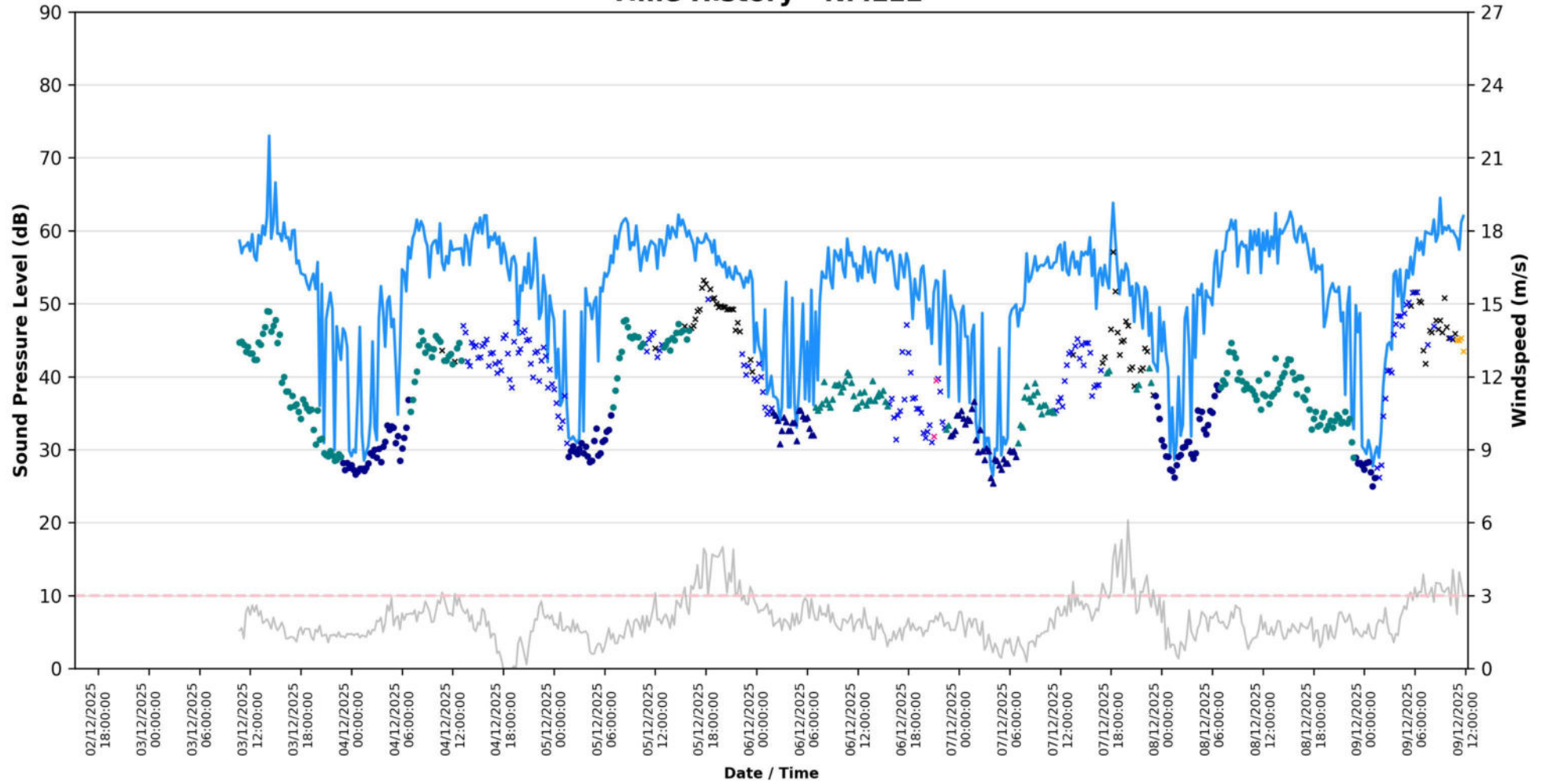
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML11



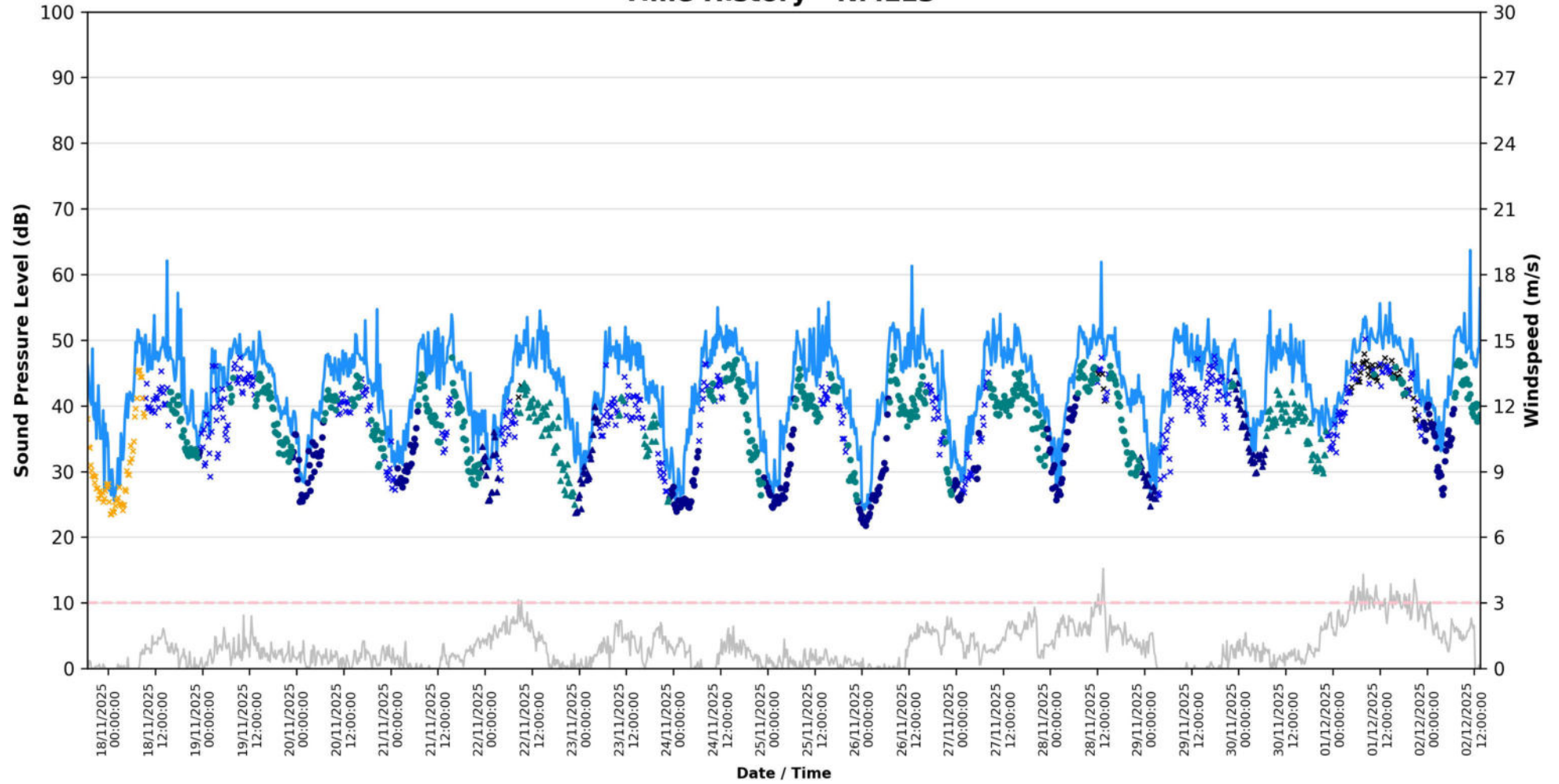
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML12



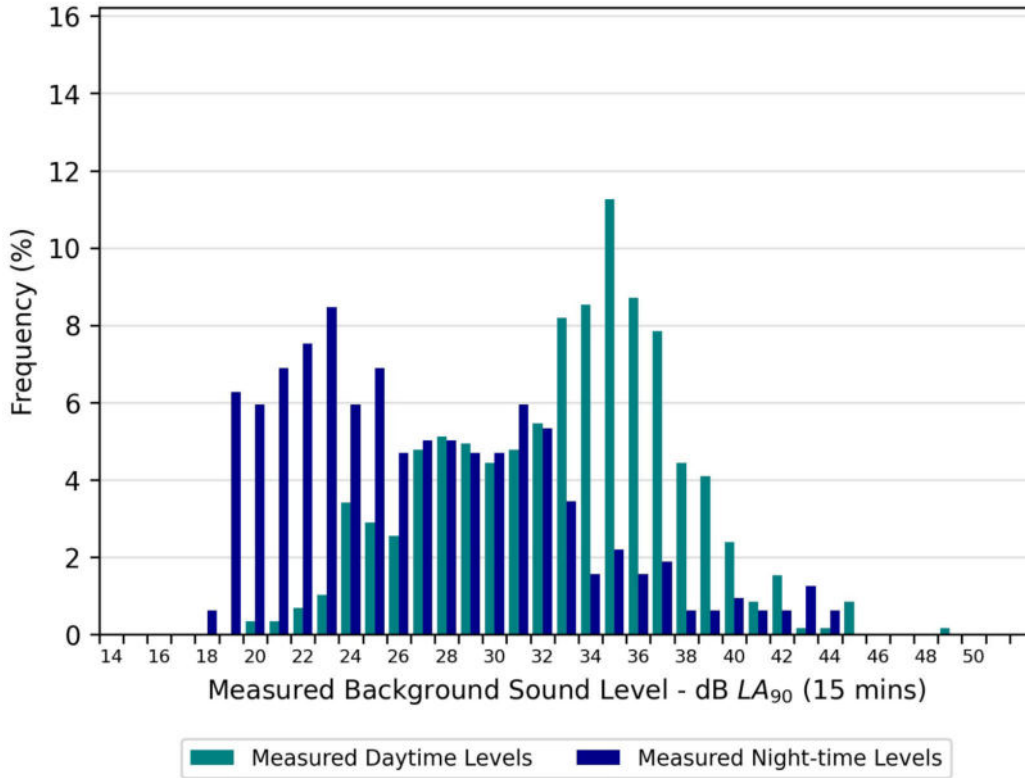
16549 - Mylen Leah - Measured Sound Levels:

Time History - NML13

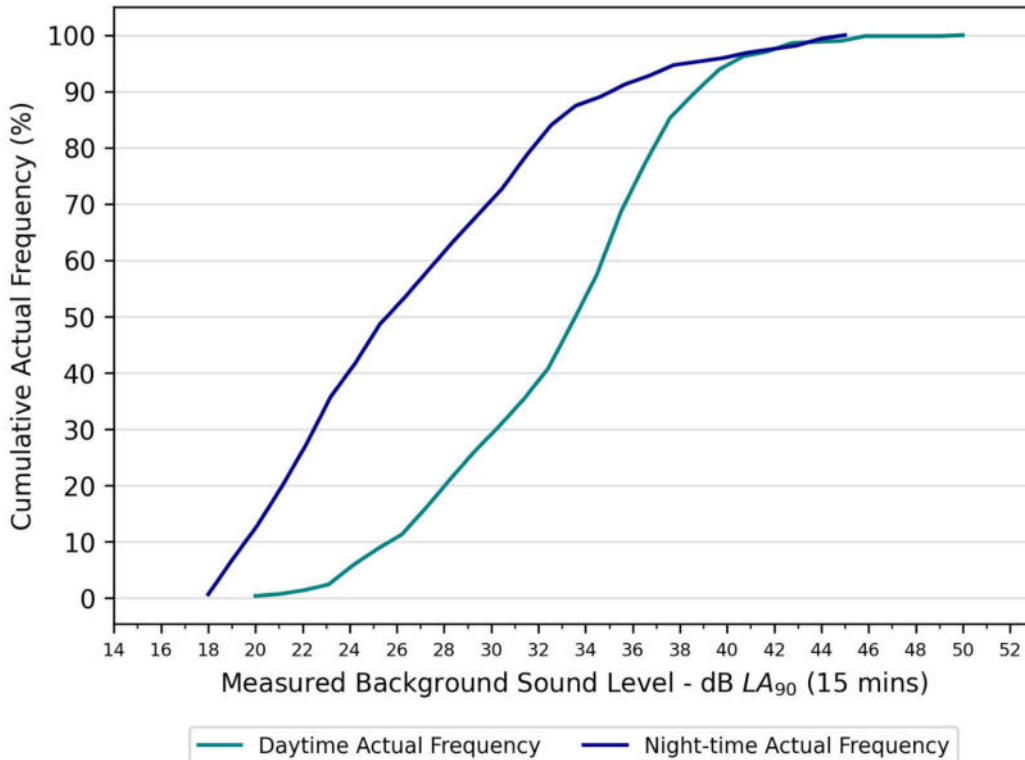


- | | |
|--|---|
| — LA_{eq} (15 mins) | X Auto Exclusion - Windspeed > 3.0 m/s |
| ● Weekday - Daytime LA_{90} (15 mins) | X Manual Exclusion |
| ● Weekday - Night-time LA_{90} (15 mins) | X Corrupt/Incomplete Data |
| ▲ Weekend - Daytime LA_{90} (15 mins) | — Windspeed |
| ▲ Weekend - Night-time LA_{90} (15 mins) | - - - Windspeed Cutoff |
| X Auto Exclusion - Precipitation Event | |

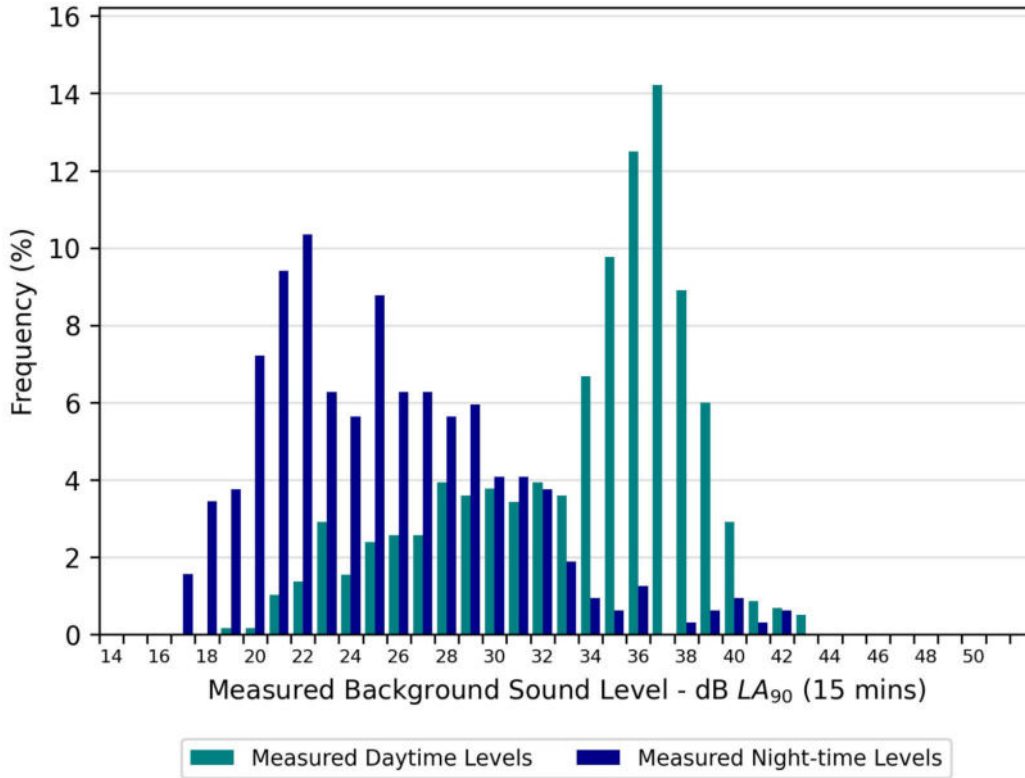
Statistical Analysis - NML1



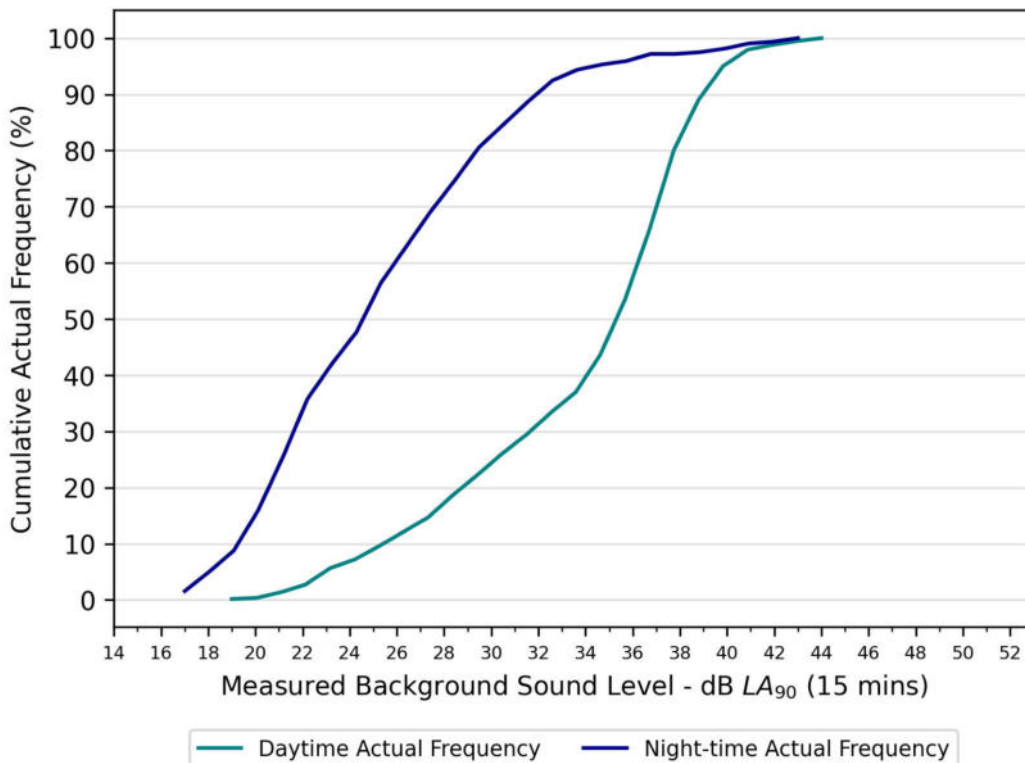
Statistical Analysis - NML1



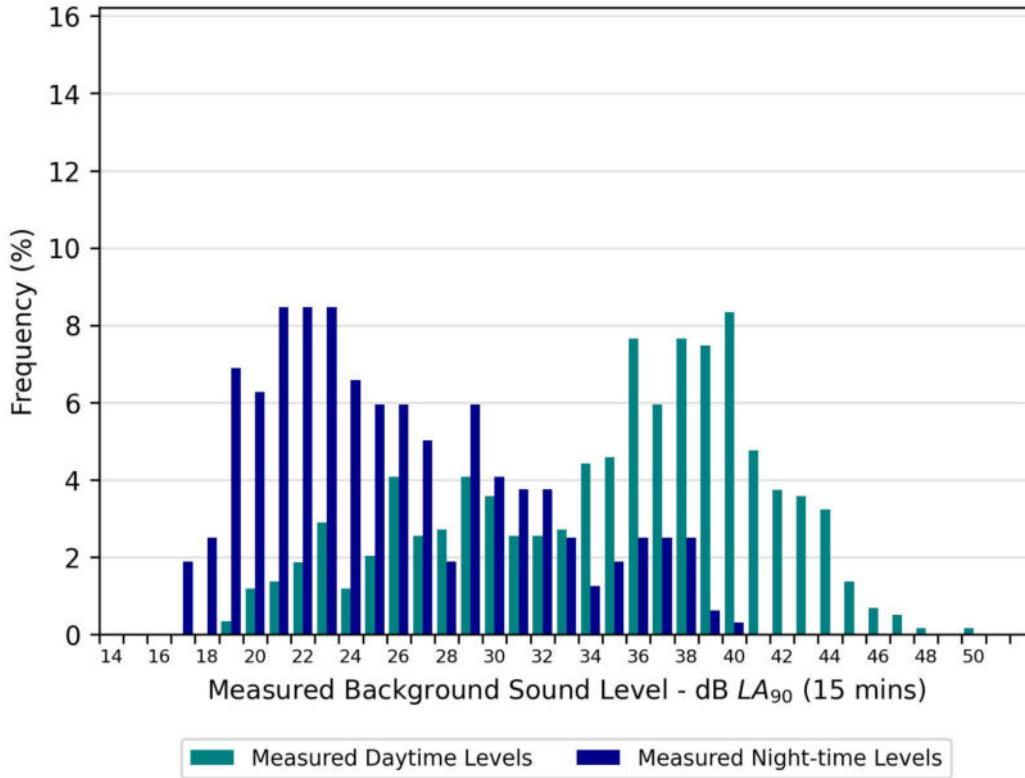
Statistical Analysis - NML2



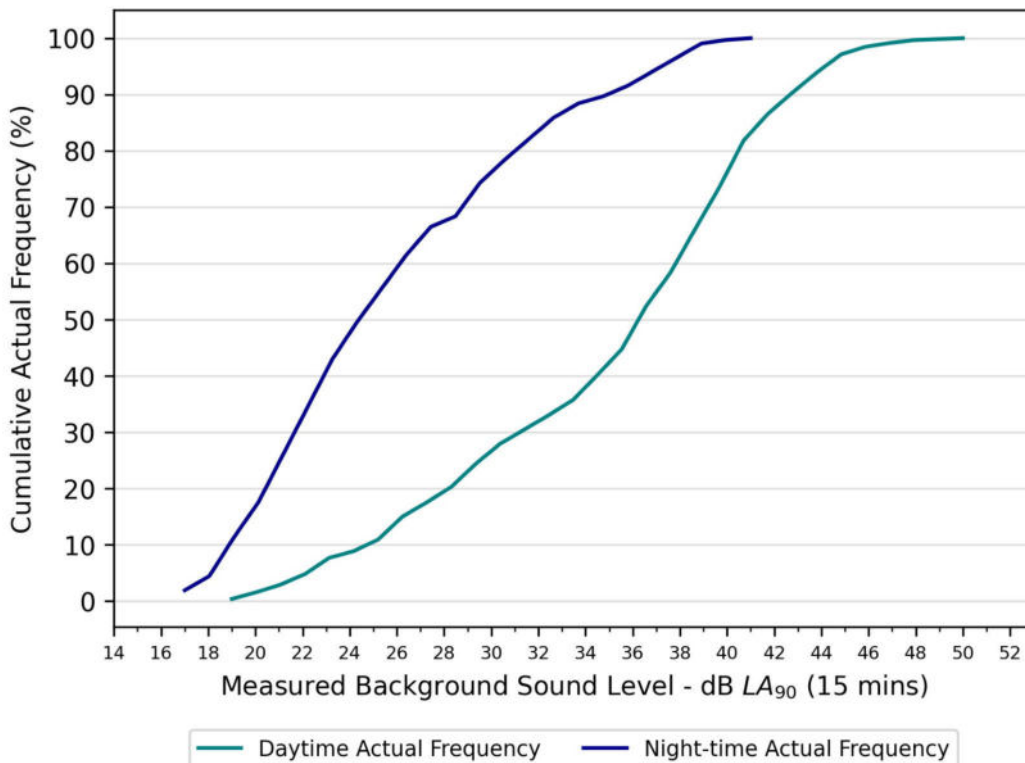
Statistical Analysis - NML2



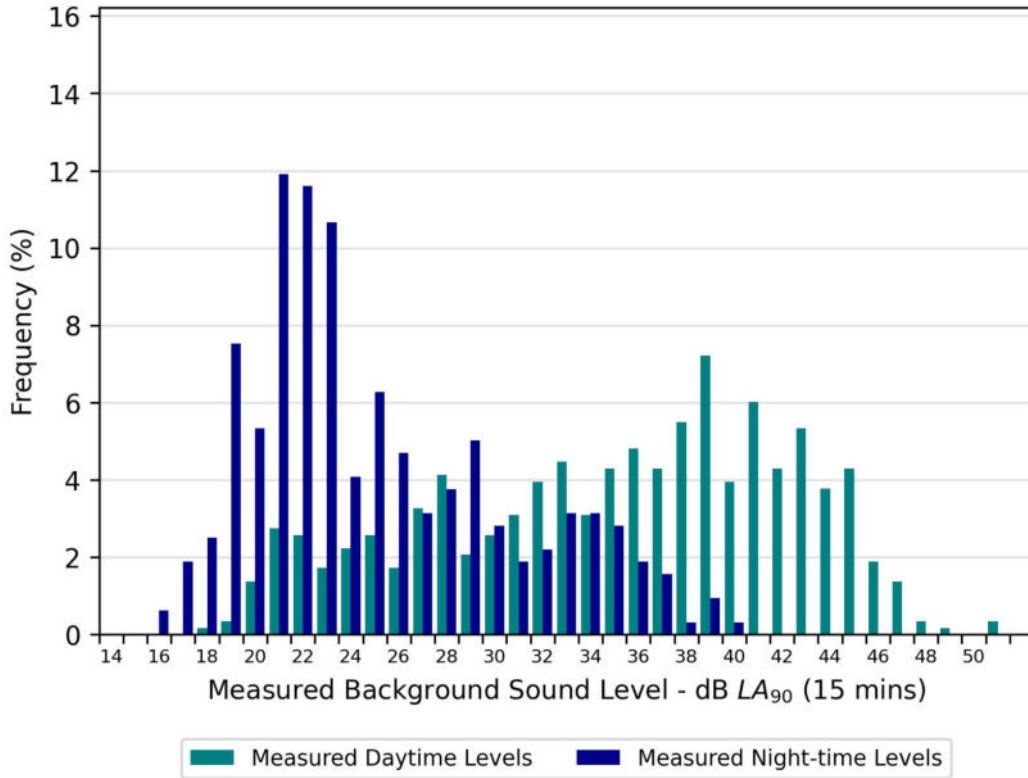
Statistical Analysis - NML3



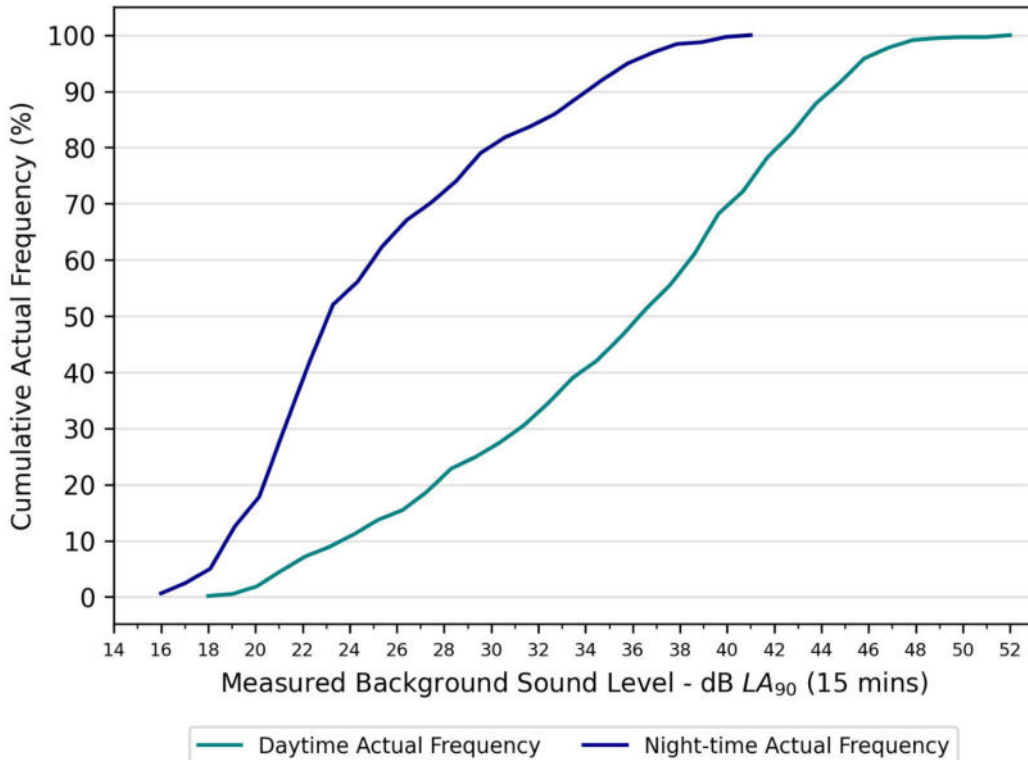
Statistical Analysis - NML3



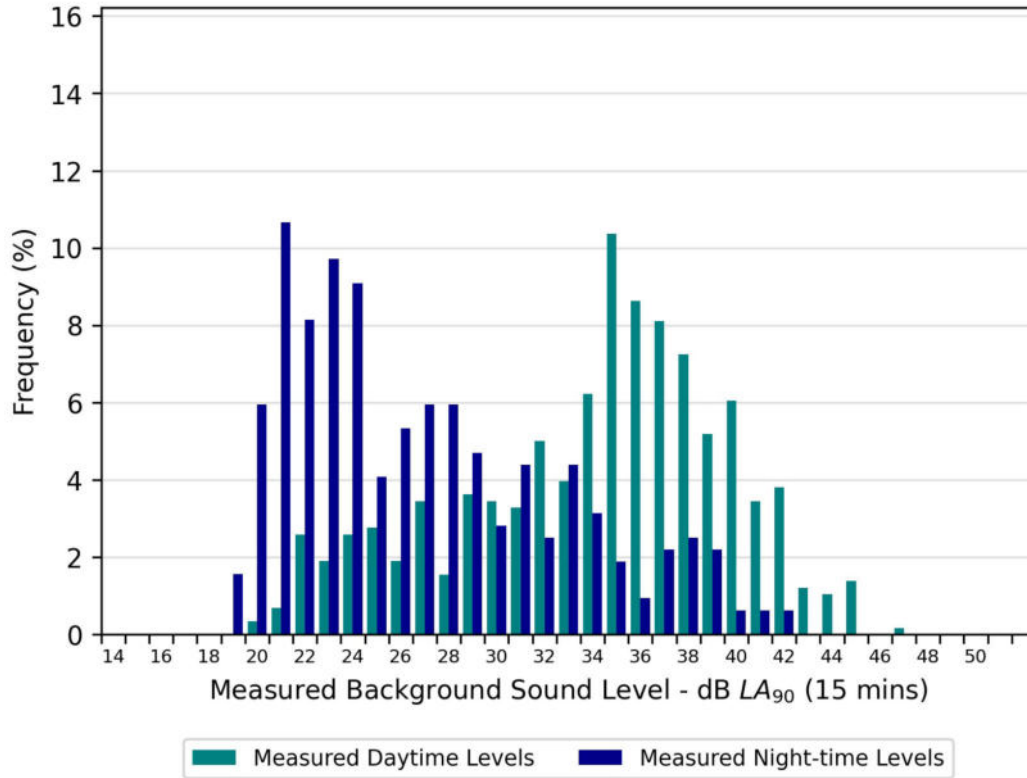
Statistical Analysis - NML4



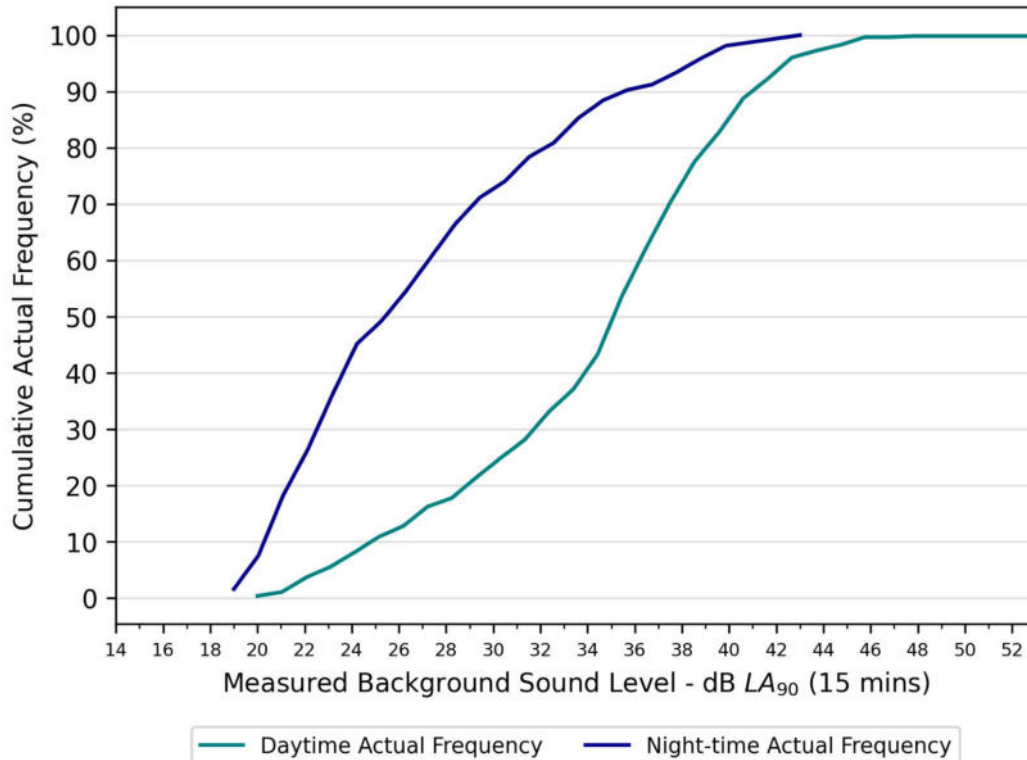
Statistical Analysis - NML4



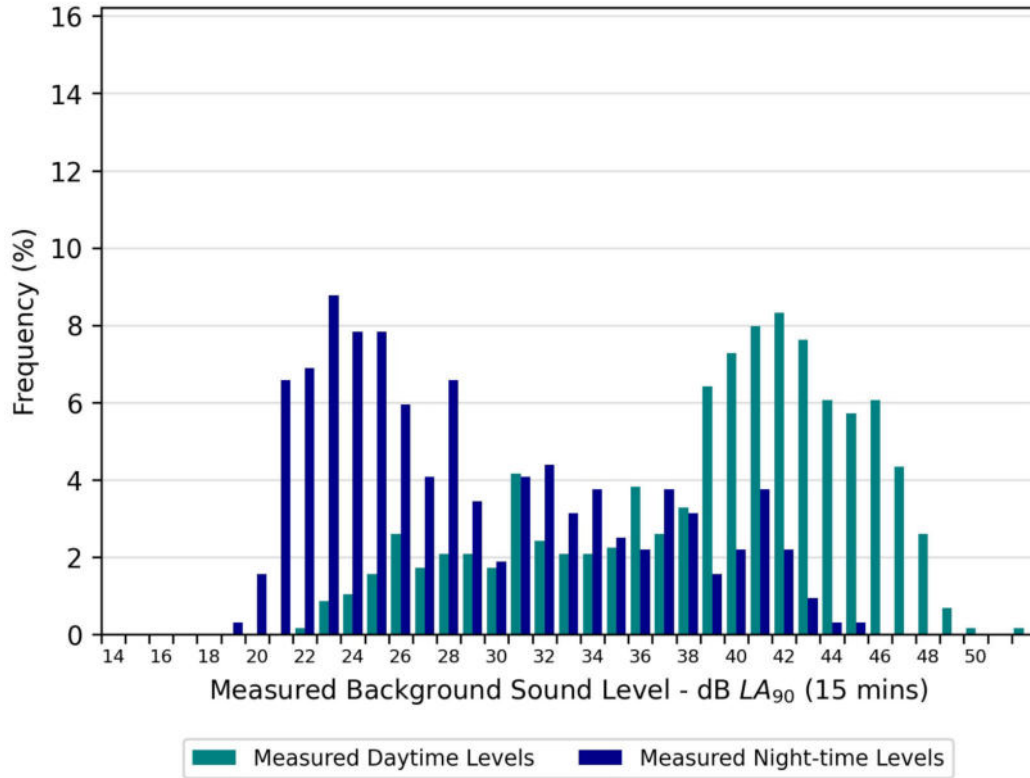
Statistical Analysis - NML5



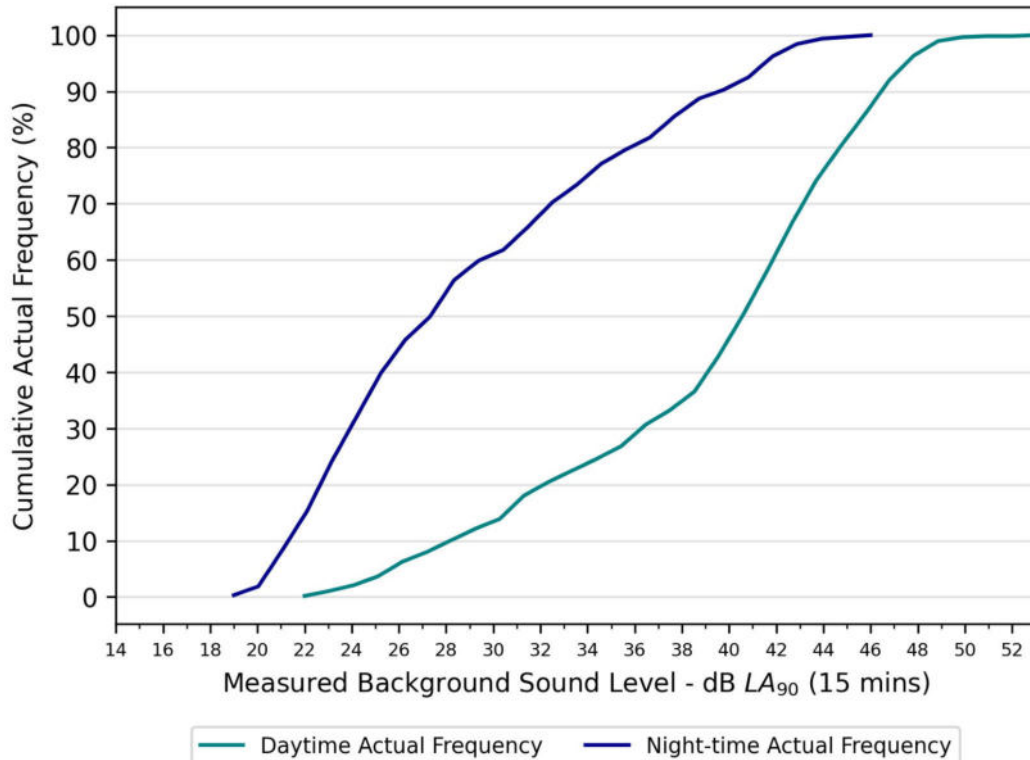
Statistical Analysis - NML5



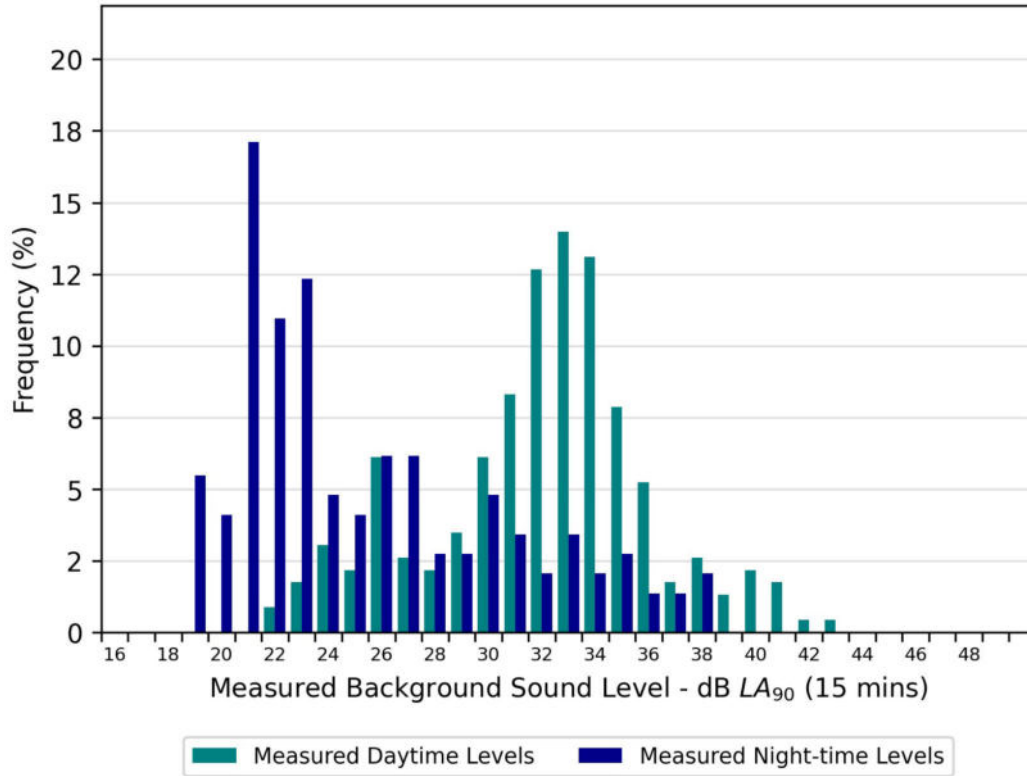
Statistical Analysis - NML6



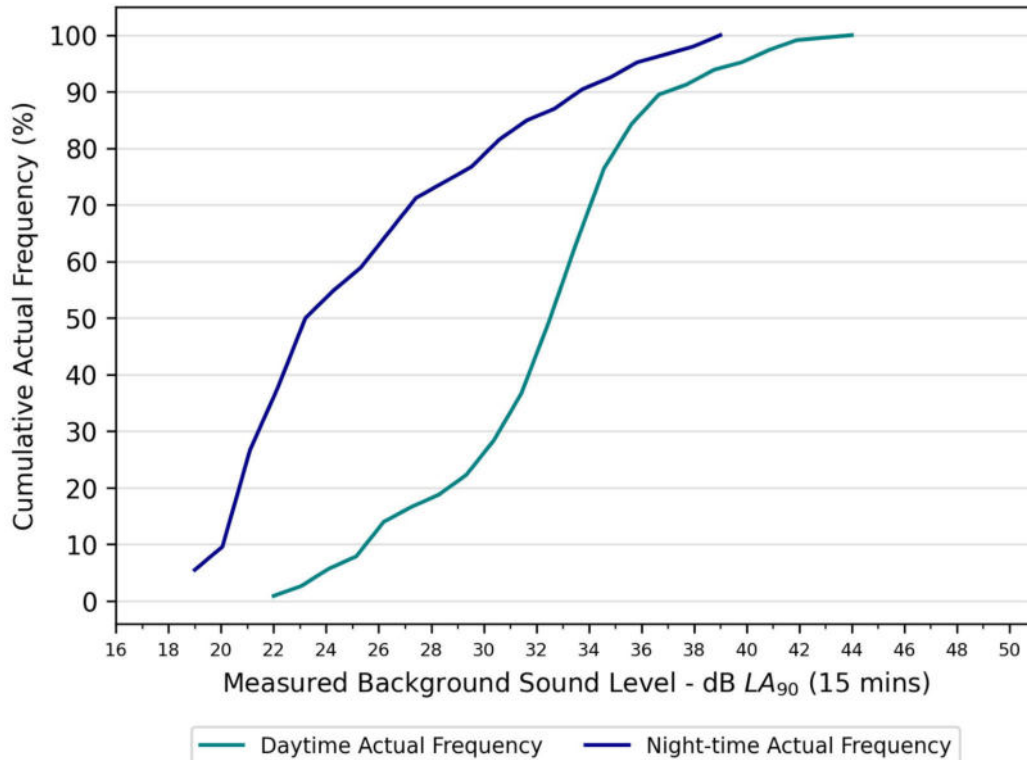
Statistical Analysis - NML6



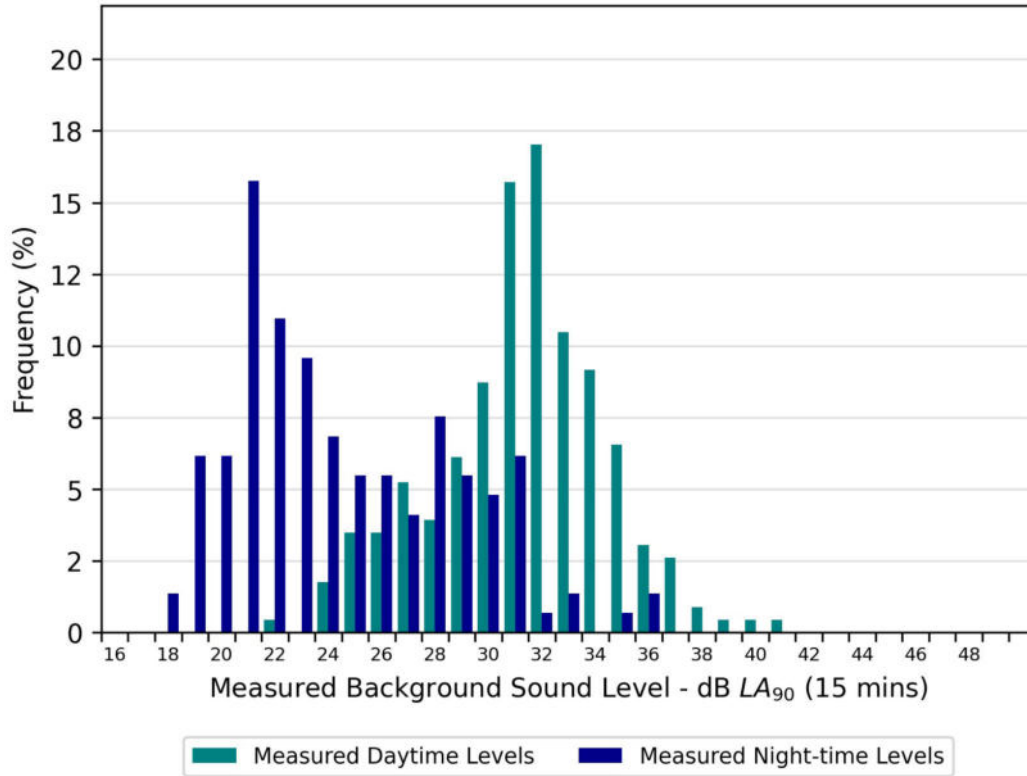
Statistical Analysis - NML7



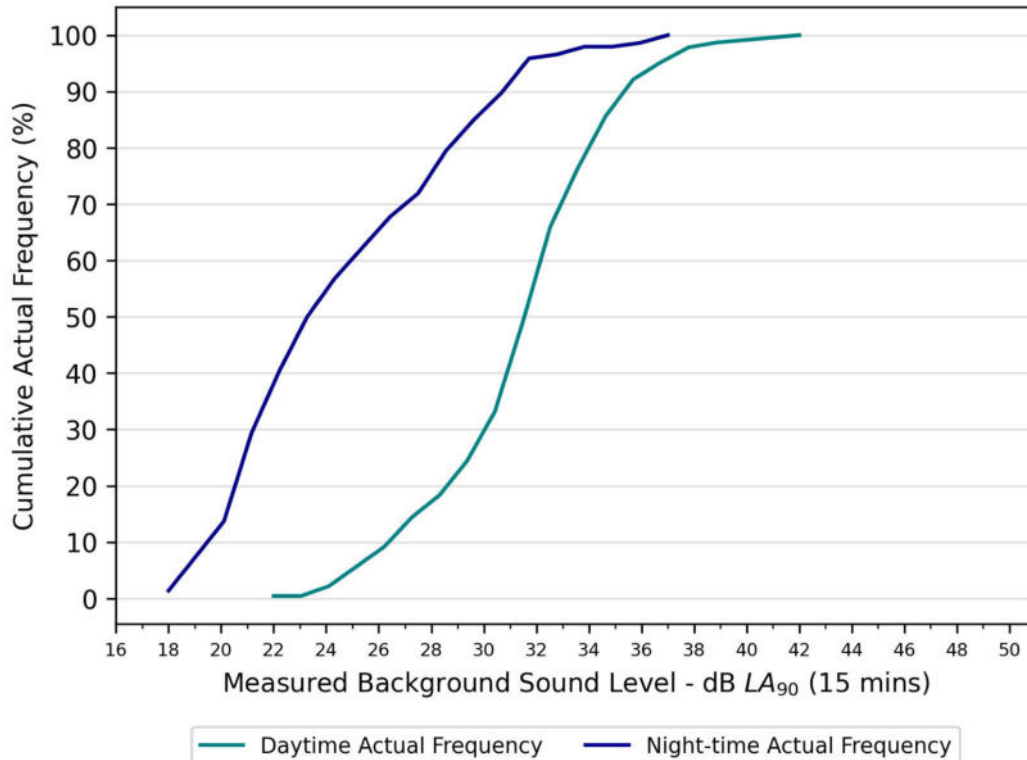
Statistical Analysis - NML7



Statistical Analysis - NML8

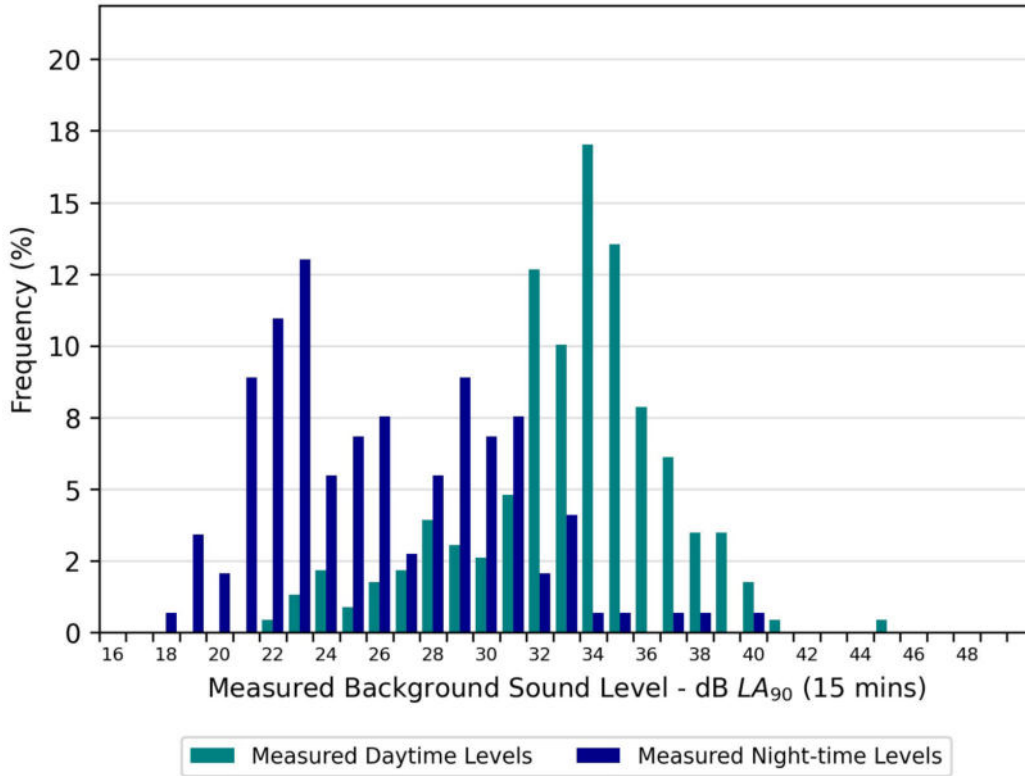


Statistical Analysis - NML8

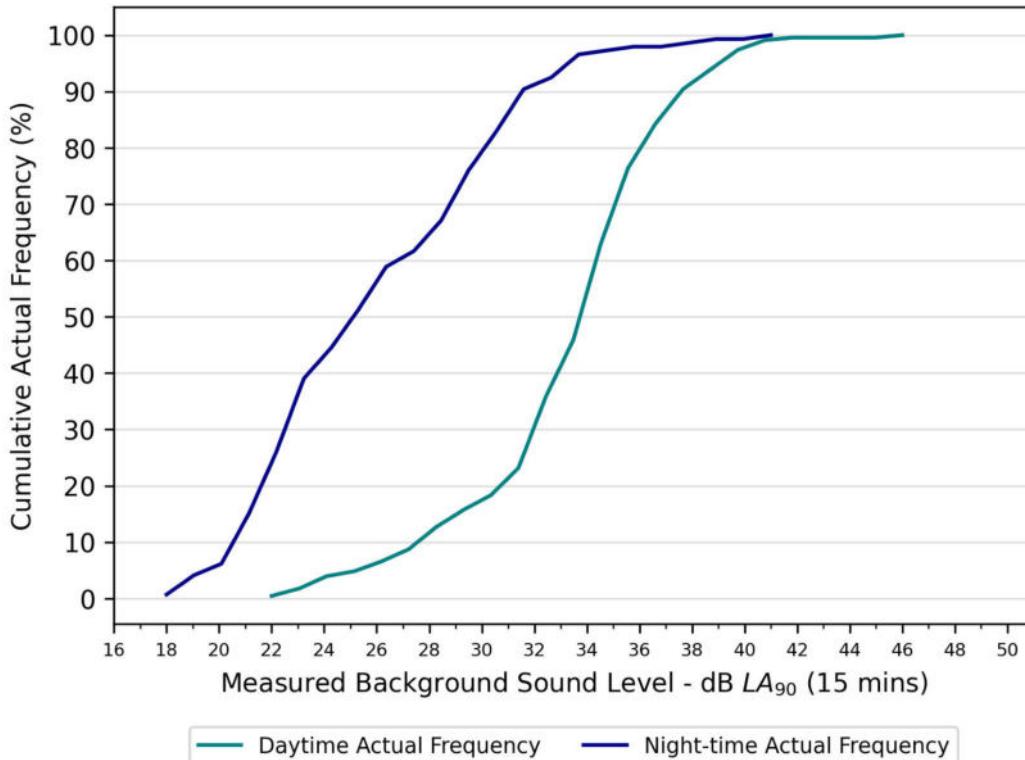


16549 - Mylen Leah - Measured Sound Levels:

Statistical Analysis - NML9

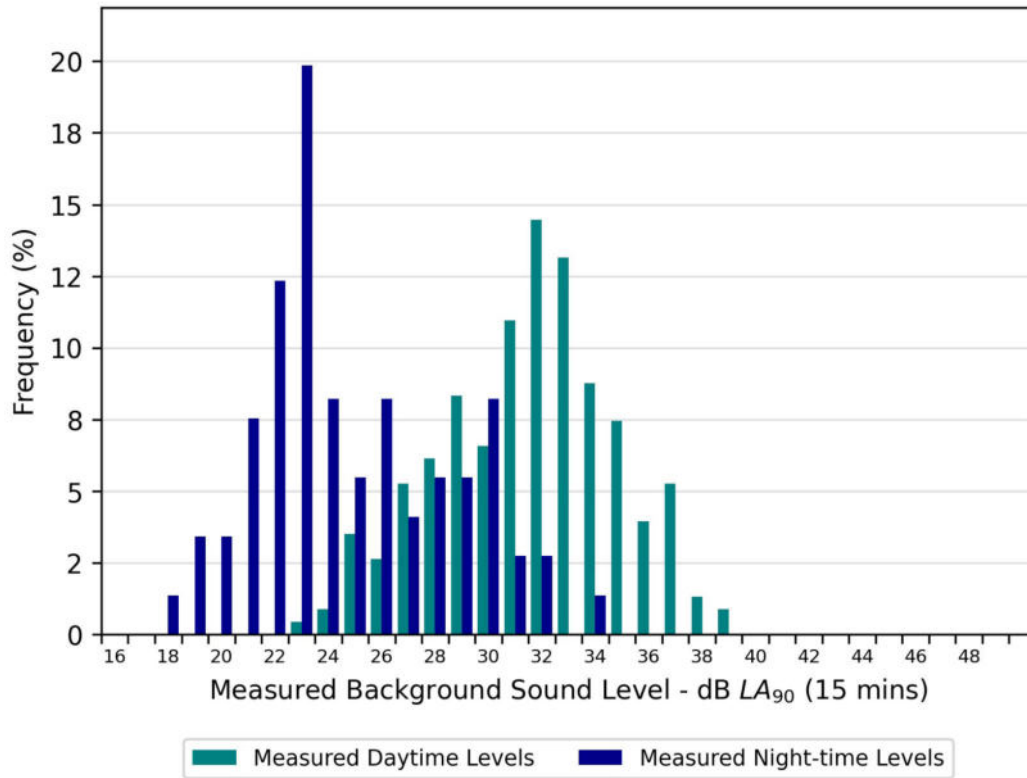


Statistical Analysis - NML9

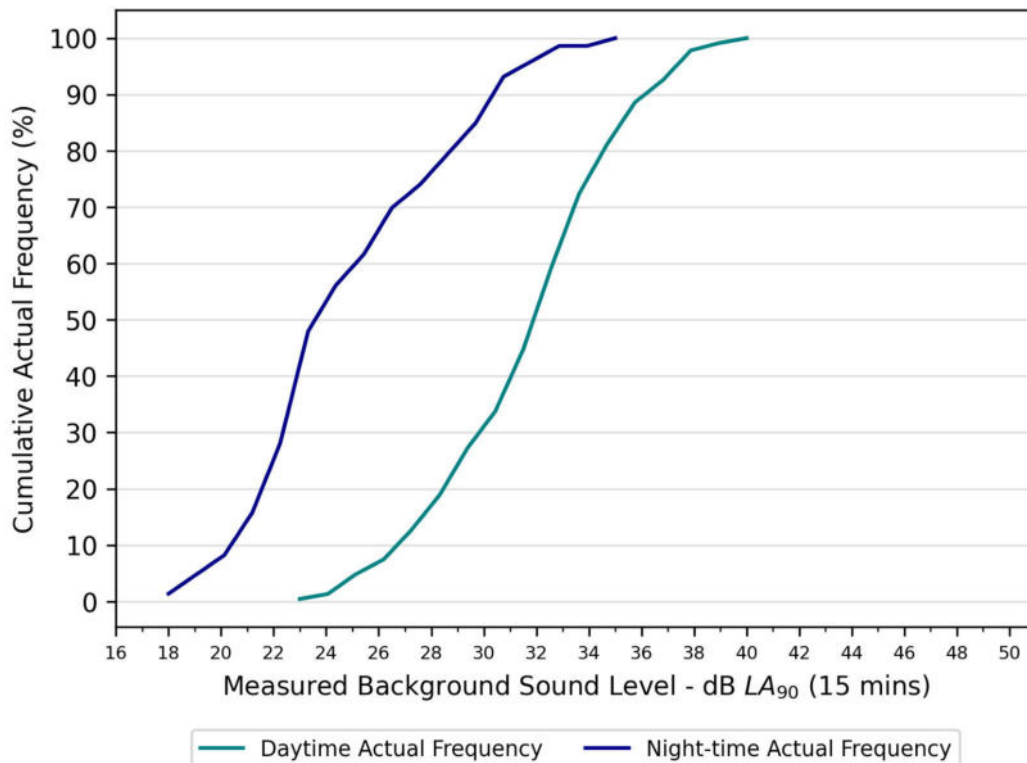


16549 - Mylen Leah - Measured Sound Levels:

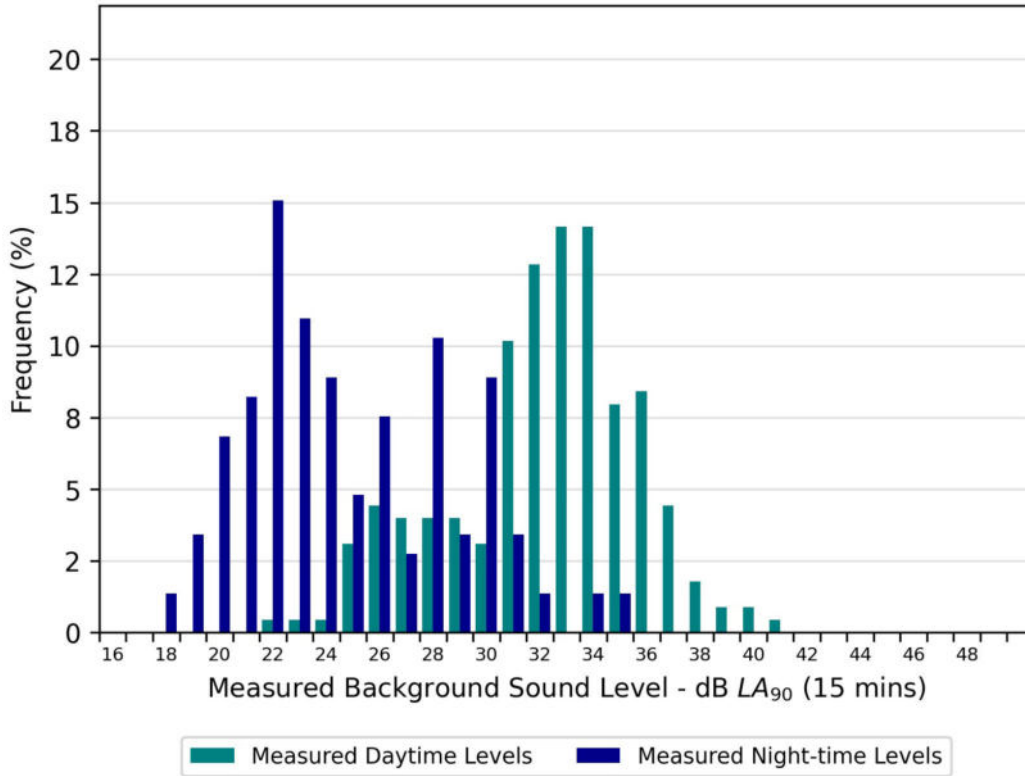
Statistical Analysis - NML10



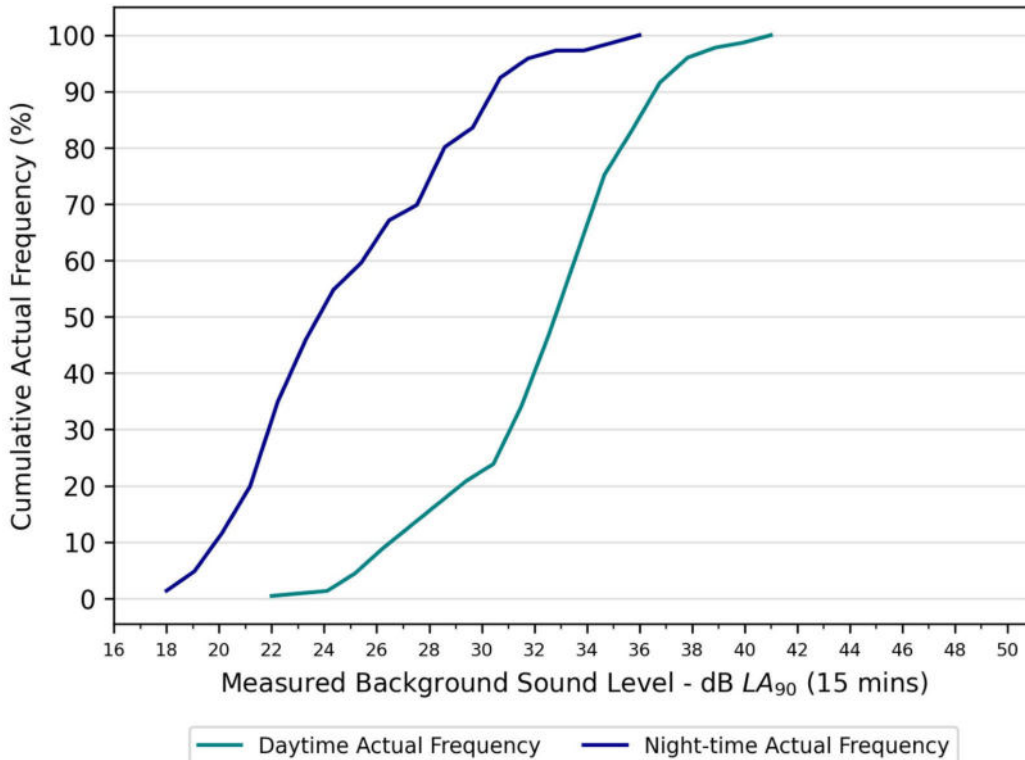
Statistical Analysis - NML10



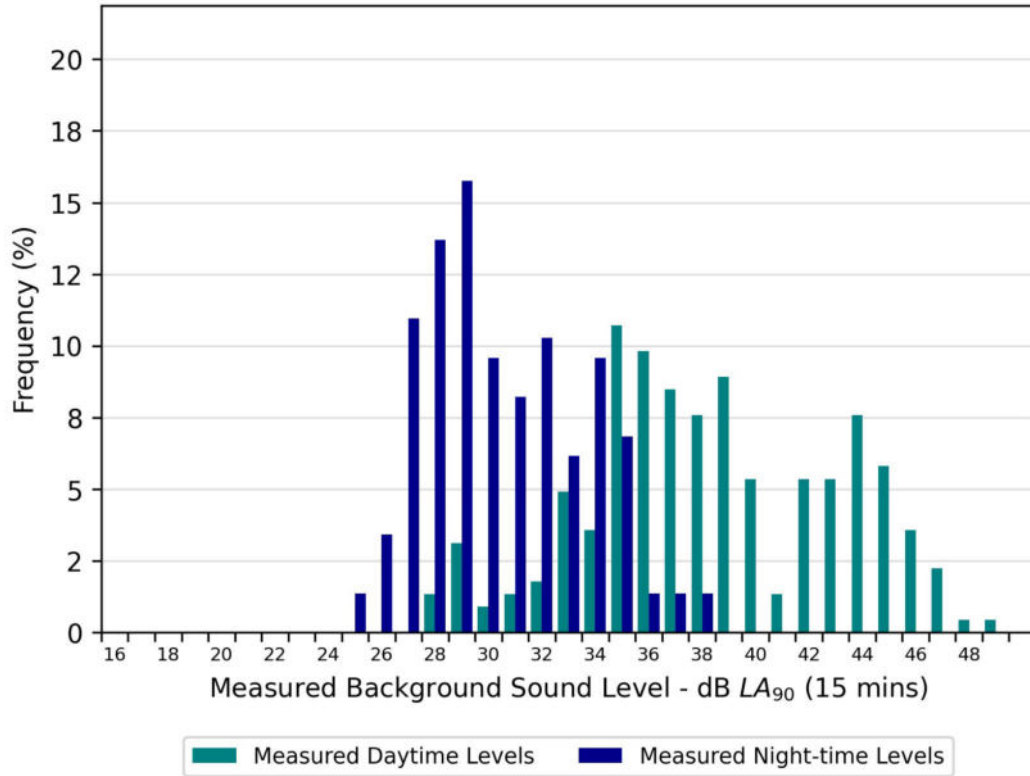
Statistical Analysis - NML11



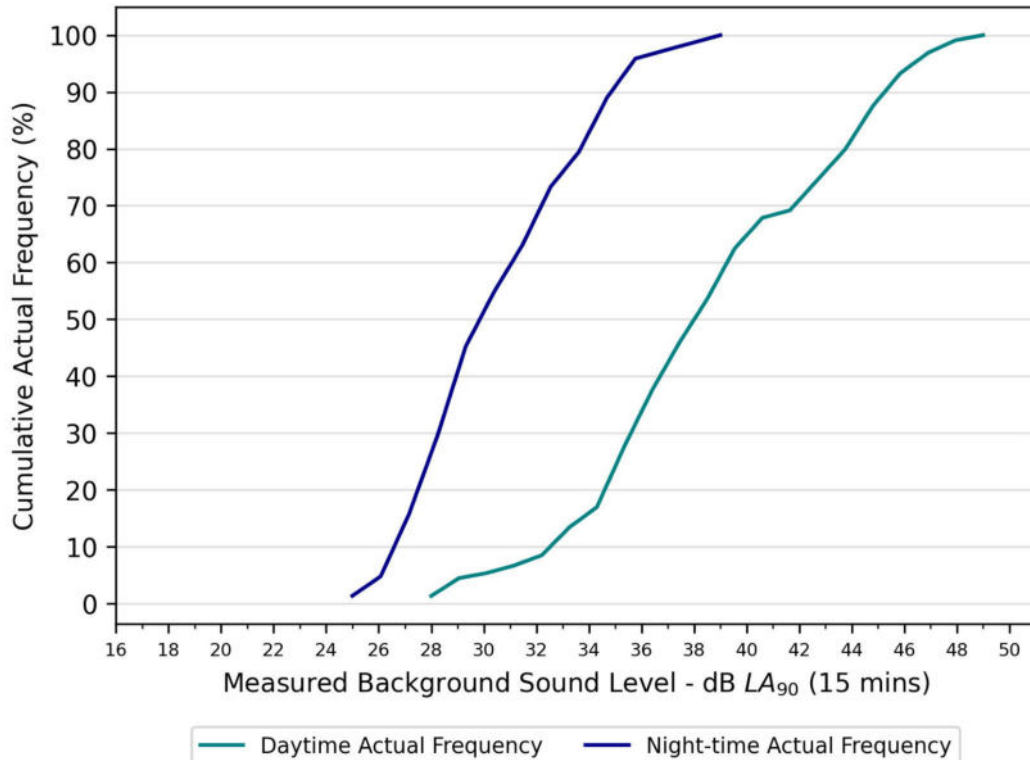
Statistical Analysis - NML11



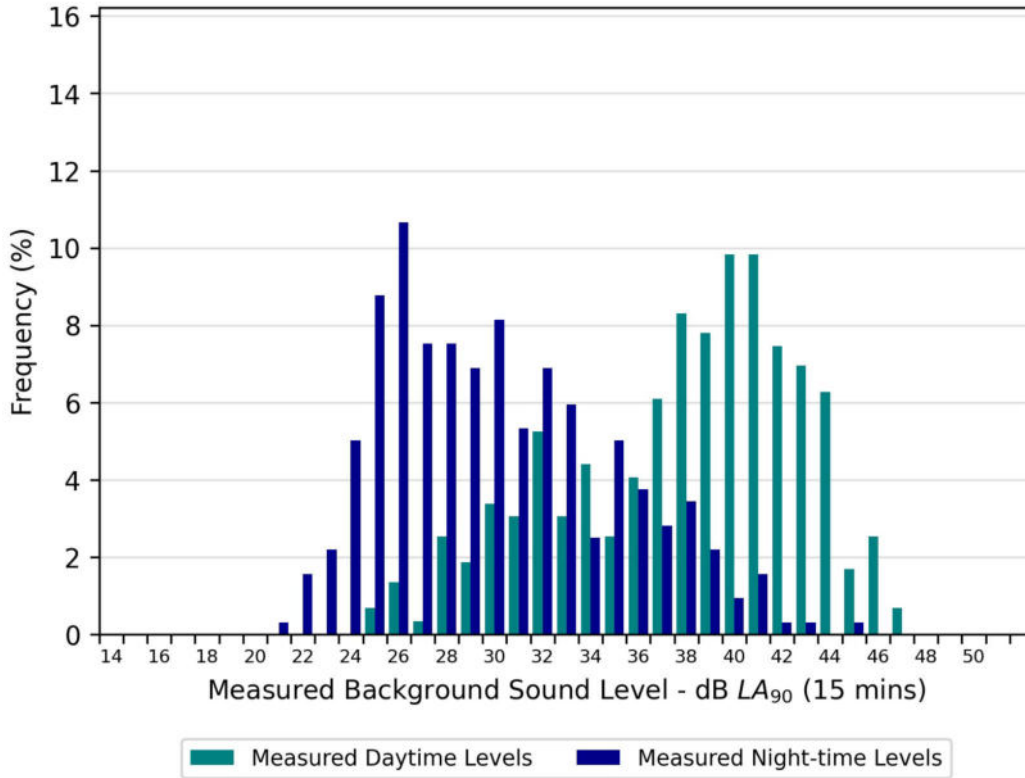
Statistical Analysis - NML12



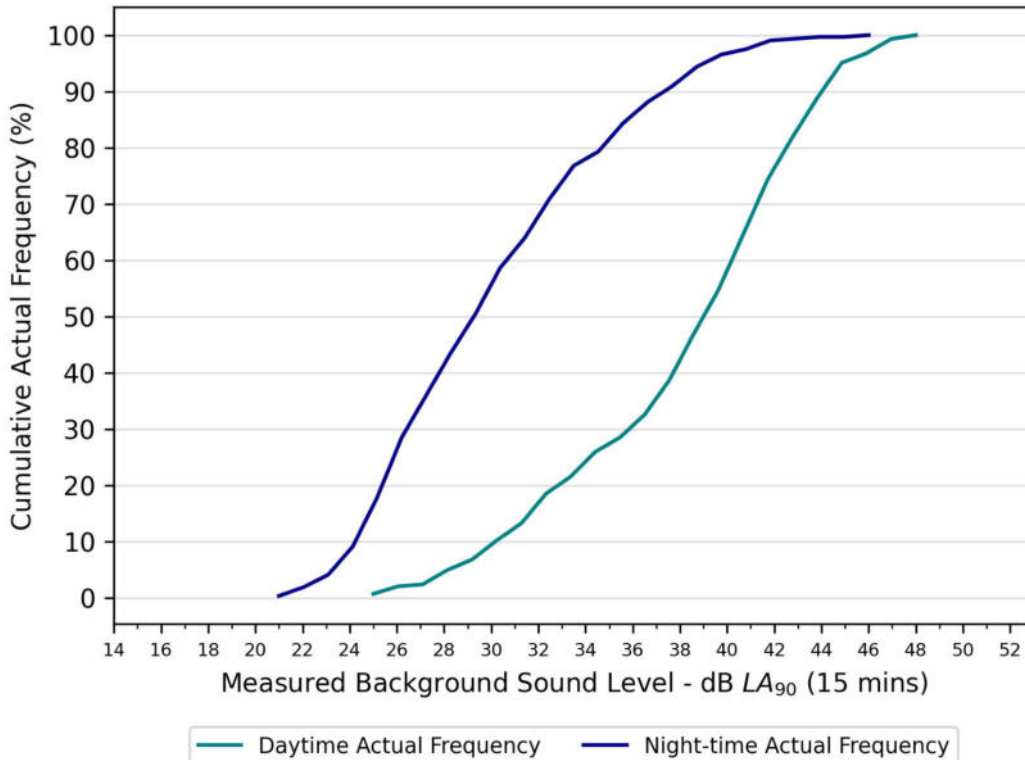
Statistical Analysis - NML12



Statistical Analysis - NML13



Statistical Analysis - NML13



16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML1

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	583	33	34	20 - 46
	LAEQ (15 MINS)	583	40	40	23 - 64
NIGHT-TIME	LA90 (15 MINS)	306	27	26	18 - 40
	LAEQ (15 MINS)	306	31	31	21 - 46

NML2

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	584	34	36	20 - 43
	LAEQ (15 MINS)	584	44	46	26 - 67
NIGHT-TIME	LA90 (15 MINS)	319	26	25	18 - 43
	LAEQ (15 MINS)	319	31	31	19 - 49

16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML3

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	584	35	37	19 - 47
	LAEQ (15 MINS)	584	63	65	27 - 74
NIGHT-TIME	LA90 (15 MINS)	312	26	25	17 - 40
	LAEQ (15 MINS)	312	45	51	21 - 66

NML4

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	577	35	36	19 - 49
	LAEQ (15 MINS)	577	64	66	28 - 72
NIGHT-TIME	LA90 (15 MINS)	317	25	24	17 - 40
	LAEQ (15 MINS)	317	46	52	19 - 68

16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML5

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	577	35	36	20 - 47
	LAEQ (15 MINS)	577	43	43	24 - 66
NIGHT-TIME	LA90 (15 MINS)	319	27	26	19 - 43
	LAEQ (15 MINS)	319	33	34	21 - 49

NML6

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	576	39	41	23 - 50
	LAEQ (15 MINS)	576	50	51	33 - 66
NIGHT-TIME	LA90 (15 MINS)	317	29	28	20 - 46
	LAEQ (15 MINS)	317	40	40	23 - 54

16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML7

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	224	32	33	23 - 42
	LAEQ (15 MINS)	224	51	53	26 - 65
NIGHT-TIME	LA90 (15 MINS)	146	26	24	19 - 39
	LAEQ (15 MINS)	146	34	30	20 - 55

NML8

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	225	32	32	23 - 39
	LAEQ (15 MINS)	225	47	48	27 - 68
NIGHT-TIME	LA90 (15 MINS)	146	25	24	19 - 37
	LAEQ (15 MINS)	146	32	29	20 - 52

16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML9

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	226	34	34	23 - 41
	LAEQ (15 MINS)	226	41	41	25 - 71
NIGHT-TIME	LA90 (15 MINS)	146	26	26	18 - 40
	LAEQ (15 MINS)	146	30	29	20 - 44

NML10

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	223	32	32	24 - 39
	LAEQ (15 MINS)	223	37	37	27 - 60
NIGHT-TIME	LA90 (15 MINS)	146	25	24	19 - 35
	LAEQ (15 MINS)	146	28	27	21 - 37

16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML11

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	216	32	33	23 - 41
	LAEQ (15 MINS)	216	43	43	27 - 68
NIGHT-TIME	LA90 (15 MINS)	146	25	24	19 - 36
	LAEQ (15 MINS)	146	31	30	20 - 47

NML12

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	224	39	38	28 - 49
	LAEQ (15 MINS)	224	56	57	30 - 73
NIGHT-TIME	LA90 (15 MINS)	146	31	30	25 - 39
	LAEQ (15 MINS)	146	42	43	26 - 58



16549 - Mylen Leah - Measured Sound Levels:

Relevant Statistics

NML13

		COUNT	MEAN	MEDIAN	RANGE
DAYTIME	LA90 (15 MINS)	590	38	39	25 - 48
	LAEQ (15 MINS)	590	46	47	31 - 64
NIGHT-TIME	LA90 (15 MINS)	319	31	30	22 - 45
	LAEQ (15 MINS)	319	36	36	24 - 50



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 10 November 2025

Certificate Number: UCRT25/2580

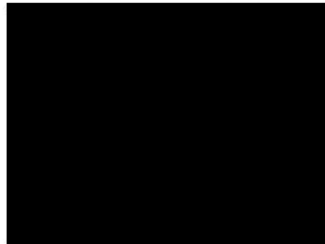
Calibrated at & Certificate issued by:

ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk

Page 1 of 2 Pages	
Approved Signatory	[Redacted]
[Redacted]	[Redacted]

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Customer



Order No. 5001

Test Procedure Procedure TP 14 Calibration of Sound Calibrators (60942:2017)

Description Acoustic Calibrator

Identification	Manufacturer	Instrument	Model	Serial No.
	Rion	Calibrator	NC-75	35046102
Public evidence of Type Approval		Yes	Approved by	PTB

The calibrator has been tested as specified in Annex B of IEC 60942:2017. As public evidence was available, from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in Annex A of IEC 60942:2017, the sound calibrator tested is considered to conform to all the class 1 requirements of IEC 60942:2017.

ANV Job No. UKAS25/10808

Date Received 29 October 2025

Date Calibrated 10 November 2025

Previous Certificate	Dated	23 October 2024
	Certificate No.	UCRT24/2404
	Laboratory	0653

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Certificate Number

UCRT25/2580

UKAS Accredited Calibration Laboratory No. 0653

Page 2 of 2 Pages

Measurements

The sound pressure level generated by the calibrator (averaged over a 20 to 25 second period) in its WS2 configuration was measured five times (rotating the calibrator on the microphone each time) by the Insert Voltage Method using a microphone as detailed below. The mean of the results obtained is shown below.

The frequency of the sound from the calibrator was measured five times over a 20 to 25 second period and the average frequency calculated.

The total distortion + noise of the sound from the calibrator was measured, using a rejection filter distortion factor meter, five times over a 20 to 25 second period and the average distortion + noise calculated.

Test Microphone	Manufacturer	Type
	Brüel & Kjær	4134

<u>Nominal Setting</u> dB / Hz	<u>Mean Level</u> dB rel 20 μ Pa	<u>Frequency</u>	<u>Distortion + Noise</u>
94 / 1000	93.93 \pm 0.10	1000.00 \pm 0.12Hz	(0.18 \pm 0.05) %

<u>Environmental conditions during tests</u>	<u>Start</u>	<u>End</u>	
Temperature	23.80	23.70	\pm 0.30 °C
Humidity	58.1	53.2	\pm 3.0 %RH
Ambient Pressure	99.155	99.165	\pm 0.030 kPa

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

The uncertainties refer to the measured values only with no account being taken of the ability of the instrument to maintain its calibration.

A small correction factor may need to be applied to the sound pressure level quoted above if the device is used to calibrate a sound level meter which is fitted with a free-field response microphone. See manufacturers handbook for details.

Note: Calibrator adjusted prior to calibration? NO

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None

Calibrated by: TK

R 2

..... END

SIM 78



CERTIFICATE OF CONFORMANCE

Date of Issue 14 August 2024
Customer TNEI Services Ltd
Certificate Number CONF082407

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541058
Preamplifier	Rion	NH-25	34011
Microphone	Rion	UC-59	25589

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.

Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk



CERTIFICATE OF CONFORMANCE

Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082404**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541099
Preamplifier	Rion	NH-25	34052
Microphone	Rion	UC-59	25633

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.


 Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk



CERTIFICATE OF CONFORMANCE

Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082401**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541059
Preamplifier	Rion	NH-25	34012
Microphone	Rion	UC-59	25590

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.


 Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk



CERTIFICATE OF CALIBRATION

Date of Issue: 22 August 2024

Certificate Number: TCRT24/1660

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages	
Approved Signatory	

Customer

Order No.	5001																												
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator																												
Identification	<table border="0"> <thead> <tr> <th>Manufacturer</th> <th>Instrument</th> <th>Type</th> <th>Serial No. / Version</th> </tr> </thead> <tbody> <tr> <td>Rion</td> <td>Sound Level Meter</td> <td>NL-52</td> <td>00721002</td> </tr> <tr> <td>Rion</td> <td>Firmware</td> <td></td> <td>2.1</td> </tr> <tr> <td>Rion</td> <td>Pre Amplifier</td> <td>NH-25</td> <td>22108</td> </tr> <tr> <td>Rion</td> <td>Microphone</td> <td>UC-59</td> <td>21941</td> </tr> <tr> <td>Rion</td> <td>Calibrator</td> <td>NC-74</td> <td>34762316</td> </tr> <tr> <td></td> <td>Calibrator adaptor type if applicable</td> <td></td> <td>NC-74-002</td> </tr> </tbody> </table>	Manufacturer	Instrument	Type	Serial No. / Version	Rion	Sound Level Meter	NL-52	00721002	Rion	Firmware		2.1	Rion	Pre Amplifier	NH-25	22108	Rion	Microphone	UC-59	21941	Rion	Calibrator	NC-74	34762316		Calibrator adaptor type if applicable		NC-74-002
Manufacturer	Instrument	Type	Serial No. / Version																										
Rion	Sound Level Meter	NL-52	00721002																										
Rion	Firmware		2.1																										
Rion	Pre Amplifier	NH-25	22108																										
Rion	Microphone	UC-59	21941																										
Rion	Calibrator	NC-74	34762316																										
	Calibrator adaptor type if applicable		NC-74-002																										

Performance Class 1
Test Procedure TP 10. SLM 61672-3:2013
Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes
If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 21 August 2024 ANV Job No. TRAC24/08373
Date Calibrated 22 August 2024

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	Initial Calibration		

This certificate provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION



Certificate Number
TCRT24/1660
 Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-52/NL-42 Description for IEC 61672-1		
SLM instruction manual ref / issue	No. 56034 21-03	Source	Rion
Date provided or internet download date	19 March 2021		
	Case Corrections	Wind Shield Corrections	Mic Pressure to Free Field Corrections
Uncertainties provided	Yes	Yes	Yes
Total expanded uncertainties within the requirements of IEC 61672-1:2013			
	YES		
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Customers Calibrator		
Calibrator adaptor type if applicable	NC-74-002		
Calibrator cal. date	14 February 2024		
Calibrator cert. number	UCRT24/1237		
Calibrator cal cert issued by Lab	ANV Measurement Systems		
Calibrator SPL @ STP	94.03	dB	Calibration reference sound pressure level
Calibrator frequency	1002.41	Hz	Calibration check frequency
Reference level range	Single	dB	
Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15			
Note - The Extension Cable was used between the SLM and the pre-amp for this calibration.			

Environmental conditions during tests	Start	End	
Temperature	22.98	22.82	± 0.30 °C
Humidity	53.3	53.0	± 3.00 %RH
Ambient Pressure	99.47	99.41	± 0.03 kPa

Indication at the Calibration Check Frequency			
Initial indicated level	94.1	dB	Adjusted indicated level 94.0 dB
Uncertainty of calibrator used for Indication at the Calibration Check Frequency ±			0.10 dB
Self Generated Noise			
Microphone installed -	Less Than	20.0	dB A Weighting
Microphone replaced with electrical input device - UR = Under Range indicated			
Weighting	A	C	Z
	10.5	14.9	22.3
	dB	dB	dB
	UR	UR	UR

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with the Guide to the Expression of Uncertainty in Measurement published by ISO.

Additional Comments

None

.....
 Calibrated by: [REDACTED] END
 R 2



CERTIFICATE OF CONFORMANCE

Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082403**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541098
Preamplifier	Rion	NH-25	34051
Microphone	Rion	UC-59	25632

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.


 Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk

SLM 61



CERTIFICATE OF CALIBRATION



0653

Date of Issue: 05 August 2024

Certificate Number: UCRT24/2053

Calibrated at & Certificate issued by:

ANV Measurement Systems

Beaufort Court

17 Roebuck Way

Milton Keynes MK5 8HL

Telephone 01908 642846 Fax 01908 642814

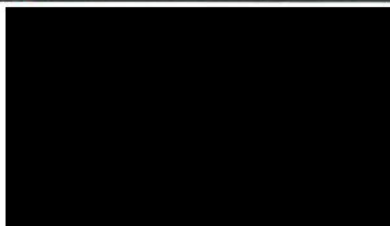
E-Mail: info@noise-and-vibration.co.uk

Web: www.noise-and-vibration.co.uk

Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page	1	of	2	Pages
Approved Signatory	[Redacted]			

Customer



Order No.	5001																												
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator																												
Identification	<table><thead><tr><th>Manufacturer</th><th>Instrument</th><th>Type</th><th>Serial No. / Version</th></tr></thead><tbody><tr><td>Rion</td><td>Sound Level Meter</td><td>NL-52</td><td>00721060</td></tr><tr><td>Rion</td><td>Firmware</td><td></td><td>2.1</td></tr><tr><td>Rion</td><td>Pre Amplifier</td><td>NH-25</td><td>22166</td></tr><tr><td>Rion</td><td>Microphone</td><td>UC-59</td><td>22048</td></tr><tr><td>Rion</td><td>Calibrator</td><td>NC-75</td><td>34334830</td></tr><tr><td></td><td>Calibrator adaptor type if applicable</td><td></td><td>NC-75-022</td></tr></tbody></table>	Manufacturer	Instrument	Type	Serial No. / Version	Rion	Sound Level Meter	NL-52	00721060	Rion	Firmware		2.1	Rion	Pre Amplifier	NH-25	22166	Rion	Microphone	UC-59	22048	Rion	Calibrator	NC-75	34334830		Calibrator adaptor type if applicable		NC-75-022
Manufacturer	Instrument	Type	Serial No. / Version																										
Rion	Sound Level Meter	NL-52	00721060																										
Rion	Firmware		2.1																										
Rion	Pre Amplifier	NH-25	22166																										
Rion	Microphone	UC-59	22048																										
Rion	Calibrator	NC-75	34334830																										
	Calibrator adaptor type if applicable		NC-75-022																										
Performance Class	1																												
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>																												
Type Approved to IEC 61672-1:2013	Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>																												
Date Received	02 August 2024	ANV Job No.	UKAS24/08562																										
Date Calibrated	05 August 2024																												

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
----------------------	-------	-----------------	------------

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Certificate Number

UCRT24/2053

UKAS Accredited Calibration Laboratory No. 0653

Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-52/NL-42 Description for IEC 61672-1		
SLM instruction manual ref / issue	No. 56034 21-03	Source	Rion
Date provided or internet download date	19 March 2021		
	Case Corrections	Wind Shield Corrections	Mic Pressure to Free Field Corrections
Uncertainties provided	Yes	Yes	Yes
Total expanded uncertainties within the requirements of IEC 61672-1:2013			YES
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Lab Calibrator		
Calibrator adaptor type if applicable	NC-75-022		
Calibrator cal. date	10 July 2024		
Calibrator cert. number	UCRT24/1958		
Calibrator cal cert issued by Lab	0653		
Calibrator SPL @ STP	94.00	dB	Calibration reference sound pressure level
Calibrator frequency	1000.00	Hz	Calibration check frequency
Reference level range	Single	dB	
Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15			
Note - The Extension Cable was used between the SLM and the pre-amp for this calibration.			

Environmental conditions during tests	Start	End	
Temperature	23.85	23.70	± 0.30 °C
Humidity	60.1	59.8	± 3.00 %RH
Ambient Pressure	100.19	100.19	± 0.03 kPa

Indication at the Calibration Check Frequency					
Initial indicated level	94.0	dB	Adjusted indicated level	94.0	dB
Uncertainty of calibrator used for Indication at the Calibration Check Frequency ±			0.10		dB

Self Generated Noise									
Microphone installed -	Less Than	22.2	dB	A Weighting					
Microphone replaced with electrical input device -				UR = Under Range indicated					
Weighting	A		C		Z				
	10.6	dB	UR	15.3	dB	UR	22.9	dB	UR

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None

END

Calibrated by:



R 2



CERTIFICATE OF CONFORMANCE

Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082401**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541059
Preamplifier	Rion	NH-25	34012
Microphone	Rion	UC-59	25590

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.


 Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk



CERTIFICATE OF CONFORMANCE

Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082408**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541103
Preamplifier	Rion	NH-25	34056
Microphone	Rion	UC-59	25637

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.

Signed. [REDACTED] ... Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk



CERTIFICATE OF CONFORMANCE

Date of Issue 14 August 2024
Customer TNEI Services Ltd
Certificate Number CONF082407

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541058
Preamplifier	Rion	NH-25	34011
Microphone	Rion	UC-59	25589

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.


 Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk

SLM 61



CERTIFICATE OF CALIBRATION



0653

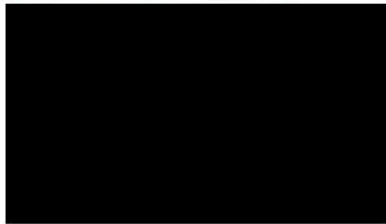
Date of Issue: 05 August 2024

Certificate Number: UCRT24/2053

Calibrated at & Certificate issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages
Approved Signatory
[Redacted Signature]

Customer



Order No.	5001																												
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator																												
Identification	<table><thead><tr><th>Manufacturer</th><th>Instrument</th><th>Type</th><th>Serial No. / Version</th></tr></thead><tbody><tr><td>Rion</td><td>Sound Level Meter</td><td>NL-52</td><td>00721060</td></tr><tr><td>Rion</td><td>Firmware</td><td></td><td>2.1</td></tr><tr><td>Rion</td><td>Pre Amplifier</td><td>NH-25</td><td>22166</td></tr><tr><td>Rion</td><td>Microphone</td><td>UC-59</td><td>22048</td></tr><tr><td>Rion</td><td>Calibrator</td><td>NC-75</td><td>34334830</td></tr><tr><td></td><td>Calibrator adaptor type if applicable</td><td></td><td>NC-75-022</td></tr></tbody></table>	Manufacturer	Instrument	Type	Serial No. / Version	Rion	Sound Level Meter	NL-52	00721060	Rion	Firmware		2.1	Rion	Pre Amplifier	NH-25	22166	Rion	Microphone	UC-59	22048	Rion	Calibrator	NC-75	34334830		Calibrator adaptor type if applicable		NC-75-022
Manufacturer	Instrument	Type	Serial No. / Version																										
Rion	Sound Level Meter	NL-52	00721060																										
Rion	Firmware		2.1																										
Rion	Pre Amplifier	NH-25	22166																										
Rion	Microphone	UC-59	22048																										
Rion	Calibrator	NC-75	34334830																										
	Calibrator adaptor type if applicable		NC-75-022																										
Performance Class	1																												
Test Procedure	TP 10. SLM 61672-3:2013 <i>Procedures from IEC 61672-3:2013 were used to perform the periodic tests.</i>																												
Type Approved to IEC 61672-1:2013	Yes <i>If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013</i>																												
Date Received	02 August 2024	ANV Job No.	UKAS24/08562																										
Date Calibrated	05 August 2024																												

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
----------------------	-------	-----------------	------------

Initial Calibration

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Certificate Number

UCRT24/2053

UKAS Accredited Calibration Laboratory No. 0653

Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-52/NL-42 Description for IEC 61672-1		
SLM instruction manual ref / issue	No. 56034 21-03	Source	Rion
Date provided or internet download date	19 March 2021		
	Case Corrections	Wind Shield Corrections	Mic Pressure to Free Field Corrections
Uncertainties provided	Yes	Yes	Yes
Total expanded uncertainties within the requirements of IEC 61672-1:2013			YES
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Lab Calibrator		
Calibrator adaptor type if applicable	NC-75-022		
Calibrator cal. date	10 July 2024		
Calibrator cert. number	UCRT24/1958		
Calibrator cal cert issued by Lab	0653		
Calibrator SPL @ STP	94.00	dB	Calibration reference sound pressure level
Calibrator frequency	1000.00	Hz	Calibration check frequency
Reference level range	Single	dB	
Accessories used or corrected for during calibration -	Extension Cable & Wind Shield WS-15		
Note - The Extension Cable was used between the SLM and the pre-amp for this calibration.			

Environmental conditions during tests	Start	End	
Temperature	23.85	23.70	± 0.30 °C
Humidity	60.1	59.8	± 3.00 %RH
Ambient Pressure	100.19	100.19	± 0.03 kPa

Indication at the Calibration Check Frequency			
Initial indicated level	94.0	dB	Adjusted indicated level 94.0 dB
Uncertainty of calibrator used for Indication at the Calibration Check Frequency ±			0.10 dB

Self Generated Noise			
Microphone installed -	Less Than	22.2	dB A Weighting
Microphone replaced with electrical input device - UR = Under Range indicated			
Weighting	A	C	Z
	10.6 dB UR	15.3 dB UR	22.9 dB UR

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Additional Comments The results on this certificate only relate to the items calibrated as identified above.

None

END

Calibrated by:



R 2



CERTIFICATE OF CONFORMANCE

Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082404**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541099
Preamplifier	Rion	NH-25	34052
Microphone	Rion	UC-59	25633

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.


 Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk



CERTIFICATE OF CALIBRATION

Date of Issue: 22 August 2024

Certificate Number: TCRT24/1660

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Page 1 of 2 Pages	
Approved Signatory	

Customer

Order No.	5001																												
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator																												
Identification	<table border="0"> <thead> <tr> <th>Manufacturer</th> <th>Instrument</th> <th>Type</th> <th>Serial No. / Version</th> </tr> </thead> <tbody> <tr> <td>Rion</td> <td>Sound Level Meter</td> <td>NL-52</td> <td>00721002</td> </tr> <tr> <td>Rion</td> <td>Firmware</td> <td></td> <td>2.1</td> </tr> <tr> <td>Rion</td> <td>Pre Amplifier</td> <td>NH-25</td> <td>22108</td> </tr> <tr> <td>Rion</td> <td>Microphone</td> <td>UC-59</td> <td>21941</td> </tr> <tr> <td>Rion</td> <td>Calibrator</td> <td>NC-74</td> <td>34762316</td> </tr> <tr> <td></td> <td>Calibrator adaptor type if applicable</td> <td></td> <td>NC-74-002</td> </tr> </tbody> </table>	Manufacturer	Instrument	Type	Serial No. / Version	Rion	Sound Level Meter	NL-52	00721002	Rion	Firmware		2.1	Rion	Pre Amplifier	NH-25	22108	Rion	Microphone	UC-59	21941	Rion	Calibrator	NC-74	34762316		Calibrator adaptor type if applicable		NC-74-002
Manufacturer	Instrument	Type	Serial No. / Version																										
Rion	Sound Level Meter	NL-52	00721002																										
Rion	Firmware		2.1																										
Rion	Pre Amplifier	NH-25	22108																										
Rion	Microphone	UC-59	21941																										
Rion	Calibrator	NC-74	34762316																										
	Calibrator adaptor type if applicable		NC-74-002																										

Performance Class 1
Test Procedure TP 10. SLM 61672-3:2013
Procedures from IEC 61672-3:2013 were used to perform the periodic tests.

Type Approved to IEC 61672-1:2013 Yes
If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2013

Date Received 21 August 2024 ANV Job No. TRAC24/08373
Date Calibrated 22 August 2024

The sound level meter submitted for testing has successfully completed the periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organisation responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013, the sound level meter submitted for testing conforms to the class 1 specifications of IEC 61672-1:2013.

Previous Certificate	Dated	Certificate No.	Laboratory
	Initial Calibration		

This certificate provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION



Certificate Number
TCRT24/1660
 Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-52/NL-42 Description for IEC 61672-1		
SLM instruction manual ref / issue	No. 56034 21-03	Source	Rion
Date provided or internet download date	19 March 2021		
	Case Corrections	Wind Shield Corrections	Mic Pressure to Free Field Corrections
Uncertainties provided	Yes	Yes	Yes
Total expanded uncertainties within the requirements of IEC 61672-1:2013			
	YES		
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Customers Calibrator		
Calibrator adaptor type if applicable	NC-74-002		
Calibrator cal. date	14 February 2024		
Calibrator cert. number	UCRT24/1237		
Calibrator cal cert issued by Lab	ANV Measurement Systems		
Calibrator SPL @ STP	94.03	dB	Calibration reference sound pressure level
Calibrator frequency	1002.41	Hz	Calibration check frequency
Reference level range	Single	dB	
Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15			
Note - The Extension Cable was used between the SLM and the pre-amp for this calibration.			

Environmental conditions during tests	Start	End	
Temperature	22.98	22.82	± 0.30 °C
Humidity	53.3	53.0	± 3.00 %RH
Ambient Pressure	99.47	99.41	± 0.03 kPa

Indication at the Calibration Check Frequency			
Initial indicated level	94.1	dB	Adjusted indicated level 94.0 dB
Uncertainty of calibrator used for Indication at the Calibration Check Frequency ±			0.10 dB
Self Generated Noise			
Microphone installed -	Less Than	20.0	dB A Weighting
Microphone replaced with electrical input device - UR = Under Range indicated			
Weighting	A	C	Z
	10.5	14.9	22.3
	dB UR	dB UR	dB UR

Self Generated Noise reported for information only and not used to assess conformance to a requirement

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with the Guide to the Expression of Uncertainty in Measurement published by ISO.

Additional Comments

None

..... END

Calibrated by: [REDACTED] R 2



CERTIFICATE OF CONFORMANCE

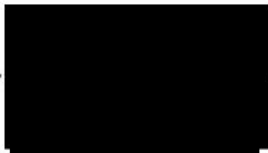
Date of Issue **14 August 2024**
Customer **TNEI Services Ltd**
Certificate Number **CONF082408**

	Manufacturer	Type	Serial Number
Sound Level Meter	Rion	NL-53	00541103
Preamplifier	Rion	NH-25	34056
Microphone	Rion	UC-59	25637

This is to certify that the instrument was tested and calibrated at the Manufacturer's factory according to their specification and that the product satisfied all the relevant requirements of the following Standards:

IEC 61672-1:2013 Class 1.

The instrument also received a functional check by ANV Measurement Systems prior to despatch in the UK, in accordance with our standard procedures.

Signed.  ... Position. Calibration Technician Date..... 14/08/2024

BEAUFORT COURT, 17 ROEBUCK WAY, MILTON KEYNES, MK5 8HL

☎ 01908 642846 📠 01908 642814

✉ info@noise-and-vibration.co.uk 🌐 www.noise-and-vibration.co.uk

Field Data Sheet - NML1



Project Title	Myleh Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR MC RE

MONITORING LOCATION

Location Number	NML1
Location Name	
Location Description	<p>Within a landowner field, south of The Site. Representative of NSR's located to the south west of the monitoring location.</p> <p>Equipment located >3.5m from nearby facades or reflective surfaces.</p>
Latitude	53.854162
Longitude	-0.880644
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The main sources of noise was distant road noise and air traffic when a plane flew over head. Aside from that, the soundscape could be described as quiet.</p> <p>The weather conditions when on site was wet underfoot and cloudy with no breeze.</p> <p>Collection - On collection, the main sources of noise was from farm activity from the buildings to the east of the NML. Other noise sources include birdsong and slight rustling due to wind in the foliage.</p> <p>The weather conditions were clear and sunny, but very damp underfoot and flooding within the installed field.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 078	Rion NL-53	00541058	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0101	18/11/2025 13:15	02/12/2025 12:59	94	94.1	-0.1	Farm noises, some bird song, wind rustling trees slightly, sunny and clear skies, very damp underfoot and field flooded, standing water very close to kit, no sheep in field

NML1 Photographs (Part 1)

North



Northeast



NML1 Photographs (Part 2)

South



West



Field Data Sheet - NML2



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR MC RE

MONITORING LOCATION

Location Number	NML2
Location Name	
Location Description	In a landowner field, to the south west of The Site. Representative of NSR's located to the north east, east and south east to the monitoring location. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.848982
Longitude	-0.897006
Noise sources noted during installation, weekly inspection and removal	Installation - The main sources of noise was road noise from the B1228 which consisted of occasional vehicles and HGVs. There were sheep in the nearby field at the time of installation but they were not noisy. The weather conditions when on site was wet underfoot and cloudy with no breeze. Collection - On collection, the main sources of noise was road noise from the B1228 and birdsong from the hedgerows and patch of forest to the west. No sheep were in the field. The weather conditions were clear and sunny, but damp underfoot and a slight breeze.

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 075	Rion NL-53	00541099	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0201	18/11/2025 12:15	02/12/2025 12:31	94.0	94	0.0	Road noise, bird song, slight breeze, sunny skies, no sheep in field

NML2 Photographs (Part 1)

North



East



South



West



Field Data Sheet - NML3



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR MC RE

MONITORING LOCATION

Location Number	NML3
Location Name	
Location Description	<p>Within a landowner field, west of The Site. Representative of the NSR's located to the south east and west of the monitoring location.</p> <p>Equipment located >3.5m from nearby facades or reflective surfaces.</p>
Latitude	53.85171
Longitude	-0.914483
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The kit is located near the road, so dominant noise is road traffic when vehicles are passing. There is noise from activity within the farm site located south west. There are also animal noises from the same direction. No wind induced noise as there are no leaves on the vegetation. The weather conditions when on site was wet underfoot and cloudy with slight breeze.</p> <p>Collection - During collection, the dominant source of noise is from the B1228 road running parallel to the field. Distant road noise can also be heard from further away. Some activity from the nearby farm site could be heard but rarely. No other significant noise sources heard whilst collecting. The weather conditions were damp, sunny and a slight breeze.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 079	Rion NL-53	00541059	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0301	18/11/2025 11:45	02/12/2025 13:00	94.0	94.2	-0.2	<p>The dominant source of noise is from the adjacent road. Distant road noise can also be heard. Some activity from the nearby farm site could be heard but rarely. No other significant noise sources heard whilst collecting. The weather conditions were damp, sunny and a slight breeze.</p>

NML3 Photographs (Part 1)

North



East



NML3 Photographs (Part 2)

South



West



Field Data Sheet - NML4



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR MC RE

MONITORING LOCATION

Location Number	NML4
Location Name	
Location Description	In a landowner field, west of The Site. Representative of NSR's located to the north west and north east of the monitoring locaiton. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.859829
Longitude	-0.913769
Noise sources noted during installation, weekly inspection and removal	Installation - Location is next to the B1228 road, also called Fog Ln. The road is quite busy with occasional HGVs passing. Sheep are located in the field nearby but not making noise. Banging noises in the distance, could be shooting. Noise levels ranging from 38-45dBA with no vehicles nearby. Up to 78dBA when a HGV is passing. The weather conditions when on site was wet underfoot and cloudy with slight breeze. Collection - During collection, the dominant source of noise is from the B1228 road running parallel to the field. Lots of HGVs driving by for small road. The weather conditions were sunny clear skies with slight breeze.

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 060	Rion NL-52	00721002	22/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0401	18/11/2025 11:15	02/12/2025 11:43	94.0	94.1	-0.1	Lots of HGVs driving by for small road, road noise predominant, sunny clear skies with slight breeze

NML4 Photographs (Part 1)

North



East



NML4 Photographs (Part 2)

South



West



Field Data Sheet - NML5



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR MC RE

MONITORING LOCATION

Location Number	NML5
Location Name	
Location Description	<p>Within the field on the property of the nearby receptor to the north of western section of The Site. Representative of the NSR's located to the north east, south west and north west of the monitoring location.</p> <p>Equipment located >3.5m from nearby facades or reflective surfaces.</p>
Latitude	53.86475
Longitude	-0.897405
Noise sources noted during installation, weekly inspection and removal	<p>Installation - Location is within the field located within the property grounds. Main sources of noise included road noise, from the main road north west of the NML. Horses were present in field but no noise was coming from them.</p> <p>The weather conditions when on site was wet underfoot and cloudy with slight breeze.</p> <p>Collection - During collection, the dominant source of noise was road traffic noise. The horses previously in the neighbouring fields were away in the barn, and there was birdsong noise too.</p> <p>The weather conditions were sunny clear skies with slight breeze.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 074	Rion NL-53	00541098	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	Rain Gauge and Kestrel
Equipment Notes	RG-22 and kestrel installed at this location

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0501	17/11/2025 17:00	02/12/2025 11:32	94.0	94.0	0.0	Road traffic dominant noise, horses were away in the barn, some bird song, sunny clear day with a slight breeze

NML5 Photographs (Part 1)

North

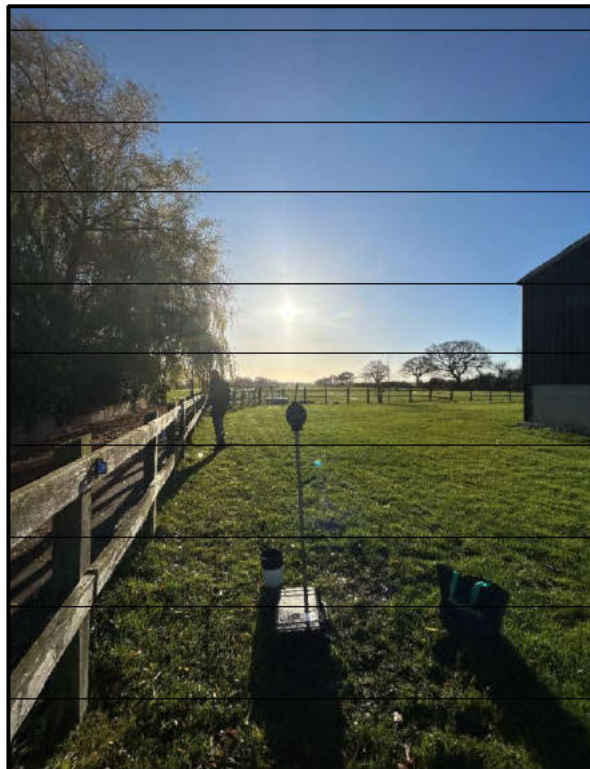


East

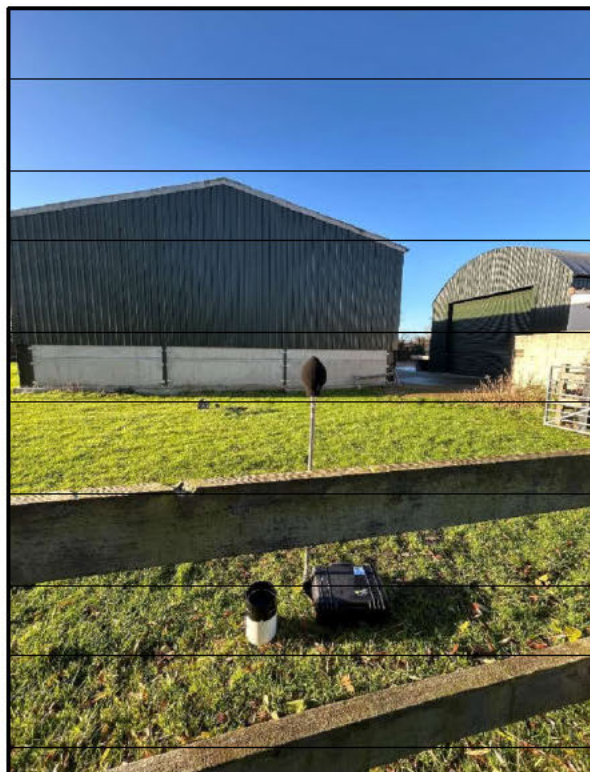


NML5 Photographs (Part 2)

South



West



Field Data Sheet - NML6



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR MC RE

MONITORING LOCATION

Location Number	NML6
Location Name	
Location Description	Within a landowner field, the the north of The Site. Representative of the NSR's located to the east and west of the monitoring location. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.876085
Longitude	-0.883694
Noise sources noted during installation, weekly inspection and removal	Installation - Cars and HGVs passing by on the road called Ash Lane, not constant traffic but regular. Around 37 dB when no cars are passing. Suspect scarecrow system with high pitched whistle and loud bang to the south. The weather conditions when on site included light rain but very minimal rain noise. Collection - During collection, the dominant source of noise was road traffic noise from nearby road and also from the southwest and birdsong. The weather conditions consisted of no clouds and sunny skies, but damp underfoot with a temperature around 6 degrees. There was also wind with a slight breeze

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 061	Rion NL-52	00721060	05/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	L90, Leq	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0601	18/11/2025 10:30	02/12/2025 10:34	94.0	94.0	0.0	Road traffic noise from nearby road from south west, bits of bird song, no clouds and sunny but damp underfoot, 6 degrees, wind and foliage with a slight breeze

NML6 Photographs (Part 1)

North



East



South



West



Field Data Sheet - NML7



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR RE TS

MONITORING LOCATION

Location Number	NML7
Location Name	
Location Description	Within landowners field. Chosen to represent receptors along the grid corridor, southwest of the monitoring location. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.887836
Longitude	-0.830935
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The main noise source came from the main road, with some lesser activity coming from the property located on the opposite side of the road, aside from that the soundscape would be described as quiet. The weather conditions on site were wet underfoot but clear skies and a slight breeze.</p> <p>Collection - Upon collection the main noise source was the rustling of foliage from the wind with some noticeable birdsong as well. Weather conditions were clear skies however damp underfoot.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 079	Rion NL-53	00541059	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	Rain Gauge
Equipment Notes	RG 22 installed here

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0701	02/12/2025 15:15	09/12/2025 11:03	94.0	94.2	-0.2	Planes overhead, near overhead lines, road traffic noise, sunny and clear day, slight breeze, livestock noise, consistent noise from birds, likely the loudest

NML7 Photographs (Part 1)

North



East



NML7 Photographs (Part 2)

South



West



Field Data Sheet - NML8



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR RE TS

MONITORING LOCATION

Location Number	NML8
Location Name	
Location Description	Open field next to house, next to road. Representative of the NSR's located to the east of the monitoring location. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.860175
Longitude	-0.869373
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The main noise source was coming from the property on the oppsite side of the road, with cars entering and leaving the property, there was also infrequent cars passing by as well. The weather conditions were dry and clear skies but the ground was wet underfoot.</p> <p>Collection - The main noise source upon collection was wind in the folliage, with some birdsong audible as well. Weather conditions were wet with a mild breeze.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 077	Rion NL-53	00541103	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0801	02/12/2025 15:45	09/12/2025 11:22	94.0	94.1	-0.1	Wind in foliage dominant, no other notable noise sources.

NML8 Photographs (Part 1)

North



East



NML8 Photographs (Part 2)

South



West



Field Data Sheet - NML9



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR RE TS

MONITORING LOCATION

Location Number	NML9
Location Name	
Location Description	<p>Within landowners field, which is central to the site. Chosen to represent receptors to the north and south of the monitoring location. Chained to an overhead line pole, no noise coming from it at the time of install.</p> <p>Equipment located >3.5m from nearby facades or reflective surfaces.</p>
Latitude	53.871678
Longitude	-0.8531
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The main noise sources noted were from birds (predominantly crows) some loud bangs from the farm to the south of the site and wind in the foliage.</p> <p>Weather conditions were wet, cloudy skies with a slight breeze and very wet underfoot.</p> <p>Collection - The main noise sources were wind in the foliage alongside bird song, with the infrequent passing of cars along the country road. The weather conditions were wet with a mild breeze.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 078	Rion NL-53	00541058	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0901	03/12/2025 09:00	09/12/2025 11:42	94.0	94.1	-0.1	<p>Cows in adjacent field, but no noise could be heard from them.</p> <p>The main sources of noise was wind in foliage and birdsong, with the very occasional car passing along the country road nearest the NML. Weather conditions were wet, with a mild breeze.</p>

NML9 Photographs (Part 1)

North



West



NML9 Photographs (Part 2)

South



East



Field Data Sheet - NML10



Project Title	Myleh Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR RE TS

MONITORING LOCATION

Location Number	NML10
Location Name	
Location Description	<p>Within landowners fields. Chosen as representative of NSRs to the north east and south west of the NML.</p> <p>Equipment located >3.5m from nearby facades or reflective surfaces.</p>
Latitude	53.862461
Longitude	-0.840958
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The dominant noise noted was a strong breeze and some bird song, there was a road located nearby however no cars passed during the installation.</p> <p>The weather was dry with clear skies, the aforementioned strong breeze and was wet underfoot.</p> <p>Collection - The dominant noise was wind, with a breeze at 3 m/s and continued bird song. There was wet conditions due to heavy rainfall however there was no rain at the time of removal.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 061	Rion NL-52	00721060	05/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	Kestrel
Equipment Notes	Kestrel located 20m north of SLM

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
1001	03/12/2025 09:30	09/12/2025 12:05	94.0	94.2	-0.2	<p>The dominant noise at the time of collection was wind induced noise with a breeze of 3 m/s, and birdsong. The conditions were wet due to heavy rainfall, but no rain at the time of collection.</p> <p>Cloudy skies at 8/8 oktas</p>

NML10 Photographs (Part 1)

North



East



NML10 Photographs (Part 2)

South



West



Field Data Sheet - NML11



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR RE TS

MONITORING LOCATION

Location Number	NML11
Location Name	
Location Description	NML chosen to represent cluster of houses to the north east and east. Situated within landowners field. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.863824
Longitude	-0.824598
Noise sources noted during installation, weekly inspection and removal	Installation - The dominant noise source came from bird squawking and wind, there was a small road located besides the kit and a larger main road located in the distance. The conditions were dry with full cloud cover, a moderate breeze and wet underfoot due to previous rainfall. Collection - The dominant noise source came from wind in the foliage, with no note from either of the roads. The weather conditions consisted of light rain and the previously mentioned wind.

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 075	Rion NL-53	00541099	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
1101	03/12/2025 10:15	09/12/2025 12:12	94.0	94.1	-0.1	Light rain, wind in foliage dominant, no other noise sources

NML11 Photographs (Part 1)

North



East



NML11 Photographs (Part 2)

South



West



Field Data Sheet - NML12



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MR RE TS

MONITORING LOCATION

Location Number	NML12
Location Name	
Location Description	Corner of landowner field, just off the road, nearby garden. Chosen to represent NSR's located to the north east and east of the monitoring location. Equipment located >3.5m from nearby facades or reflective surfaces.
Latitude	53.875786
Longitude	-0.835683
Noise sources noted during installation, weekly inspection and removal	Installation - The dominant noise was a continuous droning from a site to the south of the monitoring location, this fluctuated gradually between louder & quieter. This was accompanied with cars passing on the nearby main road and some bird squawking. The weather conditions were dry, with a slight breeze and full cloud cover. Collection - The dominant noise was wind in the foliage, there was no noise audible from the south east and the solar array to the west. The weather consisted of light rain and the previously mentioned wind.

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 060	Rion NL-52	00721002	22/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
1201	03/12/2025 10:45	09/12/2025 12:00	94.0	94.1	-0.1	Light rain, wind in foliage dominant, no noise audible from south east, solar array to the west not audible

NML12 Photographs (Part 1)

North



East



NML12 Photographs (Part 2)

South



West



Field Data Sheet - NML13



Project Title	Mylen Leah Solar Farm DCO	Project Number	16549
Client	Statkraft	Surveyor(s)	MC MR RE

MONITORING LOCATION

Location Number	NML13
Location Name	
Location Description	<p>Within landowners field. Chosen to represent receptors along the grid corridor, located east and west of the monitoring location.</p> <p>Equipment located >3.5m from nearby facades or reflective surfaces.</p>
Latitude	53.887836
Longitude	-0.830935
Noise sources noted during installation, weekly inspection and removal	<p>Installation - The main noises came from the planes flying overhead and some road traffic noise, overhead lines were close by however humming was not audible. The weather conditions were calm, with no wind or rain however it was damp underfoot.</p> <p>Collection - The main noise source was consistent bird noise, this was accompanied with the planes flying overhead, road traffic and livestock noise as well. The conditions were clear skies, sunny with a slight breeze.</p>

NOISE MONITORING EQUIPMENT DETAILS

	Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM 077	Rion NL-53	00541103	14/08/2024
Calibrator	CAL 009	Rion NC-75	35046102	10/11/2025

Weather Measurement	None
Equipment Notes	

NOISE MONITORING EQUIPMENT SETTINGS

	Frequency Weighting	Index	Interval	Time Weighting	Range	Audio Recording
Parameters Recorded	A	Leq, L90	15 Mins	Fast	20-110	No

MEASUREMENTS

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
1301	17/11/2025 16:00	02/12/2025 13:55	94.0	94.2	-0.2	Planes overhead, near overhead lines, road traffic noise, sunny and clear day, slight breeze, livestock noise, consistent noise from birds, likely the loudest

NML13 Photographs (Part 1)

North



East



West



South



Appendix B – Environmental Health Officer Consultation

- Consultation Letter
- Environmental Health Officer Correspondence

14/02/2025

Ref: 16549-005- R1

Copy: Sent by email only

██████████
Environmental Health
East Riding of Yorkshire Council

Dear ██████████

PROPOSED MYLEN LEAH SOLAR FARM: NOISE ASSESSMENT CONSULTATION ON BASELINE NOISE MONITORING

Introduction

TNEI Services Ltd (TNEI) have been commissioned by Statkraft to undertake a Noise Impact Assessment to support the Development Consent Order (DCO) planning application for the Mylen Leah Solar Farm development located between Thorganby and Everingham, York. Due to its size, the development is considered to be a Nationally Significant Infrastructure Project (NSIP).

A scoping report has been submitted to the Planning Inspectorate (PINS) and a noise section was included outlining a proposed noise methodology and suggesting that direct consultations with the Council Environmental Health team would be undertaken.

The Figures in Appendix 1 of this letter detail an indicative red line boundary and where solar PV panels may go and the nearest identified Noise Sensitive Receptors (NSRs), which mostly consist of residential properties, a fishing site, caravan site and a wedding venue with hotel facilities.

The aim of this letter is to agree as soon as possible a baseline noise monitoring methodology with Environmental Health, so that baseline survey work can progress. Other assessment details are outlined in the scoping report which the Council will have an opportunity to respond to, and we would look to engage in further detailed discussions on other noise topics at a later stage in the process.

Proposed Noise Monitoring Locations

Broadly the site is situated in a rural area, where the baseline environment is likely to be primarily influenced by intermittent vehicle movements on local roads, industrial activity at the former RAF Melbourne site, car races at Melbourne Raceway, and agricultural operations.

The current proposed development red line boundary covers a very wide potential area of land and at this stage the detailed location of potentially noisy plant during the operational phase (i.e., inverters, transformers) is not yet known. There will also be construction activities associated with the

Newcastle
7th Floor, West One
Forth Banks
Newcastle Upon Tyne
NE1 3PA

Tel: +44(0)191 211 1400

development inclusive of work in fields near NSRs. As such we would like to propose a comprehensive baseline noise survey to measure existing noise levels in various areas surrounding the site near groups of potential NSRs.

Following a detailed review of the NSRs on aerial photography and discussion with the client and landowners in control of the red line boundary, we propose monitoring at 15 x Noise Monitoring locations (NMLs) as shown in Figure 1 enclosed. The figure shows the broad areas which we have considered and within each, a very precise location in a field or resident garden where potential access to place noise equipment has already been investigated. At this stage, we are confident that these locations are accessible, and practical considerations have been evaluated when identifying the NMLs. The aim of the baseline noise survey will be to establish existing noise levels in several locations to represent the noise environment for a broad range of NSRs (i.e. the aim is not to measure at every house which may be close to the red line boundary).

Proposed Noise Monitoring Methodology

Background noise levels will be monitored with a Class 1/Type 1 Sound Level Meter with a microphone at a height of between 1.2 m and 1.5 m above ground and located in a free-field position at least 3.5 m away from hard reflective surfaces where practicable and, within the residential amenity area or a representative location nearby.

Continuous unattended monitoring will be undertaken at each of the agreed NMLs (subject to access and resident consent, locations detailed in Table 1 of the Appendix) for a period of at least 7 days and the noise levels will be logged in 15-minute intervals. TNEI will also install a rain gauge and small wind speed monitor at least at one location for this duration of the noise survey, collecting data at the same time interval as the noise meters. This will allow for all periods measured during periods of high wind or precipitation to be removed from the dataset.

How will the collected noise levels be used

Following completion of the survey, the baseline noise data, rain data and wind data collected will be analysed to calculate background noise levels in accordance with B S4142 and in turn used to assess the potential operational noise impact in a future assessment where noise predictions will also be undertaken. The baseline noise data will also be used potentially to set construction noise thresholds using the ABC method found in Annex E of BS 5228.

Summary

TNEI has drawn a comprehensive list of suggested noise monitoring locations surrounding the current red line boundary of the proposed Mylen Leah Solar Farm development. We would welcome your feedback on the suggested locations to finalise the list before commencing the noise survey.

We are proposing to install the noise monitoring equipment as soon as possible in March-April; therefore we would appreciate a response to this letter at your earliest convenience. If you would like to discuss each location in detail or suggest alternatives, please feel free to contact us at the email addresses below. We would be happy to respond or arrange a video call. We look forward to hearing from you soon.

Yours sincerely,

[Redacted]

Graduate Consultant

[Redacted]

[Redacted]

Principal Consultant

[Redacted]

Enc:

Appendix1 – Figure and Coordinates of Suggested Noise Monitoring Locations

Appendix1 – Figure and Coordinates of Suggested Noise Monitoring

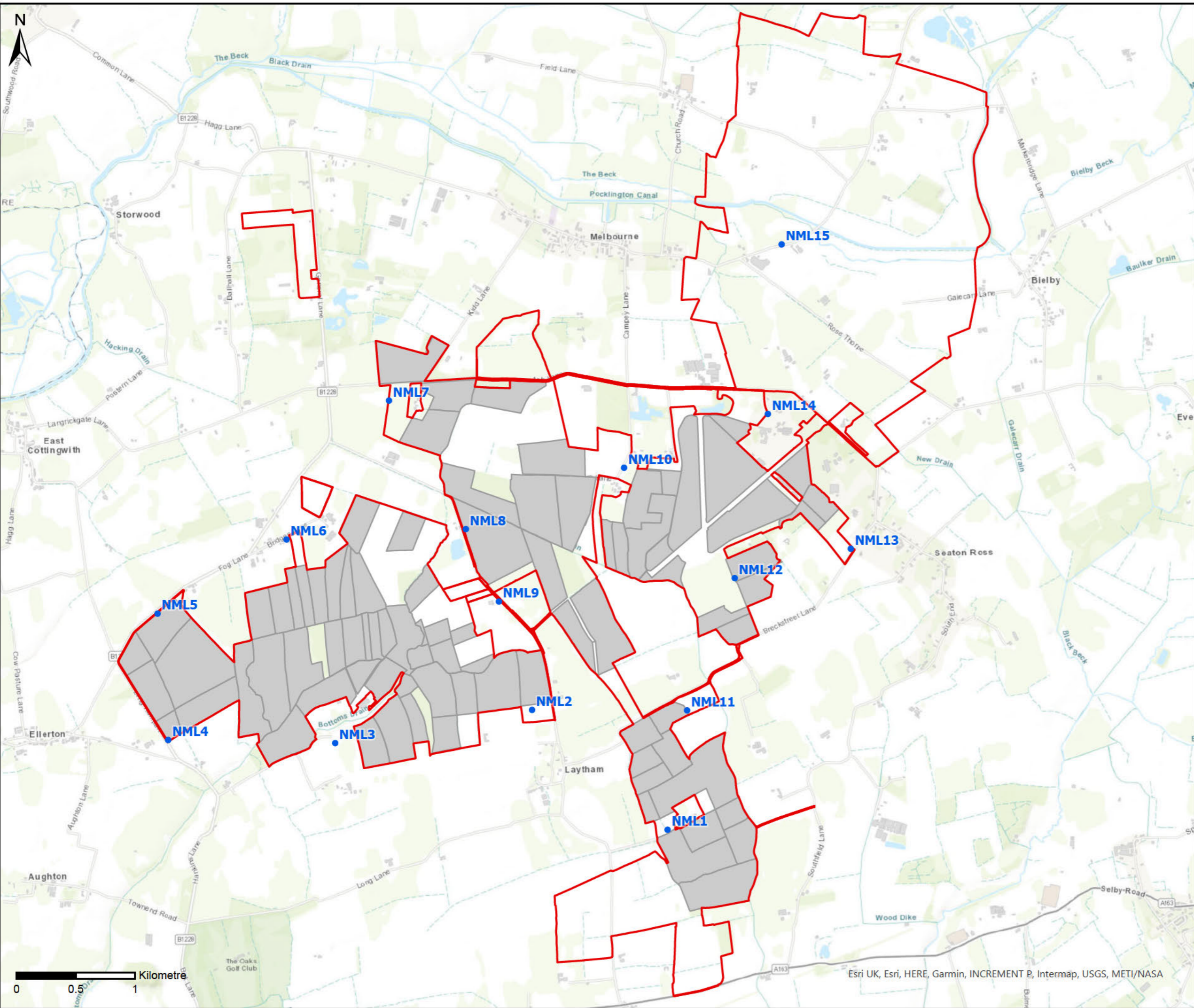
Locations

For the purposes of identifying locations suggested for noise monitoring, the below table provides the coordinates assumed by TNEI on the map figures. The map figures included are:

- Figure 1A – Proposed Noise Monitoring Locations - Overview
- Figure 1B – Proposed Noise Monitoring Locations – Detailed NML2 – NML9
- Figure 1C – Proposed Noise Monitoring Locations - Detailed NML 9, NML 10, and NML 12 – NML 15
- Figure 1D – Proposed Noise Monitoring Locations - Detailed NML 1, NML 2, NML 9, NML 11 and NML 12

Suggested Noise Monitoring Locations (NMLs)	Property Name	Easting	Northing
NML1	Oakfield Farm	475833	439103
NML2	Ruddings Wood Farm	474689	440115
NML3	Boland House	473027	439835
NML4	Within the site boundary to the East of B1228	471617	439861
NML5	Blackberry Farm	471527	440928
NML6	Fox Covert Farm	472616	441554
NML7	Within the site boundary to the West of Kidd Lane	473481	442727
NML8	Within the site boundary to the North of York Model Boat Club	474130	441642
NML9	Within the site boundary to the East of Throughleys Lane	474409	441030
NML10	Melrose Farm	475466	442160
NML11	Within the site boundary to the West of Breckstreet Lane	475998	440111
NML12	Within the site boundary to the South of Former RAF Melbourne	476400	441228
NML13	Within the site boundary to the South of Breckstreet Lane	477380	441476
NML14	Within the site boundary to the West of Oak Farm	476680	442614

NML15	Within the site boundary to the West of Walbut House Farm	476796	444046
-------	--	--------	--------



LEGEND

- Proposed Noise Monitoring Locations (NMLs)
- Site Boundary
- Indicative Solar Panel Locations

Rev	Date	Amendment Details	Drawn	Approved
0	14/02/2025	FIRST ISSUE	EH	MC

© OpenStreetMap (and) contributors, CC-BY-SA

This drawing should not be relied on or used in circumstances other than those for which it was originally prepared and for which TNEI Services Ltd was commissioned. TNEI Services Ltd accepts no responsibility for this drawing to any party other than the person by whom it was commissioned. Any party which breaches the provisions of this disclaimer shall indemnify TNEI Services Ltd for all loss or damage arising therefrom.

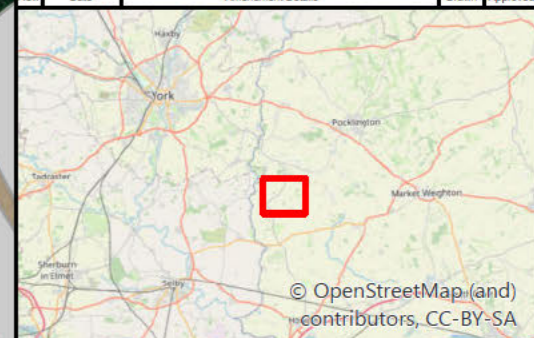
Drawing Status:	FOR ISSUE	
Project Title:	MYLEN LEAH SOLAR FARM	
Drawing Title:	1A: PROPOSED NOISE MONITORING LOCATIONS (OVERVIEW)	
Scale:	Original Size:	Spatial Reference:
1:30,000	A3	British National Grid
Drawing Number:		
16549-006		



LEGEND

- Proposed Noise Monitoring Locations (NMLs)
- Site Boundary
- Indicative Solar Panel Locations

Rev	Date	Amendment Details	Drawn	Approved
0	14/02/2025	FIRST ISSUE	EH	MC



This drawing should not be relied on or used in circumstances other than those for which it was originally prepared and for which TNEI Services Ltd was commissioned. TNEI Services Ltd accepts no responsibility for this drawing to any party other than the person by whom it was commissioned. Any party which breaches the provisions of this disclaimer shall indemnify TNEI Services Ltd for all loss or damage arising therefrom.



Client: **Statkraft**

Drawing Status: **FOR ISSUE**

Project Title: **MYLEN LEAH SOLAR FARM**

Drawing Title: **1B: PROPOSED NOISE MONITORING LOCATIONS (DETAILED NAL 2 - NAL 9)**

Scale: 1:13,000 Original Size: A3 Spatial Reference: British National Grid

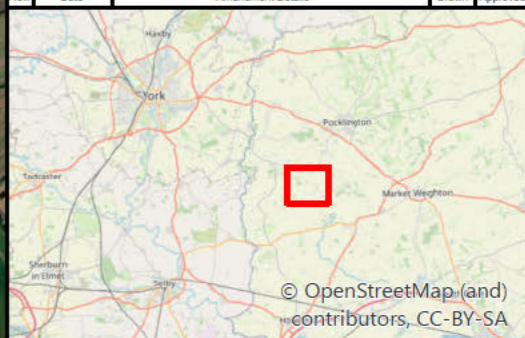
Drawing Number: **16549-006**



LEGEND

- Proposed Noise Monitoring Locations (NMLs)
- Site Boundary
- Indicative Solar Panel Locations

Rev	Date	Amendment Details	Drawn	Approved
0	14/02/2025	FIRST ISSUE	EH	MC



This drawing should not be relied on or used in circumstances other than those for which it was originally prepared and for which TNEI Services Ltd was commissioned. TNEI Services Ltd accepts no responsibility for this drawing to any party other than the person by whom it was commissioned. Any party which breaches the provisions of this disclaimer shall indemnify TNEI Services Ltd for all loss or damage arising therefrom.



Drawing Status: **FOR ISSUE**

Project Title: **MYLEN LEAH SOLAR FARM**

Drawing Title: **1C: PROPOSED NOISE MONITORING LOCATIONS (DETAILED NML 9, NML 10 AND NML 12 - NML 15)**

Scale: 1:13,000 Original Size: A3 Spatial Reference: British National Grid

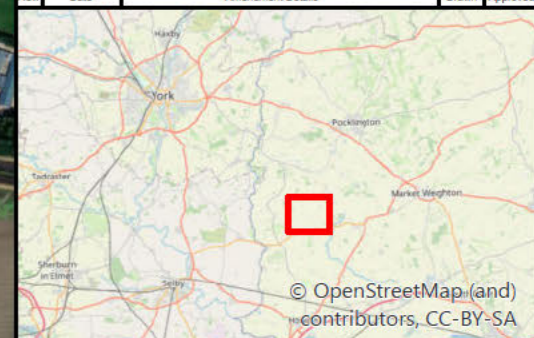
Drawing Number: **16549-006**



LEGEND

- Proposed Noise Monitoring Locations (NMLs)
- Site Boundary
- Indicative Solar Panel Locations

Rev	Date	Amendment Details	Drawn	Approved
0	14/02/2025	FIRST ISSUE	EH	MC



This drawing should not be relied on or used in circumstances other than those for which it was originally prepared and for which TNEI Services Ltd was commissioned. TNEI Services Ltd accepts no responsibility for this drawing to any party other than the person by whom it was commissioned. Any party which breaches the provisions of this disclaimer shall indemnify TNEI Services Ltd for all loss or damage arising therefrom.



Client

Drawing Status: **FOR ISSUE**

Project Title: **MYLEN LEAH SOLAR FARM**

Drawing Title: **1D: PROPOSED NOISE MONITORING LOCATIONS (DETAILED NML 1, NML 2, NML 9, NML 11 AND NML 12)**

Scale: 1:13,000 Original Size: A3 Spatial Reference: British National Grid

Drawing Number: **16549-006**

[REDACTED]

From: [REDACTED]
Sent: 06 March 2025 17:11
To: [REDACTED]
Cc: [REDACTED]
Subject: Re: Proposed Mylen Leah Solar Farm: Consultation on Baseline Noise Monitoring

Good afternoon [REDACTED]

Thank you for your email. I confirm that the proposals are acceptable.

Kind regards

[REDACTED]
Environmental Control Officer
[REDACTED]
www.eastriding.gov.uk



EAST RIDING

From: [REDACTED]
Sent: 04 March 2025 10:54
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Proposed Mylen Leah Solar Farm: Consultation on Baseline Noise Monitoring

You don't often get email from [REDACTED] [Learn why this is important](#)
[CAUTION]This email was sent from **outside of your organisation**. Do not click any links, preview or open attachments, or provide any log-in details unless you recognise the sender and know the content is safe.

Hi [REDACTED]

I hope this email finds you well.

I am reaching out to confirm whether you have received our previous letter outlining the proposed baseline noise survey locations for the Mylen Leah Solar Farm development. For your convenience, I have attached the letter again.

We are aiming to commence this survey in the coming weeks and would appreciate your feedback on the attached document at your earliest convenience.

Should you have any questions or wish to discuss any aspects further, please do not hesitate to contact either myself or my colleague, Moise (CC'd).

Kind regards,

[Redacted]



[Redacted]
Graduate Consultant
[Redacted]
www.tneigroup.com
[Social media icons: phone, email, LinkedIn]

7th Floor, West One, Forth Banks, Newcastle, NE1 3PA, United Kingdom



This message, including any attachments, may contain confidential and privileged information for the sole use of the intended recipient(s). Review, use, distribution or disclosure by others is strictly prohibited. If you are not the intended recipient, or authorised to receive information on behalf of the recipient, please contact the sender by reply email, and delete all copies of this message. While we have taken reasonable precautions to ensure that this message and any attachments are free from viruses, we cannot guarantee that they are virus free and accept no liability for any damage caused by this message or any attachments. Messages sent or received through our networks may be monitored to ensure compliance with the law, regulation and/or our policies. Registered in England & Wales No. 03891836
Registered Address: TNEI Services Ltd, Bainbridge House, 86-90 London Road, Manchester, M1 2PW

From: [Redacted]
Sent: 14 February 2025 16:47
To: [Redacted]
Cc: [Redacted]
Subject: Proposed Mylen Leah Solar Farm: Consultation on Baseline Noise Monitoring

Good Afternoon [Redacted]

Hope this finds you well.

TNEI have been commissioned by Statkraft to undertake a Noise Impact Assessment to support the Development Consent Order (DCO) planning application for the Mylen Leah Solar Farm development located between Thorganby and Everingham, York.

Please find attached a letter delineating our proposed baseline noise survey locations, we would invite your feedback regarding the attached as soon as possible in order to plan the survey.

If you have any queries on the attached, or would like to discuss anything further, please feel free to contact myself or my colleague Moise (CC).

Look forward to working with you

Kind regards,

[Redacted]

I work flexibly and may send emails outside normal working hours. Your immediate response is not expected. All East Riding of Yorkshire Council emails and attachments (other than information provided pursuant to the Freedom of Information Act 2000 or the Environmental Information Regulations 2004) are private and intended solely for the use of the individual or entity to whom they are addressed. Unauthorised use is not permitted. If this email was not intended for you, you may not copy, use or share the information in any way. Please email postmaster@eastriding.gov.uk to advise us that you have received this email in error. The Council makes every effort to virus check this email and its attachments. We cannot accept any responsibility or liability for loss or damage which may happen from opening this email or any attachment(s). It is recommended that you run an antivirus program on any material you download. This message has been sent over the internet and unless encrypted email should not be treated as a secure means of communication. Please bear this in mind when deciding what information to include in any email messages you send the Council. The Council does not accept service of legal documents by email. The Council reserves the right to monitor record and retain incoming and outgoing emails for security reasons and for monitoring compliance with our policy on staff use. As a public body, the Council may be required to disclose the contents of emails under data protection laws and the Freedom of Information Act 2000. We will withhold information where there is a good reason to do so. For information about what we do with personal data see our privacy notices on www.eastriding.gov.uk/privacyhub.

Appendix A – Noise Modelling Data

- ABB HV Grid Transformer Datasheet



TEST REPORT

Report No.:
2021/0141/031
Page 12 of 68

Sound Level

Serial No.: 1ZPL001134582

Measurement Details	
Measurement Standard	IEC 60076-10:2016
Measurement Method	Sound Intensity Method
Measurement Procedure	Walk around
Frequency Resolution	½ Octave Band

Measurement Instruments	Manufacturer	Type	Serial No.
Sound Level Meter	Brüel & Kjaer	2270	3023666
Sound Level Meter Calibration	Brüel & Kjaer	4297	3082325

X The equipment used has been laboratory calibrated in accordance with manufacturers recommendations and field calibrated before and after each measurement session.

Test Program														
Test #	No-Load condition [%]	Load condition [%]	Tap position	Number of fans	Number of pumps	Frequency [Hz]	Distance [m]	Prescribed contour	Height [m]	Surface area [m ²]	Surface measure [dB]	Top oil temperature [°C]	Guarantee [dB(A)]	Sound Pressure Level [dB(A)]
1	100		11	0		50	1.0	31.1	5.2	193	22.9			54.0
2	100		11	8		50	2.0	37.5	5.2	270	24.3			63.4
3		100	11	0		50	1.0	31.1	5.2	193	22.9			56.1
4		100	11	8		50	2.0	37.5	5.2	270	24.3			63.5
5														
6														
7														
8														
1+4	100	100		8			2.0						70.0	63.8

Standard: IEC 60076-10
 Test Date: 16/08/2021
 Test Engineer: [REDACTED]

Issue Date
29/09/2021

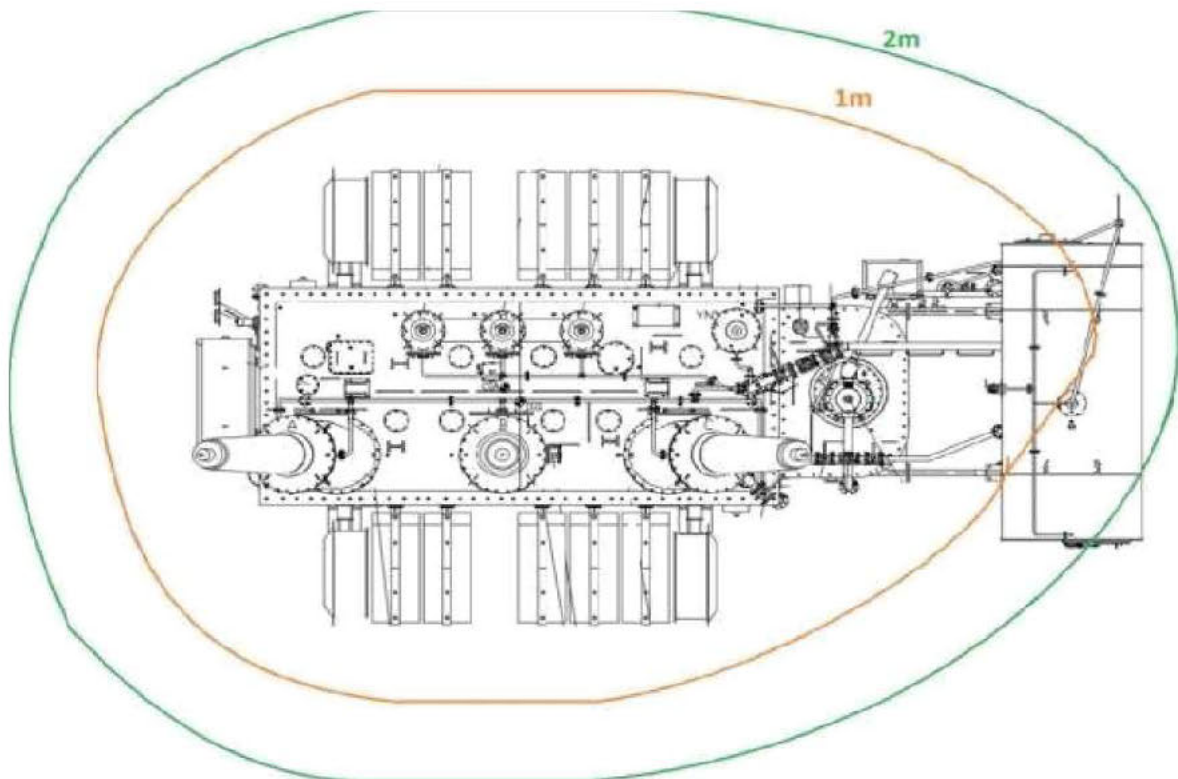
Test Engineer
Kamil Maliński

Test Department
Test Field

Sound Level

Serial No. : 1ZPL001 134582

Prescribed Contours				
x Distance [m]	l_m Prescribed contour [m]	h Height [m]	S Surface area [m ²]	L_s Surface measure [dB]
1	31.1	5.2	192.82	22.9
2	37.5	5.2	270	24.3



Issue Date
29/09/2021

Test Engineer



Test Department
Test Field



TEST REPORT

Report No.:
2021/0141/031
Page 22 of 68

Sound Level

Serial No. : 1ZPL001 134582

Combination of sound level measurements

Rated voltage	Applied voltage	Rated current	Applied current	Tap position	Fans in operation	Pumps in operation
[%]	[kV]	[%]	[A]			
100	33	100	262.43		8	

Rated voltage	Applied voltage	Rated current	Applied current	Tap position	Fans in operation	Pumps in operation
[%]	[kV]	[%]	[A]			

Frequency	Measurement 1 Sound Power Level	Measurement 4 Sound Power Level	Combined Sound Power Level
[Hz]	[dB(A)]	[dB(A)]	[dB(A)]

Frequency	Combined Sound Power Level
[Hz]	[dB(A)]

Total Sound Level		76.9	87.8	88.2
--------------------------	--	------	------	-------------

Total Sound Level				
--------------------------	--	--	--	--

Octave Band	63	39.6	64.4	64.4
	125	59.5	79.6	79.6
	250	76.1	81.2	82.3
	500	67.3	82.6	82.7
	1000	56.3	81.7	81.7
	2000	51.6	75.4	75.4
	4000	54.1	71.3	71.4
	8000	57.4	64.2	65.0

Octave Band	63			
	125			
	250			
	500			
	1000			
	2000			
	4000			
	8000			

1/3 Octave Band	50	36.1	63.8	63.8
	63	37.0	47.4	47.8
	80	0.0	55.1	55.1
	100	58.4	71.9	72.1
	125	47.5	68.5	68.6
	160	51.3	78.4	78.4
	200	63.1	73.7	74.1
	250	60.9	76.4	76.5
	315	75.8	78.0	80.1
	400	61.2	77.0	77.1
	500	63.7	76.9	77.1
	630	62.5	79.2	79.3
	800	53.7	78.6	78.6
	1000	51.4	76.7	76.7
	1250	47.1	74.5	74.5
	1600	47.0	72.4	72.4
	2000	46.7	70.2	70.2
	2500	46.9	68.5	68.5
	3150	48.4	67.5	67.6
	4000	49.6	66.9	67.0
5000	49.9	64.8	64.9	
6300	51.2	61.5	61.9	
8000	52.9	58.8	59.8	
10000	53.6	56.4	58.2	

1/3 Octave Band	50			
	63			
	80			
	100			
	125			
	160			
	200			
	250			
	315			
	400			
	500			
	630			
	800			
	1000			
	1250			
	1600			
	2000			
	2500			
	3150			
	4000			
5000				
6300				
8000				
10000				

Issue Date
29/09/2021

Test Engineer



Test Department
Test Field

¹ British Standards Institution (BSI). *Methods for rating and assessing industrial and commercial sound*. London : BSI, 2019. BS 4142:2014+A1:2019

² International Organisation for Standardisation (ISO). *Acoustics — Attenuation of sound during propagation outdoors — Part 2: Engineering method for the prediction of sound pressure levels outdoors*. Geneva : ISO, 2024. ISO 9613-2:2024

³ Association of Noise Consultants (ANC). BS 4142:2014+A1:2019 Technical Note. Version 1.0. London : ANC, 2020.

⁴ British Standards Institution (BSI). *Guidance on sound insulation and noise reduction for buildings*. London : BSI, 2014. BS 8233:2014.

⁵ International Electrotechnical Commission (IEC). *Electroacoustics – Sound level meters – Part 1: Specifications*. Geneva : IEC, 2013. IEC 61672-1:2013.