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1. Introduction

1.1 Background

1.1.1 National Grid Electricity Transmission plc ("National Grid") is in the process of submitting a Development Consent Order (DCO) application for the Yorkshire Green Energy Enablement (GREEN) Project (referred to as Yorkshire GREEN or the Project).

1.1.2 Yorkshire GREEN comprises the installation of new electricity infrastructure and works to existing infrastructure. A summary description of the Project is provided in **Section 14.1** of **Chapter 14: Noise and Vibration (Volume 5, Document 5.2.14)**, which this appendix supports, and a more detailed description is provided in **Chapter 3: Description of the Project (Volume 5, Document 5.2.3)**.

1.2 Purpose of this report

1.2.1 The purpose of this baseline report is to present the results of the baseline sound level surveys that were conducted between Monday 14th March and Monday 11th April 2022.

1.2.2 The purpose of the surveys was to gather robust and accurate baseline data to inform the noise assessments for the Environmental Impact Assessment (EIA) to be presented in the Environmental Statement (ES) accompanying the DCO application.

1.2.3 There is potential for noise effects during construction and operation of the Project. This baseline report sets out the measured baseline data used to inform the assessment of likely significant noise effects.

1.2.4 All personnel contributing to the baseline surveys, analysis of data and the preparation of this report were appropriately qualified.

1.2.5 This report contains the following sections:

- **Section 1** (this section) sets out an overview of the report;
- **Section 2** sets out relevant terminology pertaining to noise;
- **Section 3** presents technical guidance relevant to the sound and noise baseline;
- **Section 4** sets out the methodology adopted in data collection and the categories of noise receptors where baseline information is required; and
- **Section 5** sets out the specific baseline results for the Project, namely the results of the ambient and background sound and noise monitoring at several locations, as well as attended noise monitoring at the existing Monk Fryston Substation.

1.2.6 This report is based on the most up to date information available regarding the likely components required for the Project.

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2. Terminology

2.1.1 Throughout this report the term ‘noise’ is used to describe an ‘unwanted sound’ and is generally applied when describing assessment methodologies or the predictions of emissions at receptors for the purpose of assessment. In keeping with relevant policy, Standards, and guidance, calculated or measured emissions associated with the existing acoustic environment (such as ambient or background levels), and not associated with road or rail traffic, will be described as ‘sound’.

2.1.2 Whilst it is recognised that road or rail traffic noise is not always considered ‘unwanted’, the term ‘noise’ will be applied when describing their measurement.

2.1.3 The term ‘noise’ refers to airborne noise and ‘vibration’ to ground-borne vibration. For all other terminology, the full technical description is used, such as ‘ground-borne noise’. Additional technical terminology relevant to the noise assessment is presented in the **Glossary, Volume 1, Document 1.5**.

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3. Technical guidance

3.1.1 For the purposes of defining the scope of the baseline including the methodology for the sound and noise surveys for the Project, the planning policy, guidance, and standards listed in **Table 3.1** are of specific relevance.

Table 3.1 – Planning Policy, Technical Standards, and Guidance

Guidance reference	Summary
National Planning Policy Framework (NPPF)[1]	The NPPF advises (paragraph 185) that significant adverse impacts on health and the quality of life as a result of noise from new developments should be avoided. It also advises that other adverse impacts on health and quality of life arising from noise from new developments should be mitigated and reduced to a minimum. Paragraph 174 of the NPPF states that planning systems should contribute to and enhance the natural and local environment by (amongst other considerations): *"Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability."*. The NPPF further states in paragraph 185 that *"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:* *a) mitigate and reduce to a minimum, potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life; and* *b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason..."* Paragraph 187 advises that *"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and*

[1] Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework. (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/ 1005759/NPPF_July_2021.pdf (Accessed 19 April 2022).

Guidance reference	Summary
	facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have significant adverse effects on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.". This should be taken into account when considering whether the Project is an acceptable use of land.
BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites. Part 1: Noise[2]	Provides a recommended scope for construction and demolition noise assessment (the ABC Method) presented in Annex E, and also gives example threshold values for potential significant effects at noise sensitive receptors based upon the results of ambient sound monitoring.
Transport and Road Research Laboratory Research Project 53 – Ground vibration caused by civil engineering works[3]	Guidance into factors affecting the input and propagation of ground vibration from civil engineering works.
Design Manual for Roads and Bridges LA111: Noise and vibration[4]	Presents a methodology for determining impacts upon noise sensitive receptors from changes in road traffic noise due to road projects.
Calculation of Road Traffic Noise (CRTN)[5]	Provides a calculation methodology for road traffic noise.
Transport and Road Research Laboratory – Converting the UK traffic noise index $L_{A10,\ 18hr}$ to EU noise indices for noise mapping[6]	A method for converting the road traffic noise indexes described in CRTN to produce outputs in the form of European Union indices, in particular *TRL Method 3* which outlines the conversion of the $L_{A10,18hr}$ noise indices to the $L_{Aew,16hr}$ and $L_{Aeq,8hr}$ indexes.

[2] British Standards Institution (2014). BS 5228-1:2009 + A1:2014 Code of practice for noise and vibration control on construction and open sites. Part 1: Noise. BSI; London.
[3] Transport and Road Research Laboratory (1986). RR 53 Ground vibration caused by civil engineering works. TRL, Wokingham.
[4] Highways England (2020). Design Manual for Roads and Bridges LA111: Noise and vibration. (online) (Accessed October 2022).
[5] Department of Transport Welsh Office (1988). Calculation of Road Traffic Noise. (online) Available at: https://www.bradford.gov.uk/Documents/Hard%20Ings%20Road%20improvement%20scheme/2b%20Compulsory%20Purchase%20Order%20and%20Side%20Road%20Order/5%20Supporting%20documents/Calculation%20of%20Road%20Traffic%20Noise%201988.pdf (Accessed 19 April 2022).
[6] Transport Research Laboratory (2002). Converting the UK traffic noise index $L_{A10,18h}$ to EU noise indices for noise mapping. (online) Available at: https://webarchive.nationalarchives.gov.uk/ukgwa/20130402151656/http:/archive.defra.gov.uk/environment/quality/noise/research/crtn/documents/noise_crtn.pdf (Accessed 19 April 2022).

Guidance reference	Summary
Calculation of railway noise source terms for Calculation of Railway Noise 1995[7]	A methodology for obtaining and calculating rail traffic noise indexes that is additional to the methodology set out within CRN.
BS 4142:2014 + A1:2019 Methods for rating and assessing industrial and commercial sound[8]	BS 4142:2014 + A1:2019 describes methods for rating and assessing sound of an industrial nature (using outdoor sound levels), such as from factories, industrial premises, or fixed installations affecting people who might be inside or outside a dwelling. BS 4142:2014 + A1:2019 does not apply to noise associated with the passage of vehicles on public roads and railway systems.
Noise and vibration management: environmental permits[9]	Describes the principles of noise prediction and measurement, in addition to suggested methods of noise control. The guidance recommends that whenever possible, an assessment of noise should follow a recognised method of assessment, such as the methods presented within the relevant and current British Standards e.g. BS 4142:2014 + A1:2019[8].
ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors. Part 2: General method of calculation[10]	Defines a method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at distances from a source.
Guidelines for Environmental Noise Impact Assessment[11]	Presents guidelines on how the assessment of noise effects should be presented within the EIA process. The IEMA guidelines cover aspects such as scoping, baseline, prediction, and example definitions of significance criteria.
BS 7445-1:2003 Description and measurement of environmental noise. Part 1: Guide to quantities and procedures[12]	Provides guidance on the measurement and description of environmental noise.

[7] Department of Transport (1995). Calculation of Railway Noise. DfT, London.
[8] British Standards Institution (2019). BS 4142:2014 + A1:2019 Methods for rating and assessing industrial and commercial sound. BSI, London.
[9] Environment Agency (2022). Noise and vibration management: environmental permits. (online) Available at: https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits/noise-and-vibration-management-environmental-permits (Accessed 20 April 2022).
[10] International Standards Organization (1996). ISO 9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors. Part 2: General method of calculation. ISO, Geneva.
[11] Institute of Environmental Management & Assessment (2014). Guidelines for Environmental Noise Impact Assessment. IEMA, London.
[12] British Standards Institution (2003). Description and measurement of environmental noise. Part 1: Guide to quantities and procedures. BSI, London

Guidance reference	Summary
BS EN 61672-1:2013 Electroacoustics – Sound level meters. Part 1: Specifications[13]	Provides specifications for different sound level meters.
BS EN 60942:2018 Electroacoustics - Sound calibrators[14]	Provides specifications for different sound calibrators.

[13] British Standards Institution (2013). Electroacoustics – Sound level meters. Part 1: Specifications. BSI, London.
[14] British Standards Institution (2018). Electroacoustics – Sound calibrators. BSI, London.

4. Methodology

4.1 Agreed methodology

4.1.1 The methodology and monitoring locations were agreed with Environmental Health Officers from the following Local Authorities:

- Hambleton District Council;
- Harrogate Borough Council;
- Leeds City Council;
- Selby District Council; and
- City of York Council.

Identification of receptor locations

4.1.2 Noise monitoring locations were selected to be representative of Noise Sensitive Receptors (NSRs) with the greatest potential to be affected by noise from the construction and operation of the Project. The NSRs and noise monitoring locations were identified using aerial imagery, and OS mapping.

4.1.3 The ES identifies NSRs where baseline levels are required to be measured and have been taken forward when selecting monitoring locations. These receptors are shown in **Table 4.1**. **Figure 14.1, Volume 5, Document 5.4.14** shows the receptors within OS mapping.

Table 4.1 – NSRs

Reference	Location description	British Grid Reference	
		X	Y
HAM 04	Agricola, Newlands Farm	456830	460250
HAM 05	Newlands Farm	456830	460143
HAM 07	South Garth, Shipton by Beningbrough	455394	458312
HAM 08	Mill House, York Road	455307	458112
HAM 09	The Sidings	455144	457961
HAM 10	Overton Grange	455119	456590
YOR 05	Hall Moor Farm Cottages	456807	458792
YOR 06	Green View Cottage	456420	456764
YOR 07	Grantchester, Stripe Lane	456596	456103
YOR 08	Woodhouse Farm	453794	455835

Reference	Location description	British Grid Reference	
		X	Y
HAR 02	Park Farm	452617	456660
HAR 03	Thickpenny Farm	453244	456048
SEL 08	Lawnwith House, Garnet Lane	446597	441844
SEL 09	Red Brick Farm House west, Moor Lane	446416	441766
SEL 10	Red Brick Farm House east, Moor Lane	446512	441741
SEL 15	The Cottage, Butts Lane, Lumby	448607	430132
SEL 16	Traveller camp, A63/A1(M) roundabout west	447561	429768
SEL 17	Traveller camp, A63/A1(M) roundabout east	447620	429776
SEL 18	Stonehurst	449235	429680
SEL 19	Pollums House Farm	447916	429485
SEL 20	The Bungalow, Monk Fryston Lodge	448922	429407
SEL 21	Monk Fryston Lodge east	449004	429424
SEL 22	Monk Fryston Lodge west	448908	429338
SEL 23	2 Betteras Hill Road	449401	429188

4.2 Details of monitoring undertaken

Data collection methods

4.2.1 At long term monitoring locations monitoring equipment was left to measure sound levels continuously for at least 5 days. The measurements were undertaken during local schools' term-time.

4.2.2 The long-term monitoring equipment was unattended for the majority of the survey period. Observations of the sound environment were made during equipment deployment and collection to contextualise the monitoring location.

4.2.3 To obtain specific sound levels from the existing Monk Fryston Substation, short-term attended measurements were undertaken at the site boundary of the substation during the night-time period on 30 to 31 March 2022 and consisted of 15-minute samples in different positions with observations noted throughout. Where any unrepresentative, extraneous events occurred (such as emergency vehicle sirens, extended aircraft overflight, noisy vehicle passes etc), these were excluded from the measurements.

4.2.4 Noise monitoring equipment was set to measure for intervals of 15 minutes in accordance with BS 4142:2014 + A1:2019[8], which states:

"8.1.3 Ensure that the measurement time interval is sufficient to obtain a representative value of the background sound level for the period of interest. This should comprise continuous measurements of normally not less than 15 min intervals, which can be continuous or disaggregated."

4.2.5 All sound level measurements were undertaken in accordance with BS 4142:2014+A1:2019[8] and BS 7445-1:2003[12], i.e. with microphones mounted to a height of 1.2 to 1.5 m above ground level and no less than 3.5 m from any reflecting surface other than the ground.

4.2.6 At each location sound levels were measured using integrating averaging sound level meters (SLMs) conforming to Class 1 as defined by BS EN 61672-1:2013[13]. The SLMs were field calibrated before and at the end of each survey period by applying an acoustic calibrator, conforming to BS EN 60942:2018[14] to the microphone to check the sensitivity of the measuring equipment. Any drift in calibration levels was noted at the end of the survey period. No significant deviation was found at any location.

4.2.7 All SLMs used during the monitoring had undergone laboratory calibration within a period not exceeding two years prior to use. All acoustic calibrators used had undergone laboratory calibration within a period not exceeding one year prior to use. See **Annex 14A.2** for a summary of laboratory calibrations and calibration certificates.

4.2.8 Meteorological measurement equipment was deployed to monitor local wind speeds and direction, precipitation, air temperature and relative humidity during the surveys. The logged meteorological data have been used in the analysis of the sound level data to ensure that only data collected during appropriate weather conditions has been used when determining representative sound levels to be used in the assessment.

Data collection locations

Long term monitoring

4.2.9 Long term sound monitoring was undertaken at thirteen locations between Monday 14 March and Monday 11 April 2022. This consisted of long-term monitoring, with some short term attended monitoring taking place at the existing Monk Fryston Substation.

4.2.10 Long term monitoring was undertaken at various locations along the Yorkshire GREEN route, as presented in **Table 4.2** and **Figure 14.1, Volume 5, Document 5.4.14**.

Table 4.2 – Long term monitoring locations

Location reference	Location description	British Grid Reference		Monitoring period	Representative of NSR(s)
		X	Y		
MF1	Field to the east of the existing Monk Fryston substation (south of existing farm)	448817	429303	14/03/2022 – 21/03/2022	SEL20 SEL21 SEL22 SEL23
MF2	Field located on the west side of the A162, just south of junction of the A162 and Betteras Hill Road	449319	429602	14/03/2022 – 21/03/2022	SEL18
MF3	Field to the east of Pollums House Farm	447932	429486	15/03/2022 – 21/03/2022	SEL16 SEL17 SEL19

Location reference	Location description	British Grid Reference		Monitoring period	Representative of NSR(s)
		X	Y		
MF4	Field south of Red Hill Lane, to the west of The Orangery at Lumby Hall	448418	430328	14/03/2022 – 21/03/2022	SEL15
TD1	Field to the north east of Red Brick Farm House	446521	441777	22/03/2022 – 30/03/2022	SEL08 SEL09 SEL10
HE1	Thickpenny Farm	453331	456065	22/03/2022 – 30/03/2022	HAR02 HAR03 YOR08
OV1	Field to the east of Overton Grange	455138	456612	22/03/2022 – 30/03/2022	HAM10
SK1	Field to the west of Mercure York Fairfield Manor Hotel	456966	455662	22/03/2022 – 30/03/2022	YOR07
SK2	Green View Cottage	456405	456766	30/03/2022 – 03/04/2022	YOR06
SH1	South of Shipton by Beningbrough	455294	458103	31/03/2022 – 11/04/2022	HAM08 HAM09
SH2	South Garth, Shipton by Beningbrough	455385	458288	31/03/2022 – 11/04/2022	HAM07
SH3	Hall Moor Farm Cottages	456841	458801	31/03/2022 – 11/04/2022	YOR05
SH4	Newlands Farm	456809	460272	31/03/2022 – 11/04/2022	HAM04 HAM05

4.2.11 A data logging meteorological station was deployed at MF4 (14 March 2022 to 23 March 2022) and SK2 (22 March 2022 to 11 April 2022) during the surveying periods. The meteorological station logged concurrently with the sound level surveys to allow adverse weather conditions to be identified and corresponding sound levels excluded from the data analysis.

4.2.12 Specific details about the location of the monitoring equipment and observations made during deployment and collection of the long-term measurements are detailed in **Annex 14A.3**.

Meteorological conditions

4.2.13 Meteorological conditions varied throughout the long-term surveys. Monitoring periods where average wind speeds exceeded 5ms^{-1} and / or rainfall occurred have been removed from the analysis to ensure that adverse weather conditions had no influence on the monitoring results.

4.2.14 **Table 4.3** presents the total time monitored at each long-term location alongside the total time excluded from the data analysis.

Table 4.3 – Time monitored at each long-term monitoring location

Location reference	Total no. 15-minute samples	Total duration of dataset	No. samples excluded due to adverse weather	Duration of dataset, with exclusions
MF1	667	6 days, 22 hours, 45 minutes	33	6 days, 14 hours, 30 minutes
MF2	616	6 days, 10 hours	32	6 days, 2 hours
MF3	568	5 days, 22 hours	32	5 days, 14 hours
MF4	664	6 days, 22 hours	33	6 days, 13 hours, 45 minutes
TD1	748	7 days, 19 hours	16	7 days, 15 hours
HE1	753	7 days, 20 hours, 15 minutes	20	7 days, 15 hours, 15 minutes
OV1	757	7 days, 21 hours, 15 minutes	16	7 days, 17 hours, 15 minutes
SK1	764	7 days, 23 hours	15	7 days, 19 hours, 15 minutes
SK2	376	3 days, 22 hours	31	3 days, 14 hours, 15 minutes
SH1	1052	10 days, 23 hours	102	9 days, 21 hours, 30 minutes
SH2	1052	10 days, 23 hours	102	9 days, 21 hours, 30 minutes
SH3	1059	11 days, 0 hours, 45 minutes	102	9 days, 23 hours, 15 minutes
SH4	1058	11 days, 0 hours, 30 minutes	102	9 days, 23 hours

Short term monitoring

4.2.15 Short-term attended measurements were undertaken at 6 locations surrounding the existing Monk Fryston Substation between 23:44 on 30 March 2022 and 01:30 on 31 March 2022 to collect specific noise levels due to the existing substation. The short-term monitoring locations are shown in **Table 4.4**.

Table 4.4 – Short term monitoring locations

Location reference	Location description	British Grid		Monitoring period
		X	Y	
SUB1	Southeast corner of substation	448517	428974	30/03/2022 23:44 – 23:59
SUB2	Southeast side of substation, 80m north of SUB1	448536	429074	31/03/2022 00:03 – 00:18
SUB3	Northeast side of substation, underneath overhead line, 110m north of SUB2	448557	429178	31/03/2022 00:23 – 00:38
SUB4	Northeast side of substation, 45m northeast of SUB3	448598	429190	31/03/2022 00:40 – 00:55
SUB5	Northeast side of substation, 60m north of SUB4	448607	429243	31/03/2022 00:58 – 01:13
SUB6	North side of substation, 40m northwest of SUB5	448577	429280	31/03/2022 01:14 – 01:27

5. Results

5.1 Summary

5.1.1 **Annex 14A.3** contains detailed results for each monitoring location, including site photos, distribution charts and time history charts, along with rows of data for different assessment periods (construction daytime, evenings and weekends, and night-time; and operational daytime and night-time). For each assessment period, different parameters have been calculated along with the statistics for the number of periods excluded from the analysis due to adverse weather.

5.1.2 The different assessment periods are presented in **Table 5.1**.

Table 5.1 – Summary of assessment periods as described in BS 5228-1

Assessment Period	Time
Construction daytime	Monday – Friday: 0700 – 1900 Saturday: 0700 – 1300
Construction evenings & weekends	Monday – Friday: 1900 – 2300 Saturday: 1300 – 2300 Sunday: 0700 – 2300
Construction night-time	Monday – Sunday 2300 – 0700
Operational daytime (Weekdays)	Monday – Friday: 0700 – 2300
Operational daytime (Saturdays)	Saturday: 0700 – 2300
Operational daytime (Sundays)	Sunday: 0700 – 2300
Operational night-time	Monday – Sunday: 2300 - 0700

5.1.3 A summary of the logarithmically averaged ambient noise levels is presented in **Table 5.2**, with a summary of the mean averaged background levels in **Table 5.3**.

Table 5.2 – Summary of ambient noise levels (logarithmic average)

Location reference	$L_{Aeq,T}$ (dB)				
	Construction daytime	Construction evening and weekends	Construction night-time	Operational daytime (weekdays)	Operational night-time
MF1	49	46	49	49	49
MF2	67	65	63	66	63
MF3	61	60	52	54	52
MF4	50	47	48	50	48
TD1	56	56	51	56	51
HE1	53	49	52	51	52
OV1	56	49	45	49	45
SK1	51	49	53	51	53
SK2	60	57	52	60	52
SH1	60	59	54	59	54
SH2	57	54	51	57	51
SH3	58	51	48	58	48
SH4	52	48	46	52	46

Table 5.3 – Summary of background noise levels (mean average)

Location reference	$L_{A90,T}$ (dB)				
	Construction daytime	Construction evening and weekends	Construction night-time	Operational daytime (weekdays)	Operational night-time
MF1	44	40	42	45	42
MF2	56	51	41	56	41
MF3	49	45	44	48	44
MF4	46	43	43	46	43
TD1	52	52	41	52	41
HE1	36	33	29	34	29
OV1	41	40	39	40	39
SK1	46	45	45	46	45
SK2	53	48	31	51	31

Location reference	$L_{A90,T}$ (dB)				
	Construction daytime	Construction evening and weekends	Construction night-time	Operational daytime (weekdays)	Operational night-time
SH1	47	43	30	45	30
SH2	48	43	32	46	32
SH3	39	35	34	39	34
SH4	41	36	33	40	33

5.1.4 Operational statistical noise levels have been presented for MF1, MF2, MF3, MF4 and OV1. A summary of the statistical ambient noise levels for the locations are presented in **Table 5.4**, with a summary of the statistical background levels in Table 5.5.

Table 5.4 – Summary of statistical ambient sound levels

	Ambient Sound Level, $L_{Aeq,T}$ (dB)									
	Operational Daytime					Operational Night-time				
	MF1	MF2	MF3	MF4	OV1	MF1	MF2	MF3	MF4	OV1
Min	39	61	49	39	40	37	56	47	37	38
25th %ile	45	65	53	47	45	43	60	50	43	40
Median	48	66	54	49	47	45	61	51	46	42
75th %ile	50	67	54	51	49	49	63	52	48	46
Max	59	70	64	57	65	62	70	57	57	57

Table 5.5 – Summary of statistical background sound levels

Background Sound Level, $L_{A90,T}$ (dB)										
	Operational Daytime					Operational Night-time				
	MF1	MF2	MF3	MF4	OV1	MF1	MF2	MF3	MF4	OV1
Min	36	41	41	36	36	33	34	40	33	38
25th %ile	41	54	47	44	41	39	39	43	39	38
Median	44	57	49	46	43	41	42	44	43	39
75th %ile	46	58	51	48	44	46	47	45	46	40
Max	55	63	51	55	52	56	60	51	54	47

5.2 Interpretation of results

MF1

5.2.1 The time history for MF1 displays peaks for ambient and background levels in the early morning (6 – 8 am) and in the early evening (5 – 6 pm), representative of rush hour traffic. The sound levels are at their lowest during the night-time periods. The existing Monk Fryston Substation lies to the west of the monitoring location. Consequently, with a predominantly easterly wind, it is expected that sound levels would be elevated at MF1. This was reflected during the nights of 19th/20th March where the winds were predominantly easterly and subsequently the night-time background sound levels were slightly elevated in comparison to the majority of the monitoring period where the wind conditions were different.

5.2.2 The monitoring location is close to a working farm and approximately 350m south of the A63 and 400m east of the A1(M). Although SEL23 is closer to the A162 than MF1, using MF1 levels presents a worst case for the assessment of effects at SEL23. It is therefore considered appropriate to use the results of the monitoring at MF1 to represent baseline noise levels at the receptors identified in **Table 4.1** within the noise assessment.

MF2

5.2.3 The time history for MF2 shows a typical diurnal pattern of higher ambient and background levels during the daytime and lower levels during the night-time. The monitoring location was approximately 7m south of the A63 and 100m west of A162. Road traffic noise was the dominant noise source at the monitoring location.

5.2.4 The receptors within SEL18 are approximately the same distance from the A63 and A162 as the MF2. It is therefore considered appropriate to use the results of the monitoring at MF2 to represent baseline noise levels at SEL18 within the noise assessment.

MF3

5.2.5 The time history for MF3 shows a typical diurnal pattern with higher ambient and background levels during the daytime and lower levels during the night-time. Peaks in sound levels due to high wind speeds were measured on 19th March and 20th March (at wind speeds over 5 m/s, data were omitted from the analysis). These peaks also coincide with periods where the wind was generally in an easterly direction, therefore likely increasing noise contributions from the A1(M), located approximately 300m west of the monitoring location.

5.2.6 As MF3 is located within the grounds of SEL19, it is considered appropriate to use the results of the monitoring at MF3 to represent baseline noise levels at SEL19 within the noise assessment. Whilst SEL16 and SEL17 lie closer to the A1(M) and A63 than MF3 was located, it is considered conservative to use the levels measured at MF3 to represent SEL16 and SEL17 and present a worst-case scenario in the assessment.

MF4

5.2.7 The time history for MF4 shows daily peaks around the 06:30 – 07:30 hour, likely due to rush hour traffic. The time history also shows a diurnal pattern of higher ambient and background levels during the daytime and lower levels during the night-time. A period of elevated sound levels was measured on 17th March between 13:00 and 19:00. This coincided with a period of westerly winds, and hence the measurements were likely representative of a greater noise contribution from road traffic associated with the village of Lumby which lies approximately 150m east.

5.2.8 MF4 is approximately 150m outside of Lumby (SEL15). Consequently, MF4 is likely to have measured lower sound levels due to the relative distance from the noise sources associated with Lumby (i.e. local road traffic), than if a monitoring location was at a property within Lumby itself. It is therefore considered appropriate to use the results of the monitoring at MF4 as a conservative representation of baseline noise levels at the receptors identified in **Table 4.1** within the noise assessment.

TD1

5.2.9 The time history for TD1 shows the typical diurnal pattern of lower night-time levels and higher daytime levels. The A64 is the dominant noise source and the changes in noise levels throughout the period are representative of this typical diurnal pattern.

5.2.10 TD1 is located approximately 20m north of SEL10 and therefore likely to produce more conservative baseline levels as there is greater distance from the A64 and working barn. It is therefore considered appropriate to use the results of the monitoring to represent baseline noise levels at the receptors identified in **Table 4.1** within the noise assessment for the Project, as this is likely to be a conservative representation (lower levels than those experienced at the receptors) of the receptors.

HE1

5.2.11 The time history for HE1 shows a daily pattern of the highest background sound levels in the early morning (06:00 – 09:00), followed by a smaller peak later in the day (17:00 – 18:00), with the lowest levels occurring during the night-time period. HE1 is approximately 1km from the A59 and 3km from the A19. Therefore it is unlikely that peak hours on the major roads was causing the daytime peaks. However, the monitoring location was on the boundary of a working farm (Thickpenny Farm) and it is likely that these periods were when the most machinery movement occurred.

5.2.12 HE1 was within the garden of the residential dwelling at Thickpenny Farm and therefore it is considered appropriate to use the results of the monitoring at HE1 to represent baseline noise levels at the receptors identified in **Table 4.1** within the noise assessment.

OV1

5.2.13 The time history for OV1 shows a relatively consistent background sound level throughout the daytime and night-time periods, with some peaks during the early morning (around 08:00) on weekdays. Overton Grange (HAM10) is a working farm and further analysis of the data collected shows a tonal element at 100Hz present throughout the daytime and night-time periods. After listening to the audio collected during the measurement, a consistent hum can be heard during the quiet night-time periods, confirming the presence of plant on site.

5.2.14 On the basis of the above, the ambient and background levels collected from OV1 are considered representative of the receptors identified in **Table 4.1** within the noise assessment.

SK1 and SK2

5.2.15 The time history for SK1 shows higher ambient and background sound levels during the daytime than the night-time, with higher peaks between 06:00 – 08:00 and 16:00 – 20:00, likely due to rush hour traffic. The difference between daytime and night-time background levels is small, with night-time levels never dropping below 40dB whilst daytime levels rarely reach above 50dB.

5.2.16 The time history for SK2 shows a clear diurnal pattern of higher ambient and background sound levels during the daytime and lower levels during the night-time, with a significant drop in background levels during the night-time.

5.2.17 SK1 background levels are 12dB higher than SK2 background levels during the night-time period, despite being approximately 100m from the road compared to SK2 which is 60m from the road. This suggests there may be something other than the road traffic dominating the background, though further analysis of the data shows no tonal component to suggest plant noise from the hotel.

5.2.18 As the NSR YOR07 sits between SK1 and SK2, it is deemed appropriate to use the worst-case levels from SK1 and SK2 to represent the baseline noise levels at YOR07 (i.e. the lowest values for each assessment period).

5.2.19 As SK2 is in the garden of YOR06, it is considered appropriate to use the measurement levels from SK2 to represent the baseline sound levels at YOR06 within the noise assessment.

SH1

5.2.20 The time history at SH1 shows a typical diurnal pattern of higher daytime ambient and background sound levels and lower night-time levels. The A19 was the dominant noise source. SH1 was located approximately 30m back from the A19. When high wind speeds were measured, the data show minimal change to the background and ambient levels (though where the speed exceeds 5 m/s the data have been excluded from the analysis).

5.2.21 SH1 is located approximately 30m from the A19, and HAM08 is located approximately 200m from the A19. However, HAM08 is located next to the East Coast Main Line

Railway. If HAM08 requires consideration within the noise assessment, the measured levels at SH1 are considered representative and will be used in the noise assessment.

SH2

5.2.22 The time history for SH2 shows a typical diurnal pattern of higher ambient and background sound levels during the daytime and lower levels during the night-time, where the A19 is the dominant noise source.

5.2.23 SH2 was located within a garden of a property on South Garth, approximately 50m from the A19. Therefore, the measured levels at SH2 are considered representative of HAM07 for the noise assessment.

SH3

5.2.24 The time history for SH3 shows the diurnal pattern of higher ambient and background sound levels during the daytime and lower levels during the night-time, with lower daytime peaks occurring on weekends. The monitoring location is approximately 1.5km east of the A19 and approximately 200m northwest of Hall Moor Farm. It is therefore likely that the increase in daytime levels is due to farm activity as the dominant noise source, as opposed to road traffic noise.

5.2.25 It is considered appropriate to use the results of the monitoring from SH3 as baseline levels for YOR05.

SH4

5.2.26 The time history for SH4 shows the diurnal pattern of higher ambient and background sound levels during the daytime and lower levels during the night-time, with lower daytime peaks occurring on weekends. The monitoring location is approximately 2km east of the A19 and within the grounds of Newlands Farm. It is therefore likely that the increase in daytime levels is due to farm activity as the dominant noise source, as opposed to road traffic noise. Work from the commercial farm was noted as an observation when setting up and collecting the monitoring kit, supporting this assumption.

5.2.27 As the levels from SH4 are proposed to only be used to represent HAM04 and HAM05 (Newlands Farm) in the assessment, it is considered appropriate to use the results of the monitoring from SH4 as baseline levels in the noise assessment.

6. Summary

6.1.1 To inform the noise assessment forming part of the EIA to be presented as part of the ES in support of the DCO application, baseline noise surveys were undertaken. This baseline report presents the results of the baseline sound surveys which were conducted between Monday 14 March 2022 and Monday 11 April 2022.

6.1.2 All monitoring and subsequent data processing, analysis and reporting was undertaken in accordance with the relevant British Standards and the agreed methodology.

6.1.3 The measured sound levels are considered to be typical of the locations where the data were acquired, which tended to be dominant by road traffic noise or, in some instances, farm activity. Any unrepresentative events / data have been removed from the datasets (periods with wind speeds greater than 5 m/s or periods with rain, for example).

6.1.4 Based on the above, the measured sound levels are considered representative of the NSRs in proximity to each measurement location, and the representative sound levels to be used in the EIA are provided in **Table 6.1** and **Table 6.2**.

Table 6.1 – Summary of baseline ambient sound levels (logarithmic average)

Location reference	$L_{Aeq,T}$ (dB)				
	Construction daytime	Construction evening and weekends	Construction night-time	Operational daytime (weekdays)	Operational night-time
SEL08	56	56	51	56	51
SEL09	56	56	51	56	51
SEL10	56	56	51	56	51
SEL15	50	47	48	50	48
SEL16	61	60	52	54	52
SEL17	61	60	52	54	52
SEL18	67	65	63	66	63
SEL19	61	60	52	54	52
SEL20	49	46	49	49	49
SEL21	49	46	49	49	49
SEL22	49	46	49	49	49
SEL23	49	46	49	49	49
HAR02	53	49	52	51	52
HAR03	53	49	52	51	52
HAM04	52	48	46	52	46
HAM05	52	48	46	52	46
HAM07	57	54	51	57	51
HAM08	60	59	54	59	54
HAM09	60	59	54	59	54
HAM10	56	49	45	49	45
YOR05	58	51	48	58	48
YOR06	60	57	52	60	52
YOR07	51	49	52	51	52
YOR08	53	49	52	51	52

Table 6.2 – Summary of baseline background sound levels (mean/modal average)

Location reference	$L_{A90,T}$ (dB)				
	Construction daytime	Construction evening and weekends	Construction night-time	Operational daytime (weekdays)	Operational night-time
SEL08	50	52	39	50	39
SEL09	50	52	39	50	39
SEL10	50	52	39	50	39
SEL15	46	43	43	46	43
SEL16	49	44	43	46	43
SEL17	49	44	43	46	43
SEL18	56	51	41	53	41
SEL19	49	44	43	46	43
SEL20	47	43	30	45	40
SEL21	44	39	40	44	40
SEL22	44	39	40	44	40
SEL23	44	39	40	44	40
HAR02	36	33	26	34	26
HAR03	36	33	26	34	26
HAM04	41	36	27	40	27
HAM05	41	36	27	40	27
HAM07	48	43	25	46	25
HAM08	47	43	26	45	26
HAM09	47	43	26	45	26
HAM10	41	40	39	40	39
YOR05	39	34	31	39	31
YOR06	53	45	28	51	28
YOR07	46	45	28	46	28
YOR08	36	33	26	34	26

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Annex 14A.1
Noise Terminology

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Term	Definition
Acoustic environment	Sound from all sources as modified by the environment.
Ambient sound	Totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far.
Ambient sound level	The $L_{Aeq,\,T}$, of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T.
Background sound level	The underlying level of sound over a period, T, and is represented by $L_{A90,\,T}$, the level exceeded for 90% of the measurement interval T.
dB	A unit used to measure the intensity of a sound or the power level of an electrical signal by comparing it with a given level on a logarithmic scale.
Façade level	A correction factor (addition of 3dB to the free field level when calculated using BS 5228:2009 + A1:2014) to take into account reflections from a building.
Free-field level	Resulting level from a measurement that is undertaken away from the acoustic influence of a reflective façade (i.e. at least 3.5 m away from any reflective source, not including the ground).
Frequency in Octave Bands	A range of frequencies where the upper frequency limit is twice that of the lower frequency limit. For example, the 1000 Hertz octave band contains acoustic energy at all frequencies from 707 to 1414 Hertz.
Frequency in One Third Octave Bands	Octave bands that are sub-divided into three parts, equal to 23% of the centre frequency. Used when octave analysis does not provide sufficient detail. Divides the audio spectrum into 33 or more equal parts where the cut-off frequencies have a ratio of 21/3, which is approximately 1.26. For example, a 1 kHz third-octave band filter has a centre frequency of 1000 Hz with lower and upper frequencies of 891 Hz and 1112 Hz, respectively.
Hertz (Hz)	The number of waves per second. The unit of measurement for frequency of a sound wave.
Impulsive	A sound described as being impulsive will be characterised by a sudden onset rate of sound. In BS 4142:2014 + A1:2019 the onset rate of a sound must exceed a slope gradient of 10 dB per second on the positive slope for a sound to be characterised as impulsive. A penalty of up to 9 dB can be applied to an impulsive sound dependant on impulse prominence.
Intermittent	An intermittent sound will come from a source that has on and off conditions that are readily distinguishable against the residual acoustic environment. In BS 4142:2014 + A1:2019 a penalty of 3 dB can be applied to a sound where it is determined to be intermittent.
$L_{A10,\,18h}$	The $L_{A10,\,18h}$ is the A-weighted sound pressure level that is exceeded for 10% of an 18-hour measurement.

Term	Definition
$L_{A90, T}$	The A-weighted sound pressure level that is exceeded for 90% of a given time interval, T. Known as the 'background sound level'.
$L_{Aeq, T}$	The A-weighted equivalent continuous sound level. It is the notional continuous level that, over the defined time period, T, contains the same sound energy as the actual fluctuating sound that occurred over the same time period.
$L_{Aeq, 16hr}$ / $L_{Aeq, 8hr}$	The L_{Aeq} over 16 hour and 8 hour periods respectively
$L_{Aeq, 18hr}$ / $L_{Aeq, 6hr}$	The L_{Aeq} over 18 hour and 6 hour periods respectively.
$L_{AFmax,T}$	The maximum recorded sound level within a given time period, T, measured using a fast time weighting.
$L_{AN,T}$	The level of A-weighted noise exceeded for N% of the measurement time T. Note that the time weighting (usually Fast) is sometimes included, denoted by 'F' (e.g. $L_{AFN,T}$)
$L_{ASmax,T}$	The maximum recorded sound level within a given time period, T, measured using a slow time weighting.
Mean (average)	The arithmetic average of a set of numbers, e.g. add up the numbers and divide by the number of numbers.
Modal (average)	The mode is the number in a dataset that is repeated more often than any other number in the same set.
Noise	A term used to describe 'unwanted sound' or any sound that is undesired by the recipient.
Rating level, $L_{Ar, T}$	The specific sound level, plus any adjustments for the characteristic features of the sound, (such as tonality, impulsivity or intermittency).
Root mean square (rms)	Root Mean Square of a time-varying quantity is obtained by squaring the amplitude at each instant, obtaining the average of the squared values over the interval of interest, and then taking the Square Root of this average.
Sound	A term used to describe airborne waves that can be heard.
Sound level meter (SLM)	SLM is the instrument used for acoustic (sound that travels through air) measurements. It is commonly a hand-held instrument with a microphone. The diaphragm of the microphone responds to changes in air pressure caused by sound waves.
Sound pressure level (Lp)	Sound pressure level is the RMS value of the Instantaneous Sound Pressures measured over a specified period of time, measured in decibels (dB) to a given reference pressure level.
Specific sound level	An equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r.

Term	Definition
Time weighting	Time weightings determine how quickly the sound level meter responds to changes in sound pressure level. Fast time weighting: the sound level meter samples over a number of discrete 125ms periods, with all parameters calculated from these 125ms measurements. E.g. a 15-minute measurement period is actually 432,000 individual measurements. Slow time weighting: the sound level meter samples over a number of discrete 1 second periods, with all parameters calculated from these 1 second measurements.
Tonal	A sound described as being tonal will be characterised as a sound that contains one or more distinct tones. In BS 4142:2014 + A1:2019 a tone can be identified where a frequency band contains more energy and is shown to have a certain level difference over its neighbouring bands. A penalty of up to 6 dB can be applied to a tonal sound dependant on tonal prominence.
Weighting network	An electronic filter in a sound level meter, which approximates, under defined conditions, the frequency response of the human ear. The A-weighting network is most commonly used.

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Annex 14A.2
Calibration certificates

CERTIFICATE OF CALIBRATION

UKAS Accredited Calibration Laboratory No. 0653

Certificate Number UCRT21/1429

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

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52	
SLM instruction manual ref / issue		11-03	
SLM instruction manual source		Manufacturer	
Internet download date if applicable		N/A	
Case corrections available		Yes	
Uncertainties of case corrections		Yes	
Source of case data		Manufacturer	
Wind screen corrections available		Yes	
Uncertainties of wind screen corrections		Yes	
Source of wind screen data		Manufacturer	
Mic pressure to free field corrections		Yes	
Uncertainties of Mic to F.F. corrections		Yes	
Source of Mic to F.F. corrections		Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes	
Specified or equivalent Calibrator		Specified	
Customer or Lab Calibrator		Customers Calibrator	
Calibrator adaptor type if applicable		NC-74-002	
Calibrator cal. date		29 March 2021	
Calibrator cert. number		UCRT21/1413	
Calibrator cal cert issued by		0653	
Calibrator SPL @ STP		94.04 dB	Calibration reference sound pressure level
Calibrator frequency		1004.01 Hz	Calibration check frequency
Reference level range		25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End			
Temperature	24.45	24.46	±	0.30	°C
Humidity	41.7	40.2	±	3.00	%RH
Ambient Pressure	101.75	101.74	±	0.03	kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.1	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting	
Uncertainty of the microphone installed self generated noise ±	N/A	dB		

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	10.9	dB	UR	15.5	dB	UR	20.3	dB	UR
Uncertainty of the electrical self generated noise ±						0.12		dB	

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Giles R 1

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

UKAS Accredited Calibration Laboratory No. 0653

Certificate Number
UCRT21/1418

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

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52
SLM instruction manual ref / issue		11-03
SLM instruction manual source		Manufacturer
Internet download date if applicable		N/A
Case corrections available		Yes
Uncertainties of case corrections		Yes
Source of case data		Manufacturer
Wind screen corrections available		Yes
Uncertainties of wind screen corrections		Yes
Source of wind screen data		Manufacturer
Mic pressure to free field corrections		Yes
Uncertainties of Mic to F.F. corrections		Yes
Source of Mic to F.F. corrections		Manufacturer
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes
Specified or equivalent Calibrator		Specified
Customer or Lab Calibrator		Customers Calibrator
Calibrator adaptor type if applicable		NC-74-002
Calibrator cal. date		26 March 2021
Calibrator cert. number		UCRT21/1406
Calibrator cal cert issued by		0653
Calibrator SPL @ STP	93.97 dB	Calibration reference sound pressure level
Calibrator frequency	1001.55 Hz	Calibration check frequency
Reference level range	25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	24.04	24.00	± 0.30 °C
Humidity	45.0	45.3	± 3.00 %RH
Ambient Pressure	101.60	101.60	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	11.9	dB	UR	16.6	dB	UR	22.8	dB	UR
Uncertainty of the electrical self generated noise ±							0.12	dB	

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Bogdan R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

UKAS Accredited Calibration Laboratory No. 0653

Certificate Number
UCRT21/1422

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

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52
SLM instruction manual ref / issue		11-03
SLM instruction manual source		Manufacturer
Internet download date if applicable		N/A
Case corrections available		Yes
Uncertainties of case corrections		Yes
Source of case data		Manufacturer
Wind screen corrections available		Yes
Uncertainties of wind screen corrections		Yes
Source of wind screen data		Manufacturer
Mic pressure to free field corrections		Yes
Uncertainties of Mic to F.F. corrections		Yes
Source of Mic to F.F. corrections		Manufacturer
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes
Specified or equivalent Calibrator		Specified
Customer or Lab Calibrator		Customers Calibrator
Calibrator adaptor type if applicable		NC-74-002
Calibrator cal. date		26 March 2021
Calibrator cert. number		UCRT21/1405
Calibrator cal cert issued by		0653
Calibrator SPL @ STP	94.00 dB	Calibration reference sound pressure level
Calibrator frequency	1001.15 Hz	Calibration check frequency
Reference level range	25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	23.42	23.73	± 0.30 °C
Humidity	40.1	40.7	± 3.00 %RH
Ambient Pressure	101.80	101.79	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.3	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	11.1	dB	UR	15.1	dB	UR	22.8	dB	UR
Uncertainty of the electrical self generated noise ±						0.12	dB		

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Bogdan R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

Certificate Number	
UCRT22/1353	
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	Sound Level Meter	NL-42 / NL-52	
SLM instruction manual ref / issue		11-03	
SLM instruction manual source		Manufacturer	
Internet download date if applicable		N/A	
Case corrections available		Yes	
Uncertainties of case corrections		Yes	
Source of case data		Manufacturer	
Wind screen corrections available		Yes	
Uncertainties of wind screen corrections		Yes	
Source of wind screen data		Manufacturer	
Mic pressure to free field corrections		Yes	
Uncertainties of Mic to F.F. corrections		Yes	
Source of Mic to F.F. corrections		Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes	
Specified or equivalent Calibrator		Specified	
Customer or Lab Calibrator		Customers Calibrator	
Calibrator adaptor type if applicable		NC-74-002	
Calibrator cal. date		10 March 2022	
Calibrator cert. number		UCRT22/1352	
Calibrator cal cert issued by		0653	
Calibrator SPL @ STP		94.03 dB	Calibration reference sound pressure level
Calibrator frequency		1004.05 Hz	Calibration check frequency
Reference level range		25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	22.78	23.11	± 0.30 °C
Humidity	40.6	40.9	± 3.00 %RH
Ambient Pressure	100.63	100.62	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	13.0	dB	UR	17.1	dB	UR	24.3	dB	UR
Uncertainty of the electrical self generated noise ±							0.12	dB	

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Bogdan R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

Certificate Number
UCRT21/1426

UKAS Accredited Calibration Laboratory No. 0653

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

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52	
SLM instruction manual ref / issue		11-03	
SLM instruction manual source		Manufacturer	
Internet download date if applicable		N/A	
Case corrections available		Yes	
Uncertainties of case corrections		Yes	
Source of case data		Manufacturer	
Wind screen corrections available		Yes	
Uncertainties of wind screen corrections		Yes	
Source of wind screen data		Manufacturer	
Mic pressure to free field corrections		Yes	
Uncertainties of Mic to F.F. corrections		Yes	
Source of Mic to F.F. corrections		Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes	
Specified or equivalent Calibrator		Specified	
Customer or Lab Calibrator		Customers Calibrator	
Calibrator adaptor type if applicable		NC-74-002	
Calibrator cal. date		29 March 2021	
Calibrator cert. number		UCRT21/1413	
Calibrator cal cert issued by		0653	
Calibrator SPL @ STP	94.04	dB	Calibration reference sound pressure level
Calibrator frequency	1004.01	Hz	Calibration check frequency
Reference level range	25 - 130	dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End			
Temperature	24.21	24.22	±	0.30	°C
Humidity	40.5	40.5	±	3.00	%RH
Ambient Pressure	101.79	101.77	±	0.03	kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	12.8	dB	UR	17.0	dB	UR	23.5	dB	UR
Uncertainty of the electrical self generated noise ±						0.12		dB	

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Bogdan R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

Certificate Number UCRT21/1427
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	Sound Level Meter	NL-42 / NL-52	
SLM instruction manual ref / issue		11-03	
SLM instruction manual source		Manufacturer	
Internet download date if applicable		N/A	
Case corrections available		Yes	
Uncertainties of case corrections		Yes	
Source of case data		Manufacturer	
Wind screen corrections available		Yes	
Uncertainties of wind screen corrections		Yes	
Source of wind screen data		Manufacturer	
Mic pressure to free field corrections		Yes	
Uncertainties of Mic to F.F. corrections		Yes	
Source of Mic to F.F. corrections		Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes	
Specified or equivalent Calibrator		Specified	
Customer or Lab Calibrator		Customers Calibrator	
Calibrator adaptor type if applicable		NC-74-002	
Calibrator cal. date		29 March 2021	
Calibrator cert. number		UCRT21/1413	
Calibrator cal cert issued by		0653	
Calibrator SPL @ STP		94.04 dB	Calibration reference sound pressure level
Calibrator frequency		1004.01 Hz	Calibration check frequency
Reference level range		25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	24.34	24.40	± 0.30 °C
Humidity	41.3	41.5	± 3.00 %RH
Ambient Pressure	101.78	101.75	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise	This test is currently not performed by this Lab.		
Microphone installed (if requested by customer) = Less Than		N/A dB	A Weighting
Uncertainty of the microphone installed self generated noise ±		N/A dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	12.1	dB	UR	16.7	dB	UR	20.8	dB	UR
Uncertainty of the electrical self generated noise ±						0.12		dB	

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: C. Hirlav R 3

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

Certificate Number UCRT21/1428
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	Sound Level Meter	NL-42 / NL-52	
SLM instruction manual ref / issue		11-03	
SLM instruction manual source		Manufacturer	
Internet download date if applicable		N/A	
Case corrections available		Yes	
Uncertainties of case corrections		Yes	
Source of case data		Manufacturer	
Wind screen corrections available		Yes	
Uncertainties of wind screen corrections		Yes	
Source of wind screen data		Manufacturer	
Mic pressure to free field corrections		Yes	
Uncertainties of Mic to F.F. corrections		Yes	
Source of Mic to F.F. corrections		Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes	
Specified or equivalent Calibrator		Specified	
Customer or Lab Calibrator		Customers Calibrator	
Calibrator adaptor type if applicable		NC-74-002	
Calibrator cal. date		29 March 2021	
Calibrator cert. number		UCRT21/1413	
Calibrator cal cert issued by		0653	
Calibrator SPL @ STP		94.04 dB	Calibration reference sound pressure level
Calibrator frequency		1004.01 Hz	Calibration check frequency
Reference level range		25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	24.26	24.55	± 0.30 °C
Humidity	40.3	41.9	± 3.00 %RH
Ambient Pressure	101.77	101.74	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0 dB		Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	12.4	dB	UR	16.7	dB	UR	23.7	dB	UR
Uncertainty of the electrical self generated noise ±						0.12		dB	

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.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Bogdan R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

CERTIFICATE OF CALIBRATION

UKAS Accredited Calibration Laboratory No. 0653

Certificate Number
UCRT21/1682

Measurements

The sound pressure level generated by the calibrator in its WS2 configuration was measured five times by the Insert Voltage Method using a microphone as detailed below. The mean of the results obtained is shown below. It is corrected to the standard atmospheric pressure of 101.3 kPa (1013 mBar) using original manufacturers information.

Test Microphone	*Manufacturer*	*Type*
	Brüel & Kjær	4134

Results

The level of the calibrator output under the conditions outlined above was

94.00 ± 0.10 dB rel 20 µPa

Functional Tests and Observations

The frequency of the sound produced was	1002.82 Hz	±	0.13 Hz
The total distortion was	1.02 %	±	6.9 % of Reading

During the measurements environmental conditions were

Temperature	23	to	24	°C
Relative Humidity	38	to	45	%
Barometric Pressure	101.0	to	101.1	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.

..... END .....

Note:

Calibrator adjusted prior to calibration?	YES	
Initial Level	94.12	dB
Initial Frequency	1002.91	Hz

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

None

R 1

Calibrated by: B. Giles

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Annex 14A,3
Baseline Monitoring Results

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MF1

Monitoring Position:

X: 448817

Y: 429303

Location:

East of Monk Fryston substation

Duration:

14/03/2022 13:15 – 21/03/2022 12:00

Description of monitoring location

The Sound Level Meter (SLM) was deployed along the eastern boundary of a land parcel fence. The SLM was located in a free-field position, approximately 50 m from the closest acoustically reflective façade.

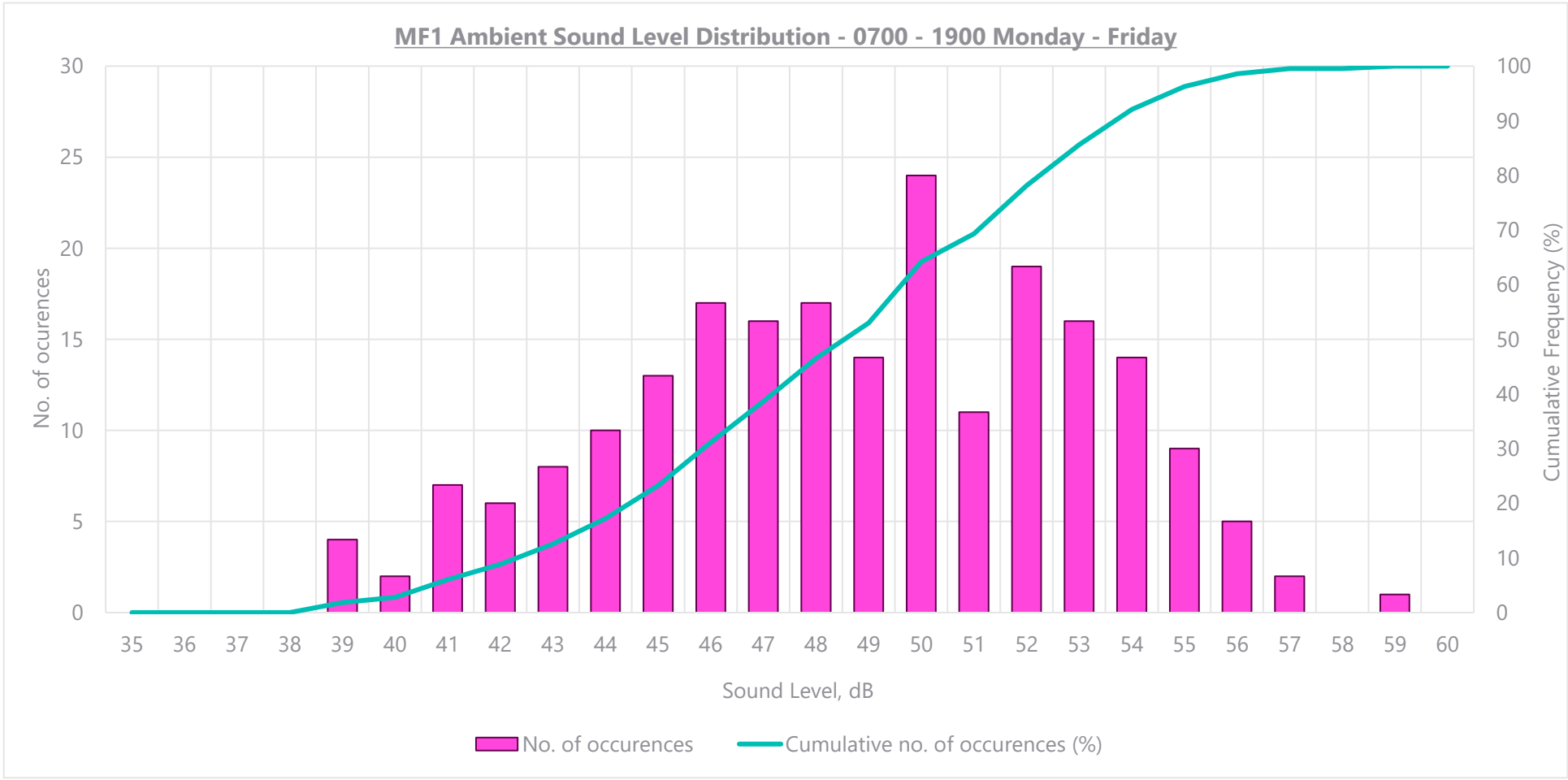
The SLM was on the opposite side of the land parcel to the existing substation. The substation was approximately 210 m west of the monitoring location; however, distant road traffic movements during noise kit deployment and collection were noted as a dominant noise source.

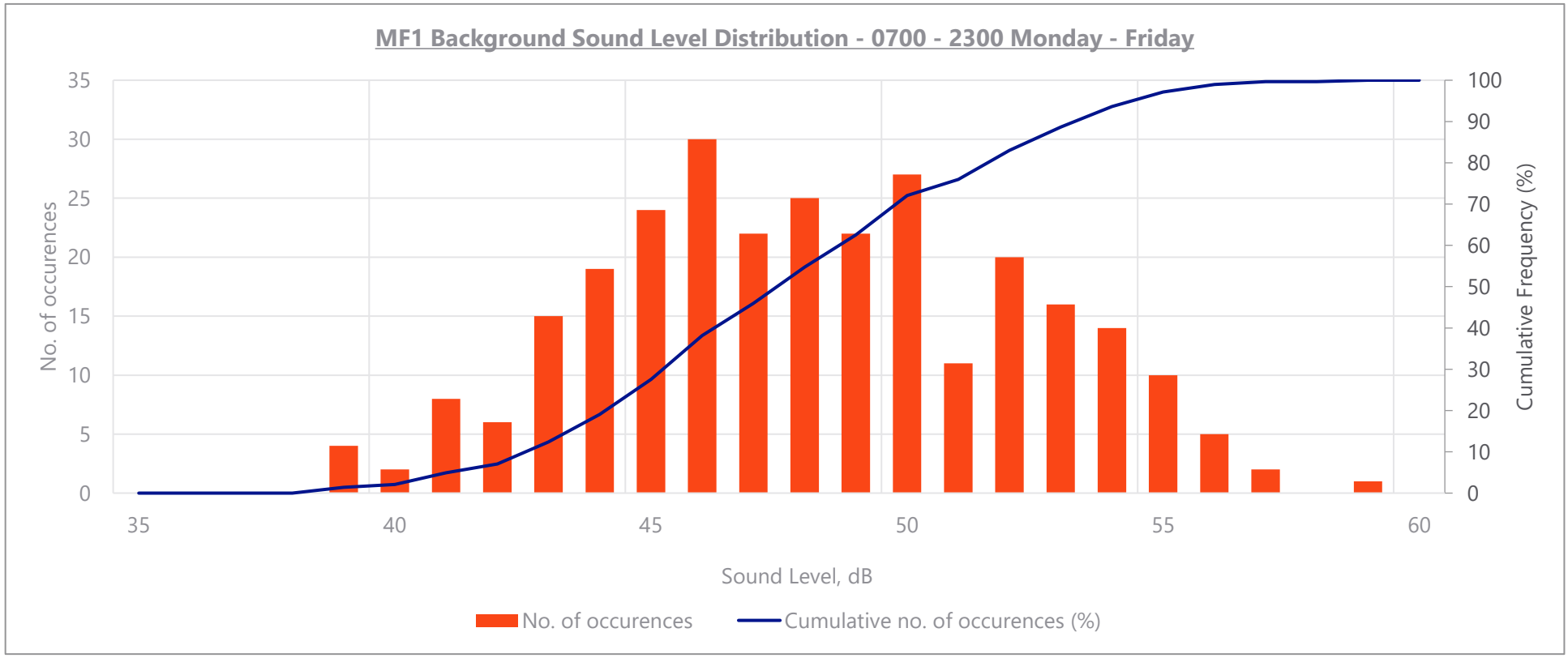
General observations

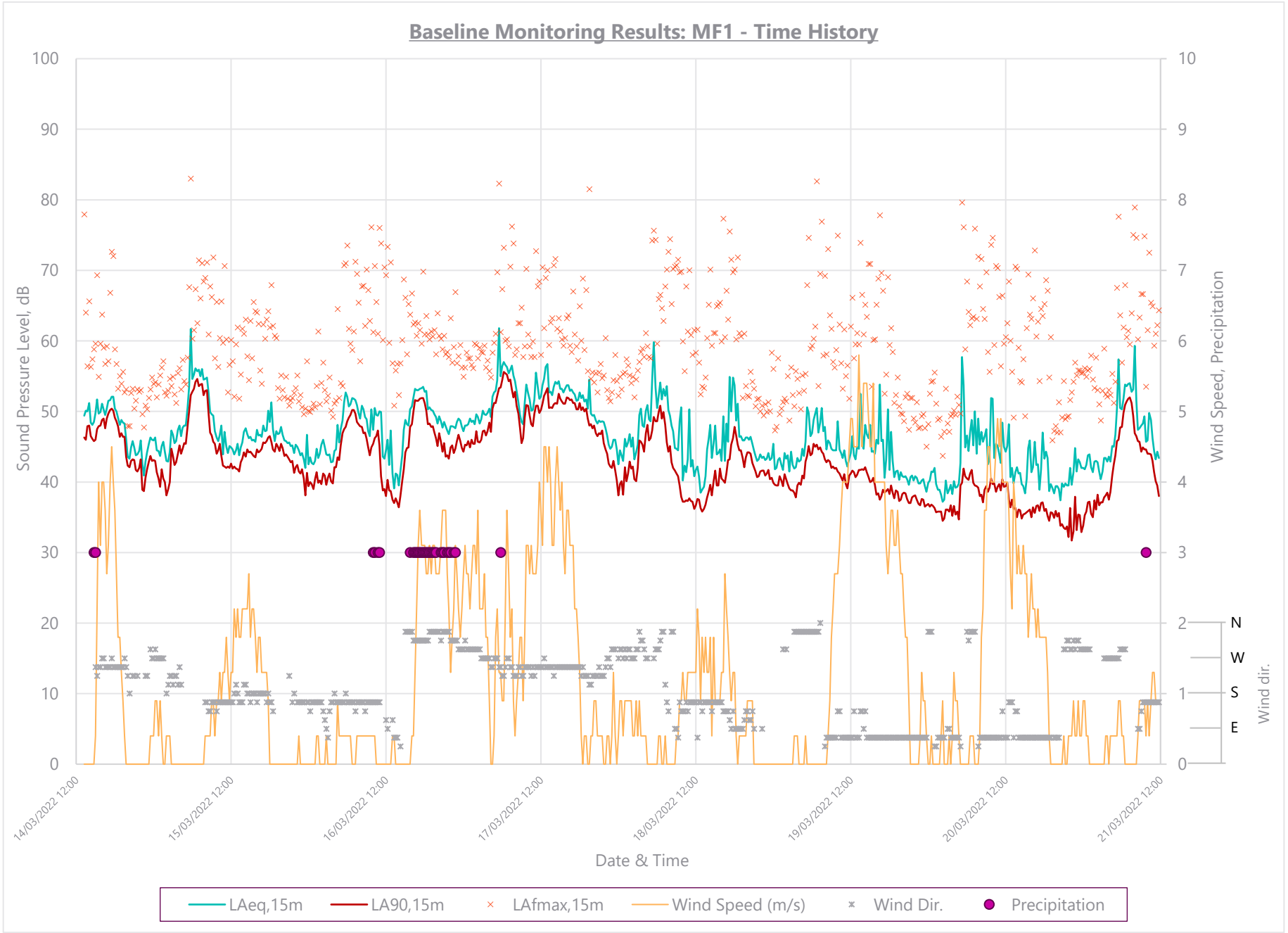
The noise environment noted during SLM deployment and collection was generally quiet, and typical of a rural location. Noise from distant road traffic movements, along with birdsong, a slight breeze through the trees and occasional domestic noise from the nearby farm contributed to the overall noise environment, with plant movement expected during some periods.

Monitoring Position

Assessment Period		LAeq,T (dB)	LA90,T (dB) [mean average]	LA90,T (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	49	44	44	259	19	7.3
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	46	40	39	184	13	7.1
Construction night-time	**Monday – Sunday** 2300 – 0700	49	42	40	224	1	0.4
Operational daytime	**Monday – Friday** 0700 – 2300	49	45	44	315	31	9.8
	Saturday 0700 – 2300	46	40	38	64	1	1.6
	Sunday 0700 - 2300	44	37	36	64	0	0.0
Operational night-time	**Monday – Sunday** 2300 - 0700	49	42	40	224	1	0.4


MF1 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


MF1 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: MF1 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
14/03/2022 12:00
15/03/2022 12:00
16/03/2022 12:00
17/03/2022 12:00
18/03/2022 12:00
19/03/2022 12:00
20/03/2022 12:00
21/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

MF2

Monitoring Position:

X: 449319

Y: 429602

Location:

Roundabout at A63 and York Road

Duration:

14/03/2022 14:00 – 21/03/2022 00:00

Description of monitoring location

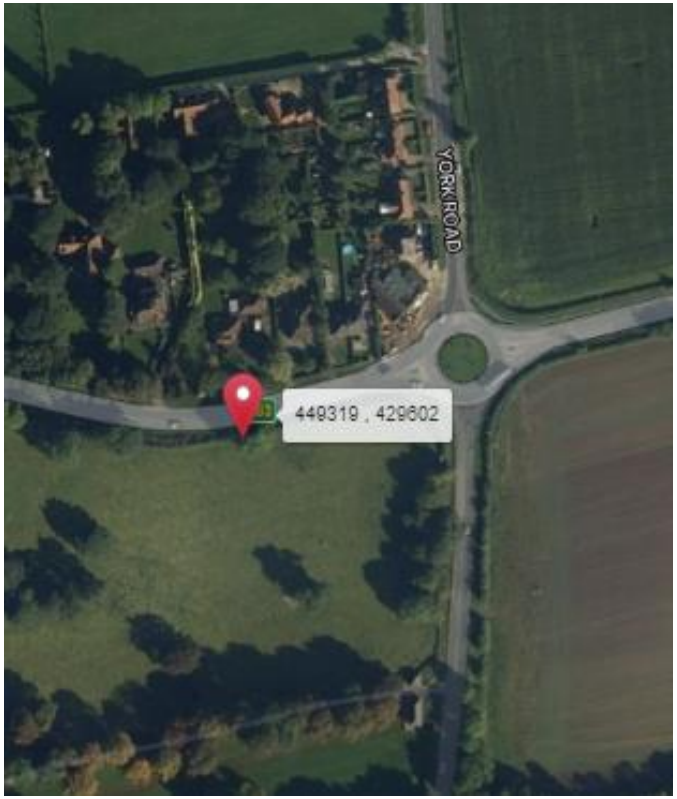
The Sound Level Meter (SLM) was deployed along the northern boundary of a land parcel fence The SLM was located in a free-field position, approximately 50 m from the closest acoustically reflective façade.

The SLM was directly opposite residence on adjacent side of the A63, approximately 50 m north of the monitoring location; however, road traffic movements during noise kit deployment and collection were noted as dominant from the A162.

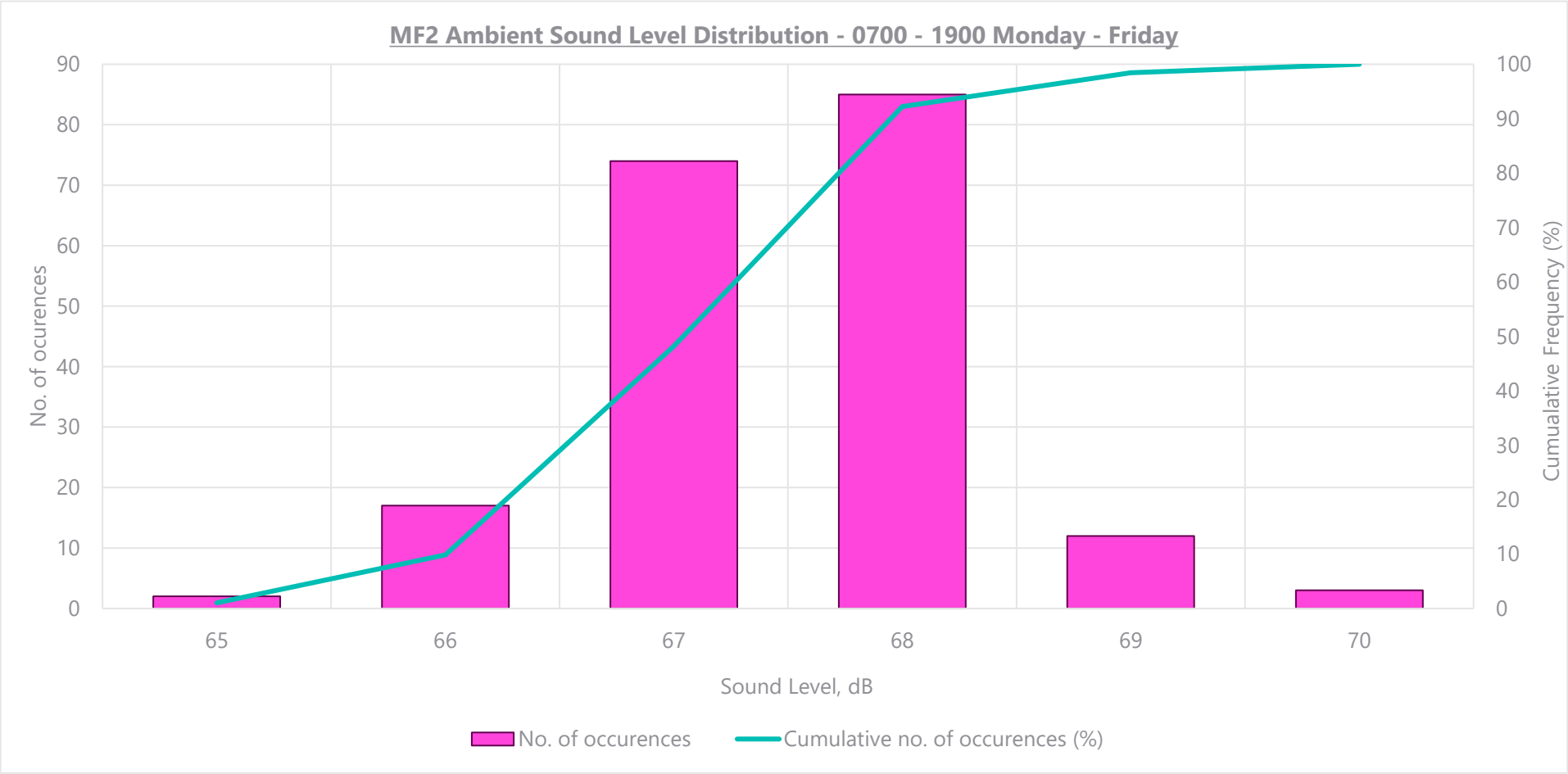
General observations

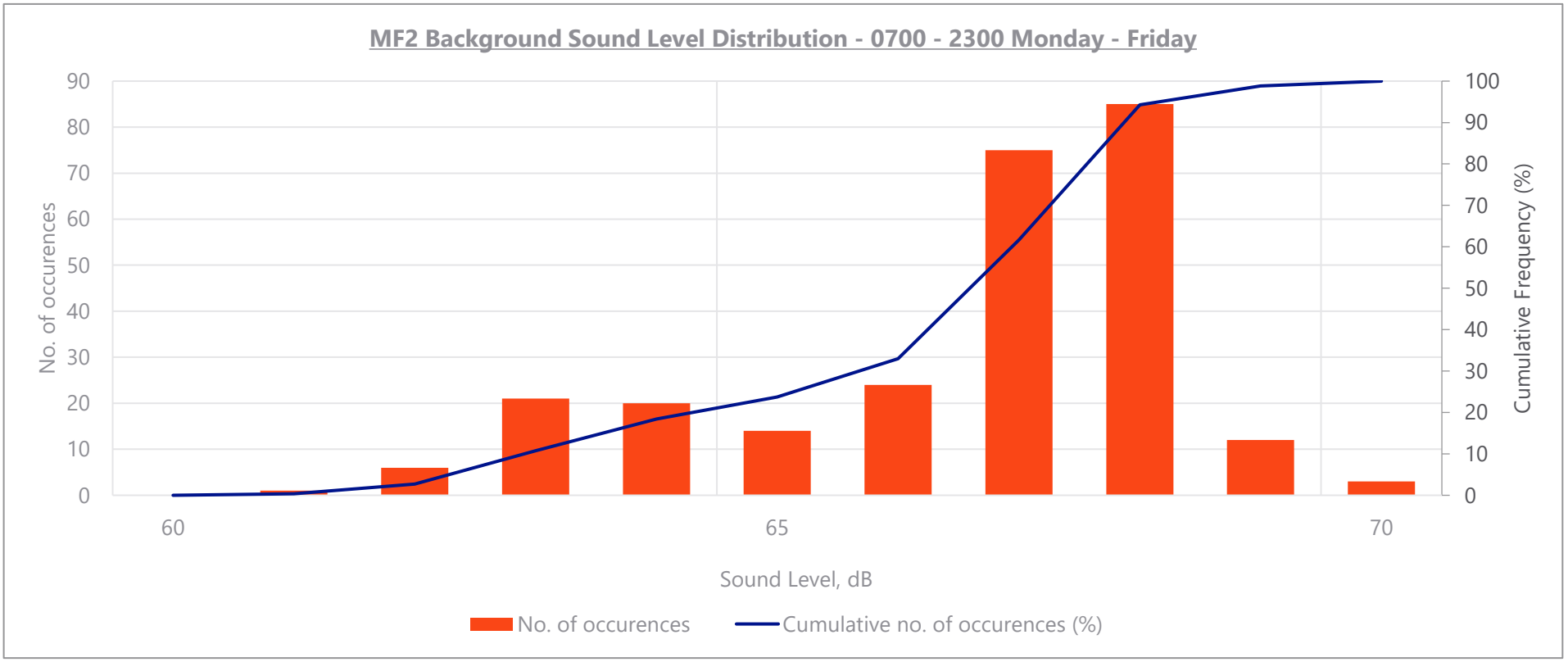
The noise environment noted during SLM deployment and collection was generally quiet. Noise from road traffic movements along the A63 and A162 were the dominant noise sources along with a slight breeze through the trees and occasional sheep that contributed to the overall noise environment.

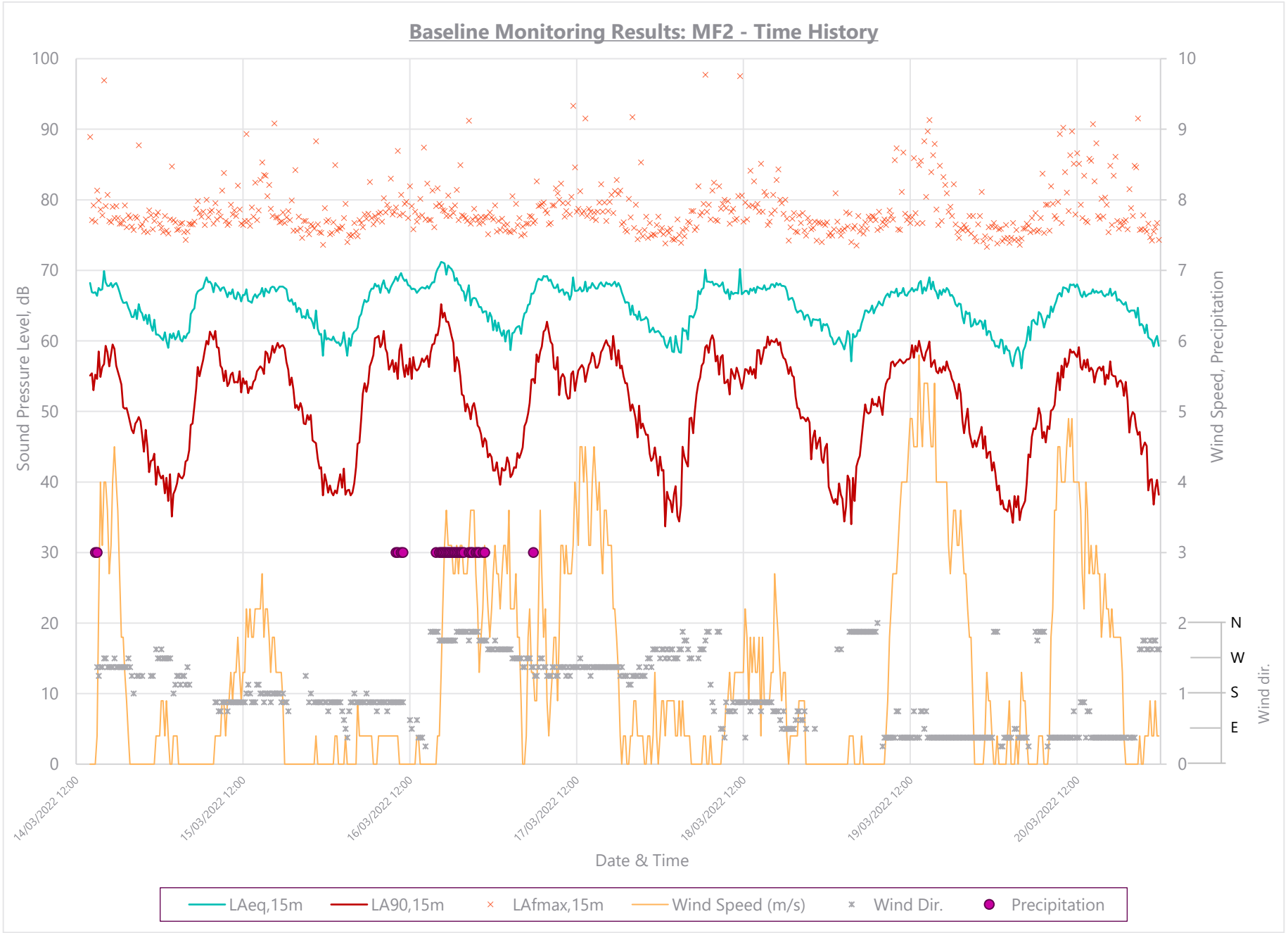
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	67	56	56	236	18	7.6
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	65	51	56	184	13	7.1
Construction night-time	**Monday – Sunday** 2300 – 0700	63	44	41	196	1	0.5
Operational Daytime	**Monday – Friday** 0700 – 2300	66	53	56	292	30	10.3
	Saturday 0700 – 2300	66	54	57	64	1	1.6
	Sunday 0700 - 2300	66	53	56	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	63	44	41	196	1	0.5


MF2 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
0
10
20
30
40
50
60
70
80
90
100
65
66
67
68
69
70
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


MF2 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
60
65
70
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: MF2 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
14/03/2022 12:00
15/03/2022 12:00
16/03/2022 12:00
17/03/2022 12:00
18/03/2022 12:00
19/03/2022 12:00
20/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

MF3

Monitoring Position:

X: 447932

Y: 429486

Location:

Pollums House Farm

Duration:

15/03/2022 14:15 – 21/03/2022 12:15

Description of monitoring location

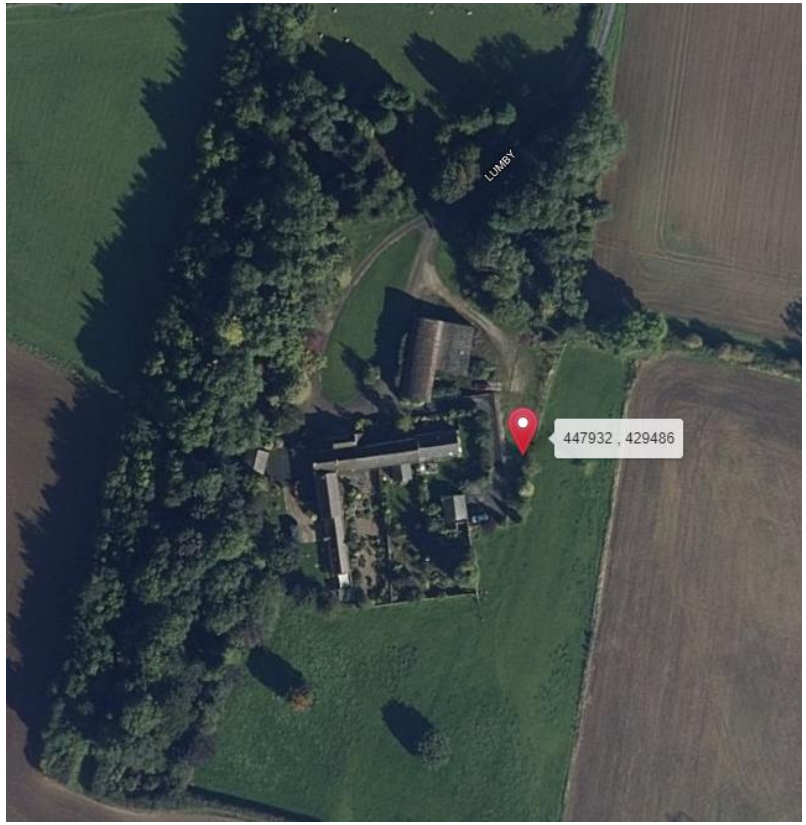
The Sound Level Meter (SLM) was deployed to the east of the main property, in a field located next to the property. The SLM was located in a free-field position, approximately 15 m from the closest acoustically reflective façade.

The SLM was on the opposite side of the property to the A1(M). A1(M) was approximately 300 m west of the monitoring location, with A63 approximately 320 m north; road traffic movements during noise kit deployment and collection were noted as dominant.

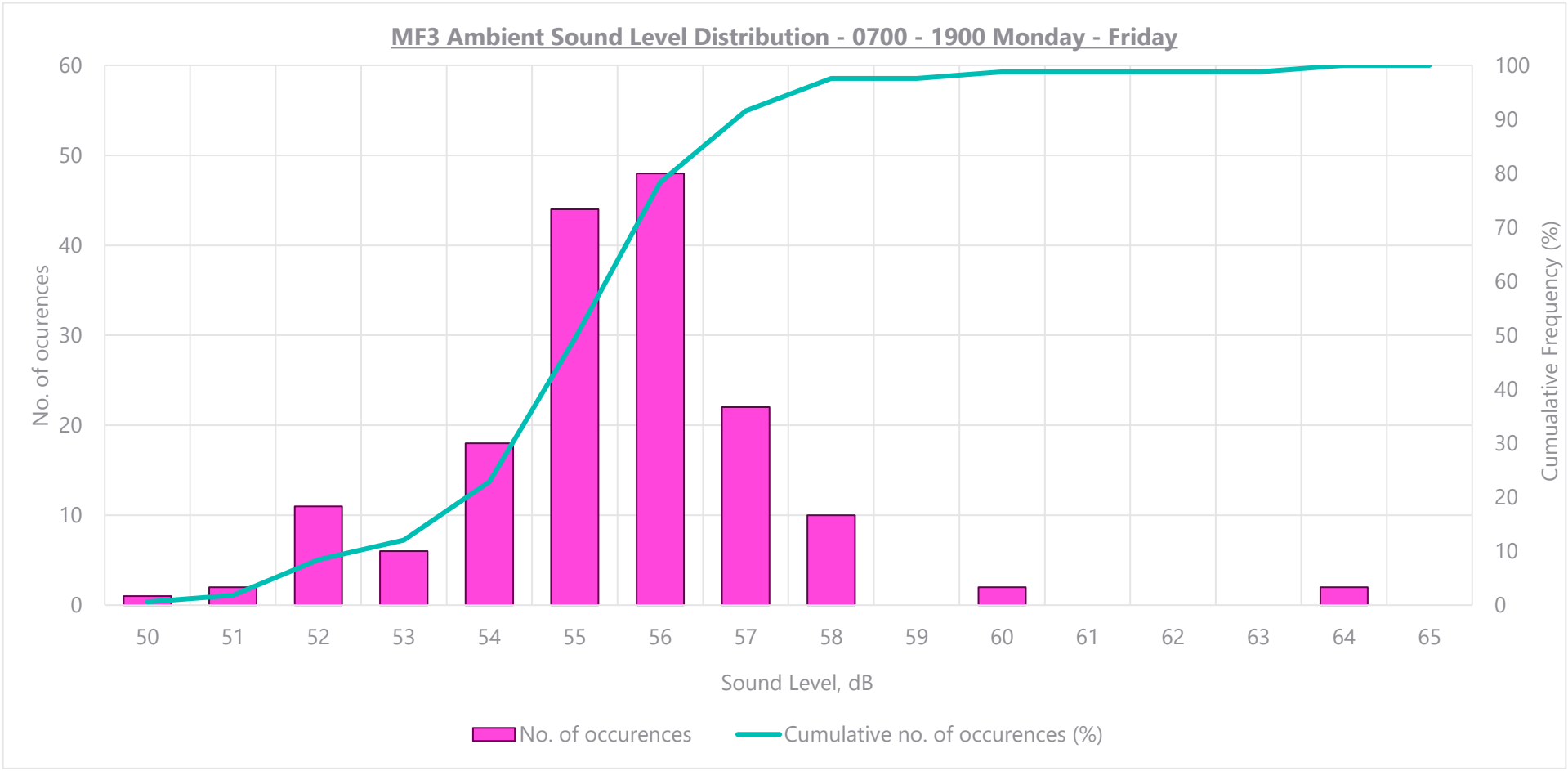
General observations

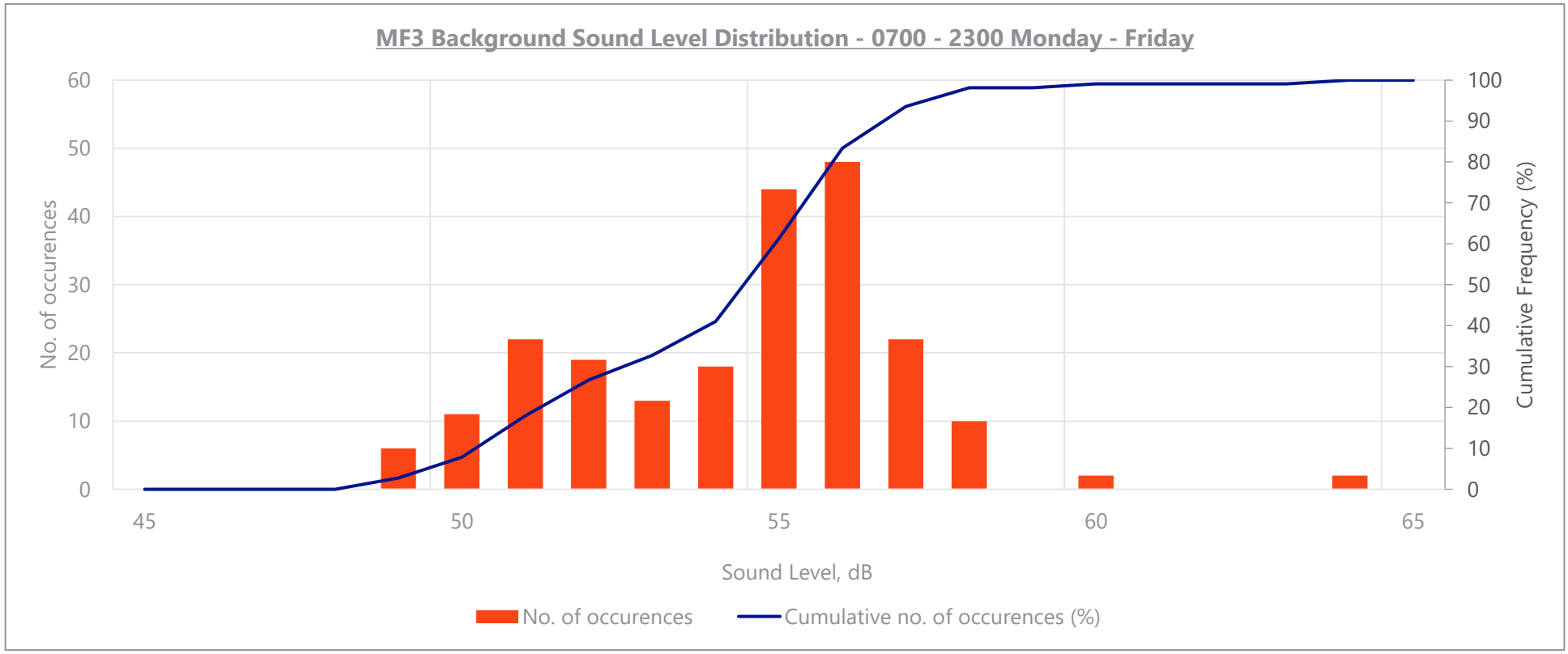
The noise environment noted during SLM deployment and collection was generally dominated by road traffic movements along the A1(M) and A63, with some occasional dog barking and birdsong present.

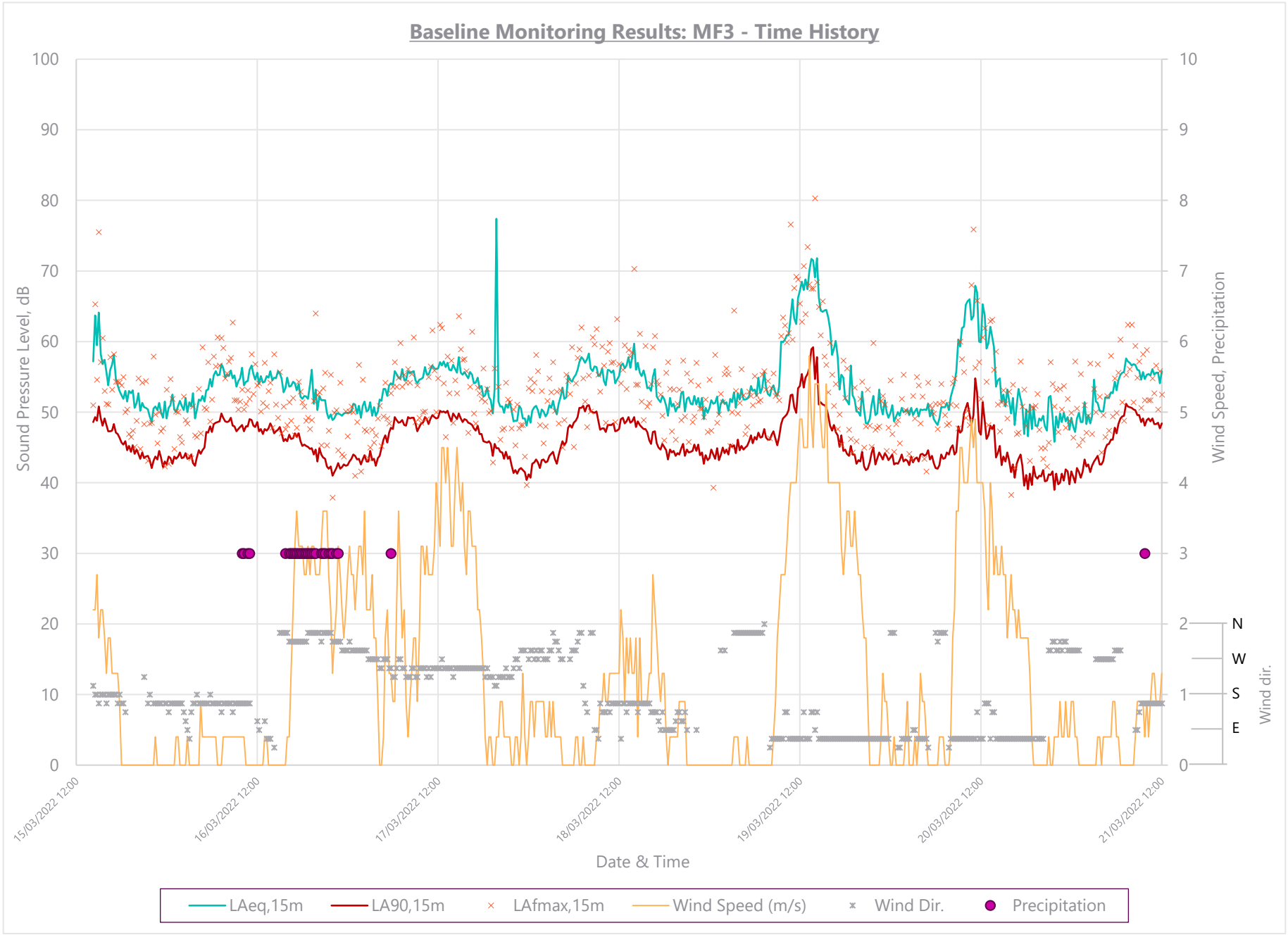
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	61	49	49	208	17	8.2
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	60	45	44	168	14	8.3
Construction night-time	**Monday – Sunday** 2300 – 0700	52	44	43	193	2	1.0
Operational Daytime	**Monday – Friday** 0700 – 2300	54	46	49	248	30	12.1
	Saturday 0700 – 2300	63	48	47	64	1	1.6
	Sunday 0700 - 2300	59	44	41	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	52	44	43	193	2	1.0


MF3 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
0
10
20
30
40
50
60
0
10
20
30
40
50
60
70
80
90
100
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
No. of occurences
Cumulative no. of occurences (%)


MF3 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: MF3 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
15/03/2022 12:00
16/03/2022 12:00
17/03/2022 12:00
18/03/2022 12:00
19/03/2022 12:00
20/03/2022 12:00
21/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

MF4

Monitoring Position:

X: 448418

Y: 430328

Location: West of Lumby

Duration:

14/03/2022 14:45 – 21/03/2022 12:45

Description of monitoring location

The Sound Level Meter (SLM) was deployed along the western boundary of a land parcel fence. The SLM was located in a free-field position, approximately 100 m from the closest acoustically reflective façade.

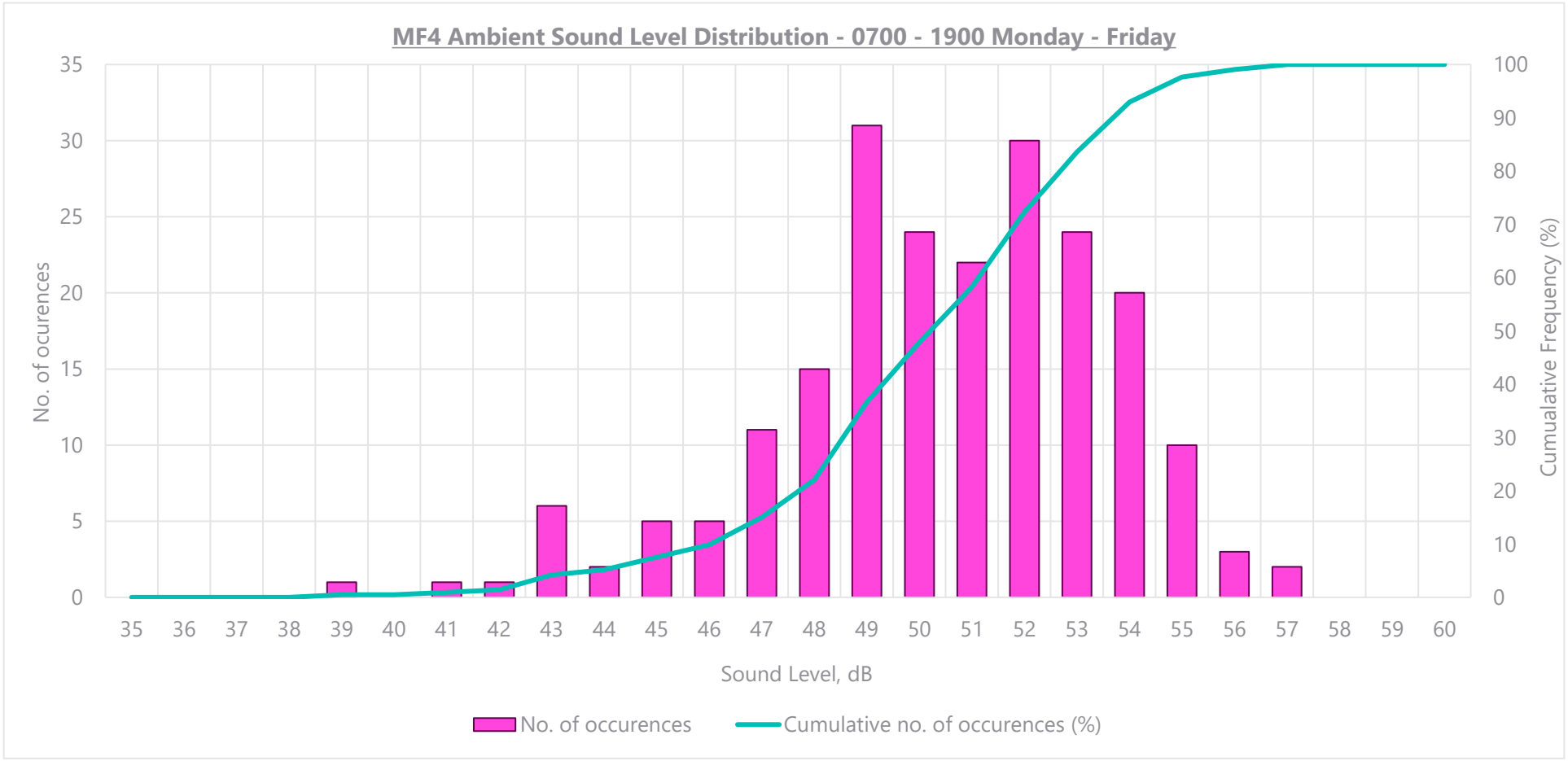
The SLM was opposite residents across one field with arable field in between the buildings and the kit. The A1(M) was approximately 1 km west of the monitoring location; road traffic movements during noise kit deployment and collection were noted as dominant but distant.

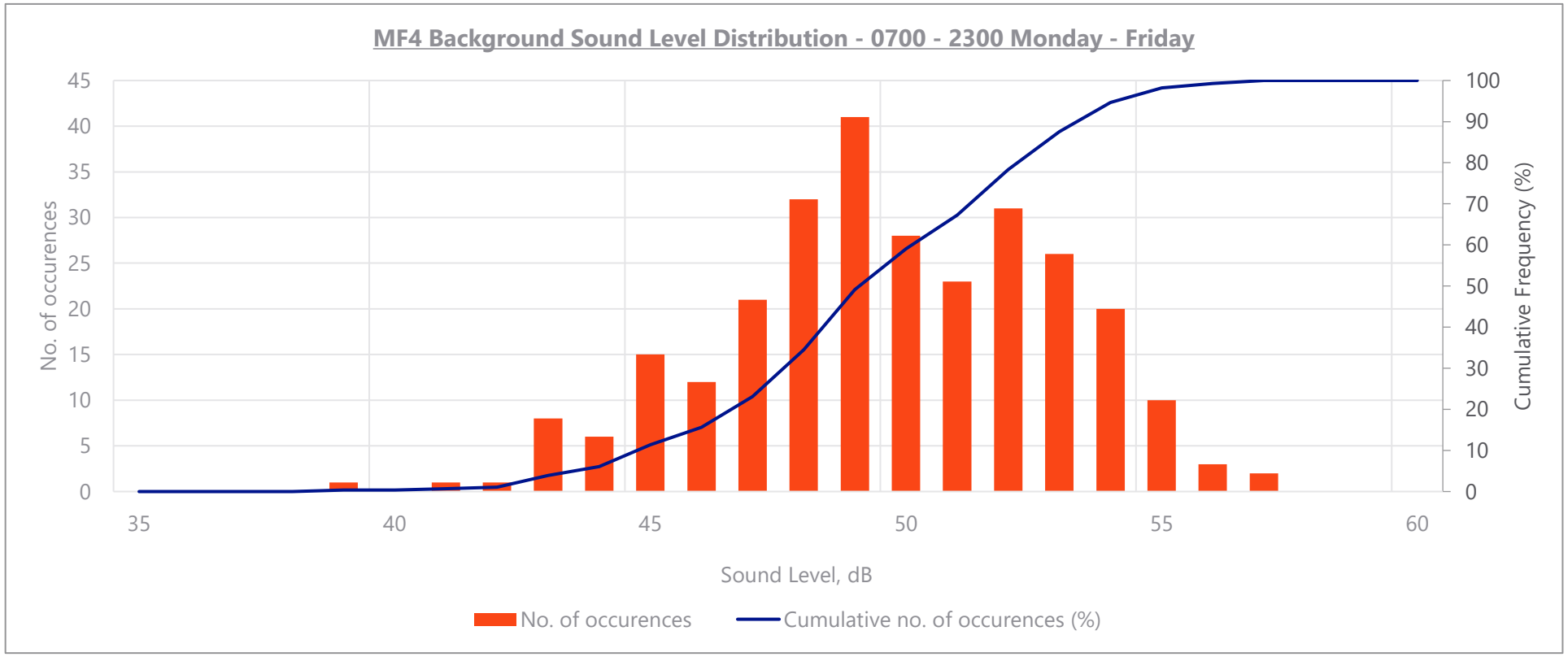
General observations

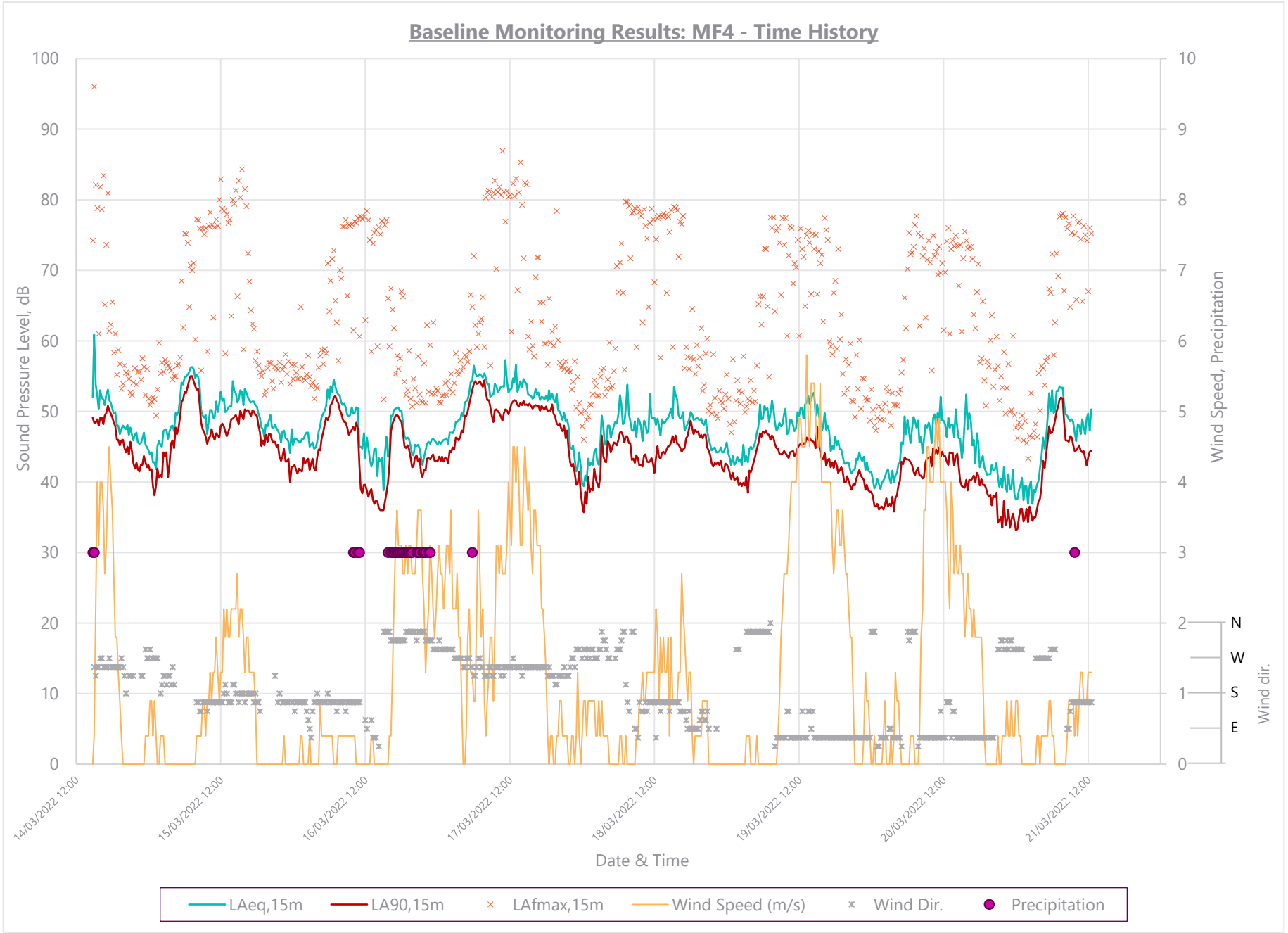
The noise environment noted during SLM deployment and collection was generally dominated by traffic movements from the A1(M) to the west and Butts Lane to the east however the noise was distant. This, along with birdsong, a slight breeze through the trees, dogs barking, sheep and distant rifle fire all contributed to the overall noise environment.

Monitoring Position

Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	50	46	50	256	19	7.4
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	47	43	43	184	13	7.1
Construction night-time	**Monday – Sunday** 2300 – 0700	48	43	43	224	1	0.4
Operational Daytime	**Monday – Friday** 0700 – 2300	50	46	50	312	31	9.9
	Saturday 0700 – 2300	48	43	44	64	1	1.6
	Sunday 0700 - 2300	47	41	44	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	48	43	43	224	1	0.4


MF4 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


MF4 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: MF4 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
14/03/2022 12:00
15/03/2022 12:00
16/03/2022 12:00
17/03/2022 12:00
18/03/2022 12:00
19/03/2022 12:00
20/03/2022 12:00
21/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

TD1

Monitoring Position:

X: 446521

Y: 441777

Location: Northeast of Red Brick Farm House

Duration:

22/03/2022 14:15 – 30/03/2022 10:15

Description of monitoring location

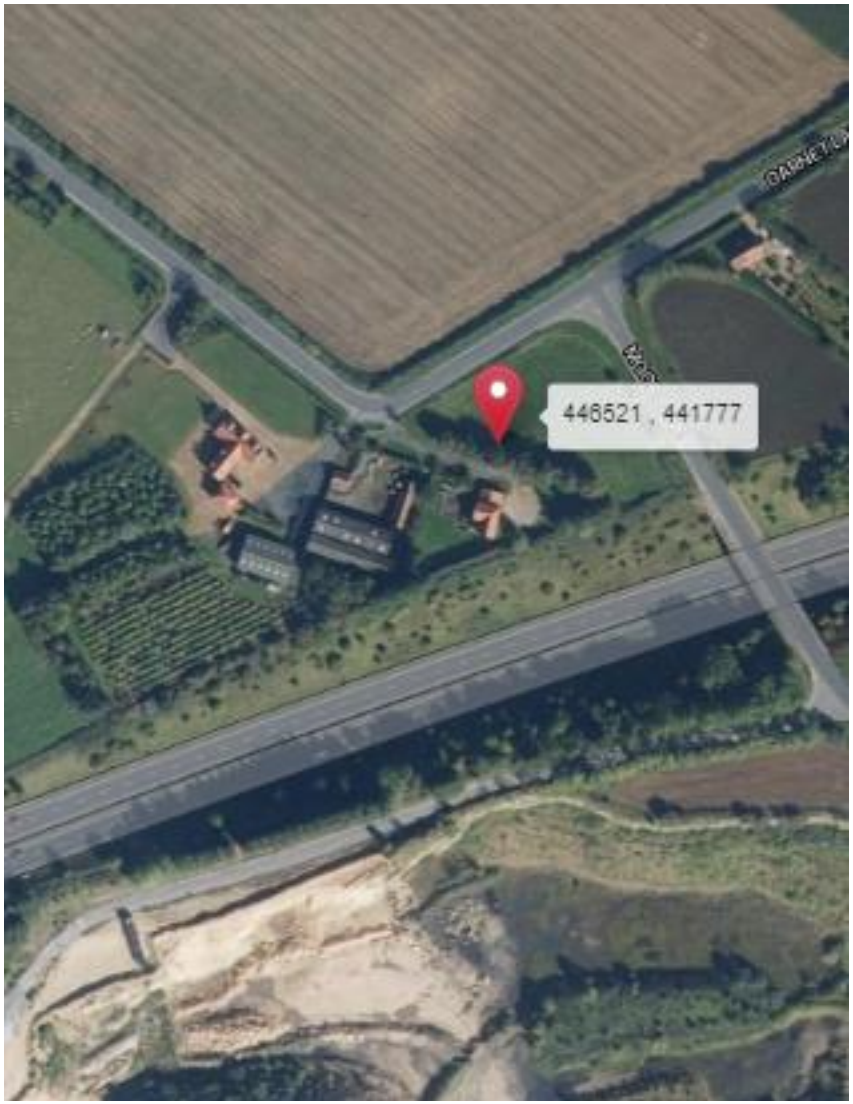
The Sound Level Meter (SLM) was deployed along the southern boundary of the land parcel opposite the residence. The SLM was located in a free-field position, approximately 25 m from the closest acoustically reflective façade.

The SLM was opposite the residence with a gravel road in between. Garnet Lane is located approximately 30 m north of the monitoring location, with a clear line of sight between the road and monitoring location.

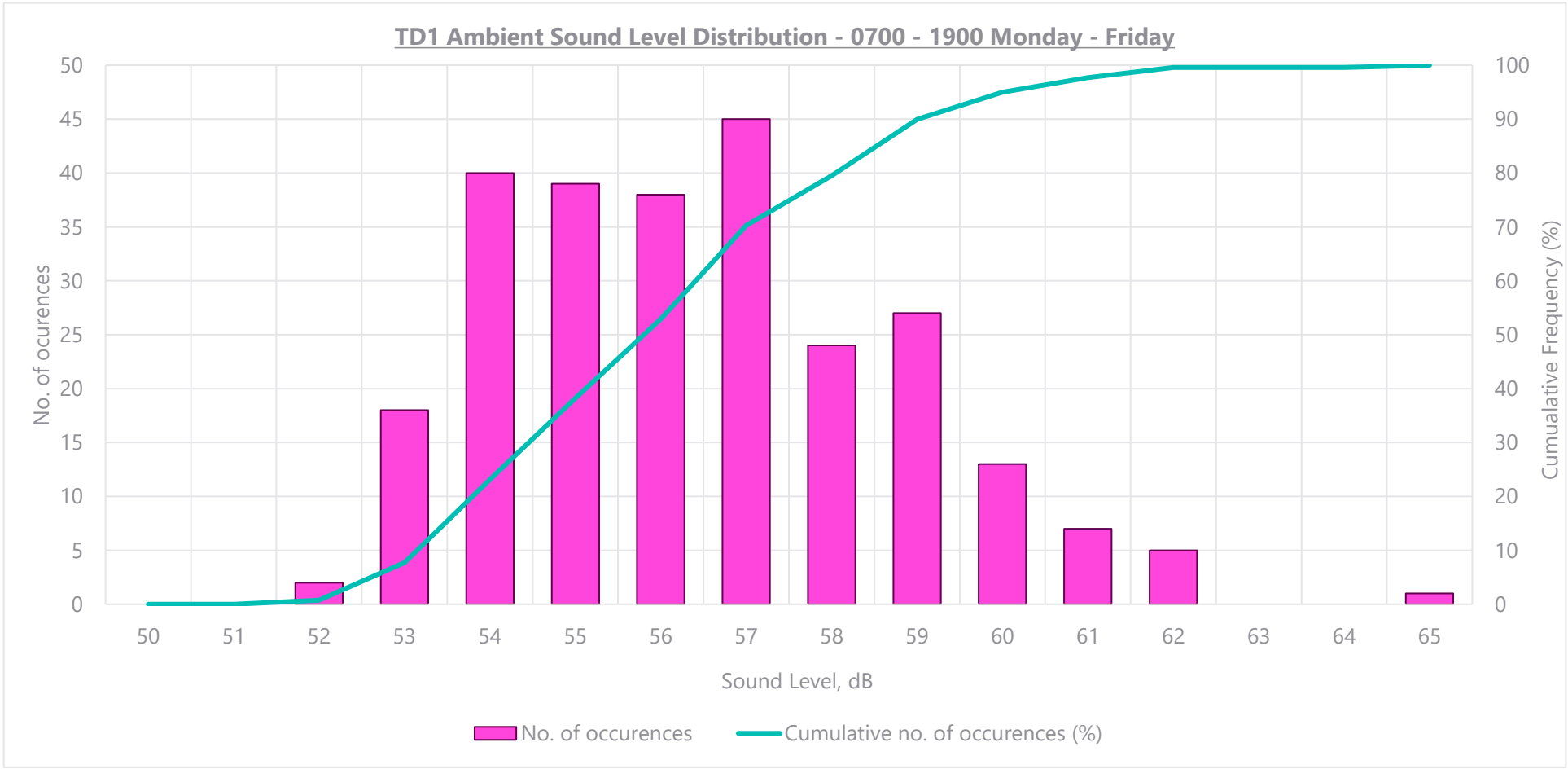
General observations

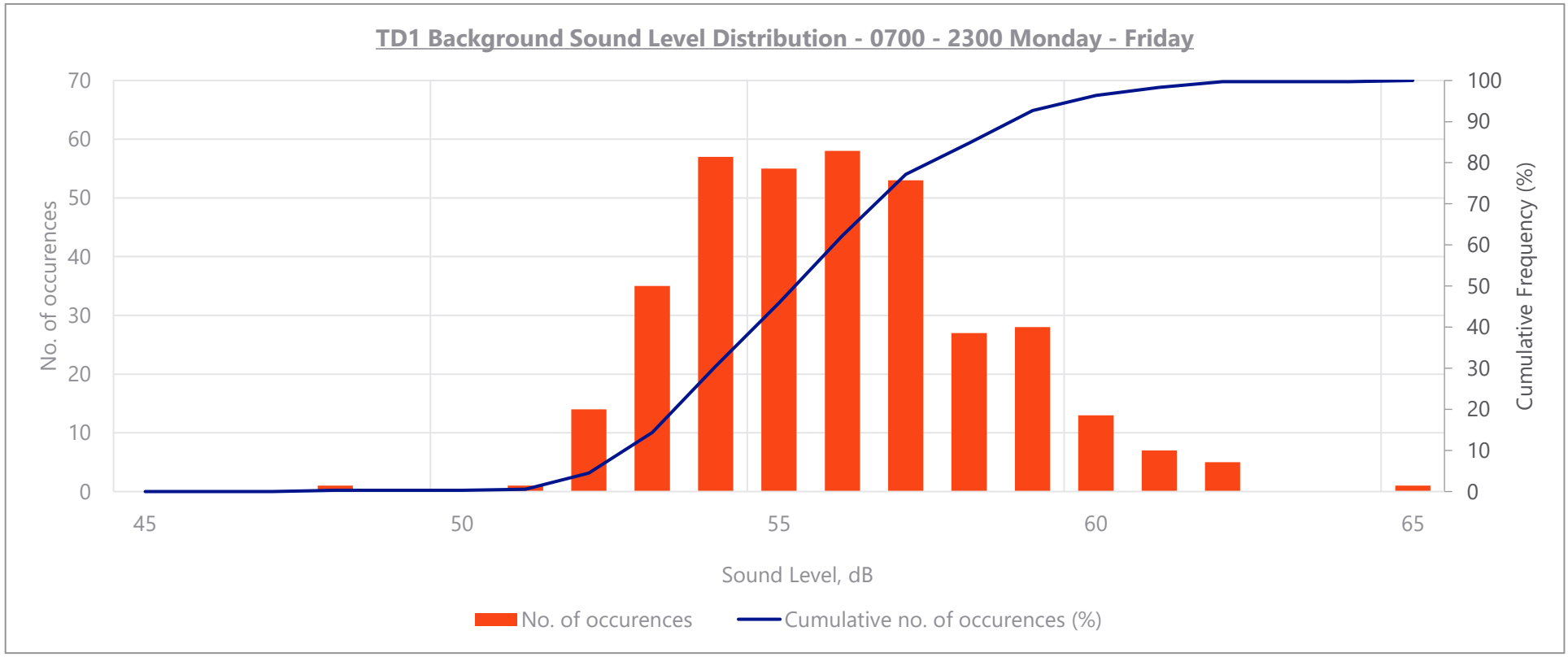
The noise environment noted during SLM deployment and collection was dominant noise from the A64 with light traffic along the local road. A slight breeze through the trees with some bird song that contributed to the overall noise environment. Sheep were present but quiet during deployment and collection.

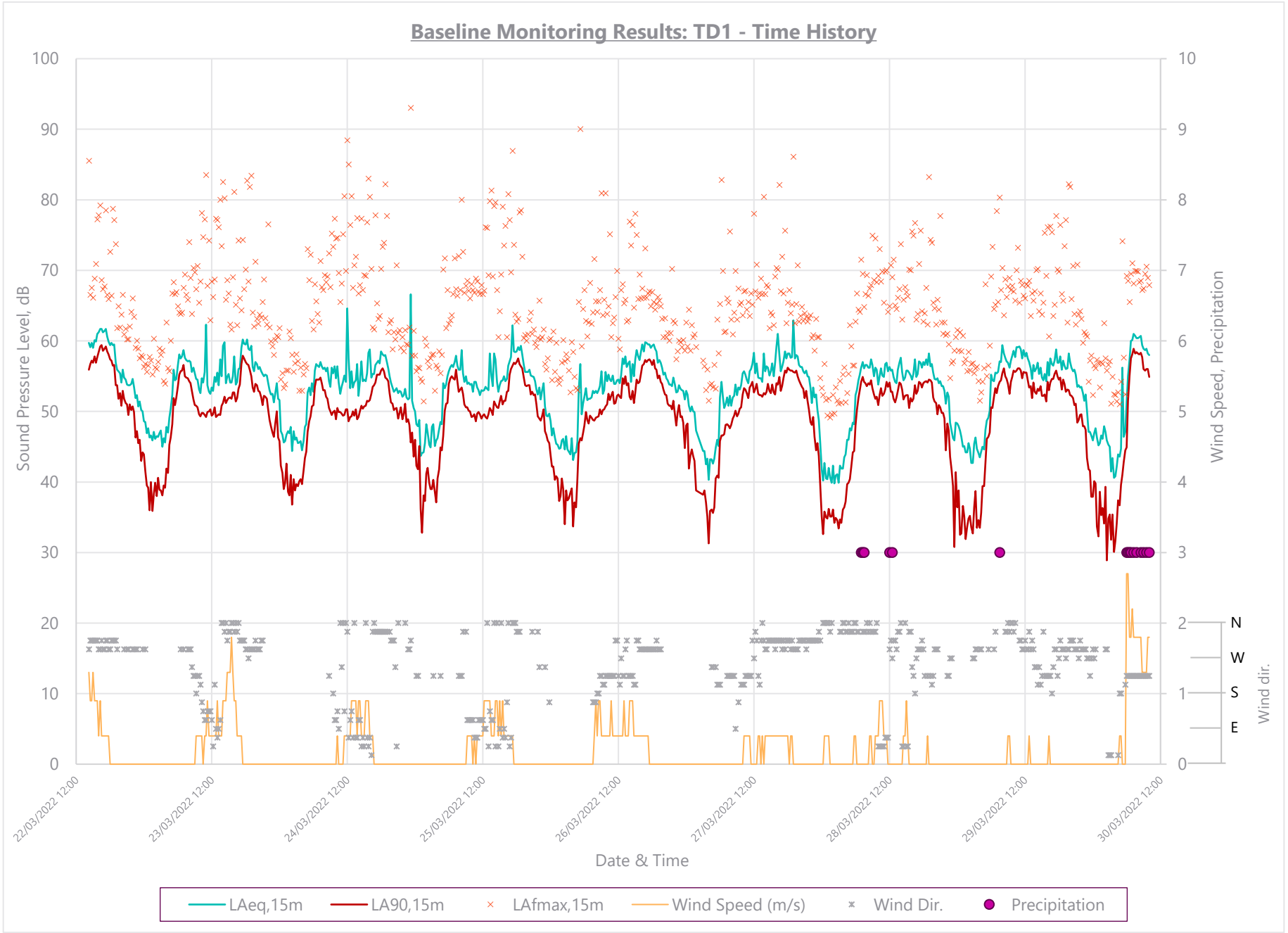
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	56	52	50	296	12	4.1
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	56	52	54	200	0	0.0
Construction night-time	**Monday – Sunday** 2300 – 0700	51	41	39	252	4	1.6
Operational Daytime	**Monday – Friday** 0700 – 2300	56	52	50	368	12	3.3
	Saturday 0700 – 2300	56	53	52	64	0	0.0
	Sunday 0700 - 2300	56	52	53	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	51	41	39	252	4	1.6


TD1 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


TD1 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: TD1 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
22/03/2022 12:00
23/03/2022 12:00
24/03/2022 12:00
25/03/2022 12:00
26/03/2022 12:00
27/03/2022 12:00
28/03/2022 12:00
29/03/2022 12:00
30/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

HE1

Monitoring Position:

X: 453331

Y: 456065

Location:
Thickpenny Farm

Duration:

22/03/2022 15:15 – 30/03/2022 12:30

Description of monitoring location

The Sound Level Meter (SLM) was deployed in the garden to the rear of Thickpenny Farm, in the flowerbed near the brook. The SLM was located in a free-field position, approximately 70 m from the closest acoustically reflective façade.

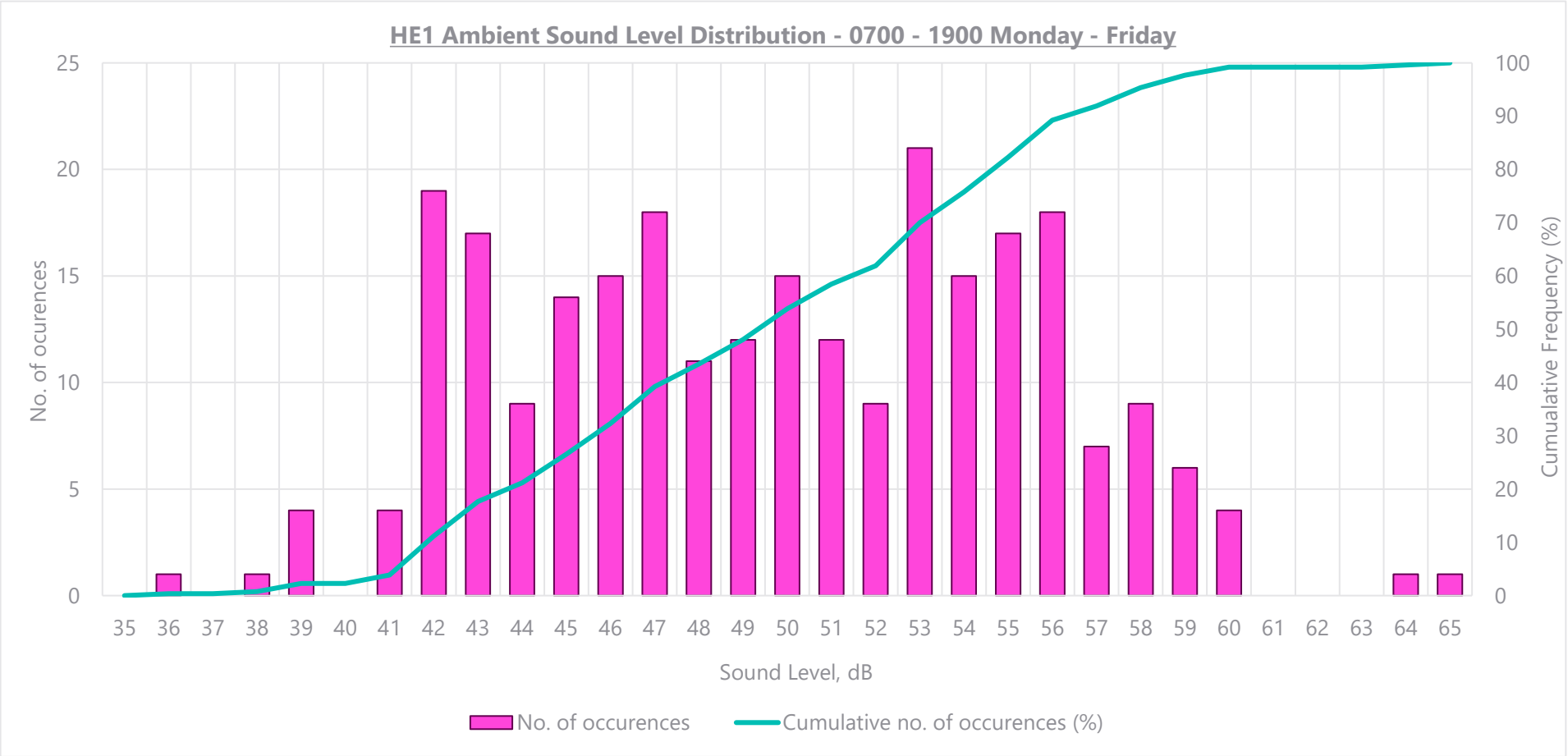
The SLM was to the north of the property along the garden boundary. Road traffic movements during noise kit deployment and collection were noted as negligible.

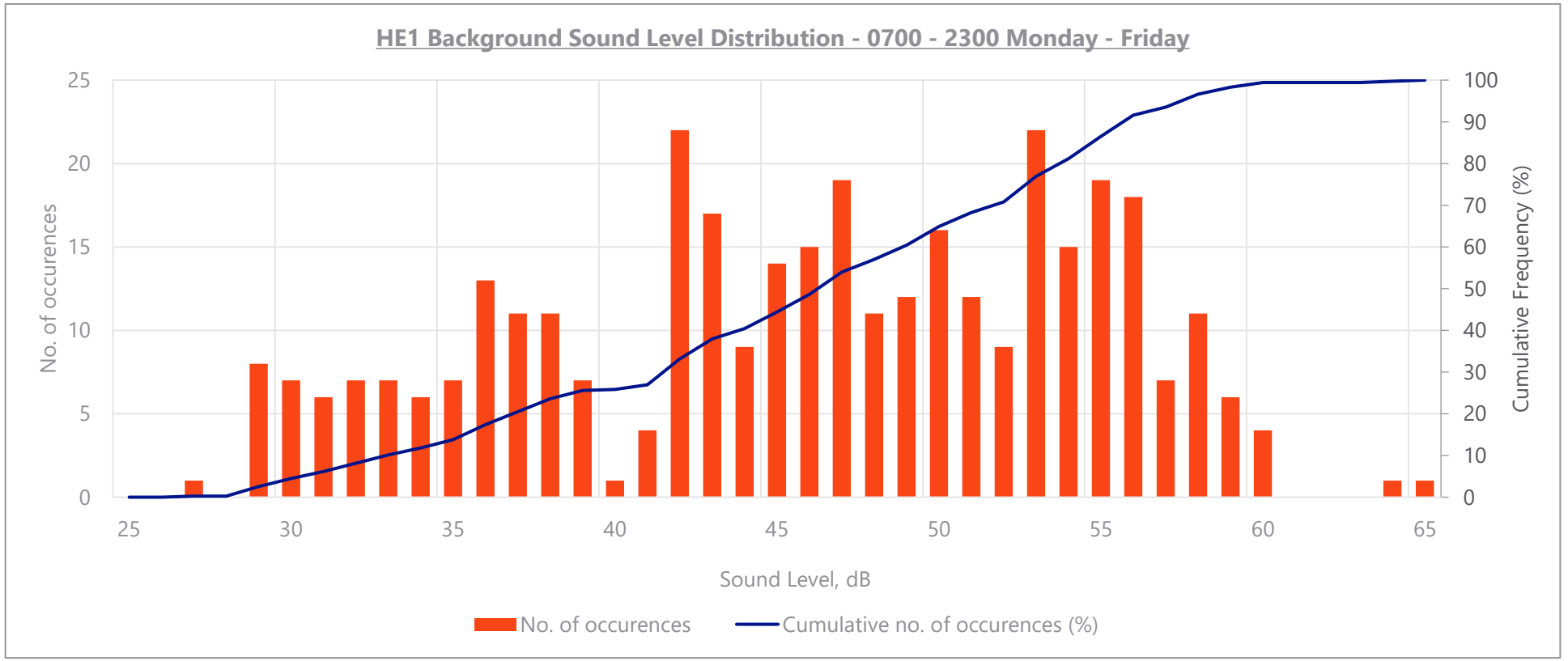
General observations

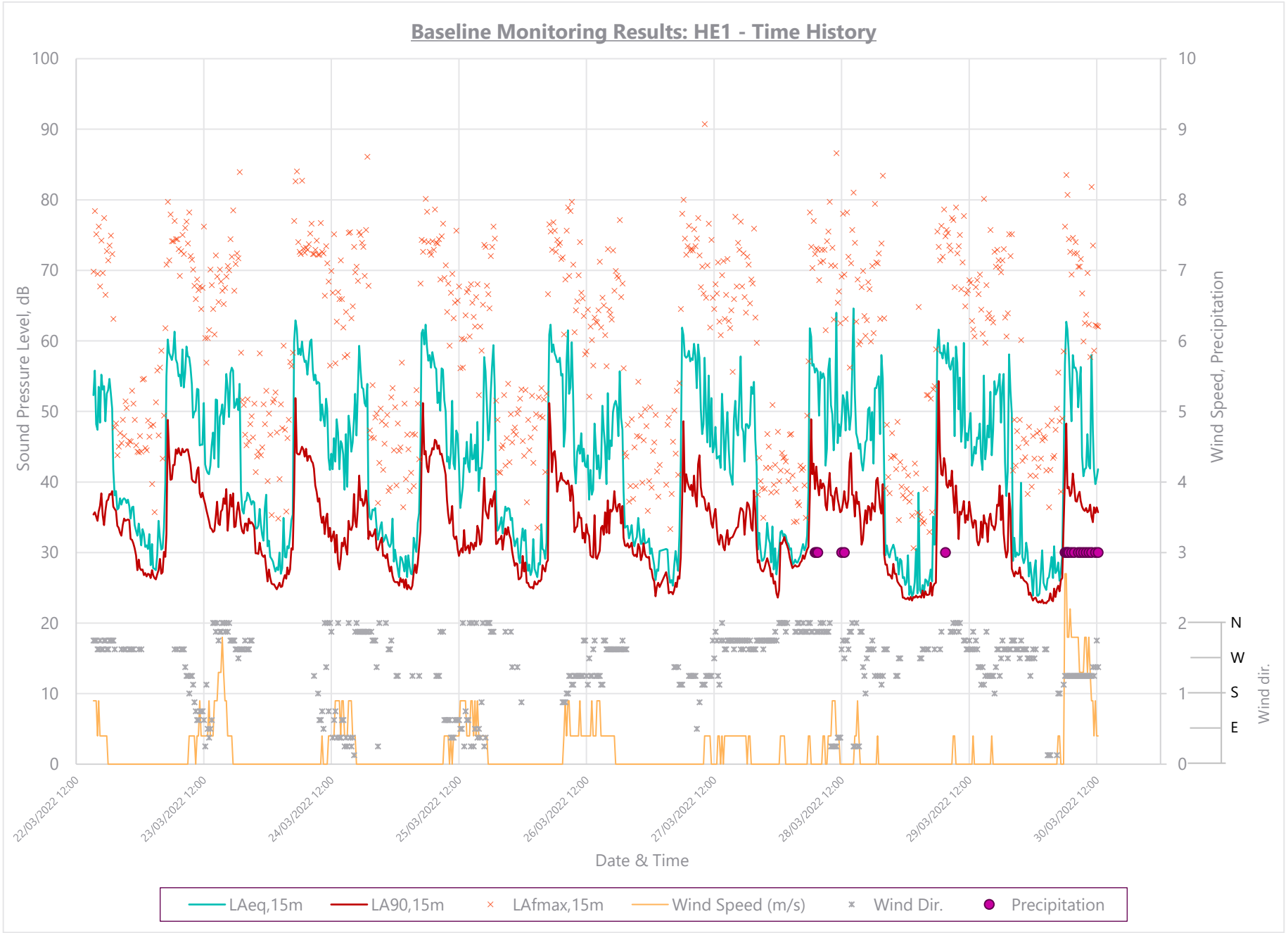
The noise environment noted during SLM deployment and collection was generally quiet, and typical of a rural location. Noise from light road traffic movements was audible but distant birdsong and domestic noise from residents contributed to the overall noise environment. A small stream was visible but not audible.

Monitoring Position

Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	53	36	36	301	16	5.3
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	49	33	34	200	0	0.0
Construction night-time	**Monday – Sunday** 2300 – 0700	52	29	26	252	4	1.6
Operational Daytime	**Monday – Friday** 0700 – 2300	51	34	36	373	16	4.3
	Saturday 0700 – 2300	50	34	31	64	0	0.0
	Sunday 0700 - 2300	52	34	36	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	52	29	26	252	4	1.6


HE1 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


HE1 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: HE1 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
22/03/2022 12:00
23/03/2022 12:00
24/03/2022 12:00
25/03/2022 12:00
26/03/2022 12:00
27/03/2022 12:00
28/03/2022 12:00
29/03/2022 12:00
30/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

OV1

Monitoring Position:

X: 455138

Y: 456612

Location: Overton Grange

Duration:

22/03/2022 12:45 – 30/03/2022 11:00

Description of monitoring location

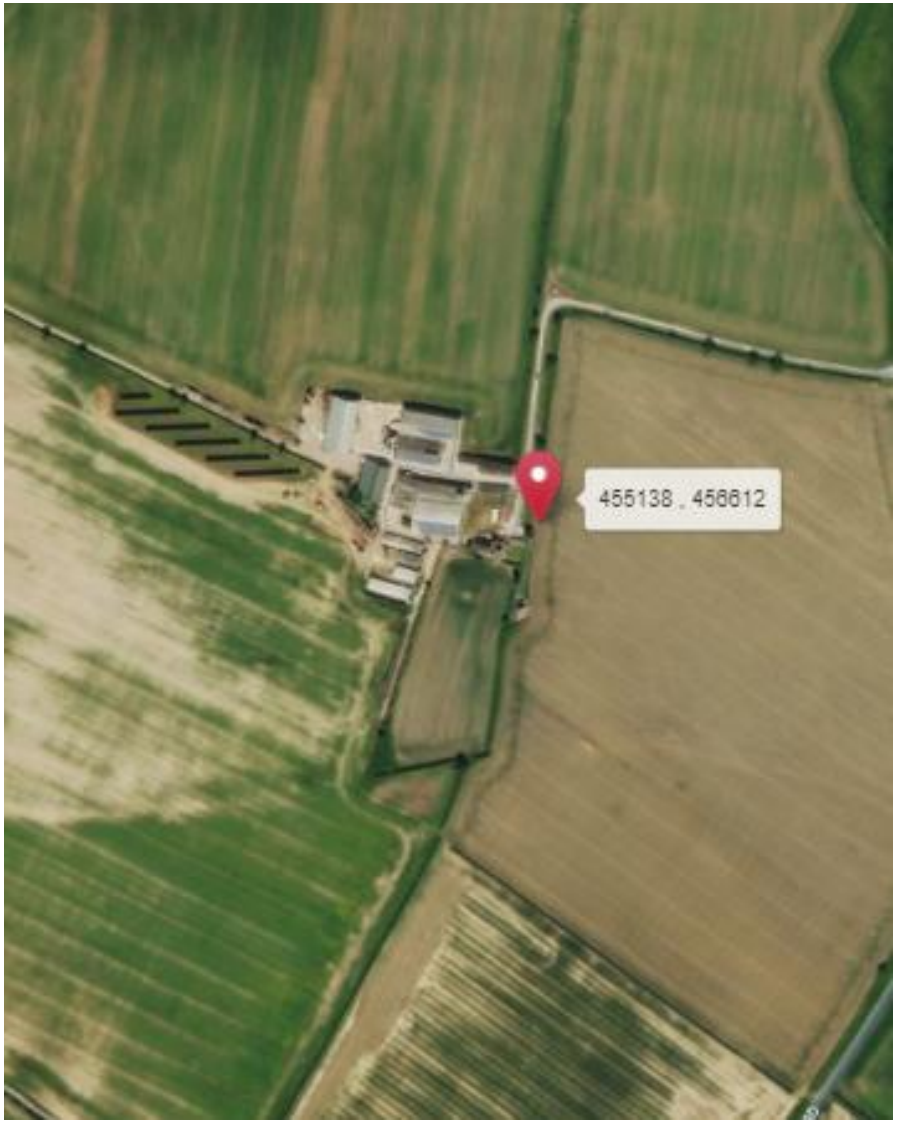
The Sound Level Meter (SLM) was deployed in the field on the eastern boundary closest to the farm. The SLM was located in a free-field position, 15 m from the closest acoustically reflective façade with a dry asphalt carpark between the meter and house.

The SLM was on the east side of the property 290 m east of the closest road, Overton Road; however, road traffic movements during noise kit deployment and collection were minimal with the dominant noise being large vehicles going to the farm via the private road.

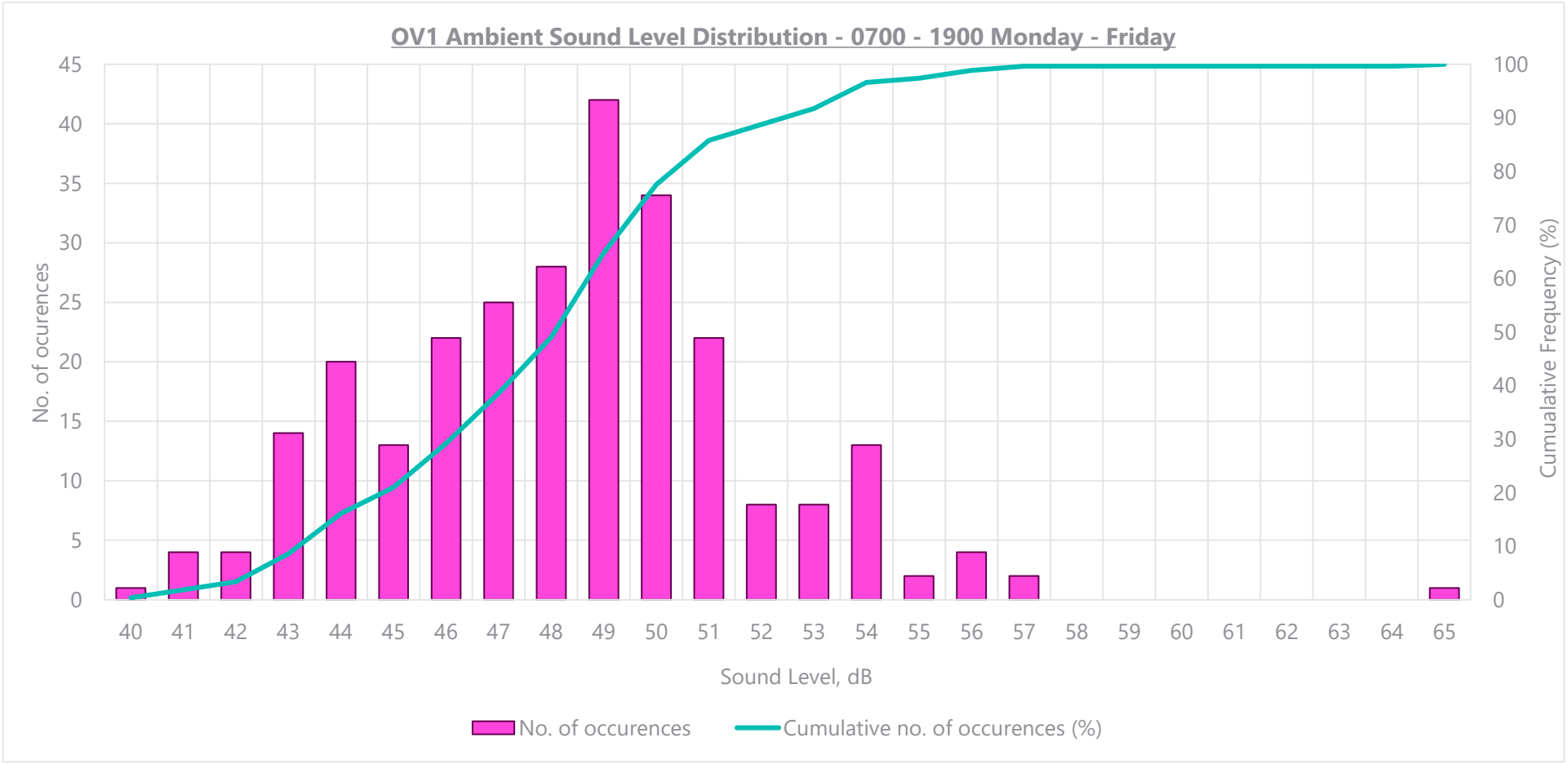
General observations

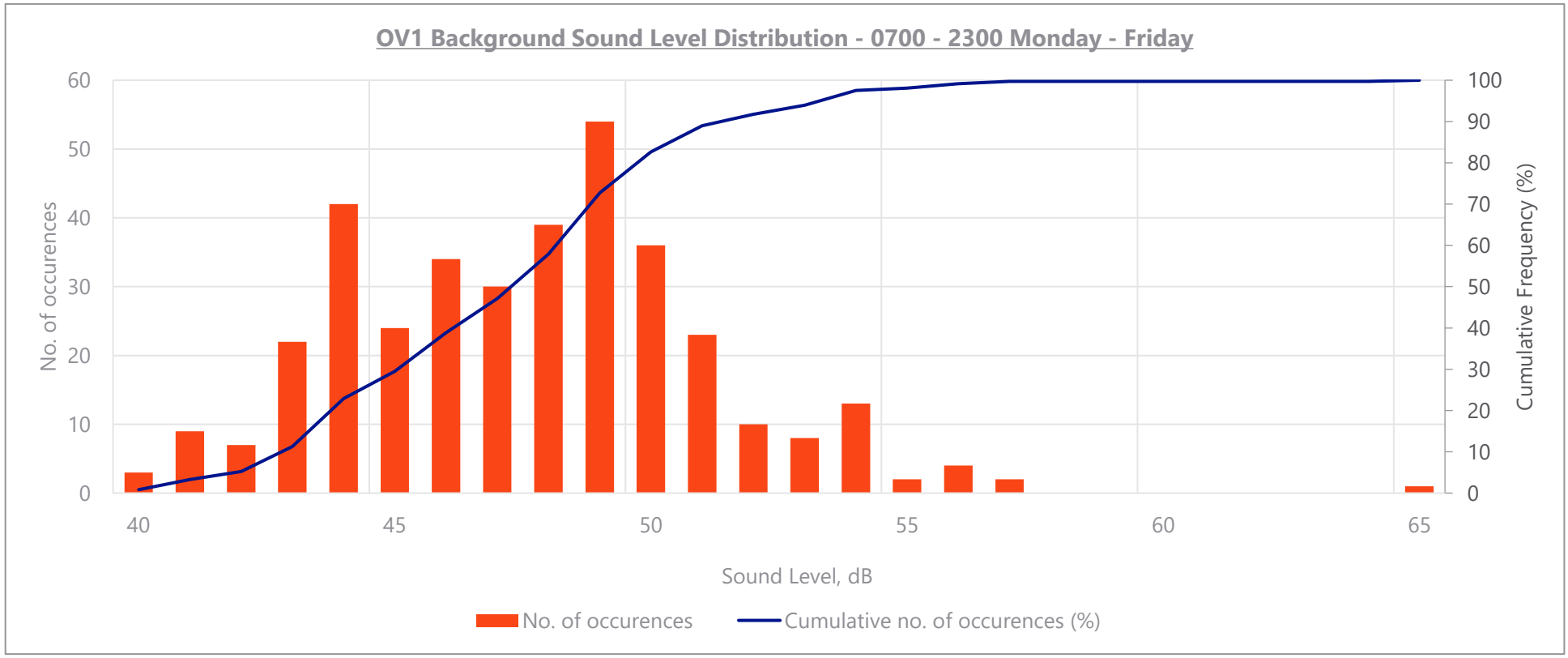
The noise environment noted during SLM deployment and collection was vehicles accessing the farm, rail noise on the railway and distant road noise from A roads contributed to the overall noise environment.

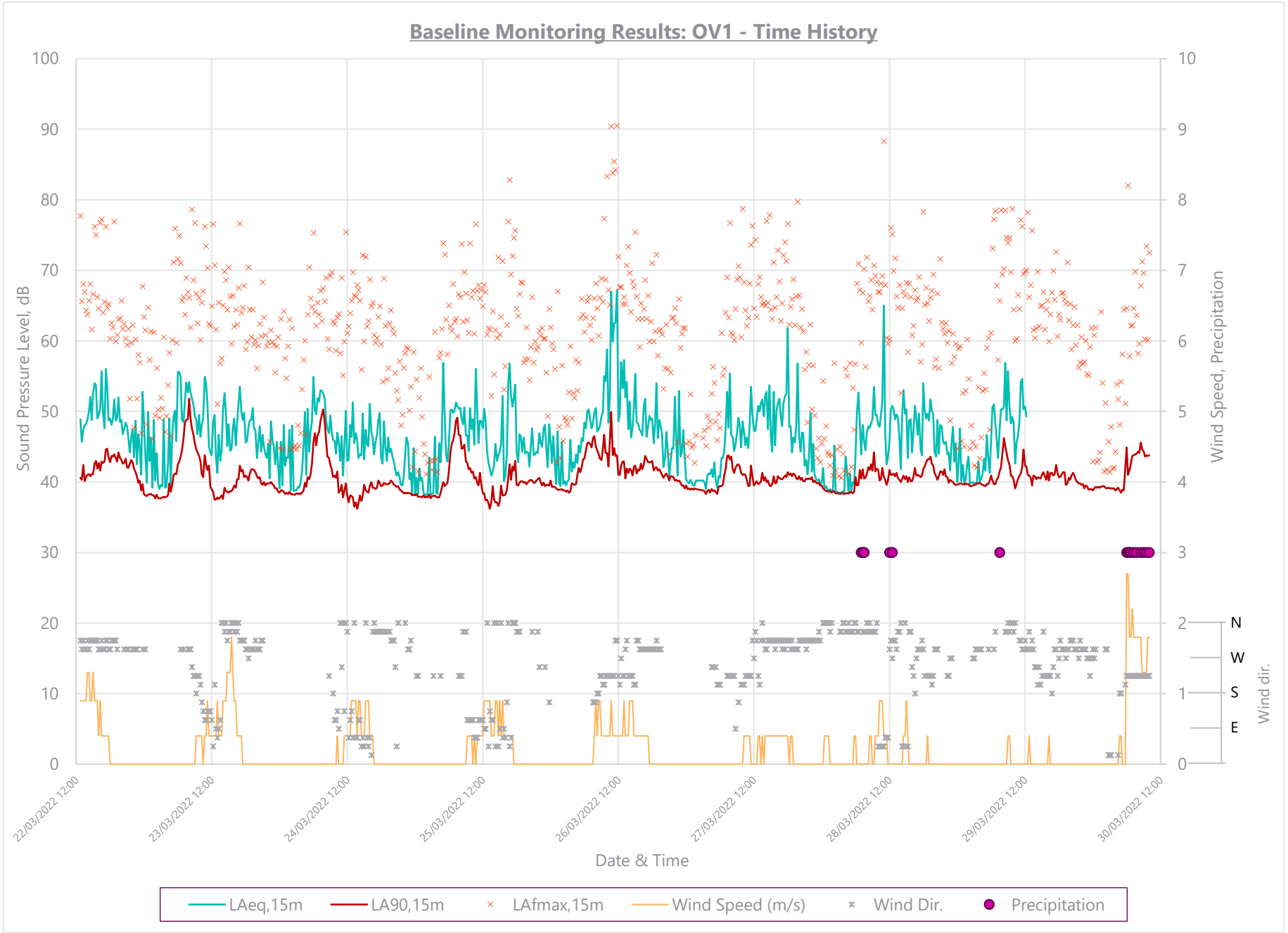
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	56	43	41	305	13	4.3
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	49	41	40	200	0	0.0
Construction night-time	**Monday – Sunday** 2300 – 0700	45	39	39	252	4	1.6
Operational Daytime	**Monday – Friday** 0700 – 2300	49	41	40	377	13	3.4
	Saturday 0700 – 2300	55	43	42	64	0	0.0
	Sunday 0700 - 2300	50	41	41	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	45	39	39	252	4	1.6


OV1 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


OV1 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: OV1 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
22/03/2022 12:00
23/03/2022 12:00
24/03/2022 12:00
25/03/2022 12:00
26/03/2022 12:00
27/03/2022 12:00
28/03/2022 12:00
29/03/2022 12:00
30/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

SK1

Monitoring Position

X: 456966

Y: 455662

Location: Mercure York Fairfield Manor

Duration:

22/03/2022 11:15 – 30/03/2022 11:15

Description of monitoring location

The Sound Level Meter (SLM) was deployed along the northern boundary of the hotel garden fence, east of the hotel building. The SLM was located in a free-field position, 20 m from the closest acoustically reflective façade.

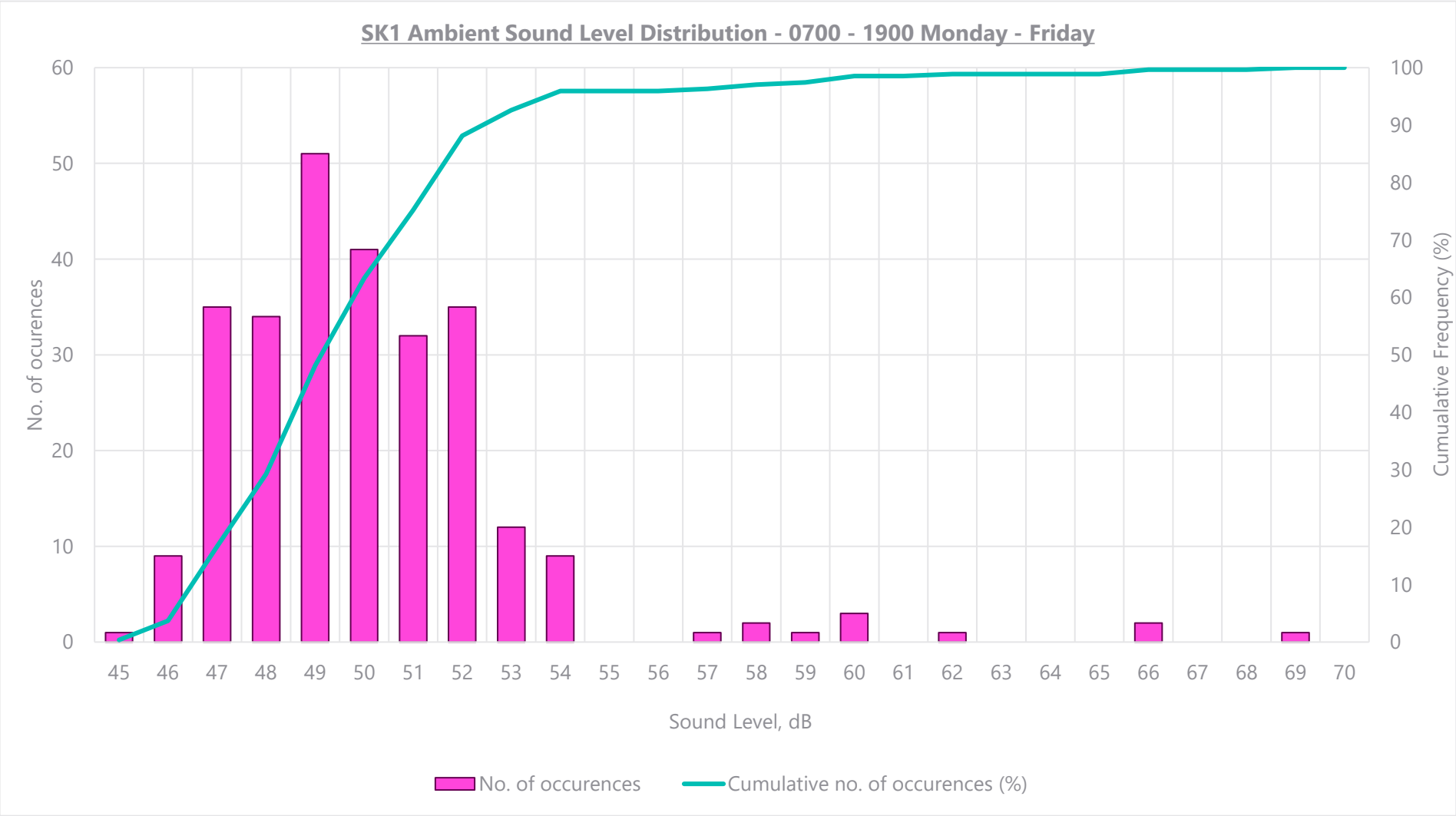
The SLM was located west of the hotel, the A19 was approximately 100 m east of the monitoring location; road traffic movements during noise kit deployment and collection were noted as dominant.

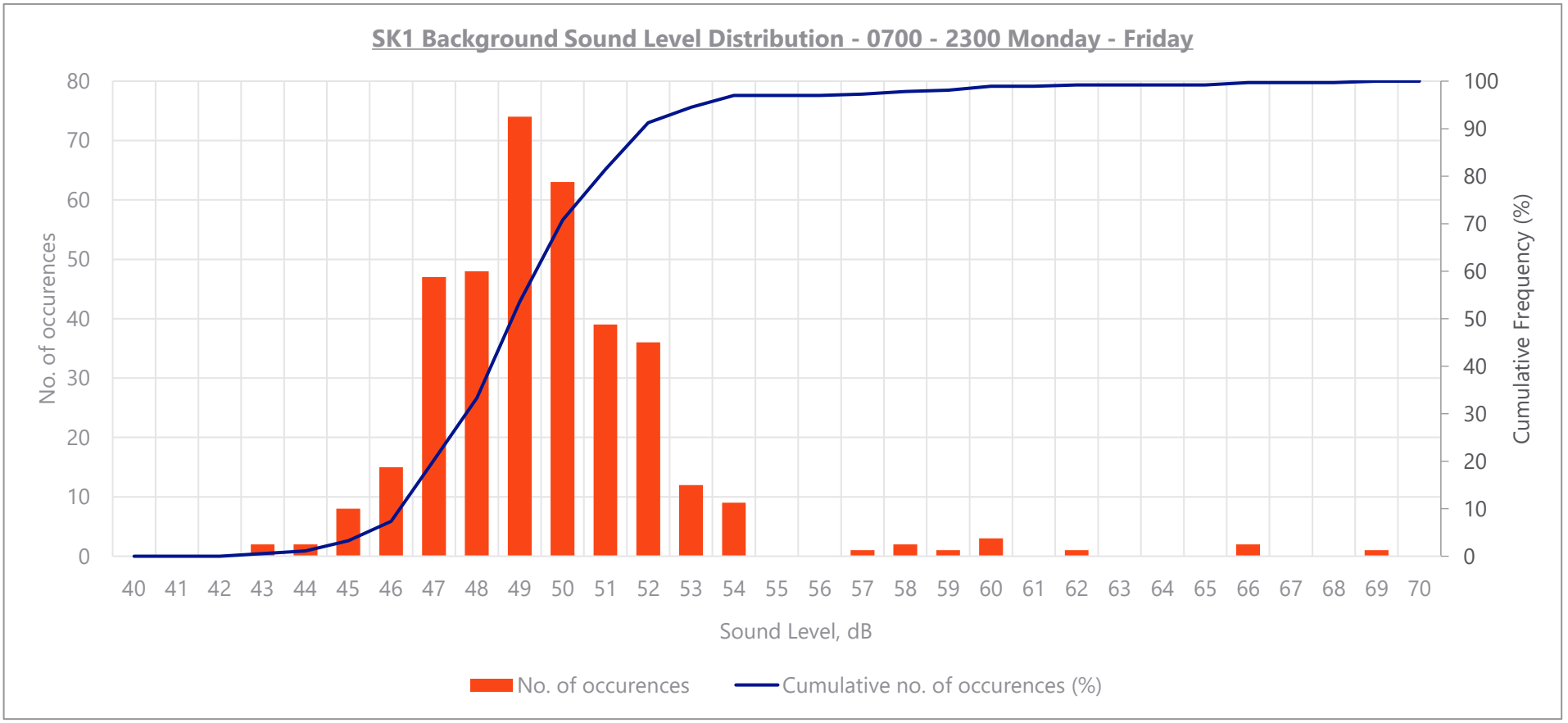
General observations

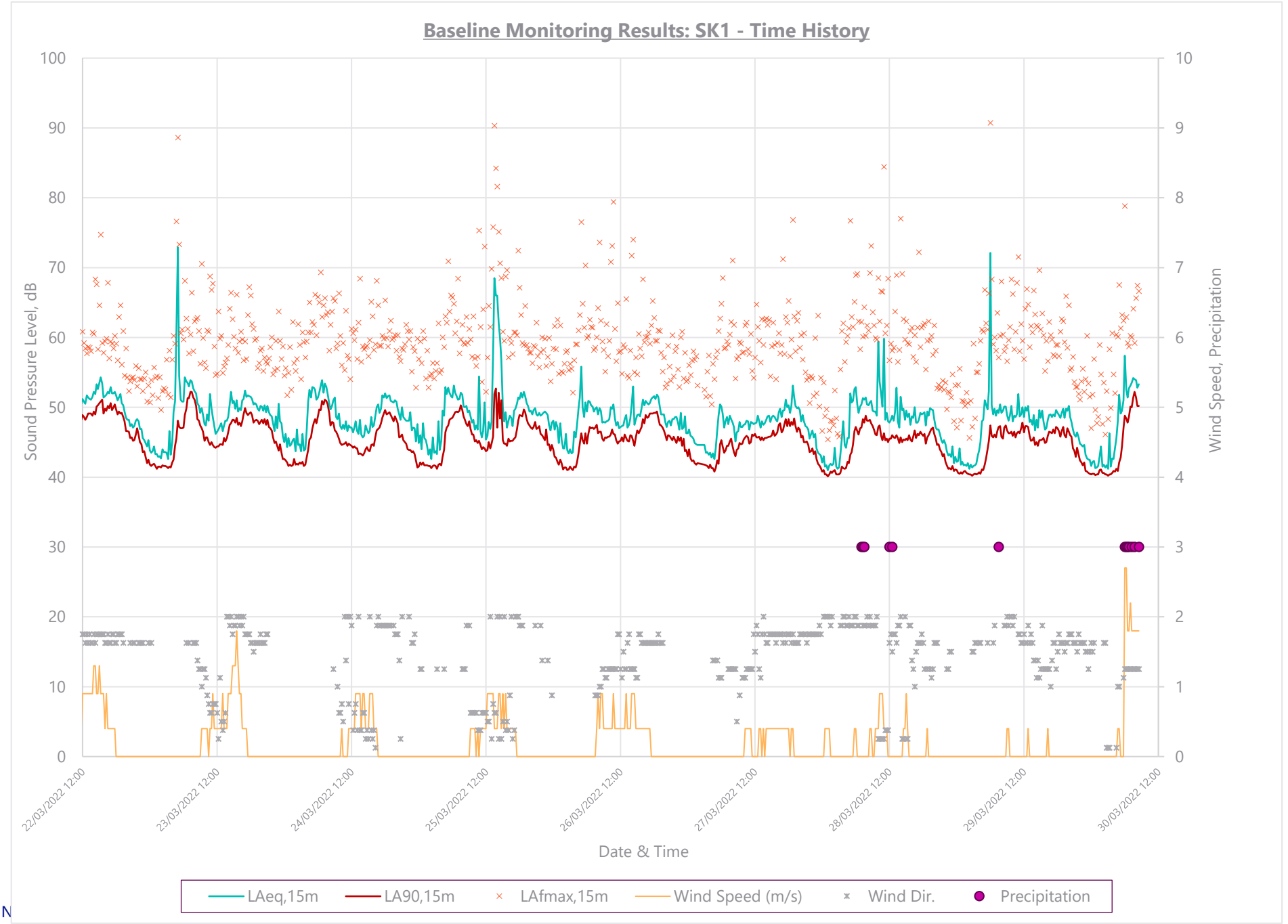
The noise environment noted during SLM deployment and collection was generally quiet. Noise from road traffic movements along the A19, along with birdsong, hotel users, gardeners and a slight breeze through the trees contributed to the overall noise environment.

Monitoring Position

Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	51	46	46	312	17	5.4
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	49	46	46	200	0	0.0
Construction night-time	**Monday – Sunday** 2300 – 0700	53	43	42	252	4	1.6
Operational Daytime	**Monday – Friday** 0700 – 2300	51	46	46	384	17	4.4
	Saturday 0700 – 2300	49	46	46	64	0	0.0
	Sunday 0700 - 2300	48	46	46	64	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	53	43	42	252	4	1.6


SK1 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
0
10
20
30
40
50
60
0
10
20
30
40
50
60
70
80
90
100
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
No. of occurences
Cumulative no. of occurences (%)


SK1 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: SK1 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Date & Time
22/03/2022 12:00
23/03/2022 12:00
24/03/2022 12:00
25/03/2022 12:00
26/03/2022 12:00
27/03/2022 12:00
28/03/2022 12:00
29/03/2022 12:00
30/03/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

SK2

Monitoring Position:

X: 456405

Y: 456766

Location:
Green View Cottage

Duration:
30/03/2022 12:15 – 03/04/2022 10:15

Description of monitoring location

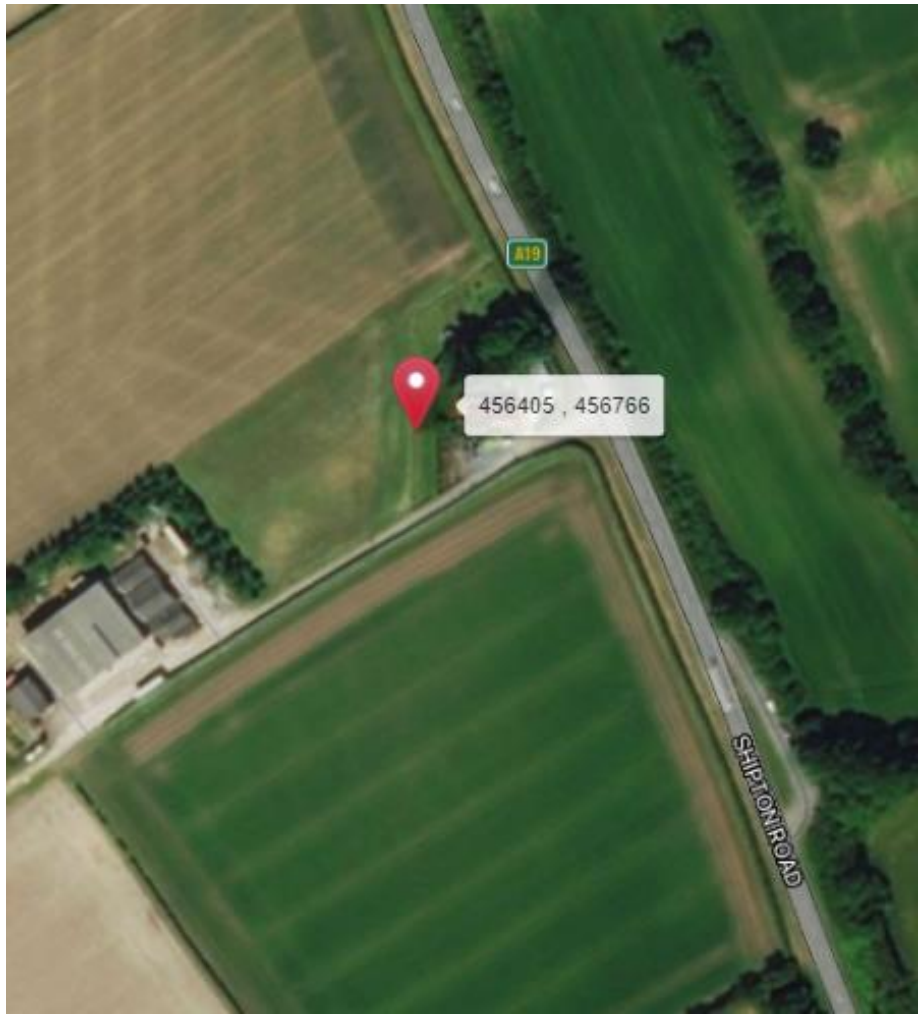
The Sound Level Meter (SLM) was deployed to the west of the main property along the boundary of a land parcel. The SLM was located in a free-field position, 17 m from the closest acoustically reflective façade.

The SLM was opposite the residences garden with soft fields and a hedgerow between the kit and the property. The A19 was approximately 60 m east of the monitoring location; road traffic movement was the dominant noise source.

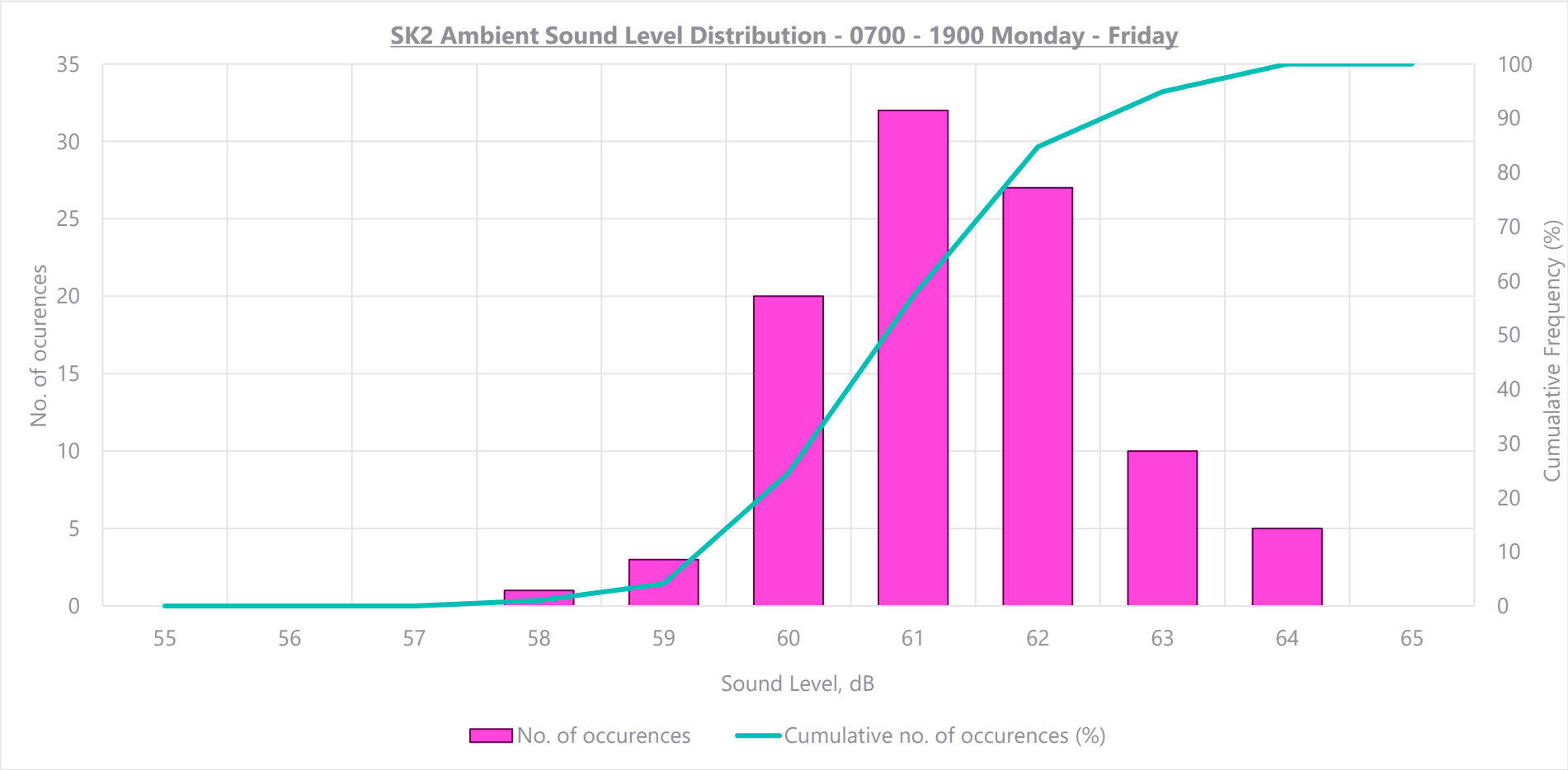
General observations

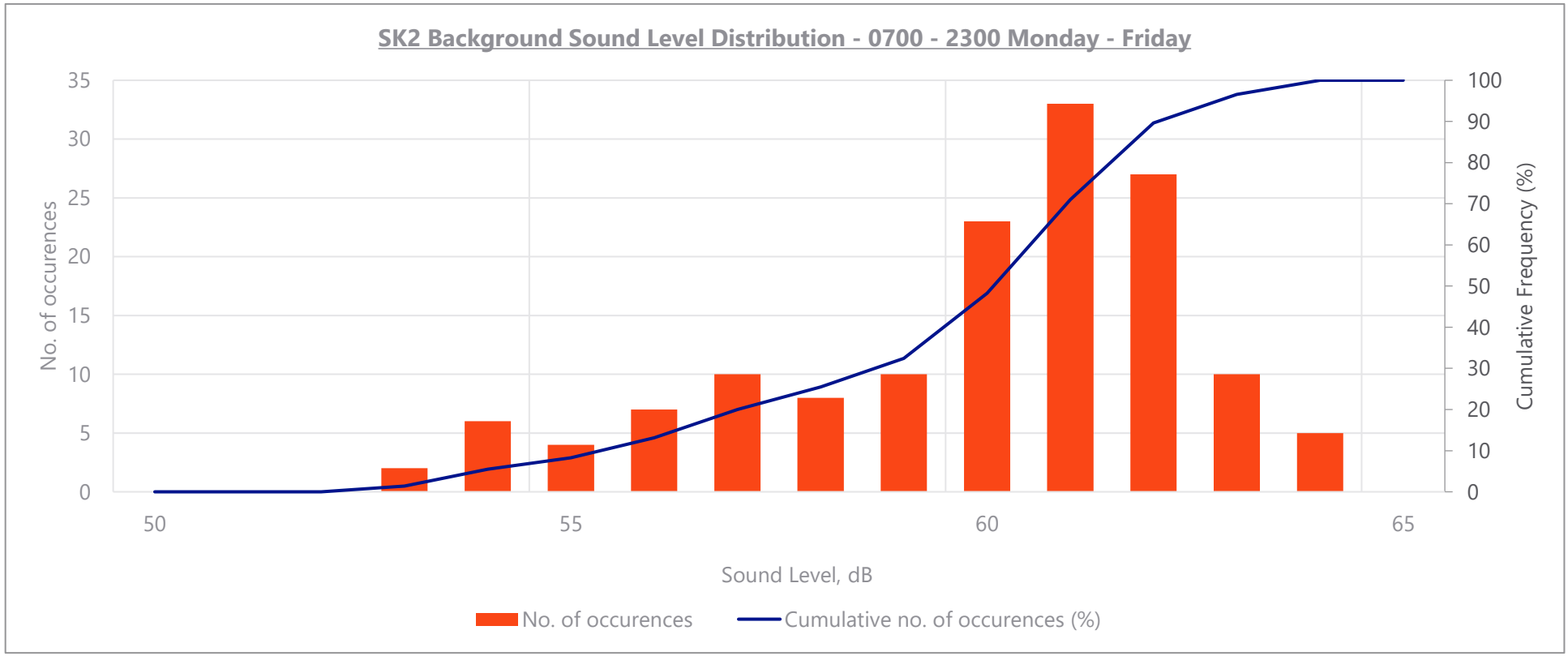
The noise environment noted during SLM deployment and collection was generally quiet, however road noise was distinctly noticeable. Noise from heavy road traffic movements from the A19, along with intermittent noise from temporary housed geese, contributed to the overall noise environment.

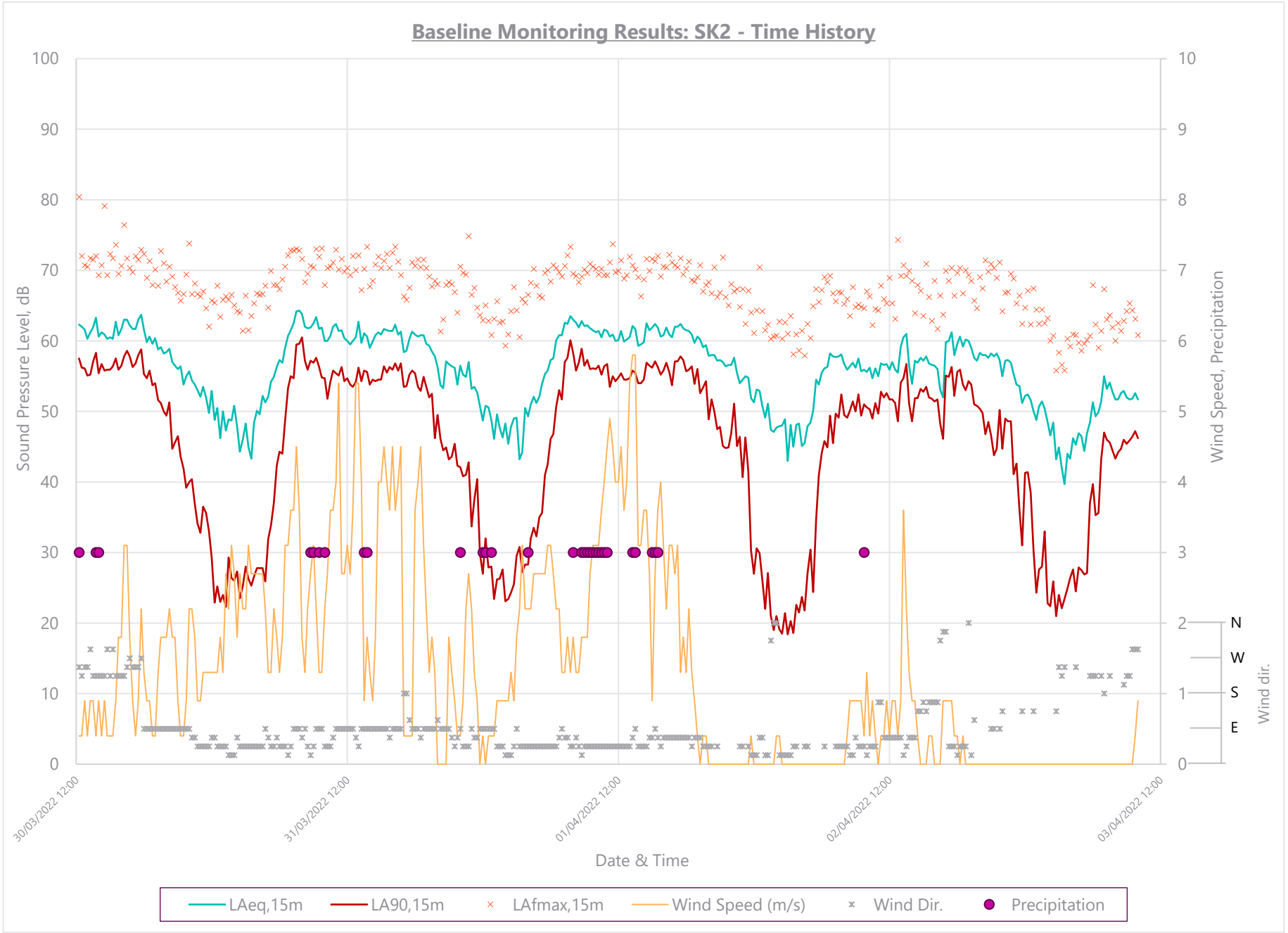
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	60	53	56	147	26	17.7
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	57	48	45	101	1	1.0
Construction night-time	**Monday – Sunday** 2300 – 0700	52	31	28	128	4	3.1
Operational Daytime	**Monday – Friday** 0700 – 2300	60	51	56	171	26	15.2
	Saturday 0700 – 2300	58	51	52	64	1	1.6
	Sunday 0700 - 2300	53	46	46	13	0	0.0
Operational Night-time	**Monday – Sunday** 2300 - 0700	52	31	28	128	4	3.1


SK2 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
55
56
57
58
59
60
61
62
63
64
65
No. of occurences
Cumulative no. of occurences (%)


SK2 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: SK2 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
30/03/2022 12:00
31/03/2022 12:00
01/04/2022 12:00
02/04/2022 12:00
03/04/2022 12:00
Date & Time
LAeq,15m
LA90,15m
LAfmax,15m
Wind Speed (m/s)
Wind Dir.
Precipitation

SH1

Monitoring Position

X: 455294

Y: 458103

Location: South of Shipton by Beningbrough

Duration:

31/03/2022 13:00 – 11/04/2022 12:00

Description of monitoring location

The Sound Level Meter (SLM) was deployed to the south of the main property, within a garden. The SLM was located in a free-field position, 15 m from the closest acoustically reflective façade.

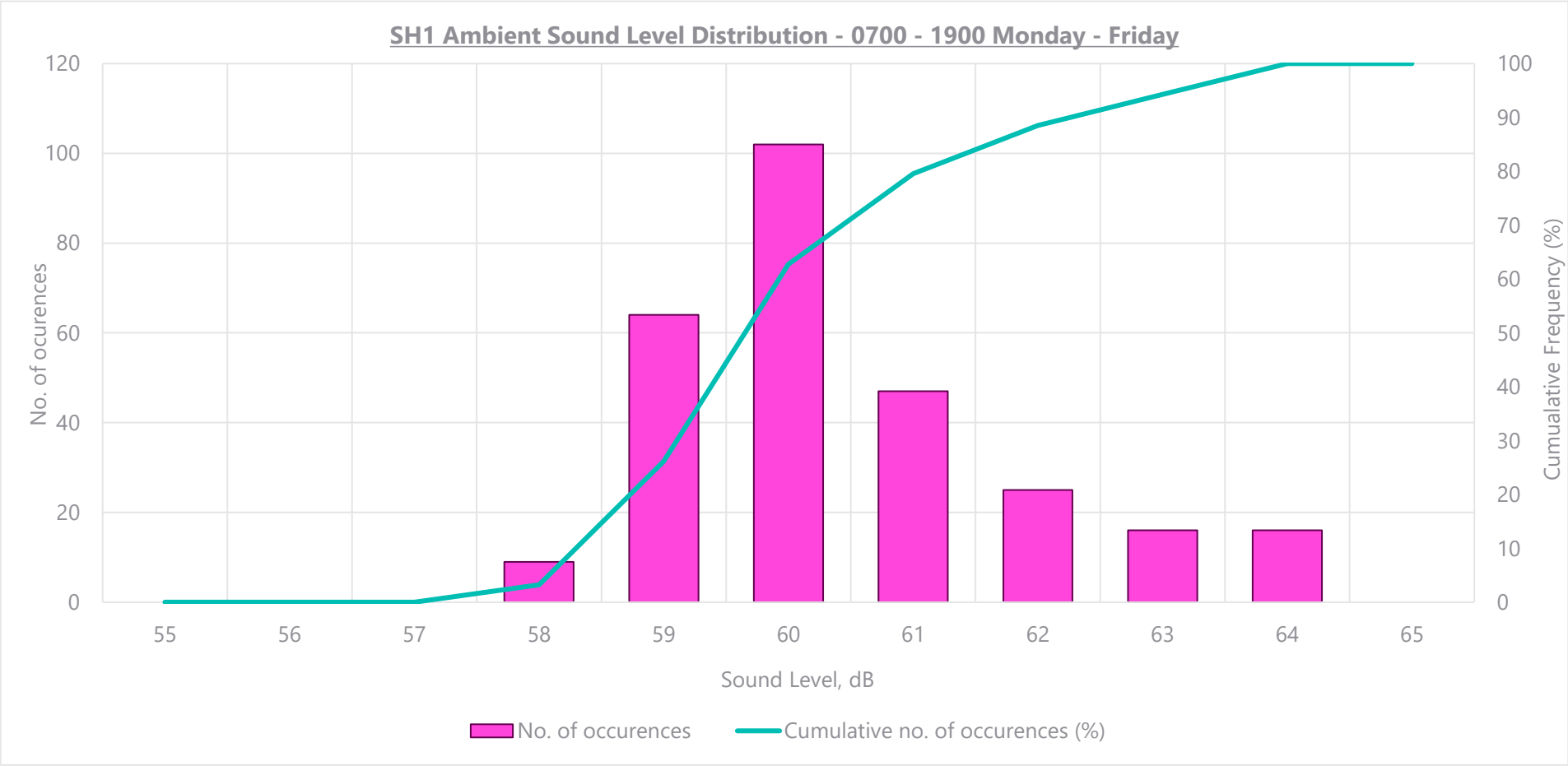
The A19 was approximately 30 m east of the monitoring location. Road traffic movements during noise kit deployment and collection were noted as dominant.

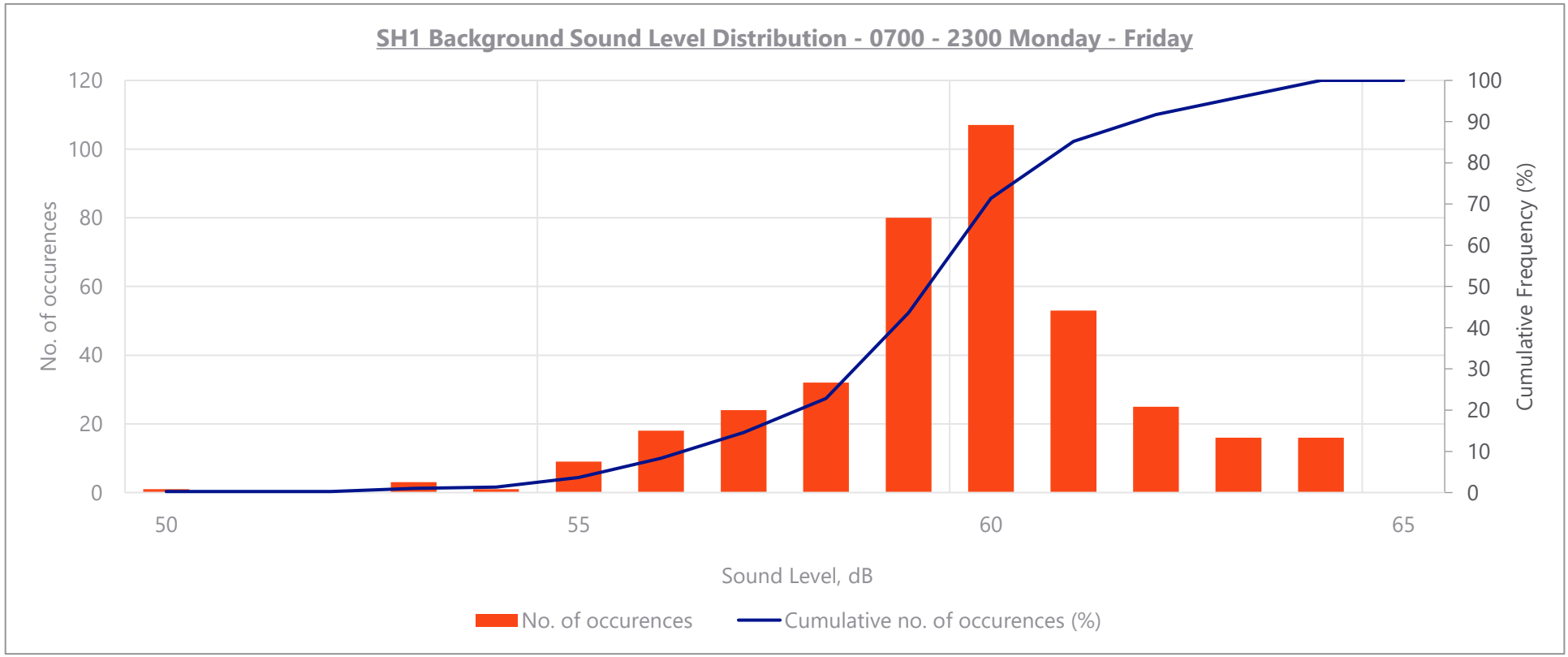
General observations

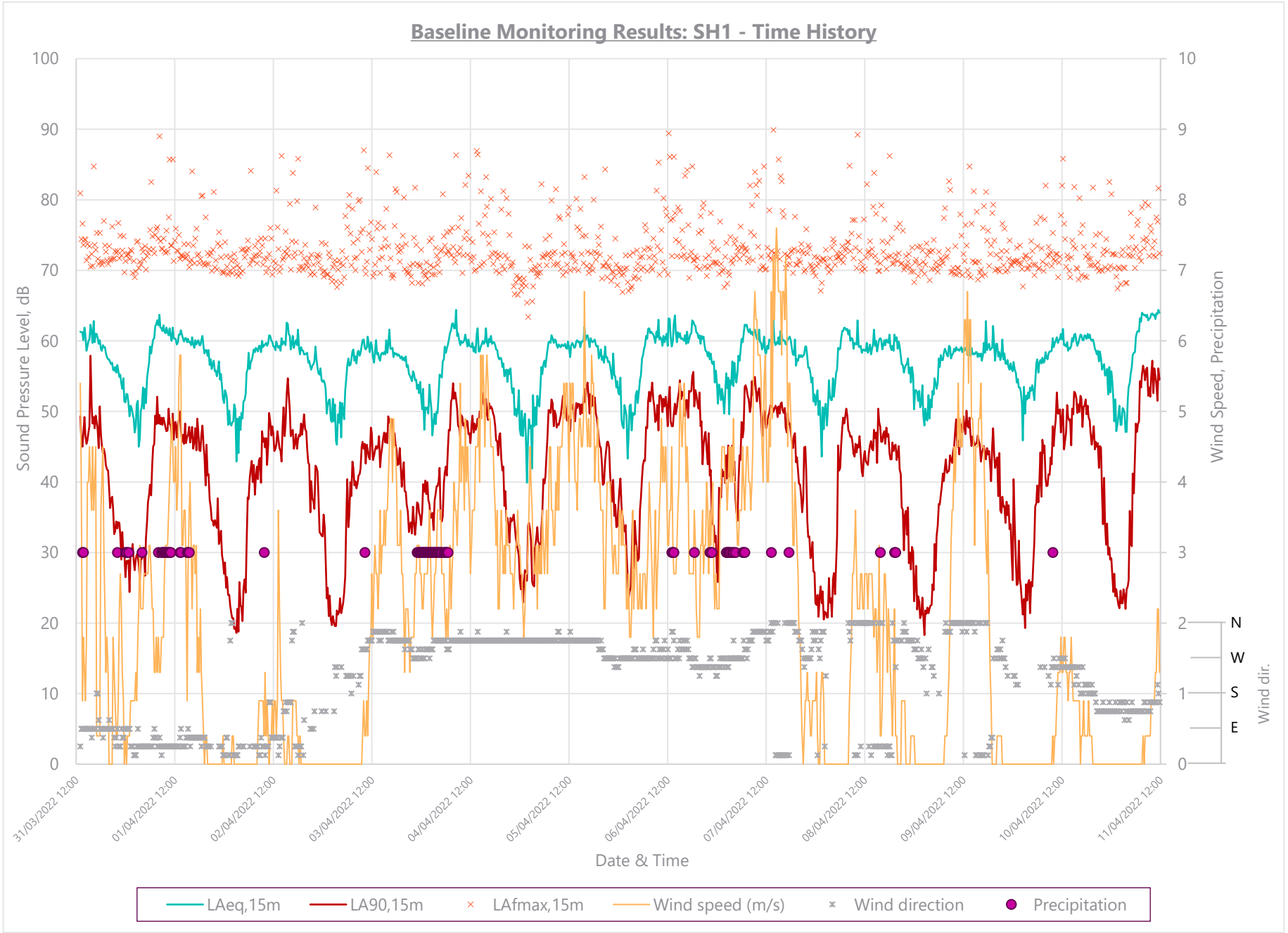
The noise environment noted during SLM deployment and collection was generally a dominant noise from heavy road traffic on the A19. Noise from road traffic movements along with birdsong, dogs inside the property and a slight breeze through the trees contributed to the overall noise environment.

Monitoring Position

Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	60	47	49	380	56	14.7
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	59	43	45	320	11	3.4
Construction night-time	**Monday – Sunday** 2300 – 0700	54	30	26	352	45	12.8
Operational Daytime	**Monday – Friday** 0700 – 2300	59	45	47	444	58	13.1
	Saturday 0700 – 2300	59	44	45	128	7	5.5
	Sunday 0700 - 2300	59	44	45	128	2	1.6
Operational Night-time	**Monday – Sunday** 2300 - 0700	54	30	26	352	45	12.8


SH1 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
120
100
80
60
40
20
0
No. of ocurences
100
90
80
70
60
50
40
30
20
10
0
Cumulative Frequency (%)
55
56
57
58
59
60
61
62
63
64
65
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


SH1 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
120
100
80
60
40
20
0
No. of occurences
100
90
80
70
60
50
40
30
20
10
0
Cumulative Frequency (%)
50
55
60
65
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: SH1 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
31/03/2022 12:00
01/04/2022 12:00
02/04/2022 12:00
03/04/2022 12:00
04/04/2022 12:00
05/04/2022 12:00
06/04/2022 12:00
07/04/2022 12:00
08/04/2022 12:00
09/04/2022 12:00
10/04/2022 12:00
11/04/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind speed (m/s)
Wind direction
Precipitation

SH2

Monitoring Position:

X: 455385

Y: 458288

Location:

South Garth, Shipton by Beningbrough

Duration:

31/03/2022 13:30 – 11/04/2022 12:00

Description of monitoring location

The Sound Level Meter (SLM) was deployed in the communal garden on the southern boundary. The SLM was located in a free-field position, 20 m from the closest acoustically reflective façade.

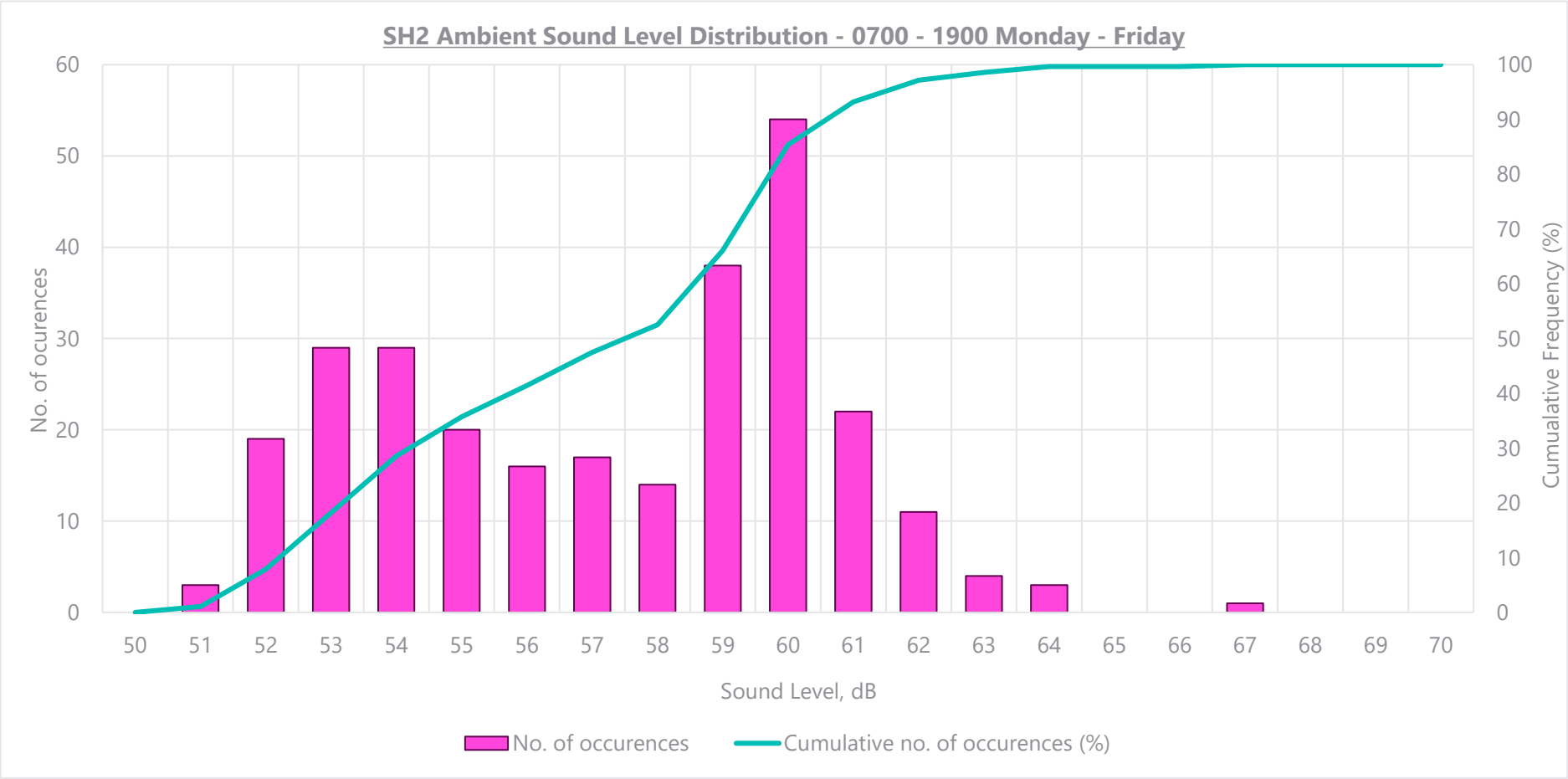
The SLM was located south of the property and the A19 was approximately 50 m west of the monitoring location; with road traffic movements during noise kit deployment and collection noted as dominant.

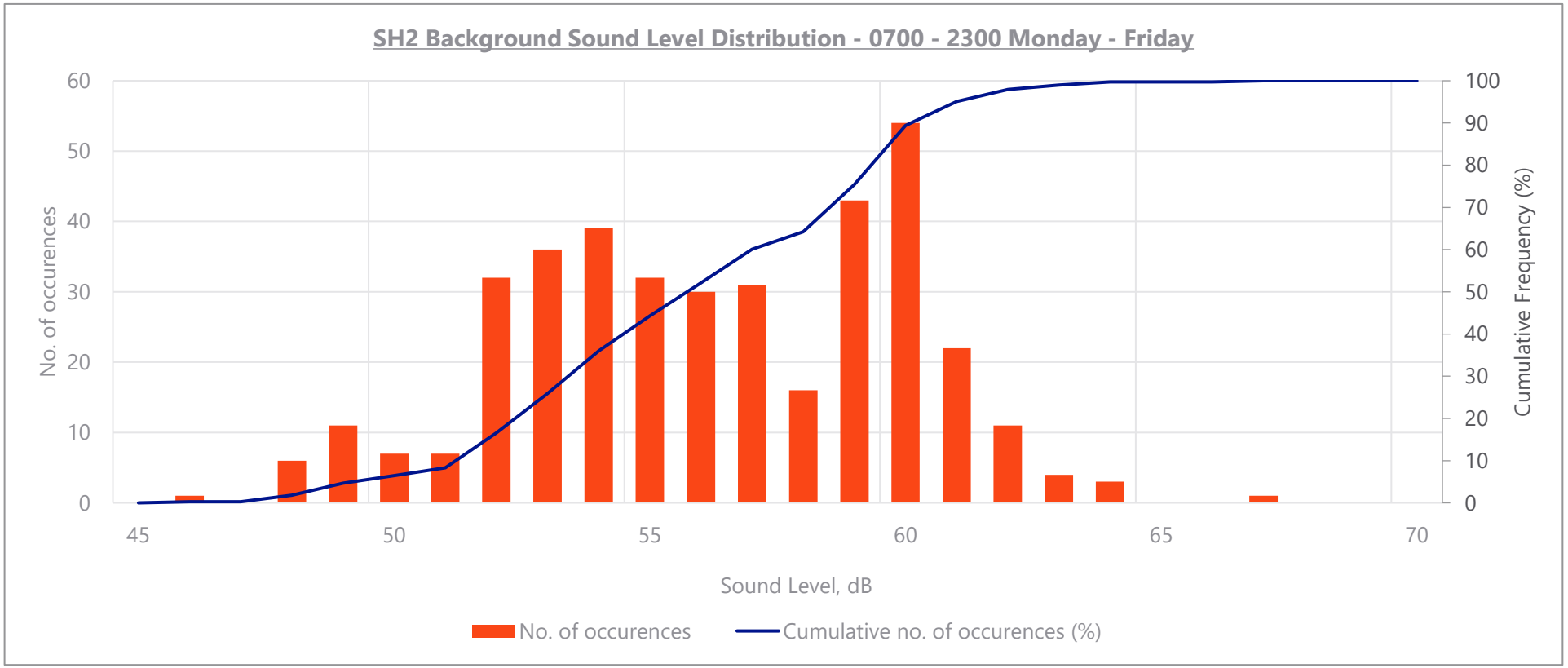
General observations

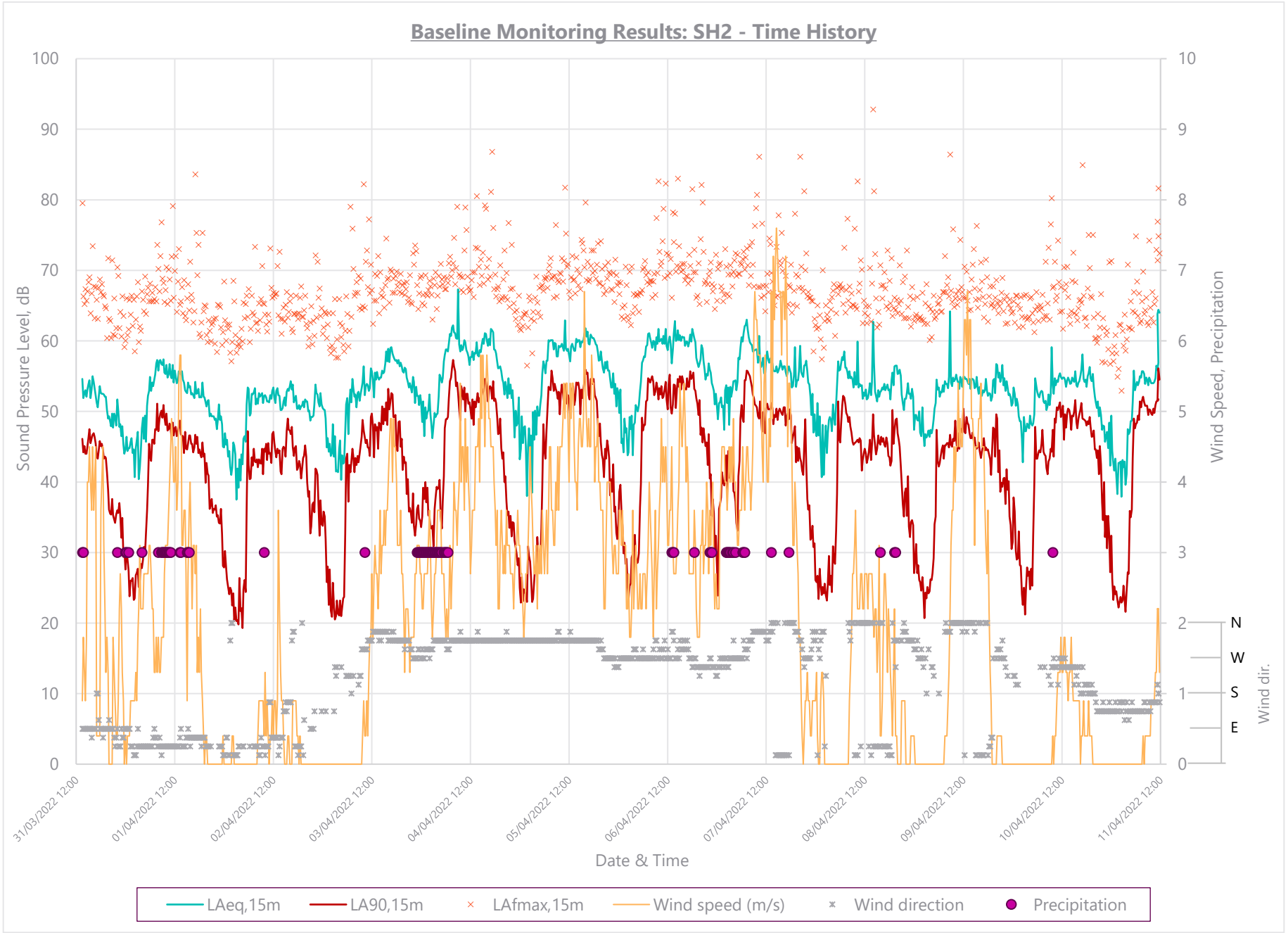
The noise environment noted during SLM deployment and collection from A19 road was dominant at the monitoring location. Along with a slight breeze through trees, birdsong and sheep in the nearby field.

Monitoring Position

Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	57	48	52	380	56	14.7
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	54	43	45	320	11	3.4
Construction night-time	**Monday – Sunday** 2300 – 0700	51	32	25	352	45	12.8
Operational Daytime	**Monday – Friday** 0700 – 2300	57	46	52	444	58	13.1
	Saturday 0700 – 2300	53	44	45	128	7	5.5
	Sunday 0700 - 2300	55	46	49	128	2	1.6
Operational Night-time	**Monday – Sunday** 2300 - 0700	51	32	25	352	45	12.8


SH2 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


SH2 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: SH2 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
31/03/2022 12:00
01/04/2022 12:00
02/04/2022 12:00
03/04/2022 12:00
04/04/2022 12:00
05/04/2022 12:00
06/04/2022 12:00
07/04/2022 12:00
08/04/2022 12:00
09/04/2022 12:00
10/04/2022 12:00
11/04/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind speed (m/s)
Wind direction
Precipitation

SH3

Monitoring Position

X: 456841

Y: 458801

Location:
Hall Moor Farm Cottages

Duration:

31/03/2022 11:45 – 11/04/2022 12:30

Description of monitoring location

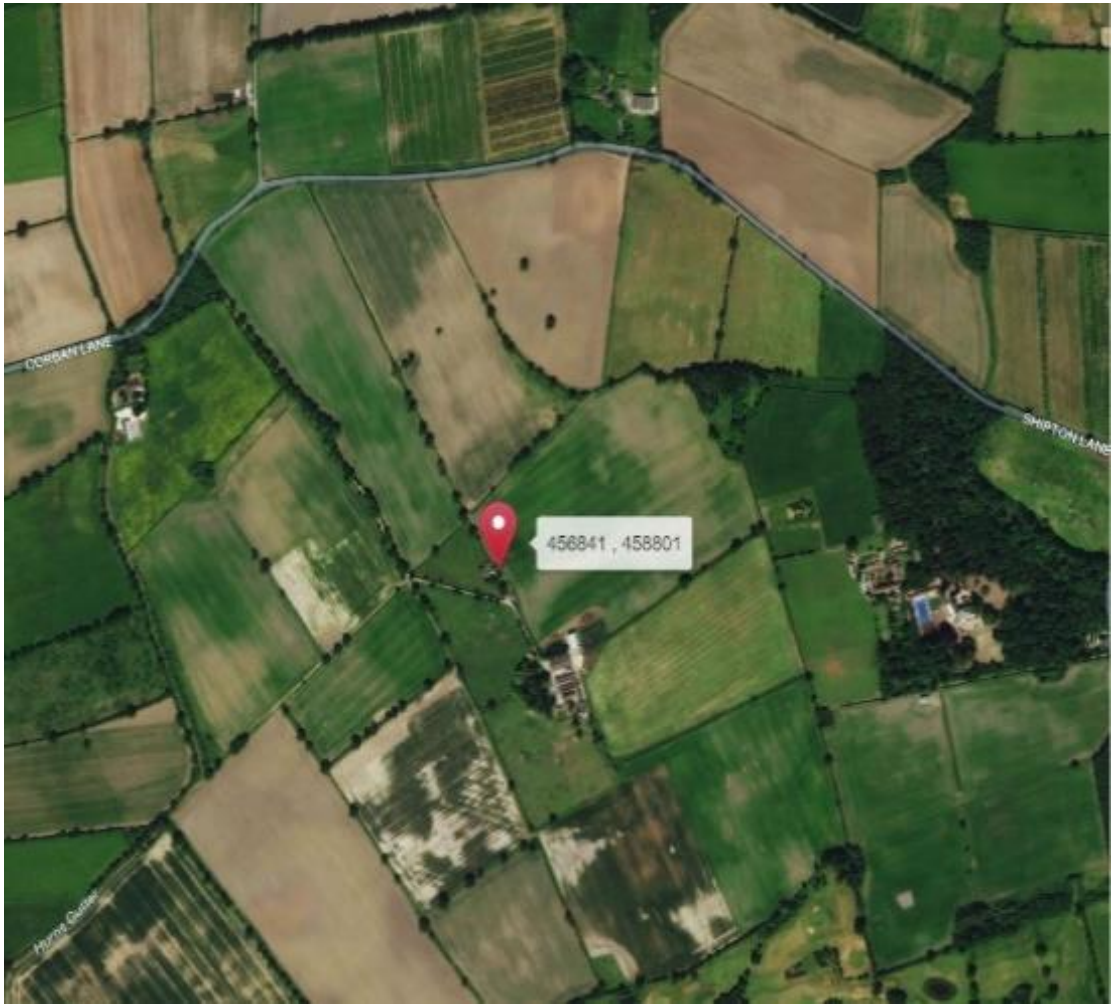
The Sound Level Meter (SLM) was deployed on the eastern boundary of the field closest to residents at the cottages. The SLM was located in a free-field position with no acoustically reflective façade nearby.

The SLM was located east of the properties and the A19 road to the west was approximately 2 km from the monitoring location, with road traffic movements during noise kit deployment and collection noted as distant.

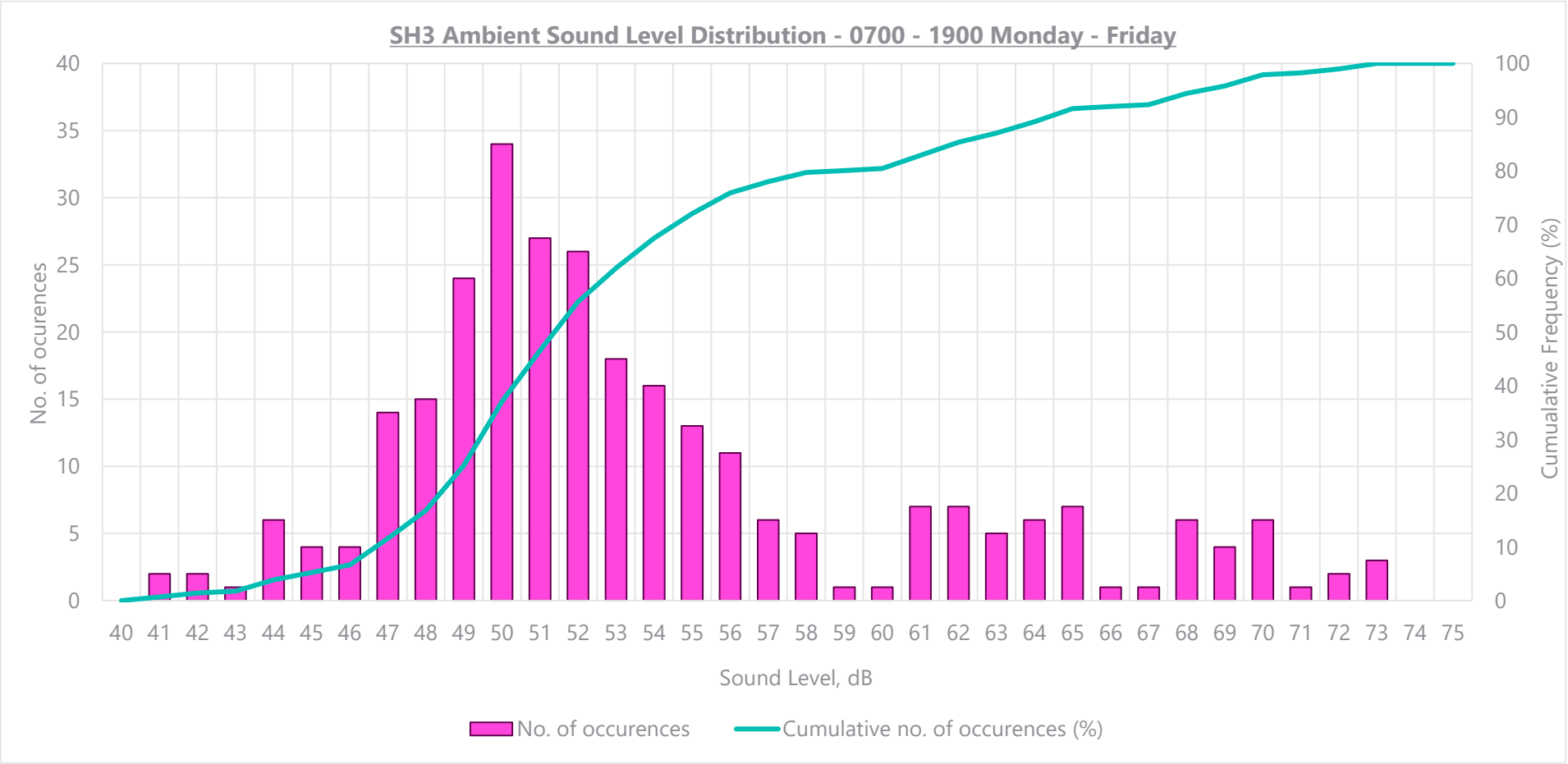
General observations

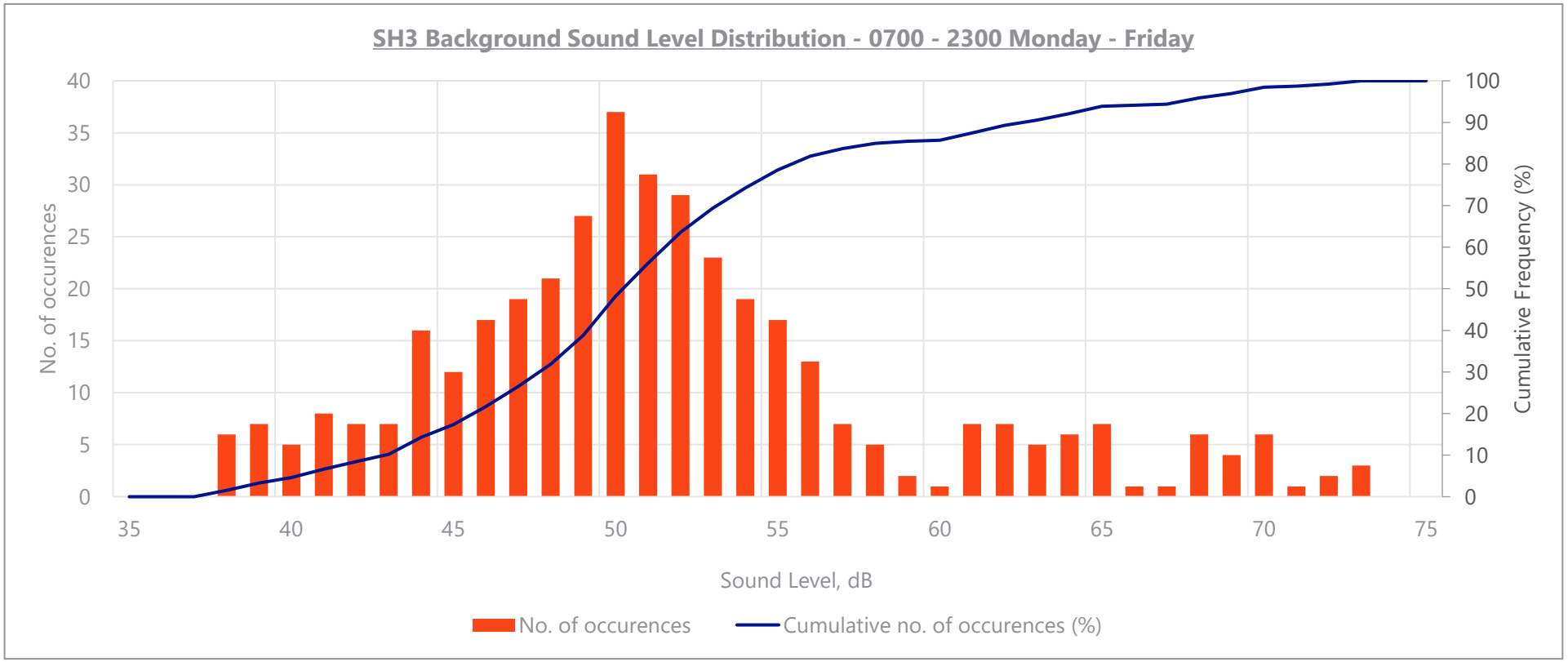
The noise environment noted during SLM deployment and collection was generally quiet, and typical of a rural location. Noise from traffic movements at A19 road and local road network was distant, along with a constant slight breeze through trees, and birdsong contributed to the overall noise environment.

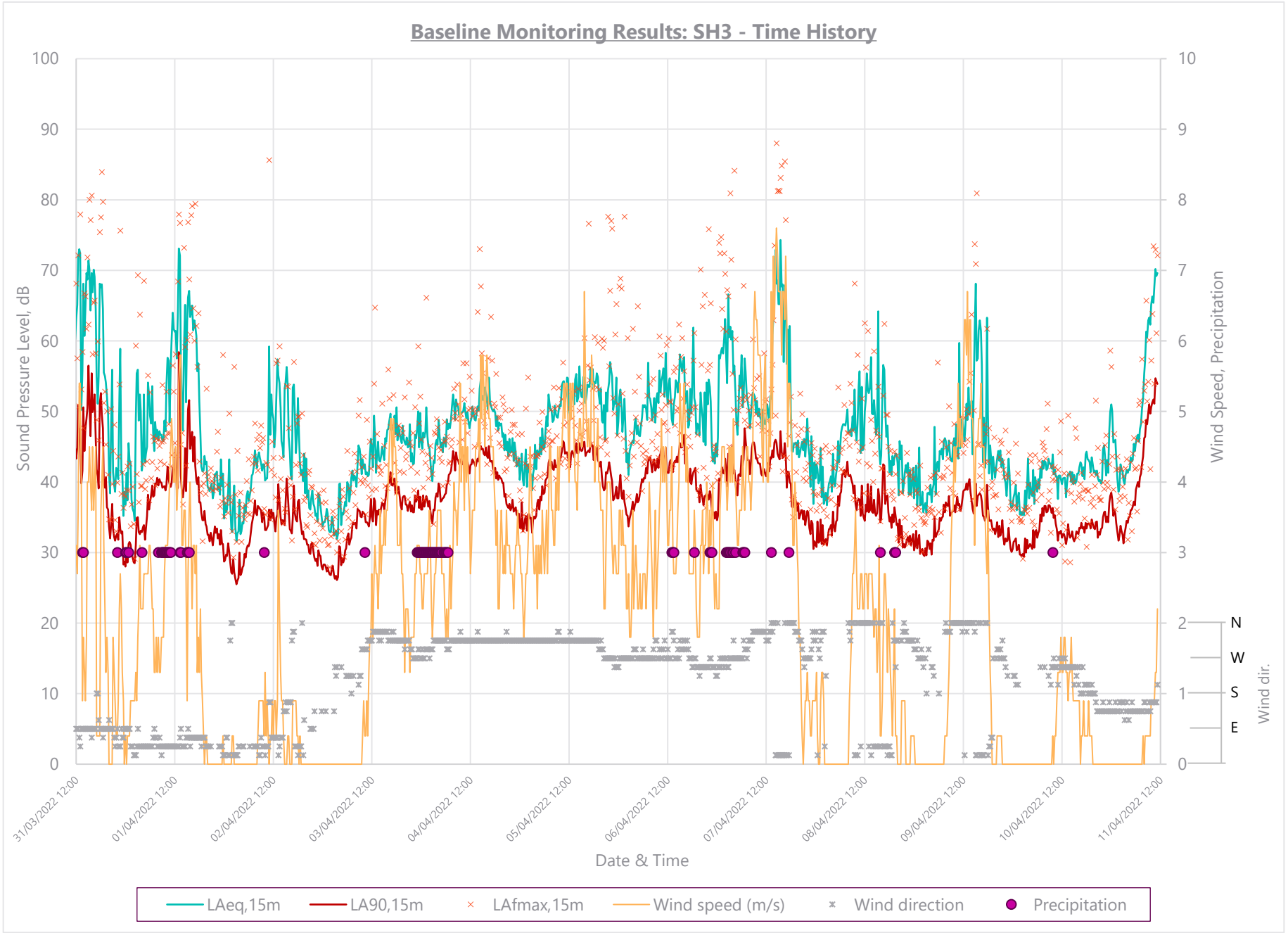
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	58	39	43	387	56	14.5
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	51	35	34	320	11	3.4
Construction night-time	**Monday – Sunday** 2300 – 0700	48	34	31	352	45	12.8
Operational Daytime	**Monday – Friday** 0700 – 2300	58	39	43	451	58	12.9
	Saturday 0700 – 2300	53	35	35	128	7	5.5
	Sunday 0700 - 2300	44	35	34	128	2	1.6
Operational Night-time	**Monday – Sunday** 2300 - 0700	48	34	31	352	45	12.8


SH3 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


SH3 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: SH3 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
31/03/2022 12:00
01/04/2022 12:00
02/04/2022 12:00
03/04/2022 12:00
04/04/2022 12:00
05/04/2022 12:00
06/04/2022 12:00
07/04/2022 12:00
08/04/2022 12:00
09/04/2022 12:00
10/04/2022 12:00
11/04/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind speed (m/s)
Wind direction
Precipitation

SH4

Monitoring Position

X: 456809

Y: 460272

Location:
Newlands Farm

Duration:

31/03/2022 12:15 – 11/04/2022 12:45

Description of monitoring location

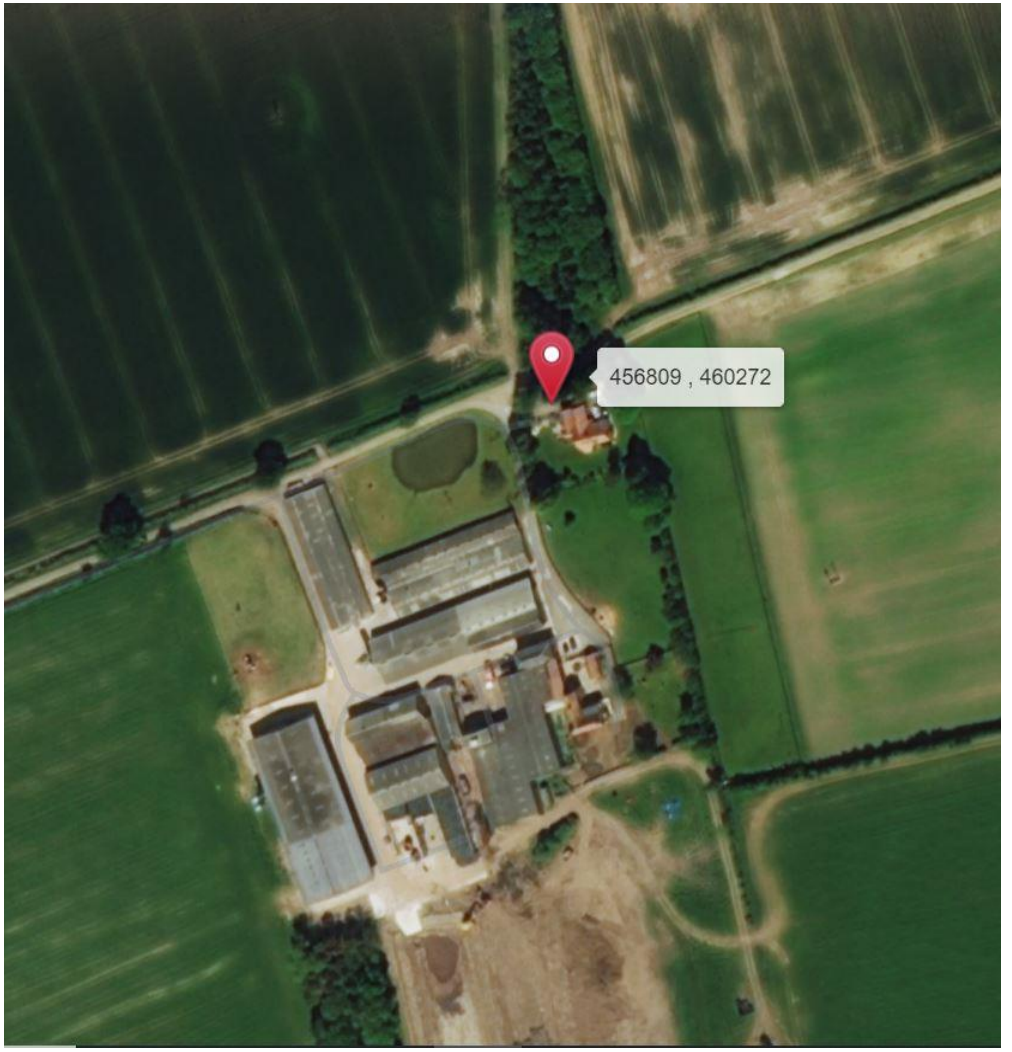
The Sound Level Meter (SLM) was deployed on the northern boundary of the cottage garden. The SLM was located in a free-field position, 15 m from the closest acoustically reflective façade.

The SLM was located north of the property and the A19 was approximately 2 km west from the monitoring location; however, road traffic movements during noise kit deployment and collection were noted as dominant.

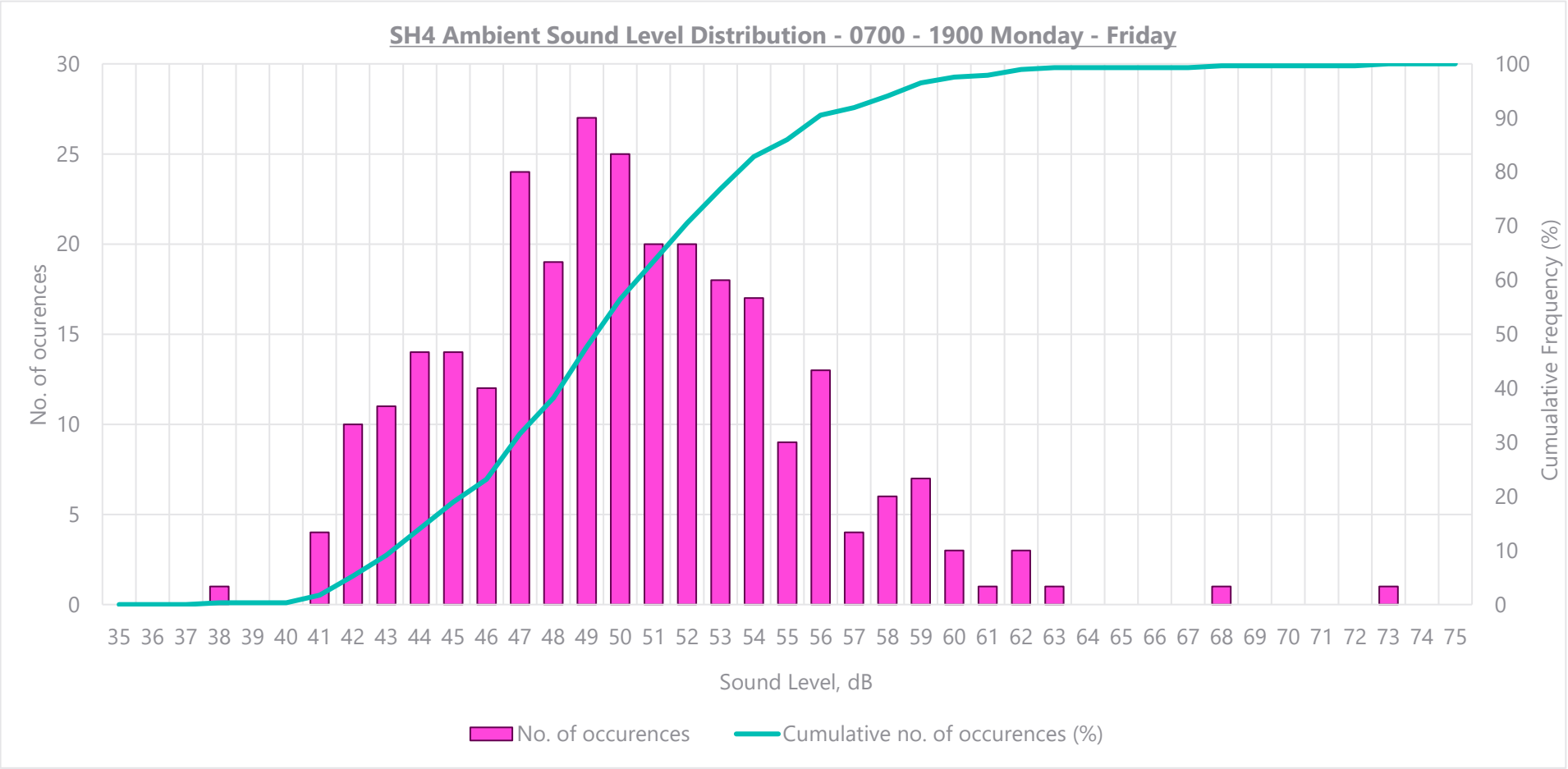
General observations

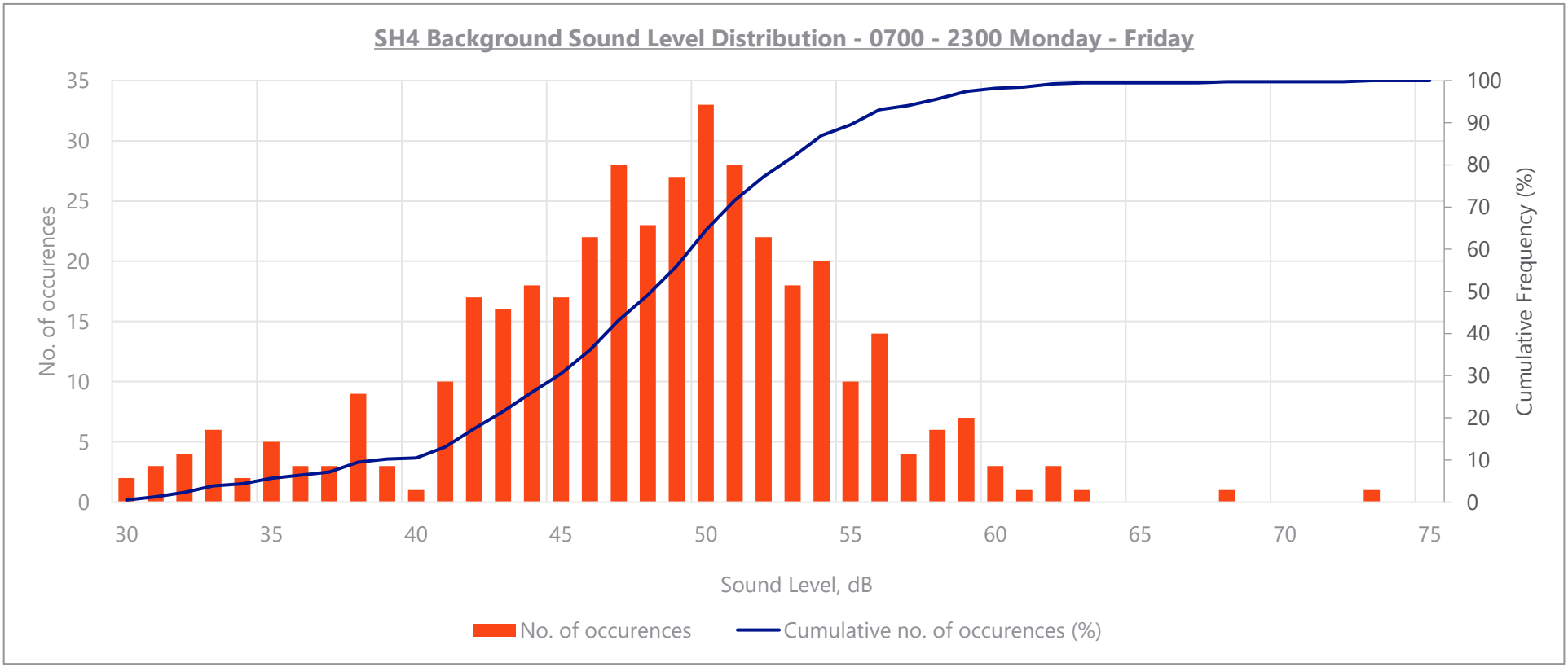
The noise environment noted during SLM deployment and collection was generally quiet, and typical of a rural location. Distant road noise from the local road network, along with birdsong, and work from commercial farms contributed to the overall noise environment.

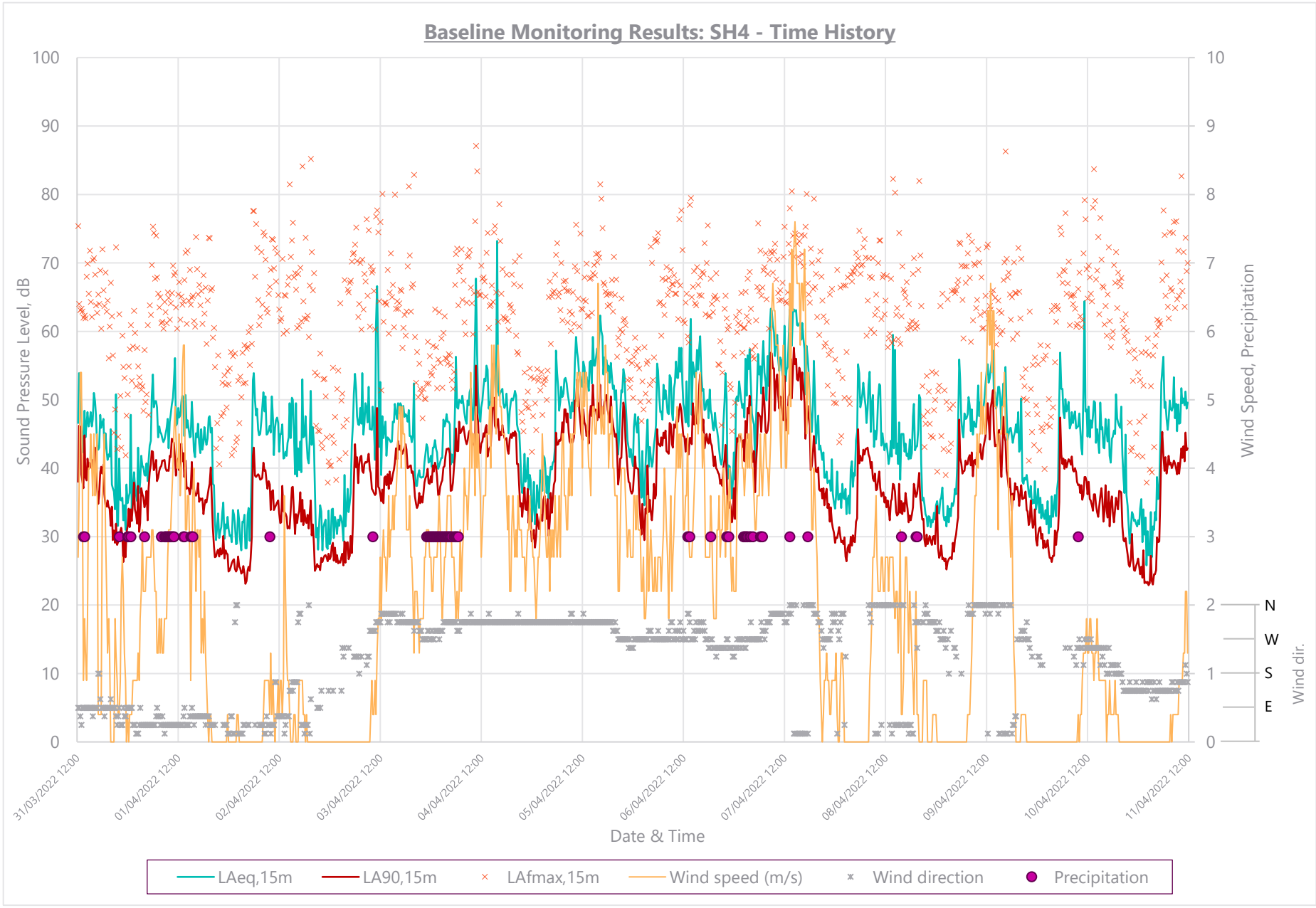
Monitoring Position



Assessment Period		$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB) [mean average]	$L_{A90,T}$ (dB) [modal average]	Total no. of 15 minute periods	Total no. of 15 minute periods affected by weather	Affected by weather %
Construction Daytime	**Monday – Friday** 0700 – 1900 **Saturday** 0700 – 1300	52	41	41	386	56	14.5
Construction evenings & weekends	**Monday – Friday** 1900 – 2300 **Saturday** 1300 – 2300 **Sunday** 0700 – 2300	48	36	36	320	11	3.4
Construction night-time	**Monday – Sunday** 2300 – 0700	46	33	27	352	45	12.8
Operational Daytime	**Monday – Friday** 0700 – 2300	52	40	45	450	58	12.9
	Saturday 0700 – 2300	47	36	34	128	7	5.5
	Sunday 0700 - 2300	51	37	36	128	2	1.6
Operational Night-time	**Monday – Sunday** 2300 - 0700	46	33	27	352	45	12.8


SH4 Ambient Sound Level Distribution - 0700 - 1900 Monday - Friday
No. of ocurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


SH4 Background Sound Level Distribution - 0700 - 2300 Monday - Friday
No. of occurences
Cumulative Frequency (%)
Sound Level, dB
No. of occurences
Cumulative no. of occurences (%)


Baseline Monitoring Results: SH4 - Time History
Sound Pressure Level, dB
Wind Speed, Precipitation
Wind dir.
N
W
S
E
Date & Time
31/03/2022 12:00
01/04/2022 12:00
02/04/2022 12:00
03/04/2022 12:00
04/04/2022 12:00
05/04/2022 12:00
06/04/2022 12:00
07/04/2022 12:00
08/04/2022 12:00
09/04/2022 12:00
10/04/2022 12:00
11/04/2022 12:00
LAeq,15m
LA90,15m
LAfmax,15m
Wind speed (m/s)
Wind direction
Precipitation

Short term substation measurements

Position no.	Measurement no.	Start date & time	Duration (mm:ss)	British Grid		Wind speed (m/s)	Wind direction	Temperature (°C)	Sound pressure level, dB					Notes
				X	Y				$L_{Aeq,T}$	L_{Amax}	$L_{A10,T}$	$L_{A50,T}$	$L_{A90,T}$	
SUB1	3310	30/03/2022 23:44	15:00	448517	428974	1.3	NE	0	41.8	63.0	43.3	41.0	39.3	Hum from auxiliary transformer dominant when no cars present on A63. Hum is equally audible to A63 when road traffic is present. Distant road traffic just audible from A1(M).
SUB2	3311	31/03/2022 00:03	15:00	448536	429074	1.3	ENE	0	45.0	53.0	47.3	44.5	41.8	Road traffic noise from A63 and A1(M) dominant. Hum/crackle from substation just audible.
SUB3	3312	31/03/2022 00:23	15:00	448557	429178	1.3	NE	0	44.2	54.3	46.4	43.7	41.4	Hum from substation dominant along with crackle from overhead lines. Road traffic from A63 and A1(M) audible but substation dominates.
SUB4	3313	31/03/2022 00:40	15:00	448598	429190	1.8	NE	0	45.6	56.0	48.1	44.8	42.4	Hum from transformer and crackle from overhead line equally dominant with road traffic noise.

SUB5	3314	31/03/2022 00:58	15:00	448607	429243	1.3	NE	0	44.5	54.5	46.8	43.7	41.6	Hum from transformer dominant over road traffic from A63 and A1(M)
SUB6	3315	31/03/2022 01:14	13:10	448577	429280	2.7	NE	0	43.6	55.9	45.5	43.0	41.0	Hum from transformer dominant, with road traffic noise from A1(M) clearly audible.

National Grid plc
National Grid House,
Warwick Technology Park,
Gallows Hill, Warwick.
CV34 6DA United Kingdom

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No. 4031152