

A12 Chelmsford to A120 widening scheme

TR010060

6.3 ENVIRONMENTAL STATEMENT

APPENDIX 12.3 BASELINE NOISE SURVEYS

APFP Regulation 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009

Volume 6

August 2022

Infrastructure Planning

Planning Act 2008

A12 Chelmsford to A120 widening scheme Development Consent Order 202[]

ENVIRONMENTAL STATEMENT APPENDIX 12.3 BASELINE NOISE SURVEYS

Regulation Reference	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010060
Application Document Reference	TR010060/APP/6.3
Author	A12 Project Team and National Highways

Version	Date	Status of Version
Rev 1	August 2022	DCO Application

CONTENTS

1	Introduction, survey aims and objectives	6
2	Methodology	7
2.1	Noise monitoring locations	7
2.2	Noise measurement instrumentation and set-up	11
2.3	Weather station instrumentation and set-up	12
2.4	Excluded survey data	12
2.5	Data processing methodology	13
3	Measurement results	15
3.1	Location L1 – Park Farm	15
3.2	Location L2 – 20 Rookery Close	18
3.3	Location L3 – Rowanbank	21
3.4	Location L4 – Little Braxted Mill House	24
3.5	Location L5 – 7 Wentworth Close	27
3.6	Location L6 – The Firs	30
3.7	Location L7 – Ewell Hall	33
3.8	Location L8 – Little Birch Holt Farm	36
3.9	Location L9 – 2 Prested Hall Farm Cottages	39
3.10	Location L10 – Easthorpe Green Farm	42
3.11	Location L11 – 241 London Road	45
3.12	Location L12 – 2 Burghey Brook Cottages	48
3.13	Location L13 – Rose Cottage	51
3.14	Location L15 – Davey House	54
3.15	Location L16 – Mathcot	57
3.16	Location L17 – Doggetts	60
3.17	Location L18 – 2 Mill Mead Cottages	63
	References	66

ANNEXES

Annex A Graphs	67
-----------------------------	-----------

LIST OF PLATES

Plate 3.1 Measurement location L1	15
Plate 3.2 Measurement location L2	18
Plate 3.3 Measurement location L3	21

Plate 3.4 Measurement location L4	24
Plate 3.5 Measurement location L5	27
Plate 3.6 Measurement location L6	30
Plate 3.7 Measurement location L7	33
Plate 3.8 Measurement location L8	36
Plate 3.9 Measurement location L9	39
Plate 3.10 Measurement location L10	42
Plate 3.11 Measurement location L11	45
Plate 3.12 Measurement location L12	48
Plate 3.13 Measurement Location L13	51
Plate 3.14 Measurement location L15	54
Plate 3.15 Measurement location L16	57
Plate 3.16 Measurement location L17	60
Plate 3.17 Measurement location L18	63
 Plate A.1 Weather data 11-26 May 2021	 67
Plate A.2 Noise measurement data L1 Park Farm.....	68
Plate A.3 Noise measurement data L2 20 Rookery Close	69
Plate A.4 Noise measurement data L3 Rowanbank	70
Plate A.5 Noise measurement data L4 Little Braxted Mill House.....	71
Plate A.6 Noise measurement data L5 7 Wentworth Close	72
Plate A.7 Noise measurement data L6 The Firs	73
Plate A.8 Noise measurement data L7 Ewell Hall.....	74
Plate A.9 Noise measurement data L8 Little Birch Holt Farm	75
Plate A.10 Noise measurement data L9 Prested Hall Farm Cottages	76
Plate A.11 Noise measurement data L10 Easthorpe Green Farm.....	77
Plate A.12 Noise measurement data L11 241 London Road.....	78
Plate A.13 Noise measurement data L12 2 Burghey Brook Cottages	79
Plate A.14 Noise measurement data L13 Rose Cottage	80
Plate A.15 Noise measurement data L15 Davey House	81
Plate A.16 Noise measurement data L16 Mathcot.....	82
Plate A.17 Noise measurement data L17 Doggetts	83
Plate A.18 Noise measurement data L18 2 Mill Mead Cottages.....	84

LIST OF TABLES

Table 2.1 Noise measurement locations	7
Table 2.2 Rationale for selection of noise measurement locations	8
Table 2.3 Noise measurement equipment	12
Table 2.4 Periods of excluded data due to adverse weather	13
Table 3.1 Measured daytime $L_{Aeq,T}$, corrected to free-field – L1 Park Farm.....	16
Table 3.2 Measured night-time $L_{Aeq,T}$, corrected to free-field – L1 Park Farm.....	16
Table 3.3 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L1 Park Farm.....	16
Table 3.4 Measured $L_{A10,18h}$ dB, corrected to free-field – L1 Park Farm.....	17
Table 3.5 Measured daytime $L_{Aeq,T}$, corrected to free-field – L2 20 Rookery Close	19
Table 3.6 Measured night-time $L_{Aeq,T}$, corrected to free-field – L2 20 Rookery Close.....	19
Table 3.7 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L2 20 Rookery Close.....	19
Table 3.8 Measured $L_{A10,18h}$ dB, corrected to free-field – L2 20 Rookery Close	20
Table 3.9 Measured Daytime $L_{Aeq,T}$, corrected to free-field – L3 Rowanbank.....	22
Table 3.10 Measured Night-time $L_{Aeq,T}$, corrected to free-field – L3 Rowanbank.....	22
Table 3.11 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L3 Rowanbank	22
Table 3.12 Measured $L_{A10,18h}$ dB, corrected to free-field – L3 Rowanbank.....	23
Table 3.13 Measured daytime $L_{Aeq,T}$, free-field – L4 Little Braxted Mill House.....	25
Table 3.14 Measured night-time $L_{Aeq,T}$, free-field – L4 Little Braxted Mill House.....	25
Table 3.15 Measured evening and weekend $L_{Aeq,T}$, free-field – L4 Little Braxted Mill House	25
Table 3.16 Measured $L_{A10,18h}$ dB, free-field – L4 Little Braxted Mill House.....	26
Table 3.17 Measured daytime $L_{Aeq,T}$, corrected to free-field – L5 7 Wentworth Close	28
Table 3.18 Measured night-time $L_{Aeq,T}$, corrected to free-field – L5 7 Wentworth Close	28
Table 3.19 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L5 7 Wentworth Close	28
Table 3.20 Measured $L_{A10,18h}$ dB, corrected to free-field – L5 7 Wentworth Close	29
Table 3.21 Measured daytime $L_{Aeq,T}$, corrected to free-field – L6 The Firs	31
Table 3.22 Measured night-time $L_{Aeq,T}$, corrected to free-field – L6 The Firs	31
Table 3.23 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L6 The Firs ..	31
Table 3.24 Measured $L_{A10,18h}$ dB, corrected to free-field – L6 The Firs	32
Table 3.25 Measured daytime $L_{Aeq,T}$, free-field – L7 Ewell Hall.....	34
Table 3.26 Measured night-time $L_{Aeq,T}$, free-field – L7 Ewell Hall	34
Table 3.27 Measured evening and weekend $L_{Aeq,T}$, free-field – L7 Ewell Hall	34

Table 3.28 Measured LA _{10,18h} dB, free-field – L7 Ewell Hall.....	35
Table 3.29 Measured Daytime LA _{eq,T} , corrected to free-field – L8 Little Birch Holt Farm ...	37
Table 3.30 Measured night-time LA _{eq,T} , corrected to free-field – L8 Little Birch Holt Farm .	37
Table 3.31 Measured evening and weekend LA _{eq,T} , corrected to free-field – L8 Little Birch Holt Farm	37
Table 3.32 Measured LA _{10,18h} dB, corrected to free-field – L8 Little Birch Holt Farm	38
Table 3.33 Measured daytime LA _{eq,T} , corrected to free-field – L9 2 Prested Hall Farm Cottages	40
Table 3.34 Measured night-time LA _{eq,T} , corrected to free-field – L9 2 Prested Hall Farm Cottages	40
Table 3.35 Measured evening and weekend LA _{eq,T} , corrected to free-field – L9 2 Prested Hall Farm Cottages	40
Table 3.36 Measured LA _{10,18h} dB, corrected to free-field – L9 2 Prested Hall Farm Cottages	41
Table 3.37 Measured daytime LA _{eq,T} , corrected to free-field – L10 Easthorpe Green Farm	43
Table 3.38 Measured night-time LA _{eq,T} , corrected to free-field – L10 Easthorpe Green Farm	43
Table 3.39 Measured evening and weekend LA _{eq,T} , corrected to free-field – L10 Easthorpe Green Farm	43
Table 3.40 Measured LA _{10,18h} dB, corrected to free-field – L10 Easthorpe Green Farm	44
Table 3.41 Measured daytime LA _{eq,T} , free-field – L11 241 London Road	46
Table 3.42 Measured night-time LA _{eq,T} , free-field – L11 241 London Road	46
Table 3.43 Measured evening and weekend LA _{eq,T} , free-field – L11 241 London Road	46
Table 3.44 Measured LA _{10,18h} dB, free-field – L11 241 London Road	47
Table 3.45 Measured daytime LA _{eq,T} , corrected to free-field – L12 2 Burghey Brook Cottages	49
Table 3.46 Measured night-time LA _{eq,T} , corrected to free-field – L12 2 Burghey Brook Cottages	49
Table 3.47 Measured evening and weekend LA _{eq,T} , corrected to free-field – L12 2 Burghey Brook Cottages	49
Table 3.48 Measured LA _{10,18h} dB, corrected to free-field – L12 2 Burghey Brook Cottages	50
Table 3.49 Measured daytime LA _{eq,T} , corrected to free-field – L13 Rose Cottage	52
Table 3.50 Measured night-time LA _{eq,T} , corrected to free-field – L13 Rose Cottage	52
Table 3.51 Measured evening and weekend LA _{eq,T} , corrected to free-field – L13 Rose Cottage	52
Table 3.52 Measured LA _{10,18h} dB, corrected to free-field – L13 Rose Cottage	53
Table 3.53 Measured daytime LA _{eq,T} , corrected to free-field – L15 Davey House	55

Table 3.54 Measured night-time $L_{Aeq,T}$, corrected to free-field – L15 Davey House.....	55
Table 3.55 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L15 Davey House	55
Table 3.56 Measured $L_{A10,18h}$ dB, corrected to free-field – L15 Davey House	56
Table 3.57 Measured daytime $L_{Aeq,T}$, corrected to free-field – L16 Mathcot.....	58
Table 3.58 Measured night-time $L_{Aeq,T}$, corrected to free-field – L16 Mathcot.....	58
Table 3.59 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L16 Mathcot	58
Table 3.60 Measured $L_{A10,18h}$ dB, corrected to free-field – L16 Mathcot.....	59
Table 3.61 Measured daytime $L_{Aeq,T}$, corrected to free-field – L17 Doggetts	61
Table 3.62 Measured Night-time $L_{Aeq,T}$, corrected to free-field – L17 Doggetts	61
Table 3.63 Measured Evening and Weekend $L_{Aeq,T}$, corrected to free-field – L17 Doggetts	61
Table 3.64 Measured $L_{A10,18h}$ dB, corrected to free-field – L17 Doggetts	62
Table 3.65 Measured daytime $L_{Aeq,T}$, corrected to free-field – L18 2 Mill Mead Cottages..	64
Table 3.66 Measured night-time $L_{Aeq,T}$, corrected to free-field – L18 2 Mill Mead Cottages	64
Table 3.67 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L18 2 Mill Mead Cottages	64
Table 3.68 Measured $L_{A10,18h}$ dB, corrected to free-field – L18 2 Mill Mead Cottages.....	65

1 Introduction, survey aims and objectives

- 1.1.1 This appendix describes the baseline noise surveys that have been undertaken to inform the noise assessments that are being submitted as part of this Environmental Statement.
- 1.1.2 The objective of the baseline noise measurements detailed in this appendix is to characterise the existing noise environment near the proposed scheme and collect baseline data to inform the various assessments described in Chapter 12: Noise and vibration, of this Environmental Statement [TR010060/APP/6.1].
- 1.1.3 Proposals regarding the baseline noise survey methodology were described within the Environmental Scoping Report (Highways England, 2020). The Environmental Scoping Report also provided a figure showing the proposed survey locations. Following feedback within the Scoping Opinion (Planning Inspectorate, 2021), the number of proposed survey locations was increased from 11 to 18. These final proposed 18 survey locations are shown on Figure 12.1 [TR010060/APP/6.2]. However, the survey at one location (L14) was not undertaken and the reason why is explained in Section 2 of this appendix.

2 Methodology

2.1 Noise monitoring locations

2.1.1 A number of constraints influenced the choice of measurement locations, including acoustic suitability, ease of access and equipment security. The final locations are detailed in Table 2.1 and presented on Figure 12.1 [TR010060/APP/6.2]. At each measurement location, the equipment was installed on the date shown and left to measure continuously until it was collected.

Table 2.1 Noise measurement locations

ID	Name	Survey dates	Façade or free-field	Observed noise sources, or those informed about by the owners
L1	Park Farm	11/05/21 to 18/05/21	Façade	Some nearby construction noise, swimming pool pump. Vehicles on Inworth Road audible at times.
L2	20 Rookery Close	19/05/21 to 26/05/21	Façade	A12 traffic noise dominant.
L3	Rowanbank	19/05/21 to 26/05/21	Façade	A12 traffic noise dominant. Vehicles on Maldon Road audible at times.
L4	Little Braxted Mill House	20/05/21 to 26/05/21	Free-field	A12 audible and nearby stream. Some bird song.
L5	7 Wentworth Close	19/05/21 to 26/05/21	Façade	A12 traffic noise just audible, nearby construction noise.
L6	The Firs	12/05/21 to 18/05/21	Façade	A12 traffic noise dominant.
L7	Ewell Hall	11/05/21 to 18/05/21	Free-field	A12 traffic noise, garden chickens. Scaffolding being erected on one day but 100m from microphone position.
L8	Little Birch Holt Farm	19/05/21 to 26/05/21	Façade	A12 traffic noise just audible, some bird song.
L9	2 Prested Hall Farm Cottages	11/05/21 to 18/05/21	Façade	A12 traffic noise dominant.
L10	Easthorpe Green Farm	12/05/21 to 19/05/21	Façade	A12 traffic noise dominant, lot of bird song.
L11	241 London Road	12/05/21 to 19/05/21	Free-field	A12 traffic noise dominant, some bird song.

ID	Name	Survey dates	Façade or free-field	Observed noise sources, or those informed about by the owners
L12	2 Burghey Brook Cottages	18/05/21 to 26/05/21	Façade	Extractor on house nearby but no suitable alternative location available to avoid this. Wind chimes, but only just audible above the dominant A12 road traffic noise.
L13	Rose Cottage	18/05/21 to 26/05/21	Façade	Building work at house, cement mixer operating on 18th and 19 th , scaffolding being moved on 21 st and 25 th . A12 just audible, some bird song. Vehicles audible on Braxted Road.
L14	Not used	-	-	-
L15	Davey House	12/05/21 to 19/05/21	Façade	A12 audible and also vehicles using London Road.
L16	Mathcot	18/05/21 to 26/05/21	Façade	A12 road traffic noise dominant. Trains on the Great Eastern Main Line (GEML) were also audible above the traffic noise from the A12.
L17	Doggetts	12/05/21 to 19/05/21	Façade	A12 road traffic just audible.
L18	2 Mill Mead Cottages	20/05/21 to 26/05/21	Façade	A12 and Main Road traffic noise, some bird song.

2.1.2 The rationale for the selection of each survey location is given in Table 2.2. The rationale behind choosing some locations was based upon potential uses of the data during the assessment. Since the survey locations were selected before any assessment for the proposed scheme had been undertaken and without knowledge of the final scheme design, some of measured data may not have been utilised within the assessment as is indicated within Table 2.4.

Table 2.2 Rationale for selection of noise measurement locations

ID	Name	Rationale for selection
L1	Park Farm	Chosen to be representative of the group of receptors in the area around the proposed new junction 24.
L2	20 Rookery Close	Selected to be representative all the receptors within Hatfield Peverel that are directly alongside the A12. This would provide an indication of the highest level of current noise exposure from traffic using the A12.

ID	Name	Rationale for selection
L3	Rowanbank	Selected to be representative the receptors in the immediate vicinity of where Maldon Road passes under the A12. This location is close to where several construction activities will be taking place that have the potential to generate high levels of noise.
L4	Little Braxted Mill House	Chosen to be representative of any location along the route where the receptor is around 400m away from the A12 and in a setting with potentially no dominant noise sources.
L5	7 Wentworth Close	Chosen to be representative of the receptors on the easter side of Hatfield Peverel that are closest to the work for the new junction 21.
L6	The Firs	The Firs was chosen to be representative of the four dwellings in The Drive, Rivenhall End. Once the proposed scheme is open, these four dwellings would experience a noise source on a different façade of the dwelling to that at present and impacts are potentially significant.
L7	Ewell Hall	Selected as being representative of the closest receptors to the north of the bypass within Kelvedon. This is also alongside the existing section of concrete road.
L8	Little Birch Holt Farm	Chosen to be representative of isolated receptors around 1km from the existing A12. Due to an often lack of a dominant noise source at such locations, this was selected in case it was necessary to use a measured noise level as the baseline for the assessment (as opposed to a predicted noise level).
L9	2 Prested Hall Farm Cottages	Selected to be representative of the locations very close to the existing A12 where the proposed scheme would move the main noise source to another façade of the receptor.
L10	Easthorpe Green Farm	Chosen to be representative of any location along the route where the receptor is around 250m away from the A12 and in a setting with potentially no dominant noise sources. In this particular location the proposed scheme would move within 120m of the receptor.
L11	241 London Road	Chosen to provide an indication of the current noise levels at the most exposed receptors within Marks Tey. In addition, selected to provide baseline data for the construction assessment of junction 25.
L12	2 Burghey Brook Cottages	Selected to be representative of the locations very close to the existing A12 where the proposed scheme would move the main noise source to another façade of the receptor. This location is also close to the new junction 22 where noise from construction could at times generate high levels of noise.

ID	Name	Rationale for selection
L13	Rose Cottage	Selected to be representative of the receptors in Rivenhall End where the proposed scheme is moving closer to the receptor. At this location there would also be extensive earthworks during construction.
L15	Davey House	Chosen to be representative of receptors on the western end of Kelvedon.
L16	Mathcot	Selected to be representative of an area of the route where there is very little work taking place or changes planned. If required, this location may provide an indication of the noise level from the GEML.
L17	Doggetts	Chosen to be representative of any location along the route where the receptor is around 250m away from the A12 and in a setting with potentially no dominant noise sources. In this particular location the proposed scheme would move the A12 from the north side of the dwelling to the south side.
L18	2 Mill Mead Cottages	Chosen to be representative of the receptors close to junction 19 where there is planned to be a large amount of construction work.

2.1.3 Some locations were not selected for the completion of baseline noise surveys. While it is not feasible to list every location along the route and provide a justification where a survey was not undertaken, the list below covers some locations where it may have been considered that a noise survey baseline survey should have been undertaken and a rationale of why a baseline survey was not undertaken at that location:

- Boreham, Chelmsford, Colchester, Marks Tey (eastern side). These locations were not included within the selected survey locations as there is not expected to be a noticeable change in noise in these locations from either construction or operation.
- Prested Hall. A survey location was planned at one of the dwellings close to Prested Hall. On the day of the survey the resident was unexpectedly away and it was not possible to install the equipment. It was not possible given time constraints to arrange another location in this area.
- Feering. No survey locations were selected within Feering as there is not expected to be any construction impacts at Feering and once the proposed scheme is completed any impacts are expected to only be beneficial.

2.1.4 Within Section 3 of this appendix, a qualitative characterisation of the sound environment in relation to the A12 has been provided for each location. The inclusion of this is as a result of a request from Public Health England made during the response to the Environmental Scoping Report (Highways England, 2020). This characterisation is based only on the external sound environment. Given there is no guidance in the consideration of a subjective view, this stated characterisation can only be based upon the opinion of the noise consultant

undertaking the noise surveys. The subjective nature of the traffic noise from the A12 on internal noise levels within this dwelling cannot be described without a visit inside the dwelling. This was considered an unnecessary requirement for the overall noise assessment, and any such visit would unlikely be representative of all the dwellings represented by this location.

- 2.1.5 The proposed survey location L14 was known to be a kennels, and was selected due to its proximity to the proposed new junction 21 and the existing junction 21. At both of these junctions there is proposed to be a large amount of construction work. Following a discussion with the owner of the kennels it was discovered that during the planned period of the noise survey there would be a higher than usual number of dogs present at the kennels, and a high proportion of these were police dogs which the survey team were informed tend to bark more than others. For this reason, together with the owner of the kennels not being particularly concerned about noise from the construction or operation of the proposed scheme, the survey was not undertaken as it would have provided unrepresentative measured noise levels. Due to the late stage of the survey planning process it was not possible to arrange an alternative location.

2.2 Noise measurement instrumentation and set-up

- 2.2.1 Ambient noise levels were measured at each location using integrating-averaging Sound Level Meters (SLMs) or equivalent systems conforming to Class 1 as defined by BS EN 61672-1:2013 (British Standards Institution, 2013). Each SLM was field calibrated before the start of each survey by applying an acoustic calibrator conforming to BS EN IEC 60942:2018 (British Standards Institution, 2018) to the microphone to check the sensitivity of the measuring equipment. Calibration checks were also performed at the end of each survey. No significant drift over the survey period was noted at any location.
- 2.2.2 The equipment used for the noise measurements was subject to more extensive performance tests, traceable to primary standards, at accredited independent laboratories within a period of one year prior to use.
- 2.2.3 The microphone height at each survey location was between 1.2m and 1.5m above ground level. To reduce the influence of reflections, where possible the microphone positions were at least 3.5m from any reflecting surface other than the ground for free-field measurements. Where this was not possible, façade measurements were taken, where the microphone was located at 1m from a vertical reflecting surface. Façade noise levels have been corrected to free-field by subtracting 2.5 dB.
- 2.2.4 A suitable foam windshield, conforming to Class 1 of BS 61672-1:2013 (British Standards Institution, 2013) was fitted to each microphone. At each location, the SLM was set to measure using the logging facility with the A-weighting filter.
- 2.2.5 Table 2.3 presents a summary of the noise measurement equipment used at each survey location. A single SLM calibrator was used at each location.

Table 2.3 Noise measurement equipment

Equipment make and model		Serial number	Date of last calibration	Survey location
1	Rion NL-52	00732101	30/03/2021	L1, L12
2	Rion NL-52	01143558	12/01/2021	L2, L17
3	Rion NL-52	00620868	24/02/2021	L3, L15
4	Rion NL-52	00231665	14/10/2020	L5, L10
5	Rion NL-52	00732098	03/03/2021	L6, L13
6	Rion NL-52	00976220	22/09/2020	L7, L18
7	Rion NL-52	01087404	13/04/2021	L8, L11
8	Rion NL-52	00620864	08/01/2021	L9, L16
9	Rion NL-52	00410085	12/01/2021	L4
Acoustic Calibrator Rion NC-75		34825717	07/01/2021	All locations

- 2.2.6 The equipment was installed by persons competent in acoustics who hold either the Institute of Acoustics Certificate of Competence in Environmental Noise Monitoring or the Diploma in Acoustics and Noise Control.

2.3 Weather station instrumentation and set-up

- 2.3.1 A weather station was co-located at measurement locations L7 and L16 that logged rainfall and windspeed. The weather station comprised a Lufft WS600 weather station and was set to provide time stamped data averaged over a one-minute measurement period. The anemometer and rainfall collector were installed at approximately 1.5m above local ground level.
- 2.3.2 The weather station was co-located with the noise measurement equipment at location L7 from 11 May 2021 to 18 May 2021 when it was moved to L16 until the end of the survey period on 26 May 2021.

2.4 Excluded survey data

- 2.4.1 During the entire two week noise survey period there was unavoidably some periods of rainfall and high winds. In these situations the measured noise levels can be unreliable, unrepresentative, or not repeatable. Therefore, some periods from the measured noise data have been removed from the analysis, and these are shown in Table 2.4.
- 2.4.2 The time periods where data has been excluded are due to either rainfall exceeding 0.5 mm in a one-hour period, an average wind exceeding 5 m/s, or a gust above 10 m/s. The noise data within periods of rainfall of less than 0.5 mm were not excluded as it was considered that on a busy road such as the A12, even at night, this amount of rainfall is unlikely to cause a noticeable change to the type / road noise. This decision was based on professional judgement.

2.4.3 A graph showing the measured data is presented in Annex A of this appendix.

Table 2.4 Periods of excluded data due to adverse weather

Date	Time
Thursday 13 May 2021	14:00-22:00
Saturday 15 May 2021	19:00-23:00
Sunday 16 May 2021	09:00-10:00, 20:00-23:00
Monday 17 2021	00:0-01:00, 15:00-16:00
Tuesday 18 2021	17:00-18:00, 21:00-22:00
Wednesday 19 2021	15:00-16:00, 18:00-19:00
Thursday 20 2021	20:00-21:00
Friday 21 2021	07:00-08:00, 10:00-15:00
Saturday 22 2021	00:00-01:00, 03:00-04:00, 06:00-07:00
Sunday 23 2021	12:00-13:00, 14:00-15:00, 20:00-21:00, 22:00-00:00
Monday 24 2021	00:00-01:00, 10:00-12:00, 17:00-18:00

2.5 Data processing methodology

2.5.1 At some locations, particular noise sources were identified that would not be representative of baseline conditions. As such the following periods of data have also been disregarded from the following locations:

- L1, a period of building works on 11 May 2021
- L5, a period of gardening on 22 May 2021, and construction work on 24 May 2021
- L4 and L8, periods of morning birdsong between approximately 04:00 to 06:00
- L11, a period of gardening on 13 May 2021
- L13, building work at the property on 18, 20 and 24 May 2021

2.5.2 The decision on which periods to exclude was based on professional judgement and undertaken by one of the survey team who had visited the survey location and so was aware of the expected noise climate and baseline sources.

2.5.3 The remaining data have been used to derive the baseline statistical noise parameters needed by the guidance and standards which have been used to assess the potential noise effects of the proposed scheme. These standards include:

- Calculation of Road Traffic Noise (CRTN) (Department for Transport and Welsh Office, 1988)
- BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites - Noise (British Standards Institution, 2014).

2.5.4 Following the sift for weather and extraneous noise sources, all remaining data points have been used to calculate noise levels for various daytime and night-time periods. The maximum measured L_{AFmax} is reported in each period, as well as the logarithmic $L_{Aeq,T}$ and statistical average $L_{A90,T}$ and $L_{A10,T}$ dB.

2.5.5 Some of the values are based on data from the full measurement period, while others will be based on reduced datasets because of excluded data.

3 Measurement results

3.1 Location L1 – Park Farm

- 3.1.1 Measurement location L1 was in the grounds of Park Farm, Inworth Road, Kelvedon, in a façade location. Observations of noise sources included the A12 and unavoidable occasional noise from a swimming pool pump. There was also some building work on the adjoining land noted during the installation of the equipment. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was not adversely influenced by the traffic noise from the A12. The location is shown on Plate 3.1.

Plate 3.1 Measurement location L1



- 3.1.2 The measurement results for L1, corrected to free-field, are presented in Tables 3.1 to 3.4. The measurements were carried out for a seven-day period from 11 May 2021 in a façade location. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.1 Measured daytime $L_{Aeq,T}$, corrected to free-field – L1 Park Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	11:35-19:00	Day	51.5	51.7
12/05/2021	Wednesday	07:00-19:00	Day	52.4	
13/05/2021	Thursday	07:00-19:00	Day	45.4	
14/05/2021	Friday	07:00-19:00	Day	54.6	
15/05/2021	Saturday	07:00-13:00	Day	43.0	
17/05/2021	Monday	07:00-19:00	Day	57.7	
18/05/2021	Tuesday	07:00-09:50	Day	57.3	

Table 3.2 Measured night-time $L_{Aeq,T}$, corrected to free-field – L1 Park Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	23:00-07:00	Night	50.6	48.2
12/05/2021	Wednesday	23:00-07:00	Night	41.2	
13/05/2021	Thursday	23:00-07:00	Night	49.6	
14/05/2021	Friday	23:00-07:00	Night	40.1	
15/05/2021	Saturday	23:00-07:00	Night	48.1	
16/05/2021	Sunday	23:00-07:00	Night	54.8	
17/05/2021	Monday	23:00-07:00	Night	53.0	

Table 3.3 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L1 Park Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	19:00-23:00	Evening	50.6	47.5
12/05/2021	Wednesday	19:00-23:00	Evening	42.0	
13/05/2021	Thursday	19:00-23:00	Evening	45.8	
14/05/2021	Friday	19:00-23:00	Evening	44.6	
15/05/2021	Saturday	13:00-23:00	Weekend	43.0	
16/05/2021	Sunday	07:00-23:00	Weekend	53.0	
17/05/2021	Monday	19:00-23:00	Evening	53.3	

Table 3.4 Measured $L_{A10,18h}$ dB, corrected to free-field – L1 Park Farm

Date	Day	Time	$L_{A10,18h}$ dB
11/05/2021	Tuesday	11:35-00:00	51.6
12/05/2021	Wednesday	06:00-00:00	49.7
13/05/2021	Thursday	06:00-00:00	47.3
14/05/2021	Friday	06:00-00:00	52.7
15/05/2021	Saturday	06:00-00:00	44.8
16/05/2021	Sunday	06:00-00:00	53.2
17/05/2021	Monday	06:00-00:00	57.7
18/05/2021	Tuesday	06:00-09:50	58.7
Average weekday $L_{A10,18h}$ dB			53.0

3.2 Location L2 – 20 Rookery Close

- 3.2.1 Measurement location L2 was in the rear garden of 20 Rookery Close, Hatfield Peverel, in a façade location. Traffic on the A12 was identified as the most dominant noise source. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.2.

Plate 3.2 Measurement location L2



- 3.2.2 The measurement results for L2, corrected to free-field, are presented in Tables 3.5 to 3.8. The measurements were carried out for a seven-day period from 19 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.5 Measured daytime $L_{Aeq,T}$, corrected to free-field – L2 20 Rookery Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	13:25-19:00	Day	61.6	62.7
20/05/2021	Thursday	07:00-19:00	Day	63.0	
21/05/2021	Friday	07:00-19:00	Day	63.3	
22/05/2021	Saturday	07:00-13:00	Day	62.6	
24/05/2021	Monday	07:00-19:00	Day	63.1	
25/05/2021	Tuesday	07:00-19:00	Day	63.2	
26/05/2021	Wednesday	07:00-11:45	Day	62.4	

Table 3.6 Measured night-time $L_{Aeq,T}$, corrected to free-field – L2 20 Rookery Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	23:00-07:00	Night	57.9	57.2
20/05/2021	Thursday	23:00-07:00	Night	58.1	
21/05/2021	Friday	23:00-07:00	Night	56.3	
22/05/2021	Saturday	23:00-07:00	Night	54.1	
23/05/2021	Sunday	23:00-07:00	Night	59.0	
24/05/2021	Monday	23:00-07:00	Night	58.2	
25/05/2021	Tuesday	23:00-07:00	Night	56.9	

Table 3.7 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L2 20 Rookery Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	19:00-23:00	Evening	60.4	60.7
20/05/2021	Thursday	19:00-23:00	Evening	60.6	
21/05/2021	Friday	19:00-23:00	Evening	62.1	
22/05/2021	Saturday	13:00-23:00	Weekend	61.1	
23/05/2021	Sunday	07:00-23:00	Weekend	62.1	
24/05/2021	Monday	19:00-23:00	Evening	59.2	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
25/05/2021	Tuesday	19:00-23:00	Evening	59.4	

Table 3.8 Measured L_{A10,18h} dB, corrected to free-field – L2 20 Rookery Close

Date	Day	Time	L _{A10,18h} dB
19/05/2021	Wednesday	13:25-00:00	62.6
20/05/2021	Thursday	06:00-00:00	64.1
21/05/2021	Friday	06:00-00:00	64.2
22/05/2021	Saturday	06:00-00:00	63.3
23/05/2021	Sunday	06:00-00:00	63.5
24/05/2021	Monday	06:00-00:00	63.5
25/05/2021	Tuesday	06:00-00:00	63.7
26/05/2021	Wednesday	06:00-11:45	64.2
Average weekday L _{A10,18h} dB			63.7

3.3 Location L3 – Rowanbank

- 3.3.1 Measurement location L3 was in the rear garden of Rowanbank, Maldon Road, Witham, in a façade location. Traffic on the A12 was identified as the dominant noise source. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.3.

Plate 3.3 Measurement location L3



- 3.3.2 The measurement results for L3, corrected to free-field, are presented in Tables 3.9 to 3.12. The measurements were carried out for a seven-day period from 19 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.9 Measured Daytime $L_{Aeq,T}$, corrected to free-field – L3 Rowanbank

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	12:30-19:00	Day	67.0	67.3
20/05/2021	Thursday	07:00-13:00	Day	66.7	
21/05/2021	Friday	07:00-19:00	Day	67.7	
22/05/2021	Saturday	07:00-19:00	Day	67.3	
24/05/2021	Monday	07:00-19:00	Day	66.8	
25/05/2021	Tuesday	07:00-19:00	Day	67.7	
26/05/2021	Wednesday	07:00-10:55	Day	67.6	

Table 3.10 Measured Night-time $L_{Aeq,T}$, corrected to free-field – L3 Rowanbank

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	23:00-07:00	Night	62.8	61.8
20/05/2021	Thursday	23:00-07:00	Night	62.5	
21/05/2021	Friday	23:00-07:00	Night	60.3	
22/05/2021	Saturday	23:00-07:00	Night	58.0	
23/05/2021	Sunday	23:00-07:00	Night	63.7	
24/05/2021	Monday	23:00-07:00	Night	63.0	
25/05/2021	Tuesday	23:00-07:00	Night	62.6	

Table 3.11 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L3 Rowanbank

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	19:00-23:00	Evening	63.9	64.2
20/05/2021	Thursday	19:00-23:00	Evening	63.9	
21/05/2021	Friday	19:00-23:00	Evening	65.2	
22/05/2021	Saturday	13:00-23:00	Weekend	65.3	
23/05/2021	Sunday	07:00-23:00	Weekend	65.6	
24/05/2021	Monday	19:00-23:00	Evening	62.5	
25/05/2021	Tuesday	19:00-23:00	Evening	63.2	

Table 3.12 Measured $L_{A10,18h}$ dB, corrected to free-field – L3 Rowanbank

Date	Day	Time	$L_{A10,18h}$ dB free-field
19/05/2021	Wednesday	12:30-00:00	67.3
20/05/2021	Thursday	06:00-00:00	68.0
21/05/2021	Friday	06:00-00:00	68.3
22/05/2021	Saturday	06:00-00:00	67.6
23/05/2021	Sunday	06:00-00:00	67.1
24/05/2021	Monday	06:00-00:00	67.4
25/05/2021	Tuesday	06:00-00:00	68.4
26/05/2021	Wednesday	06:00-10:55	69.6
Average weekday $L_{A10,18h}$ dB			68.2

3.4 Location L4 – Little Braxted Mill House

- 3.4.1 Measurement location L4 was in the rear garden of Little Braxted Mill House, Little Braxted Lane, in a free-field location. Observations of noise sources included the A12, water moving through a nearby mill stream and bird song. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was not adversely influenced by the traffic noise from the A12. The location is shown on Plate 3.4.

Plate 3.4 Measurement location L4



- 3.4.2 The measurement results for L4 are presented in Tables 3.13 to 3.16. The measurements were carried out for a six-day period from 20 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.13 Measured daytime $L_{Aeq,T}$, free-field – L4 Little Braxted Mill House

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
20/05/2021	Thursday	10:05-19:00	Day	60.4	59.4
21/05/2021	Friday	07:00-19:00	Day	61.8	
22/05/2021	Saturday	07:00-19:00	Day	57.8	
24/05/2021	Monday	07:00-19:00	Day	58.8	
25/05/2021	Tuesday	07:00-19:00	Day	59.9	
26/05/2021	Wednesday	07:00-10:50	Day	57.8	

Table 3.14 Measured night-time $L_{Aeq,T}$, free-field – L4 Little Braxted Mill House

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
20/05/2021	Thursday	23:00-07:00	Night	57.4	54.9
21/05/2021	Friday	23:00-07:00	Night	54.6	
22/05/2021	Saturday	23:00-07:00	Night	52.2	
23/05/2021	Sunday	23:00-07:00	Night	56.3	
24/05/2021	Monday	23:00-07:00	Night	55.6	
25/05/2021	Tuesday	23:00-07:00	Night	53.4	

Table 3.15 Measured evening and weekend $L_{Aeq,T}$, free-field – L4 Little Braxted Mill House

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
20/05/2021	Thursday	19:00-23:00	Evening	58.2	56.6
21/05/2021	Friday	19:00-23:00	Evening	59.0	
22/05/2021	Saturday	13:00-23:00	Weekend	55.4	
23/05/2021	Sunday	07:00-23:00	Weekend	58.3	
24/05/2021	Monday	19:00-23:00	Evening	53.1	
25/05/2021	Tuesday	19:00-23:00	Evening	55.7	

Table 3.16 Measured $L_{A10,18h}$ dB, free-field – L4 Little Braxted Mill House

Date	Day	Time	$L_{A10,18h}$ dB free-field
20/05/2021	Thursday	10:05-00:00	61.1
21/05/2021	Friday	06:00-00:00	61.7
22/05/2021	Saturday	06:00-00:00	57.1
23/05/2021	Sunday	06:00-00:00	59.4
24/05/2021	Monday	06:00-00:00	57.9
25/05/2021	Tuesday	06:00-00:00	59.8
26/05/2021	Wednesday	06:00-10:50	58.7
Average weekday $L_{A10,18h}$ dB			59.8

3.5 Location L5 – 7 Wentworth Close

- 3.5.1 Measurement location L5 was in the rear garden of 7 Wentworth Close, Hatfield Peverel, in a façade location. Observations of noise sources included traffic noise from the A12 and building work on the adjoining land. Subjectively, it was considered that traffic noise from the A12 was one of the sources contributing to the noise climate at this location (and those considered representative of this location), and would not alone adversely influence the enjoyment of the location. The location is shown on Plate 3.5.

Plate 3.5 Measurement location L5



- 3.5.2 The measurement results for L5, corrected to free-field, are presented in Tables 3.17 to 3.20. The measurements were carried out for a seven-day period from 19 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.17 Measured daytime $L_{Aeq,T}$, corrected to free-field – L5 7 Wentworth Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	12:55-19:00	Day	57.6	57.1
20/05/2021	Thursday	07:00-19:00	Day	54.7	
21/05/2021	Friday	07:00-19:00	Day	59.0	
22/05/2021	Saturday	07:00-19:00	Day	57.6	
24/05/2021	Monday	07:00-19:00	Day	54.4	
25/05/2021	Tuesday	07:00-19:00	Day	59.5	
26/05/2021	Wednesday	07:00-11:20	Day	56.8	

Table 3.18 Measured night-time $L_{Aeq,T}$, corrected to free-field – L5 7 Wentworth Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	23:00-07:00	Night	49.9	50.2
20/05/2021	Thursday	23:00-07:00	Night	52.6	
21/05/2021	Friday	23:00-07:00	Night	51.3	
22/05/2021	Saturday	23:00-07:00	Night	46.2	
23/05/2021	Sunday	23:00-07:00	Night	49.8	
24/05/2021	Monday	23:00-07:00	Night	51.9	
25/05/2021	Tuesday	23:00-07:00	Night	49.9	

Table 3.19 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L5 7 Wentworth Close

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	19:00-23:00	Evening	54.0	54.2
20/05/2021	Thursday	19:00-23:00	Evening	54.6	
21/05/2021	Friday	19:00-23:00	Evening	57.7	
22/05/2021	Saturday	13:00-23:00	Weekend	54.8	
23/05/2021	Sunday	07:00-23:00	Weekend	53.6	
24/05/2021	Monday	19:00-23:00	Evening	51.1	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
25/05/2021	Tuesday	19:00-23:00	Evening	53.4	

Table 3.20 Measured L_{A10,18h} dB, corrected to free-field – L5 7 Wentworth Close

Date	Day	Time	L _{A10,18h} dB free-field
19/05/2021	Wednesday	12:55-00:00	56.4
20/05/2021	Thursday	06:00-00:00	55.9
21/05/2021	Friday	06:00-00:00	59.5
22/05/2021	Saturday	06:00-00:00	56.3
23/05/2021	Sunday	06:00-00:00	54.1
24/05/2021	Monday	06:00-00:00	54.3
25/05/2021	Tuesday	06:00-00:00	58.7
26/05/2021	Wednesday	06:00-11:10	57.9
Average weekday L _{A10,18h} dB			57.1

3.6 Location L6 – The Firs

- 3.6.1 Measurement location L6 was at the front of The Firs, The Drive, Rivenhall End, in a façade location. Traffic on the A12 was identified as the most dominant noise source. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.6.

Plate 3.6 Measurement location L6



- 3.6.2 The measurement results for L6, corrected to free-field, are presented in Tables 3.21 to 3.24. The measurements were carried out for a six-day period from 12 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.21 Measured daytime $L_{Aeq,T}$, corrected to free-field – L6 The Firs

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	12:20-19:00	Day	53.4	54.0
13/05/2021	Thursday	07:00-19:00	Day	53.4	
14/05/2021	Friday	07:00-19:00	Day	54.6	
15/05/2021	Saturday	07:00-13:00	Day	53.2	
17/05/2021	Monday	07:00-19:00	Day	54.6	
18/05/2021	Tuesday	07:00-10:40	Day	54.8	

Table 3.22 Measured night-time $L_{Aeq,T}$, corrected to free-field – L6 The Firs

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	23:00-07:00	Night	49.7	49.7
13/05/2021	Thursday	23:00-07:00	Night	51.3	
14/05/2021	Friday	23:00-07:00	Night	47.2	
15/05/2021	Saturday	23:00-07:00	Night	47.2	
16/05/2021	Sunday	23:00-07:00	Night	52.1	
17/05/2021	Monday	23:00-07:00	Night	50.7	

Table 3.23 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L6 The Firs

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	19:00-23:00	Evening	50.7	51.2
13/05/2021	Thursday	19:00-23:00	Evening	49.2	
14/05/2021	Friday	19:00-23:00	Evening	50.0	
15/05/2021	Saturday	13:00-23:00	Weekend	52.3	
16/05/2021	Sunday	07:00-23:00	Weekend	53.7	
17/05/2021	Monday	19:00-23:00	Evening	51.3	

Table 3.24 Measured $L_{A10,18h}$ dB, corrected to free-field – L6 The Firs

Date	Day	Time	$L_{A10,18h}$ dB free-field
12/05/2021	Wednesday	12:20-00:00	54.1
13/05/2021	Thursday	06:00-00:00	55.1
14/05/2021	Friday	06:00-00:00	55.7
15/05/2021	Saturday	06:00-00:00	54.8
16/05/2021	Sunday	06:00-00:00	55.3
17/05/2021	Monday	06:00-00:00	56.0
18/05/2021	Tuesday	06:00-10:40	57.2
Average weekday $L_{A10,18h}$ dB			55.7

3.7 Location L7 – Ewell Hall

- 3.7.1 Measurement location L7 was in the rear garden of Ewell Hall, Ewell Hall Chase, Kelvedon, in a free-field location. Observations of noise sources included the A12 and free-range chicken clucking in the garden. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.7.

Plate 3.7 Measurement location L7



- 3.7.2 The measurement results for L7 are presented in Tables 3.25 to 3.28. The measurements were carried out for a seven-day period from 12 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.25 Measured daytime $L_{Aeq,T}$, free-field – L7 Ewell Hall

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	12:10-19:00	Day	62.1	58.0
12/05/2021	Wednesday	07:00-19:00	Day	60.4	
13/05/2021	Thursday	07:00-19:00	Day	59.8	
14/05/2021	Friday	07:00-19:00	Day	54.7	
15/05/2021	Saturday	07:00-13:00	Day	59.1	
17/05/2021	Monday	07:00-19:00	Day	53.8	
18/05/2021	Tuesday	07:00-10:20	Day	55.9	

Table 3.26 Measured night-time $L_{Aeq,T}$, free-field – L7 Ewell Hall

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	23:00-07:00	Night	58.4	53.8
12/05/2021	Wednesday	23:00-07:00	Night	56.1	
13/05/2021	Thursday	23:00-07:00	Night	52.8	
14/05/2021	Friday	23:00-07:00	Night	51.5	
15/05/2021	Saturday	23:00-07:00	Night	51.7	
16/05/2021	Sunday	23:00-07:00	Night	52.3	
17/05/2021	Monday	23:00-07:00	Night	54.0	

Table 3.27 Measured evening and weekend $L_{Aeq,T}$, free-field – L7 Ewell Hall

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	19:00-23:00	Evening	59.9	55.2
12/05/2021	Wednesday	19:00-23:00	Evening	55.9	
13/05/2021	Thursday	19:00-23:00	Evening	49.8	
14/05/2021	Friday	19:00-23:00	Evening	53.3	
15/05/2021	Saturday	13:00-23:00	Weekend	54.6	
16/05/2021	Sunday	07:00-23:00	Weekend	57.4	
17/05/2021	Monday	19:00-23:00	Evening	55.5	

Table 3.28 Measured L_{A10,18h} dB, free-field – L7 Ewell Hall

Date	Day	Time	L _{A10,18h} dB free-field
11/05/2021	Tuesday	12:10-00:00	62.0
12/05/2021	Wednesday	06:00-00:00	60.3
13/05/2021	Thursday	06:00-00:00	59.5
14/05/2021	Friday	06:00-00:00	55.3
15/05/2021	Saturday	06:00-00:00	58.6
16/05/2021	Sunday	06:00-00:00	58.4
17/05/2021	Monday	06:00-00:00	55.3
18/05/2021	Tuesday	06:00-10:20	56.9
Average weekday L _{A10,18h} dB			58.7

3.8 Location L8 – Little Birch Holt Farm

- 3.8.1 Measurement location L8 was alongside the garage complex of Little Birch Holt Farm, Easthorpe, in a façade location. Observations of noise sources included the A12 heard from the distance and bird song. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was not adversely influenced by the traffic noise from the A12. The location is shown on Plate 3.8.

Plate 3.8 Measurement location L8



- 3.8.2 The measurement results for L8, corrected to free-field, are presented in Tables 3.29 to 3.32. The measurements were carried out for a seven-day period from 19 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.29 Measured Daytime $L_{Aeq,T}$, corrected to free-field – L8 Little Birch Holt Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	10:45-19:00	Day	43.6	45.8
20/05/2021	Thursday	07:00-13:00	Day	38.6	
21/05/2021	Friday	07:00-19:00	Day	43.1	
22/05/2021	Saturday	07:00-19:00	Day	44.8	
24/05/2021	Monday	07:00-19:00	Day	40.0	
25/05/2021	Tuesday	07:00-19:00	Day	44.0	
26/05/2021	Wednesday	07:00-11:40	Day	45.3	

Table 3.30 Measured night-time $L_{Aeq,T}$, corrected to free-field – L8 Little Birch Holt Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	23:00-07:00	Night	41.9	40.5
20/05/2021	Thursday	23:00-07:00	Night	37.8	
21/05/2021	Friday	23:00-07:00	Night	42.9	
22/05/2021	Saturday	23:00-07:00	Night	37.6	
23/05/2021	Sunday	23:00-07:00	Night	38.1	
24/05/2021	Monday	23:00-07:00	Night	41.1	
25/05/2021	Tuesday	23:00-07:00	Night	43.8	

Table 3.31 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L8 Little Birch Holt Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
19/05/2021	Wednesday	19:00-23:00	Evening	42.5	41.1
20/05/2021	Thursday	19:00-23:00	Evening	39.5	
21/05/2021	Friday	19:00-23:00	Evening	40.8	
22/05/2021	Saturday	13:00-23:00	Weekend	43.6	
23/05/2021	Sunday	07:00-23:00	Weekend	38.4	
24/05/2021	Monday	19:00-23:00	Evening	40.3	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
25/05/2021	Tuesday	19:00-23:00	Evening	42.8	

Table 3.32 Measured L_{A10,18h} dB, corrected to free-field – L8 Little Birch Holt Farm

Date	Day	Time	L _{A10,18h} dB free-field
19/05/2021	Wednesday	10:45-00:00	51.2
20/05/2021	Thursday	06:00-00:00	47.5
21/05/2021	Friday	06:00-00:00	50.6
22/05/2021	Saturday	06:00-00:00	52.0
23/05/2021	Sunday	06:00-00:00	47.0
24/05/2021	Monday	06:00-00:00	48.0
25/05/2021	Tuesday	06:00-0950	51.7
26/05/2021	Wednesday	06:00-11:40	54.1
Average weekday L _{A10,18h} dB			50.5

3.9 Location L9 – 2 Prested Hall Farm Cottages

- 3.9.1 Measurement location L9 was in the rear garden of 2 Prested Hall Farm Cottages, London Road, Feering, in a façade location. Traffic on the A12 was identified as the most dominant noise source. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.9.

Plate 3.9 Measurement location L9



- 3.9.2 The measurement results for L9, corrected to free-field, are presented in Tables 3.33 to 3.36. The measurements were carried out for a seven-day period from 11 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.33 Measured daytime $L_{Aeq,T}$, corrected to free-field – L9 2 Prested Hall Farm Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	10:30-19:00	Day	57.8	59.5
12/05/2021	Wednesday	07:00-19:00	Day	58.7	
13/05/2021	Thursday	07:00-19:00	Day	59.1	
14/05/2021	Friday	07:00-19:00	Day	60.8	
15/05/2021	Saturday	07:00-13:00	Day	58.2	
17/05/2021	Monday	07:00-19:00	Day	60.7	
18/05/2021	Tuesday	07:00-0930	Day	61.3	

Table 3.34 Measured night-time $L_{Aeq,T}$, corrected to free-field – L9 2 Prested Hall Farm Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	23:00-07:00	Night	55.3	54.9
12/05/2021	Wednesday	23:00-07:00	Night	54.9	
13/05/2021	Thursday	23:00-07:00	Night	57.2	
14/05/2021	Friday	23:00-07:00	Night	51.8	
15/05/2021	Saturday	23:00-07:00	Night	51.3	
16/05/2021	Sunday	23:00-07:00	Night	57.6	
17/05/2021	Monday	23:00-07:00	Night	56.4	

Table 3.35 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L9 2 Prested Hall Farm Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
11/05/2021	Tuesday	19:00-23:00	Evening	55.8	56.4
12/05/2021	Wednesday	19:00-23:00	Evening	55.0	
13/05/2021	Thursday	19:00-23:00	Evening	55.2	
14/05/2021	Friday	19:00-23:00	Evening	55.8	
15/05/2021	Saturday	13:00-23:00	Weekend	57.6	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
16/05/2021	Sunday	07:00-23:00	Weekend	58.7	
17/05/2021	Monday	19:00-23:00	Evening	56.7	

Table 3.36 Measured L_{A10,18h} dB, corrected to free-field – L9 2 Prested Hall Farm Cottages

Date	Day	Time	L _{A10,18h} dB free-field
11/05/2021	Tuesday	10:30-00:00	58.6
12/05/2021	Wednesday	06:00-00:00	59.2
13/05/2021	Thursday	06:00-00:00	60.2
14/05/2021	Friday	06:00-00:00	61.1
15/05/2021	Saturday	06:00-00:00	59.4
16/05/2021	Sunday	06:00-00:00	59.7
17/05/2021	Monday	06:00-00:00	61.2
18/05/2021	Tuesday	06:00-09:30	62.7
Average weekday L _{A10,18h} dB			60.5

3.10 Location L10 – Easthorpe Green Farm

- 3.10.1 Measurement location L10 was at the front of Easthorpe Green Farm, Easthorpe Green, in a façade location. Observations of noise sources included traffic on the A12 and bird song. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was not adversely influenced by the traffic noise from the A12. The location is shown on Plate 3.10.

Plate 3.10 Measurement location L10



- 3.10.2 The measurement results for L10, corrected to free-field, are presented in Tables 3.37 to 3.40. The measurements were carried out for a seven day period from 12 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.37 Measured daytime $L_{Aeq,T}$, corrected to free-field – L10 Easthorpe Green Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	10:55-19:00	Day	47.9	52.8
13/05/2021	Thursday	07:00-19:00	Day	51.1	
14/05/2021	Friday	07:00-19:00	Day	57.6	
15/05/2021	Saturday	07:00-13:00	Day	47.0	
17/05/2021	Monday	07:00-19:00	Day	57.9	
18/05/2021	Tuesday	07:00-19:00	Day	53.7	
19/05/2021	Wednesday	07:00-09:50	Day	54.5	

Table 3.38 Measured night-time $L_{Aeq,T}$, corrected to free-field – L10 Easthorpe Green Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	23:00-07:00	Night	50.8	50.4
13/05/2021	Thursday	23:00-07:00	Night	55.3	
14/05/2021	Friday	23:00-07:00	Night	43.6	
15/05/2021	Saturday	23:00-07:00	Night	46.4	
16/05/2021	Sunday	23:00-07:00	Night	56.6	
17/05/2021	Monday	23:00-07:00	Night	51.0	
18/05/2021	Tuesday	23:00-07:00	Night	49.0	

Table 3.39 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L10 Easthorpe Green Farm

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	19:00-23:00	Evening	47.8	49.4
13/05/2021	Thursday	19:00-23:00	Evening	51.8	
14/05/2021	Friday	19:00-23:00	Evening	48.1	
15/05/2021	Saturday	13:00-23:00	Weekend	45.5	
16/05/2021	Sunday	07:00-23:00	Weekend	50.4	
17/05/2021	Monday	19:00-23:00	Evening	52.6	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
18/05/2021	Tuesday	19:00-23:00	Evening	49.3	

Table 3.40 Measured L_{A10,18h} dB, corrected to free-field – L10 Easthorpe Green Farm

Date	Day	Time	L _{A10,18h} dB free-field
12/05/2021	Wednesday	10:55-00:00	48.8
13/05/2021	Thursday	06:00-00:00	52.3
14/05/2021	Friday	06:00-00:00	55.6
15/05/2021	Saturday	06:00-00:00	47.9
16/05/2021	Sunday	06:00-00:00	51.0
17/05/2021	Monday	06:00-00:00	56.7
18/05/2021	Tuesday	06:00-00:00	53.5
19/05/2021	Wednesday	06:00-10:05	55.2
Average weekday L _{A10,18h} dB			53.7

3.11 Location L11 – 241 London Road

- 3.11.1 Measurement location L11 was in the rear garden of 241 London Road, Marks Tey, in a free-field location. Traffic on the A12 was identified as the most dominant noise source. Bird song was also heard. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.11.

Plate 3.11 Measurement location L11



- 3.11.2 The measurement results for L11 are presented in Tables 3.41 to 3.44. The measurements were carried out for a seven-day period from 12 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.41 Measured daytime $L_{Aeq,T}$, free-field – L11 241 London Road

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	11:35-19:00	Day	66.2	66.2
13/05/2021	Thursday	07:00-19:00	Day	62.4	
14/05/2021	Friday	07:00-19:00	Day	65.8	
15/05/2021	Saturday	07:00-13:00	Day	62.6	
17/05/2021	Monday	07:00-19:00	Day	68.2	
18/05/2021	Tuesday	07:00-19:00	Day	68.8	
19/05/2021	Wednesday	07:00-09:50	Day	69.2	

Table 3.42 Measured night-time $L_{Aeq,T}$, free-field – L11 241 London Road

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	23:00-07:00	Night	58.5	61.4
13/05/2021	Thursday	23:00-07:00	Night	60.1	
14/05/2021	Friday	23:00-07:00	Night	58.0	
15/05/2021	Saturday	23:00-07:00	Night	60.4	
16/05/2021	Sunday	23:00-07:00	Night	64.5	
17/05/2021	Monday	23:00-07:00	Night	64.6	
18/05/2021	Tuesday	23:00-07:00	Night	63.7	

Table 3.43 Measured evening and weekend $L_{Aeq,T}$, free-field – L11 241 London Road

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	19:00-23:00	Evening	60.7	62.5
13/05/2021	Thursday	19:00-23:00	Evening	57.9	
14/05/2021	Friday	19:00-23:00	Evening	62.8	
15/05/2021	Saturday	13:00-23:00	Weekend	62.7	
16/05/2021	Sunday	07:00-23:00	Weekend	68.3	
17/05/2021	Monday	07:00-23:00	Evening	65.5	
18/05/2021	Tuesday	19:00-23:00	Evening	65.4	

Table 3.44 Measured L_{A10,18h} dB, free-field – L11 241 London Road

Date	Day	Time	L _{A10,18h} dB free-field
12/05/2021	Wednesday	11:35-00:00	65.8
13/05/2021	Thursday	06:00-00:00	63.7
14/05/2021	Friday	06:00-00:00	66.5
15/05/2021	Saturday	06:00-00:00	64.5
16/05/2021	Sunday	06:00-00:00	69
17/05/2021	Monday	06:00-00:00	69.2
18/05/2021	Tuesday	06:00-00:00	69.6
19/05/2021	Wednesday	06:00-09:50	70.6
Average weekday L _{A10,18h} dB			67.6

3.12 Location L12 – 2 Burghey Brook Cottages

- 3.12.1 Measurement location L12 was in the rear garden of 2 Burghey Brook Cottages, London Road, in a façade location. Traffic on the A12 was identified as the most dominant noise source. Noise from the nearby extractor on the rear of the property was also heard but there was no other suitable measurement location. There were also several wind chimes nearby but these were not audible above the road traffic noise. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was dominated by traffic noise from the A12 which could adversely influence the enjoyment of the location. The location is shown on Plate 3.12.

Plate 3.12 Measurement location L12



- 3.12.2 The measurement results for L12, corrected to free-field, are presented in Tables 3.45 to 3.48. The measurements were carried out for a seven-day period from 18 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.45 Measured daytime $L_{Aeq,T}$, corrected to free-field – L12 2 Burghey Brook Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	11:40-19:00	Day	60.3	60.5
19/05/2021	Wednesday	07:00-19:00	Day	62.5	
20/05/2021	Thursday	07:00-13:00	Day	59.2	
21/05/2021	Friday	07:00-19:00	Day	58.9	
22/05/2021	Saturday	07:00-19:00	Day	61.1	
24/05/2021	Monday	07:00-19:00	Day	59.5	
25/05/2021	Tuesday	07:00-19:00	Day	60.6	
26/05/2021	Wednesday	07:00-11:25	Day	61.7	

Table 3.46 Measured night-time $L_{Aeq,T}$, corrected to free-field – L12 2 Burghey Brook Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	23:00-07:00	Night	58.4	56.4
19/05/2021	Wednesday	23:00-07:00	Night	57.3	
20/05/2021	Thursday	23:00-07:00	Night	55.1	
21/05/2021	Friday	23:00-07:00	Night	55.5	
22/05/2021	Saturday	23:00-07:00	Night	50.9	
23/05/2021	Sunday	23:00-07:00	Night	58.5	
24/05/2021	Monday	23:00-07:00	Night	57.1	
25/05/2021	Tuesday	23:00-07:00	Night	58.0	

Table 3.47 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L12 2 Burghey Brook Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	19:00-23:00	Evening	58.3	57.4
19/05/2021	Wednesday	19:00-23:00	Evening	58.6	
20/05/2021	Thursday	19:00-23:00	Evening	56.8	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
21/05/2021	Friday	19:00-23:00	Evening	56.3	
22/05/2021	Saturday	13:00-23:00	Weekend	58.3	
23/05/2021	Sunday	07:00-23:00	Weekend	57.2	
24/05/2021	Monday	19:00-23:00	Evening	57.1	
25/05/2021	Tuesday	19:00-23:00	Evening	56.5	

Table 3.48 Measured L_{A10,18h} dB, corrected to free-field – L12 2 Burghey Brook Cottages

Date	Day	Time	L _{A10,18h} dB free-field
18/05/2021	Tuesday	11:40-00:00	61.7
19/05/2021	Wednesday	06:00-00:00	63.3
20/05/2021	Thursday	06:00-00:00	60.9
21/05/2021	Friday	06:00-00:00	59.9
22/05/2021	Saturday	06:00-00:00	61.0
23/05/2021	Sunday	06:00-00:00	59.1
24/05/2021	Monday	06:00-00:00	61.1
25/05/2021	Tuesday	06:00-00:00	61.8
26/05/2021	Wednesday	06:00-11:25	63.8
Average weekday L _{A10,18h} dB			61.8

3.13 Location L13 – Rose Cottage

- 3.13.1 Measurement location L13 was adjacent to the north-western façade of Rose Cottage, Braxted Road, in a façade location. Observations of noise sources included the A12 and bird song. Noise from buildings works carried out at this property was also likely to be measured, such as the cement mixer nearby operating on 18 May 2021 and possibly 19 May 2021 and scaffolding likely to be moved on 21 May 2021 and taken down on 25 May 2021. Subjectively it was considered that traffic noise from the A12 was one of the sources contributing to the noise climate at this location (and those considered representative of this location) and would not alone adversely influence the enjoyment of the location. The location is shown on Plate 3.13.

Plate 3.13 Measurement Location L13



- 3.13.2 The measurement results for L13, corrected to free-field, are presented in Tables 3.49 to 3.52. The measurements were carried out for a seven-day period from 18 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.49 Measured daytime $L_{Aeq,T}$, corrected to free-field – L13 Rose Cottage

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	11:20-19:00	Day	55.7	55.9
19/05/2021	Wednesday	07:00-19:00	Day	55.3	
20/05/2021	Thursday	07:00-13:00	Day	54.7	
21/05/2021	Friday	07:00-19:00	Day	59.3	
22/05/2021	Saturday	07:00-19:00	Day	56.3	
24/05/2021	Monday	07:00-19:00	Day	53.9	
25/05/2021	Tuesday	07:00-19:00	Day	56.6	
26/05/2021	Wednesday	07:00-10:10	Day	55.8	

Table 3.50 Measured night-time $L_{Aeq,T}$, corrected to free-field – L13 Rose Cottage

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	23:00-07:00	Night	50.5	51.3
19/05/2021	Wednesday	23:00-07:00	Night	51.5	
20/05/2021	Thursday	23:00-07:00	Night	53.7	
21/05/2021	Friday	23:00-07:00	Night	50.9	
22/05/2021	Saturday	23:00-07:00	Night	48.9	
23/05/2021	Sunday	23:00-07:00	Night	51.4	
24/05/2021	Monday	23:00-07:00	Night	52.3	
25/05/2021	Tuesday	23:00-07:00	Night	51.0	

Table 3.51 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L13 Rose Cottage

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	19:00-23:00	Evening	52.4	52.9
19/05/2021	Wednesday	19:00-23:00	Evening	52.1	
20/05/2021	Thursday	19:00-23:00	Evening	54.7	
21/05/2021	Friday	19:00-23:00	Evening	54.7	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
22/05/2021	Saturday	13:00-23:00	Weekend	52.8	
23/05/2021	Sunday	07:00-23:00	Weekend	53.4	
24/05/2021	Monday	19:00-23:00	Evening	51.1	
25/05/2021	Tuesday	19:00-23:00	Evening	51.7	

Table 3.52 Measured L_{A10,18h} dB, corrected to free-field – L13 Rose Cottage

Date	Day	Time	L _{A10,18h} dB free-field
18/05/2021	Tuesday	11:20-00:00	55.4
19/05/2021	Wednesday	06:00-00:00	55.5
20/05/2021	Thursday	06:00-00:00	56.6
21/05/2021	Friday	06:00-00:00	58.4
22/05/2021	Saturday	06:00-00:00	55.1
23/05/2021	Sunday	06:00-00:00	55.2
24/05/2021	Monday	06:00-00:00	54.5
25/05/2021	Tuesday	06:00-0950	56.2
26/05/2021	Wednesday	06:00-10:10	57.0
Average weekday L _{A10,18h} dB			56.2

3.14 Location L15 – Davey House

- 3.14.1 Measurement location L15 was in the rear garden of Davey House, London Road, Kelvedon, in a façade location. Traffic on the A12 and other local roads was identified as the most dominant noise source. Subjectively it was considered that traffic noise from the A12 was one of the sources contributing to the noise climate at this location (and those considered representative of this location) and would not alone adversely influence the enjoyment of the location. The location is shown on Plate 3.14.

Plate 3.14 Measurement location L15



- 3.14.2 The measurement results for L15, corrected to free-field, are presented in Tables 3.53 to 3.56. The measurements were carried out for a seven-day period from 12 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.53 Measured daytime $L_{Aeq,T}$, corrected to free-field – L15 Davey House

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	11:50-19:00	Day	58.5	54.8
13/05/2021	Thursday	07:00-19:00	Day	57.3	
14/05/2021	Friday	07:00-19:00	Day	51.5	
15/05/2021	Saturday	07:00-13:00	Day	58.4	
17/05/2021	Monday	07:00-19:00	Day	51.8	
18/05/2021	Tuesday	07:00-19:00	Day	54.4	
19/05/2021	Wednesday	07:00-11:25	Day	51.6	

Table 3.54 Measured night-time $L_{Aeq,T}$, corrected to free-field – L15 Davey House

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	23:00-07:00	Night	50.8	49.7
13/05/2021	Thursday	23:00-07:00	Night	47.5	
14/05/2021	Friday	23:00-07:00	Night	49.8	
15/05/2021	Saturday	23:00-07:00	Night	49.1	
16/05/2021	Sunday	23:00-07:00	Night	48.1	
17/05/2021	Monday	23:00-07:00	Night	51.8	
18/05/2021	Tuesday	23:00-07:00	Night	50.6	

Table 3.55 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L15 Davey House

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	19:00-23:00	Evening	55.2	52.7
13/05/2021	Thursday	19:00-23:00	Evening	44.7	
14/05/2021	Friday	19:00-23:00	Evening	51.3	
15/05/2021	Saturday	13:00-23:00	Weekend	55.6	
16/05/2021	Sunday	07:00-23:00	Weekend	56.2	
17/05/2021	Monday	19:00-23:00	Evening	52.6	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
18/05/2021	Tuesday	19:00-23:00	Evening	53.3	

Table 3.56 Measured L_{A10,18h} dB, corrected to free-field – L15 Davey House

Date	Day	Time	L _{A10,18h} dB free-field
12/05/2021	Wednesday	11:50-00:00	58.4
13/05/2021	Thursday	06:00-00:00	56.4
14/05/2021	Friday	06:00-00:00	52.8
15/05/2021	Saturday	06:00-00:00	58.1
16/05/2021	Sunday	06:00-00:00	56.1
17/05/2021	Monday	06:00-00:00	53.3
18/05/2021	Tuesday	06:00-00:00	55.3
19/05/2021	Wednesday	06:00-11:25	53.5
Average weekday L _{A10,18h} dB			55.0

3.15 Location L16 – Mathcot

- 3.15.1 Measurement location L16 was in the rear garden of Mathcot, Chantry Lane, Boreham, in a façade location. Traffic on the A12 was identified as the most dominant noise source. Noise from trains on the GEML were audible above the noise from the A12. Subjectively it was considered that traffic noise from the A12 was one of the sources contributing to the noise climate at this location (and those considered representative of this location) and would not alone adversely influence the enjoyment of the location. The location is shown on Plate 3.15.

Plate 3.15 Measurement location L16



- 3.15.2 The measurement results for L16, corrected to free-field, are presented in Tables 3.57 to 3.60. The measurements were carried out for a seven-day period from 18 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.57 Measured daytime $L_{Aeq,T}$, corrected to free-field – L16 Mathcot

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	12:40-19:00	Day	56.1	57.7
19/05/2021	Wednesday	07:00-19:00	Day	52.3	
20/05/2021	Thursday	07:00-13:00	Day	63.2	
21/05/2021	Friday	07:00-19:00	Day	61.6	
22/05/2021	Saturday	07:00-19:00	Day	54.7	
24/05/2021	Monday	07:00-19:00	Day	61.1	
25/05/2021	Tuesday	07:00-19:00	Day	58.3	
26/05/2021	Wednesday	07:00-11:55	Day	54.3	

Table 3.58 Measured night-time $L_{Aeq,T}$, corrected to free-field – L16 Mathcot

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	23:00-07:00	Night	53.3	54.1
19/05/2021	Wednesday	23:00-07:00	Night	55.7	
20/05/2021	Thursday	23:00-07:00	Night	57.3	
21/05/2021	Friday	23:00-07:00	Night	54.8	
22/05/2021	Saturday	23:00-07:00	Night	50.2	
23/05/2021	Sunday	23:00-07:00	Night	56.4	
24/05/2021	Monday	23:00-07:00	Night	54.6	
25/05/2021	Tuesday	23:00-07:00	Night	50.9	

Table 3.59 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L16 Mathcot

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
18/05/2021	Tuesday	19:00-23:00	Evening	57.2	57.3
19/05/2021	Wednesday	19:00-23:00	Evening	55.5	
20/05/2021	Thursday	19:00-23:00	Evening	60.3	
21/05/2021	Friday	19:00-23:00	Evening	60.4	
22/05/2021	Saturday	13:00-23:00	Weekend	53.4	

Date	Day	Time	Period	L _{Aeq,T} dB	
				Daily	Period average
23/05/2021	Sunday	07:00-23:00	Weekend	61.7	
24/05/2021	Monday	19:00-23:00	Evening	53.5	
25/05/2021	Tuesday	19:00-23:00	Evening	56.7	

Table 3.60 Measured L_{A10,18h} dB, corrected to free-field – L16 Mathcot

Date	Day	Time	L _{A10,18h} dB free-field
18/05/2021	Tuesday	12:40-00:00	57.5
19/05/2021	Wednesday	06:00-00:00	54.1
20/05/2021	Thursday	06:00-00:00	63.4
21/05/2021	Friday	06:00-00:00	62.6
22/05/2021	Saturday	06:00-00:00	54.8
23/05/2021	Sunday	06:00-00:00	62.2
24/05/2021	Monday	06:00-00:00	59.2
25/05/2021	Tuesday	06:00-0950	59.1
26/05/2021	Wednesday	06:00-11:55	55.8
Average weekday L _{A10,18h} dB			58.8

3.16 Location L17 – Doggetts

- 3.16.1 Measurement location L17 was adjacent to the south façade of Doggetts, Potts Green, in a façade location. Traffic on the A12 was audible. Subjectively it was considered that the noise climate at this location (and those considered representative of this location) was not adversely influenced by the traffic noise from the A12. The location is shown on Plate 3.16.

Plate 3.16 Measurement location L17



- 3.16.2 The measurement results for L17, corrected to free-field, are presented in Tables 3.61 to 3.64. The measurements were carried out for a seven-day period from 12 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.61 Measured daytime $L_{Aeq,T}$, corrected to free-field – L17 Doggetts

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
12/05/2021	Wednesday	10:25-19:00	Day	46.3	46.9
13/05/2021	Thursday	07:00-19:00	Day	42.7	
14/05/2021	Friday	07:00-19:00	Day	48.1	
15/05/2021	Saturday	07:00-19:00	Day	38.3	
17/05/2021	Monday	07:00-13:00	Day	51.1	
18/05/2021	Tuesday	07:00-19:00	Day	50.7	
19/05/2021	Wednesday	07:00-11:25	Day	51.1	

Table 3.62 Measured Night-time $L_{Aeq,T}$, corrected to free-field – L17 Doggetts

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
12/05/2021	Wednesday	23:00-07:00	Night	41.2	44.9
13/05/2021	Thursday	23:00-07:00	Night	44.9	
14/05/2021	Friday	23:00-07:00	Night	38.5	
15/05/2021	Saturday	23:00-07:00	Night	44.2	
16/05/2021	Sunday	23:00-07:00	Night	49.1	
17/05/2021	Monday	23:00-07:00	Night	49.1	
18/05/2021	Tuesday	23:00-07:00	Night	47.6	

Table 3.63 Measured Evening and Weekend $L_{Aeq,T}$, corrected to free-field – L17 Doggetts

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period Average
12/05/2021	Wednesday	19:00-23:00	Evening	39.6	44.4
13/05/2021	Thursday	19:00-23:00	Evening	42.4	
14/05/2021	Friday	19:00-23:00	Evening	42.4	
15/05/2021	Saturday	19:00-23:00	Weekend	40.1	
16/05/2021	Sunday	13:00-23:00	Weekend	49.2	
17/05/2021	Monday	07:00-23:00	Evening	48.5	
18/05/2021	Tuesday	19:00-23:00	Evening	48.5	

Table 3.64 Measured $L_{A10,18h}$ dB, corrected to free-field – L17 Doggetts

Date	Day	Time	$L_{A10,18h}$ dB free-field
12/05/2021	Wednesday	10:25-00:00	44.5
13/05/2021	Thursday	06:00-00:00	43.0
14/05/2021	Friday	06:00-00:00	47.4
15/05/2021	Saturday	06:00-00:00	39.1
16/05/2021	Sunday	06:00-00:00	49.3
17/05/2021	Monday	06:00-00:00	51.1
18/05/2021	Tuesday	06:00-00:00	51.3
19/05/2021	Wednesday	06:00-11:25	51.9
Average weekday $L_{A10,18h}$ dB			48.2

3.17 Location L18 – 2 Mill Mead Cottages

- 3.17.1 Measurement location L18 was in the rear garden of 2 Mill Mead Cottages, Paynes Lane, Boreham, in a façade location. Traffic on the A12 and on Main Road were both audible. Bird song was also noted. Subjectively it was considered that traffic noise from the A12 was one of the sources contributing to the noise climate at this location (and those considered representative of this location) and would not alone adversely influence the enjoyment of the location. The location is shown on Plate 3.17.

Plate 3.17 Measurement location L18



- 3.17.2 The measurement results for L18, corrected to free-field, are presented in Tables 3.65 to 3.68. The measurements were carried out for a six-day period from 20 May 2021. Measurement results are presented in graphs in Annex A of this appendix.

Table 3.65 Measured daytime $L_{Aeq,T}$, corrected to free-field – L18 2 Mill Mead Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
20/05/2021	Thursday	09:30-13:00	Day	55.4	58.1
21/05/2021	Friday	07:00-19:00	Day	57.7	
22/05/2021	Saturday	07:00-19:00	Day	61.0	
24/05/2021	Monday	07:00-19:00	Day	54.8	
25/05/2021	Tuesday	07:00-19:00	Day	59.5	
26/05/2021	Wednesday	07:00-12:15	Day	60.1	

Table 3.66 Measured night-time $L_{Aeq,T}$, corrected to free-field – L18 2 Mill Mead Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
20/05/2021	Thursday	23:00-07:00	Night	52.6	53.2
21/05/2021	Friday	23:00-07:00	Night	55.4	
22/05/2021	Saturday	23:00-07:00	Night	49.2	
23/05/2021	Sunday	23:00-07:00	Night	51.8	
24/05/2021	Monday	23:00-07:00	Night	53.9	
25/05/2021	Tuesday	23:00-07:00	Night	56.0	

Table 3.67 Measured evening and weekend $L_{Aeq,T}$, corrected to free-field – L18 2 Mill Mead Cottages

Date	Day	Time	Period	$L_{Aeq,T}$ dB	
				Daily	Period average
20/05/2021	Thursday	19:00-23:00	Evening	54.3	55.1
21/05/2021	Friday	19:00-23:00	Evening	55.2	
22/05/2021	Saturday	13:00-23:00	Evening	58.2	
23/05/2021	Sunday	07:00-23:00	Weekend	53.3	
24/05/2021	Monday	19:00-23:00	Weekend	56.2	
25/05/2021	Tuesday	19:00-23:00	Evening	53.3	

Table 3.68 Measured $L_{A10,18h}$ dB, corrected to free-field – L18 2 Mill Mead Cottages

Date	Day	Time	$L_{A10,18h}$ dB free-field
20/05/2021	Thursday	09:30-00:00	56.4
21/05/2021	Friday	06:00-00:00	58.0
22/05/2021	Saturday	06:00-00:00	59.9
23/05/2021	Sunday	06:00-00:00	54.5
24/05/2021	Monday	06:00-00:00	56.8
25/05/2021	Tuesday	06:00-00:00	59.0
26/05/2021	Wednesday	06:00-12:15	61.9
Average weekday $L_{A10,18h}$ dB			58.4

References

British Standards Institution (2018). BS EN IEC 60942:2018: Electroacoustics. Sound calibrators.

British Standards Institution (2013). BS EN 61672-1:2013: Electroacoustics. Sound level meters - Specifications

British Standards Institution (2014). BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites. Noise.

Department of Transport and Welsh Office (1998). Calculation Road Traffic Noise.

Highways England (2020). A12 Chelmsford to A120 Widening Scheme: Environmental Scoping Report. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010060/TR010060-000006-A12%20-%20Environmental%20Scoping%20Report.pdf>. Accessed May 2022.

Planning Inspectorate (2021). Scoping Opinion: A12 Chelmsford to A120 Widening Scheme. Case Reference TR010060. Available at: <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010060/TR010060-000016-CHLM%20-%20Scoping%20Opinion.pdf>. Accessed May 2022.

Annex A Graphs

Plate A.1 Weather data 11-26 May 2021

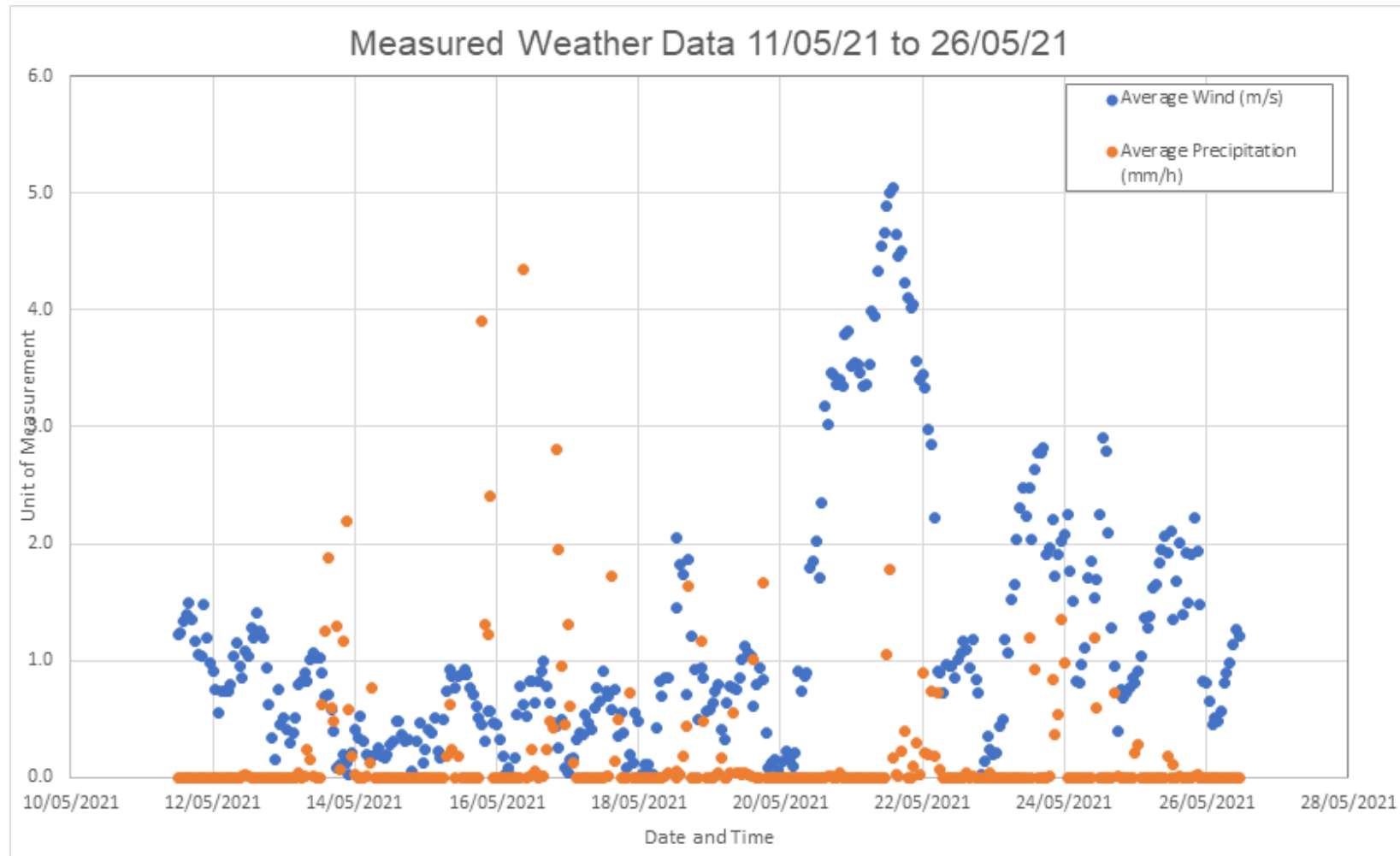


Plate A.2 Noise measurement data L1 Park Farm

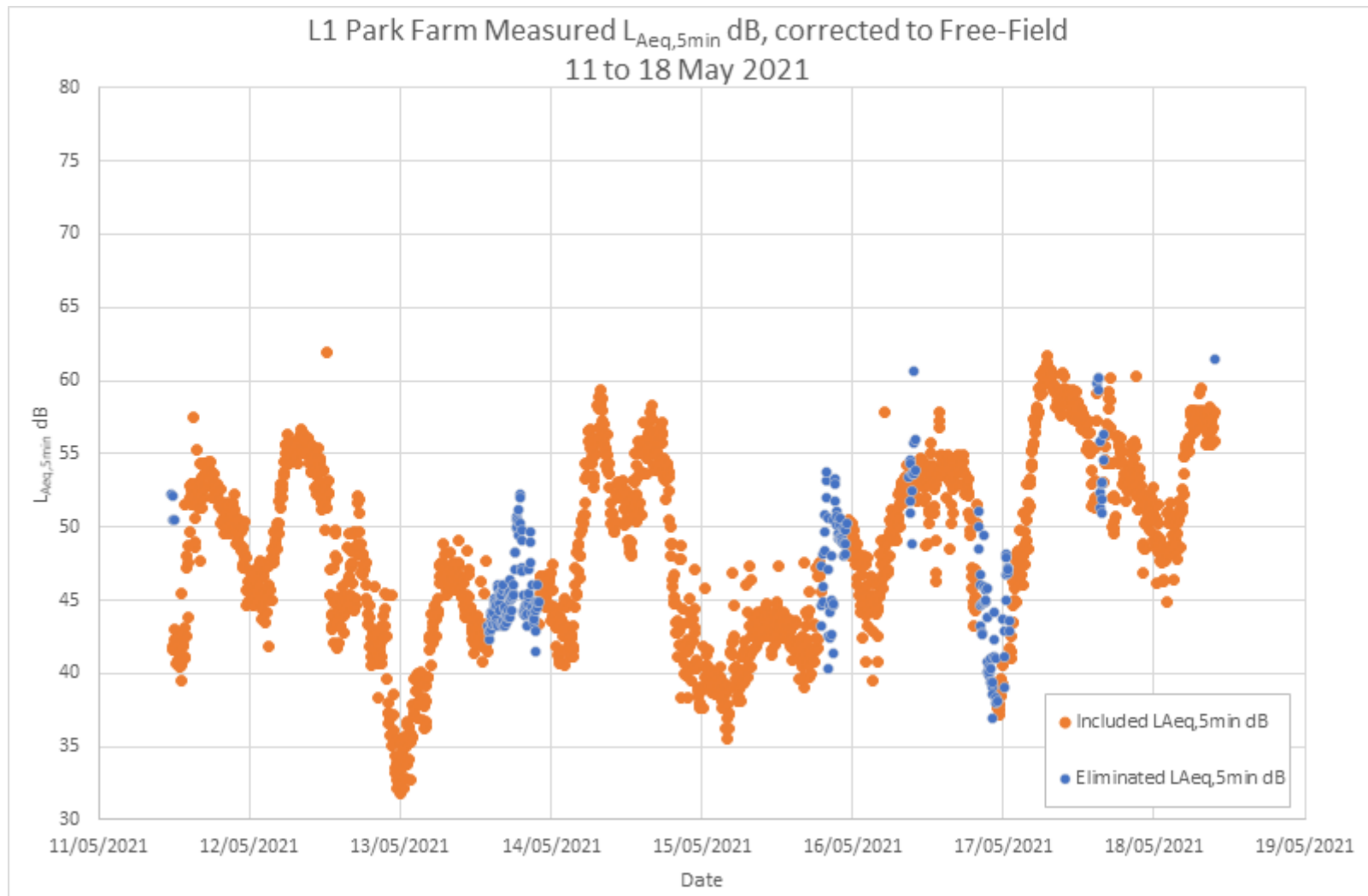


Plate A.3 Noise measurement data L2 20 Rookery Close

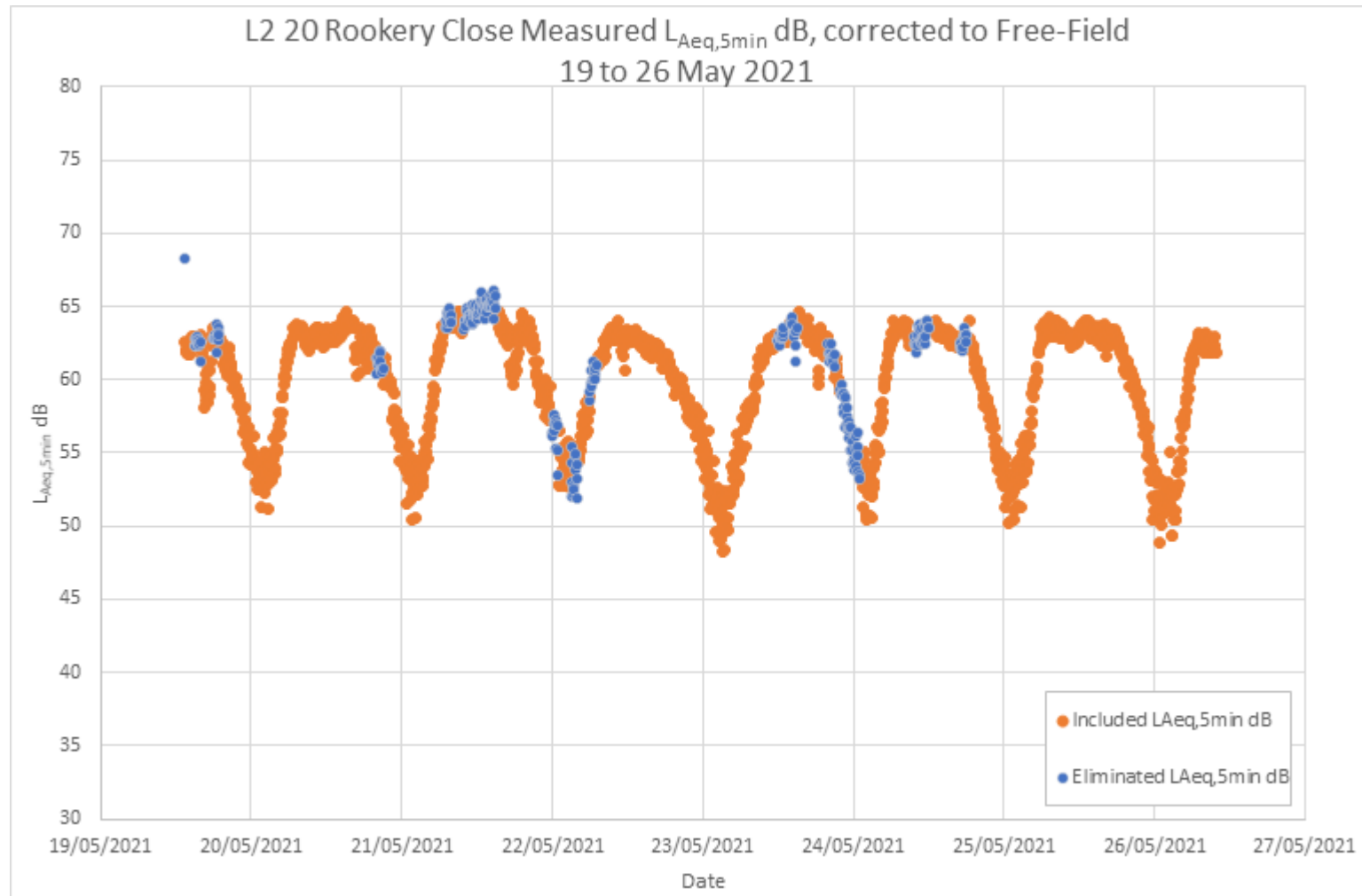


Plate A.4 Noise measurement data L3 Rowanbank

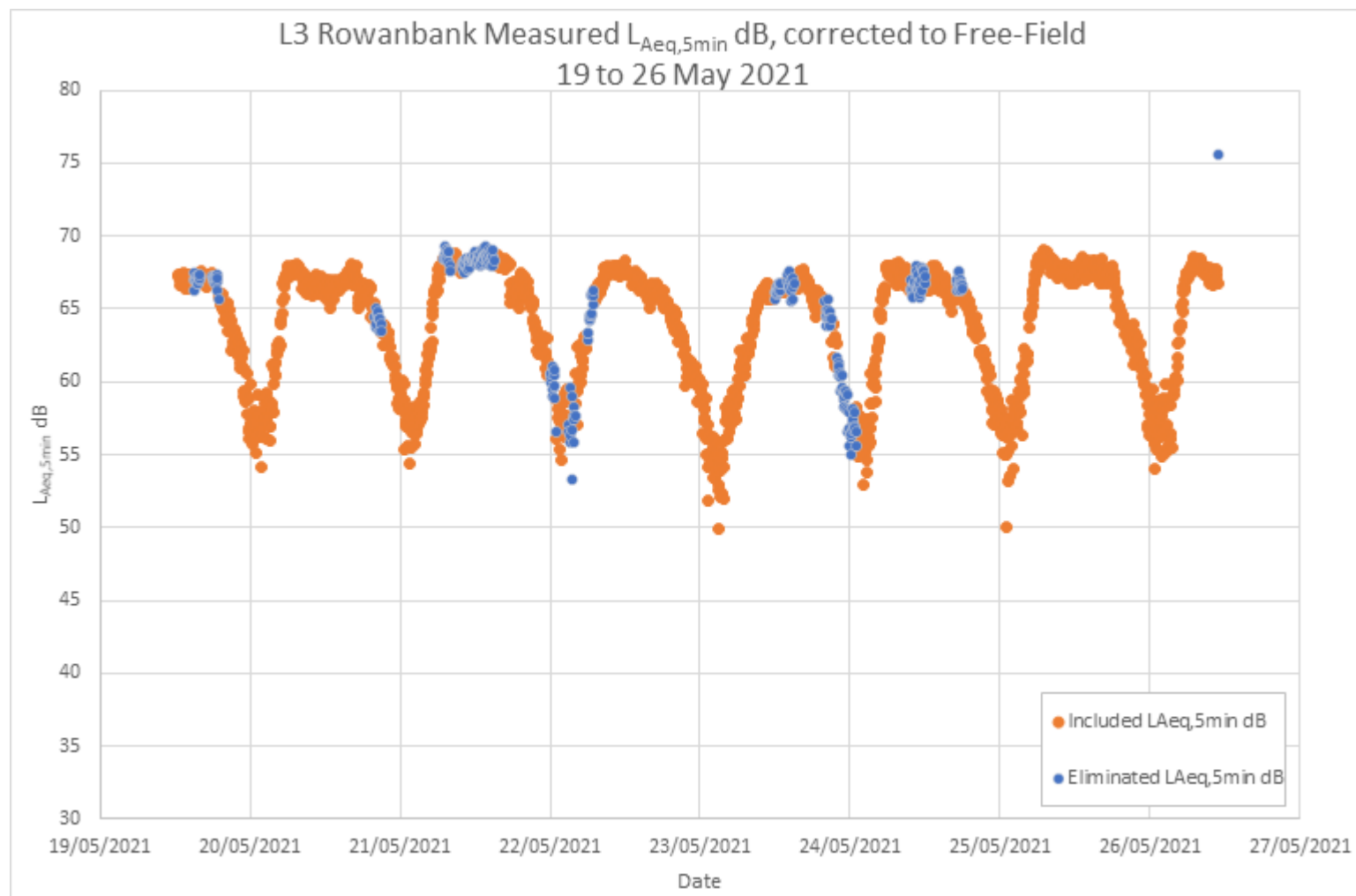


Plate A.5 Noise measurement data L4 Little Braxted Mill House

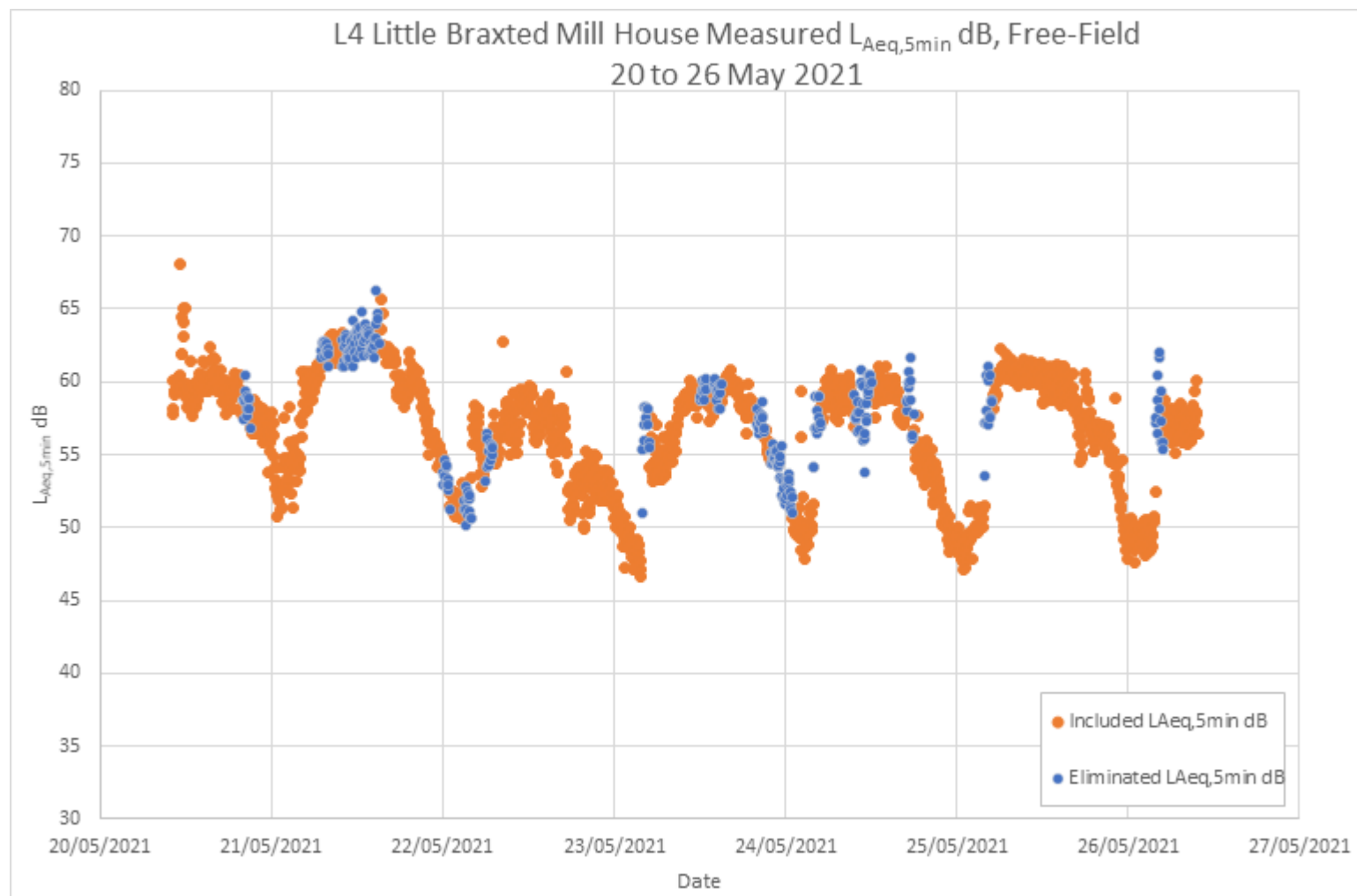


Plate A.6 Noise measurement data L5 7 Wentworth Close

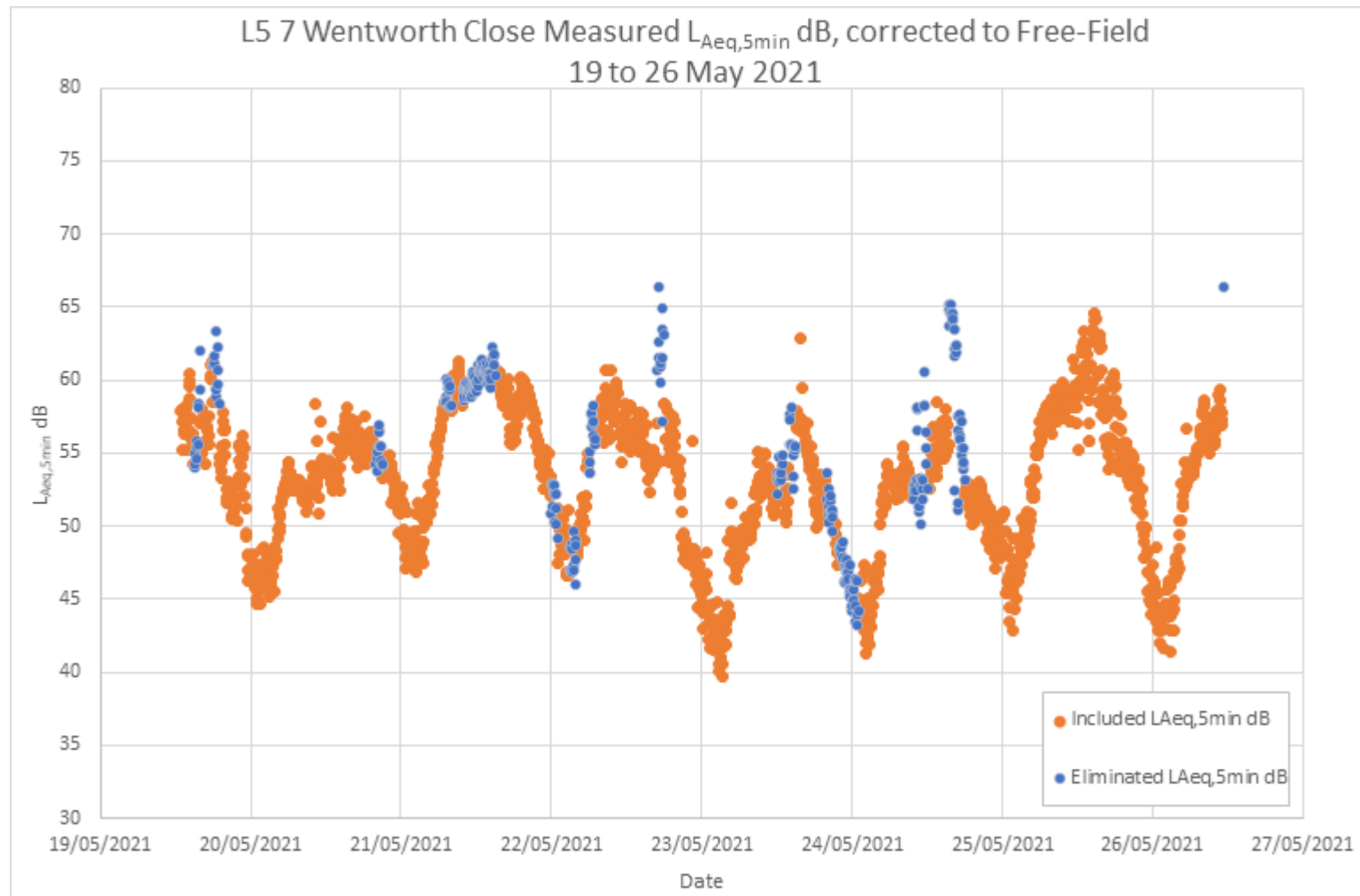


Plate A.7 Noise measurement data L6 The Firs

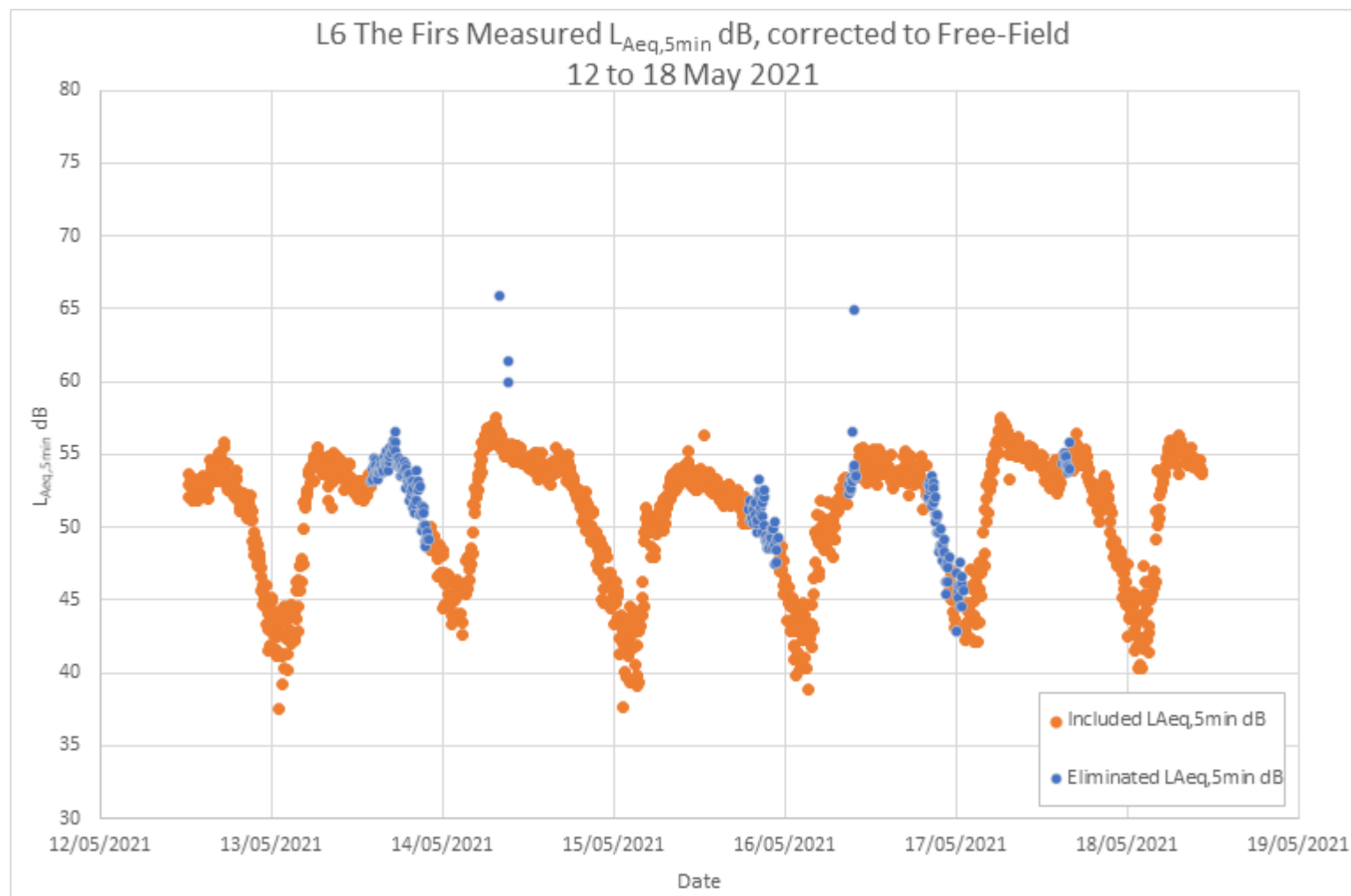


Plate A.8 Noise measurement data L7 Ewell Hall

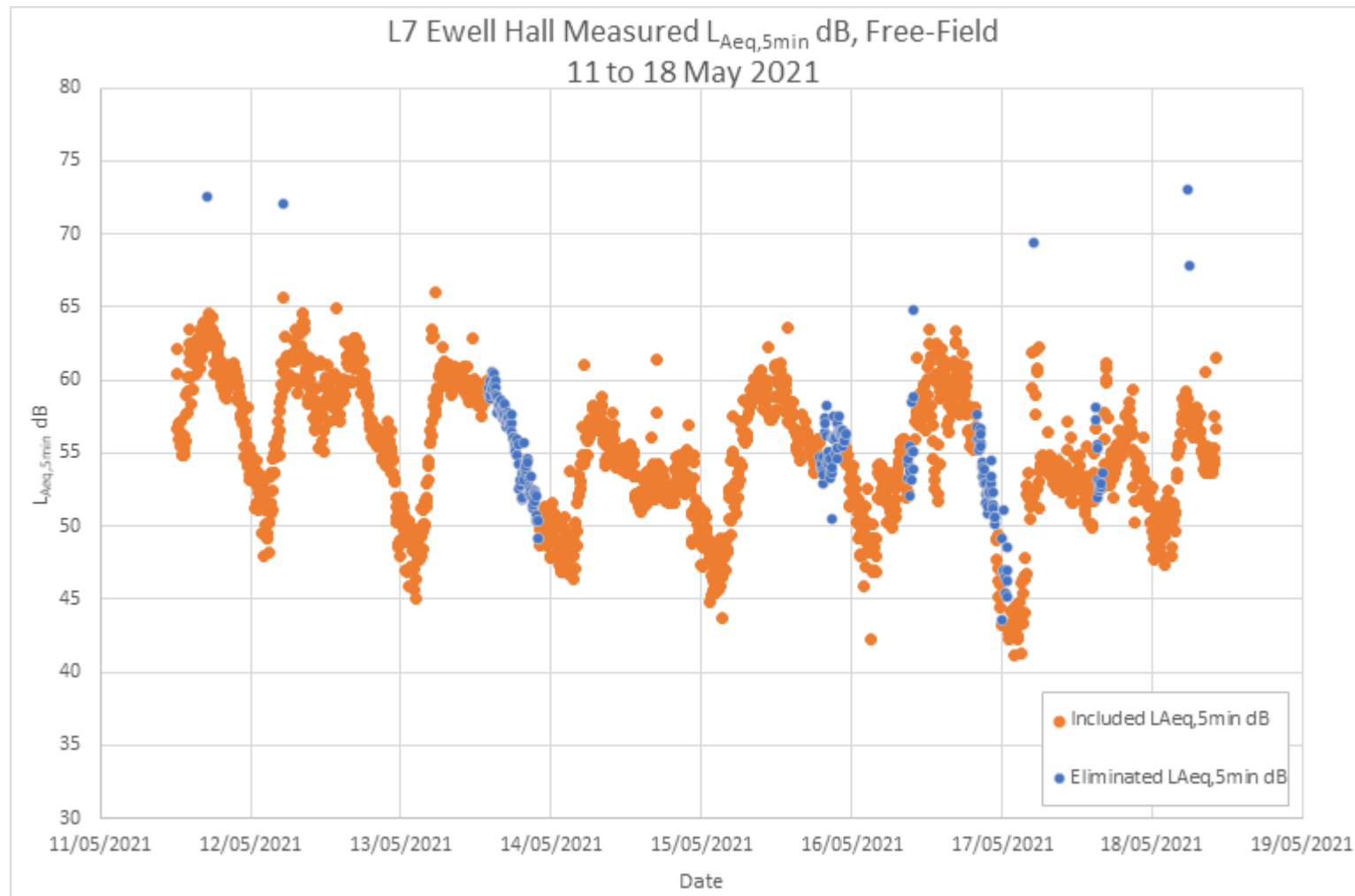


Plate A.9 Noise measurement data L8 Little Birch Holt Farm

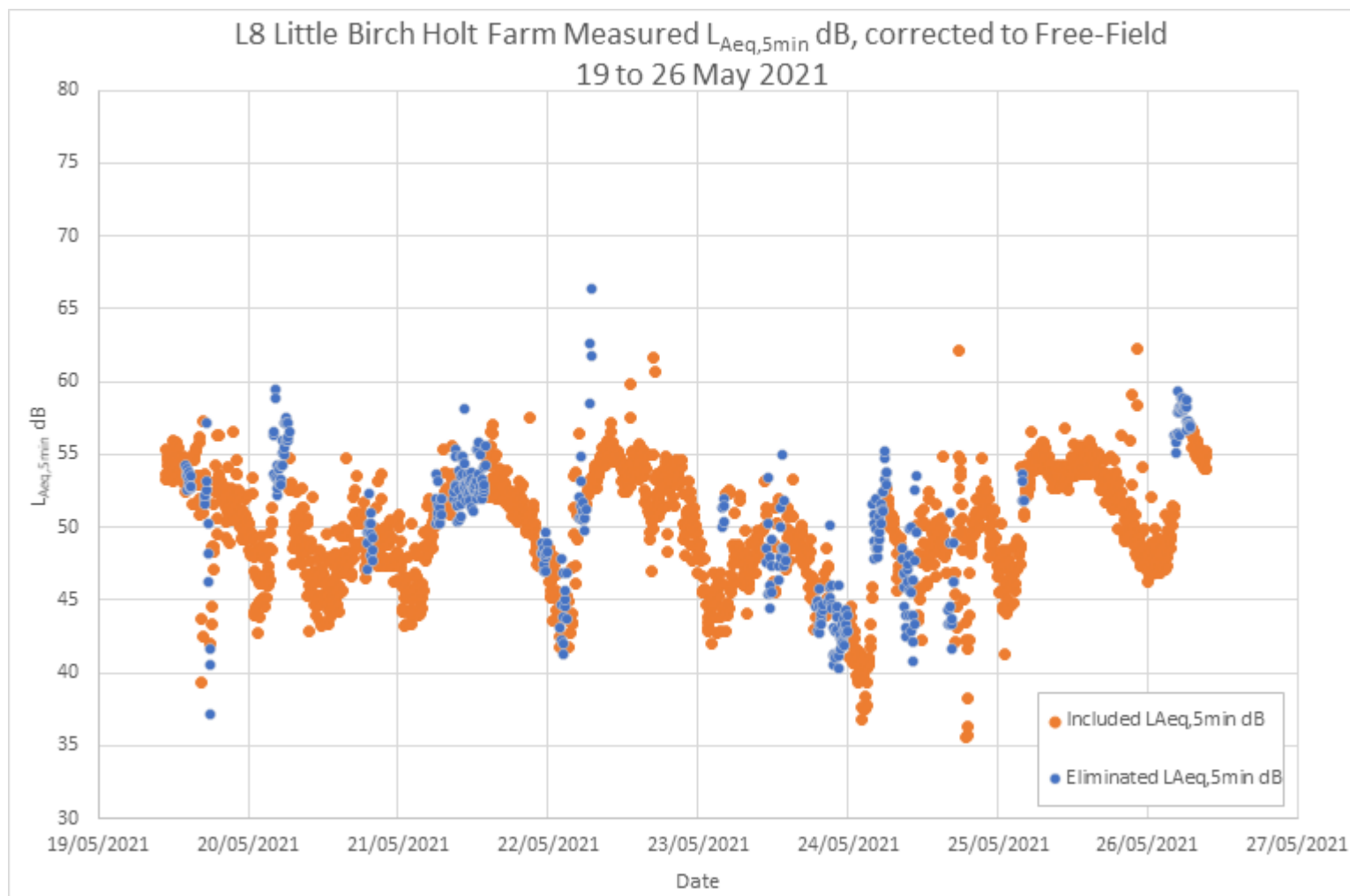


Plate A.10 Noise measurement data L9 Prested Hall Farm Cottages

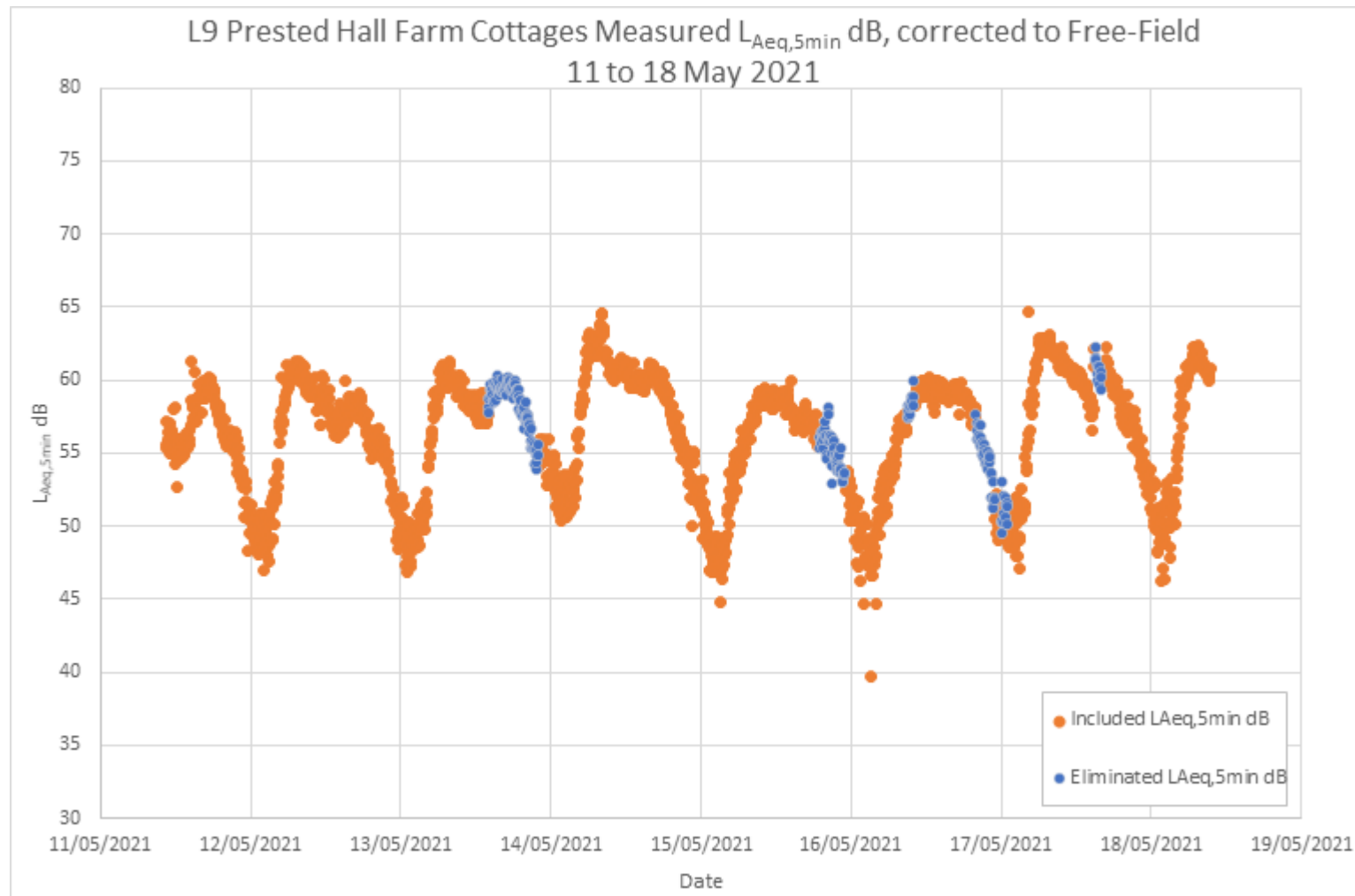


Plate A.11 Noise measurement data L10 Easthorpe Green Farm

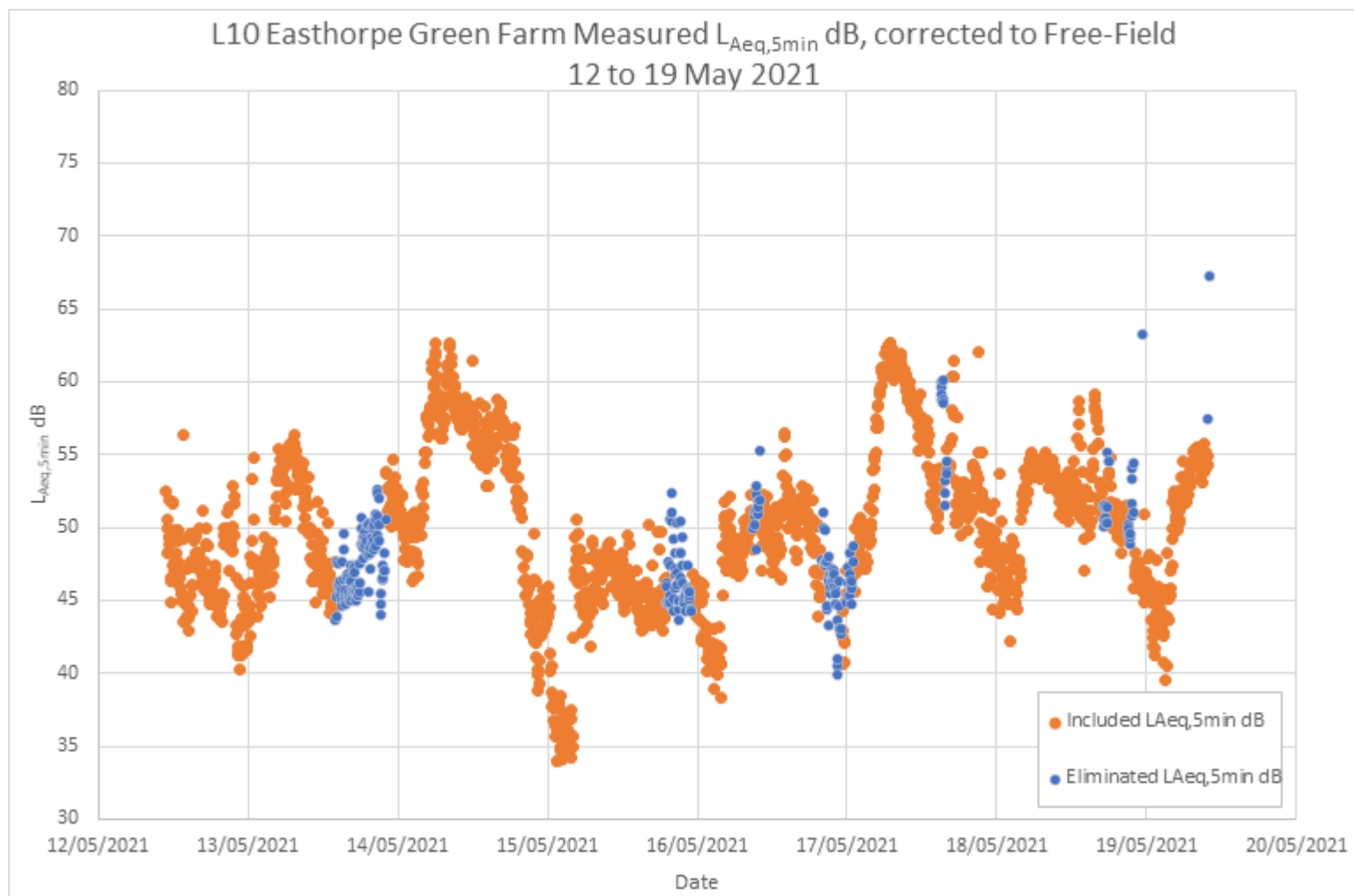


Plate A.12 Noise measurement data L11 241 London Road

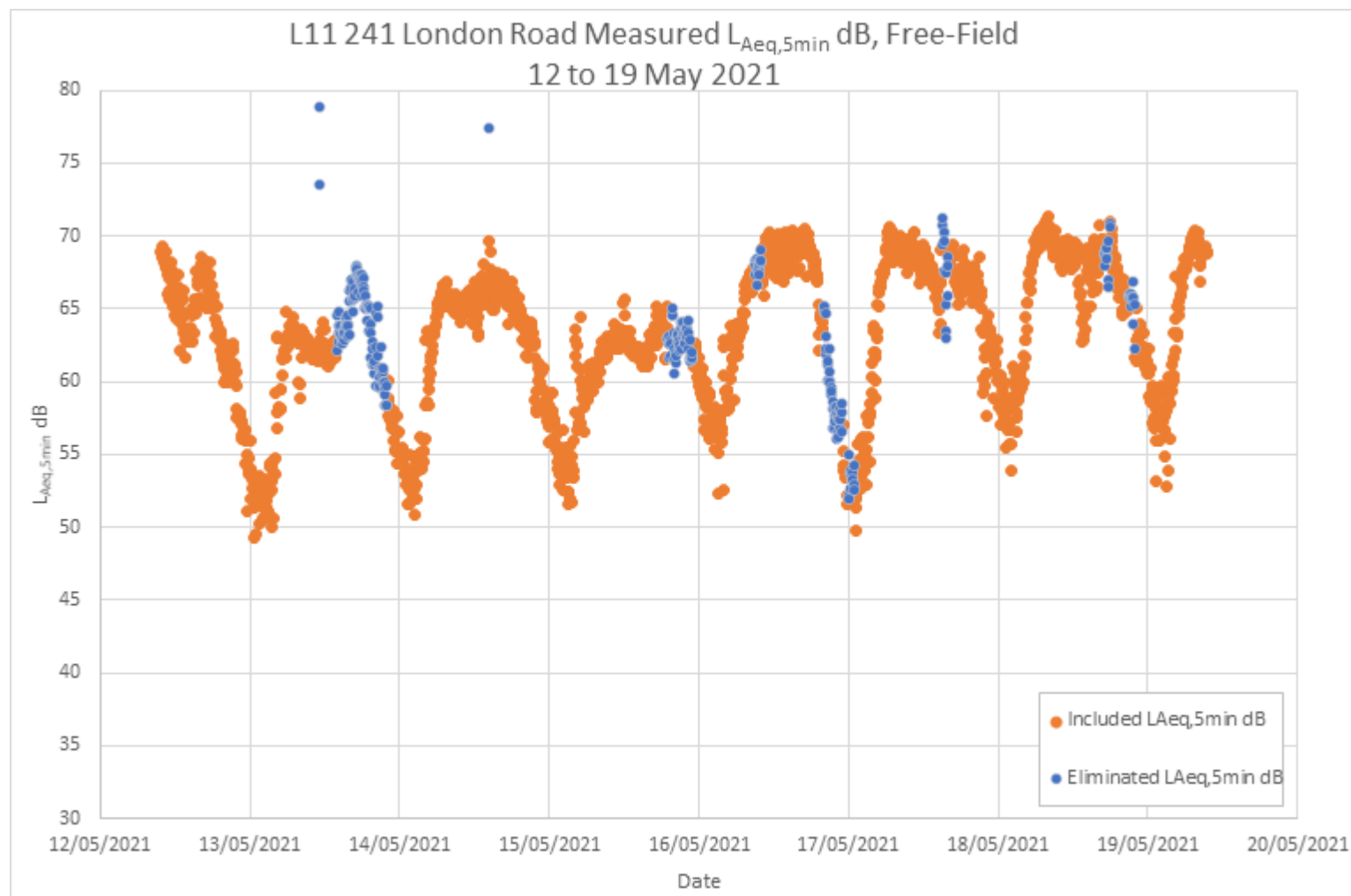


Plate A.13 Noise measurement data L12 2 Burghey Brook Cottages

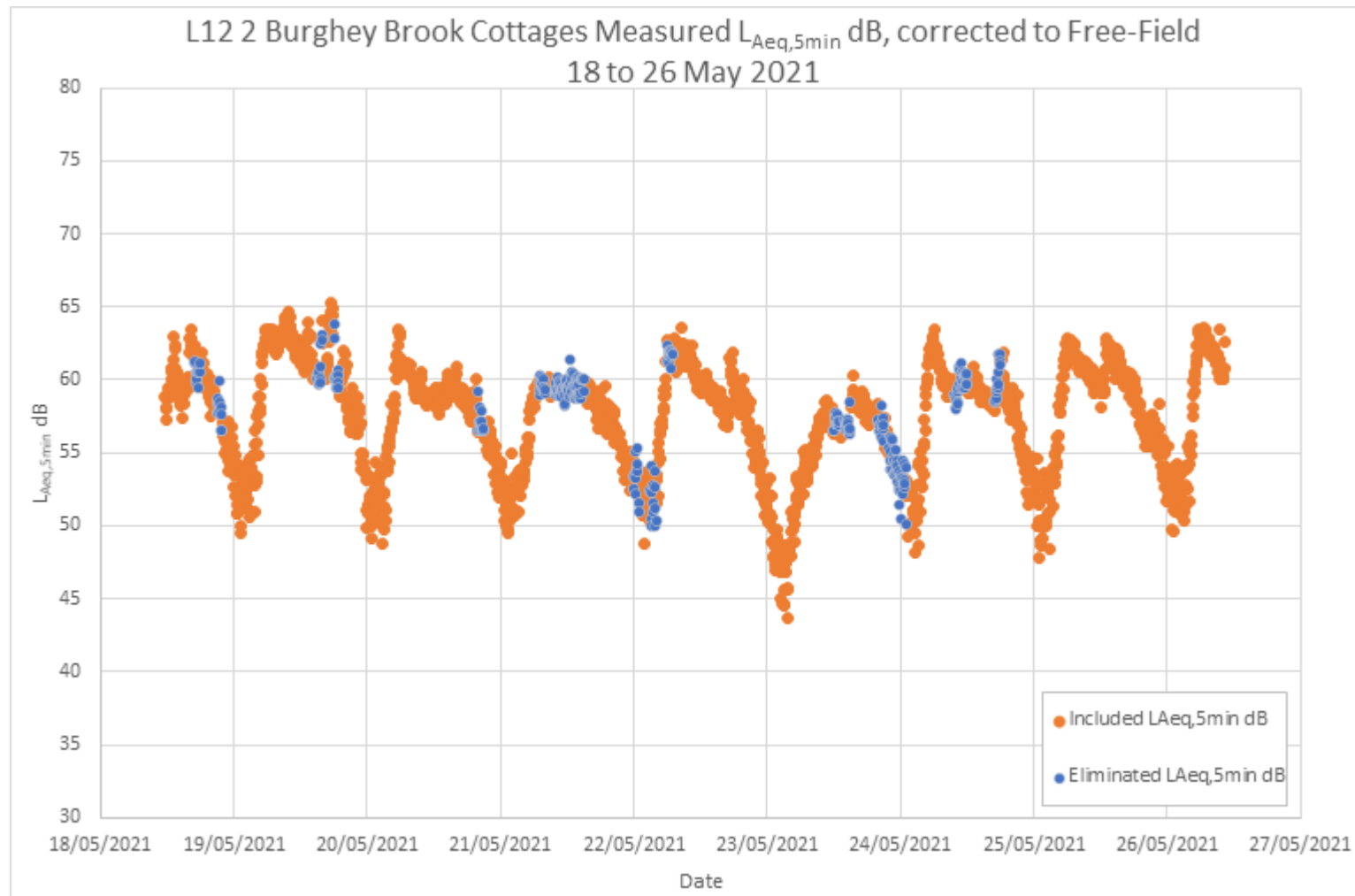


Plate A.14 Noise measurement data L13 Rose Cottage

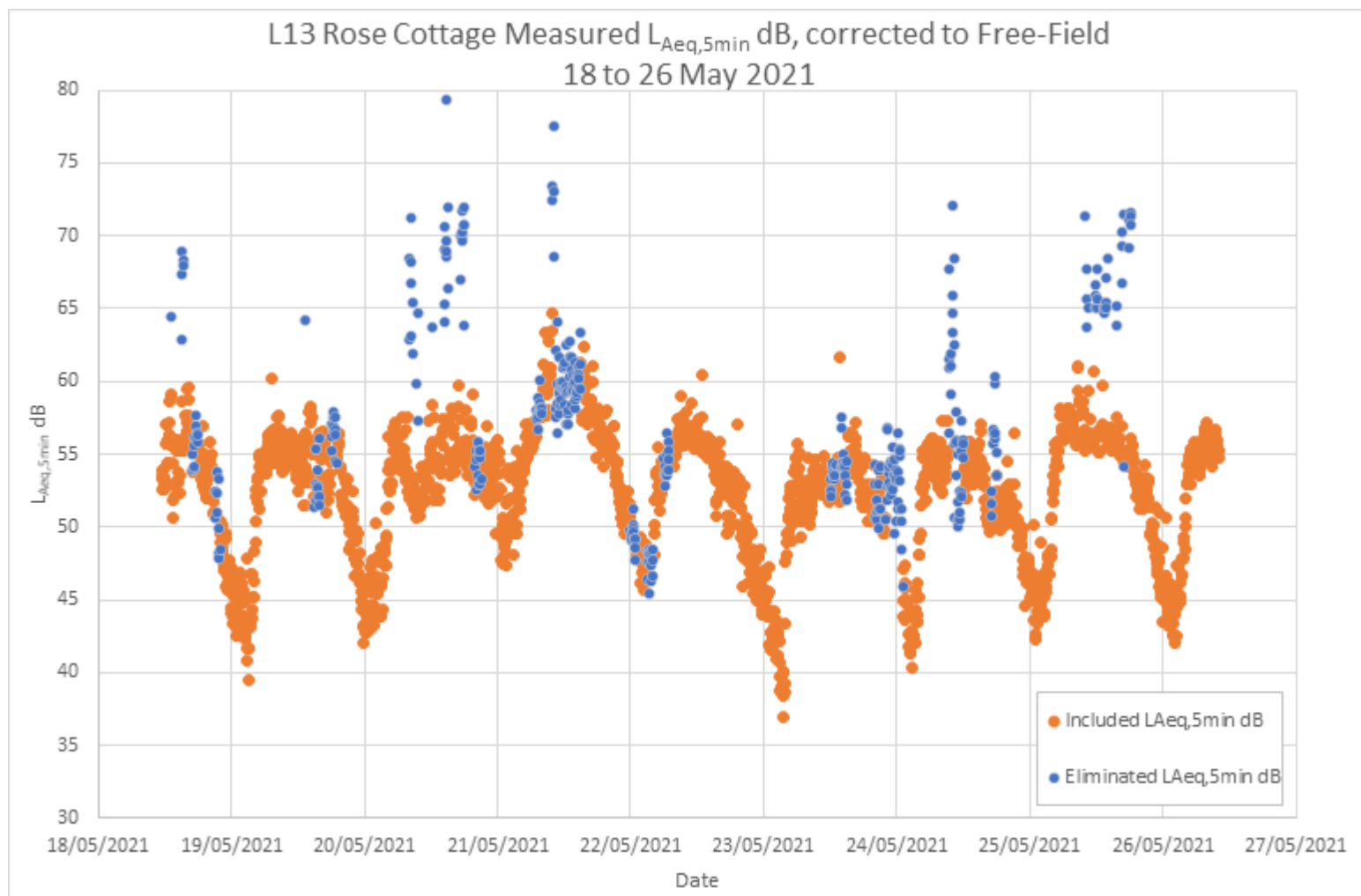


Plate A.15 Noise measurement data L15 Davey House

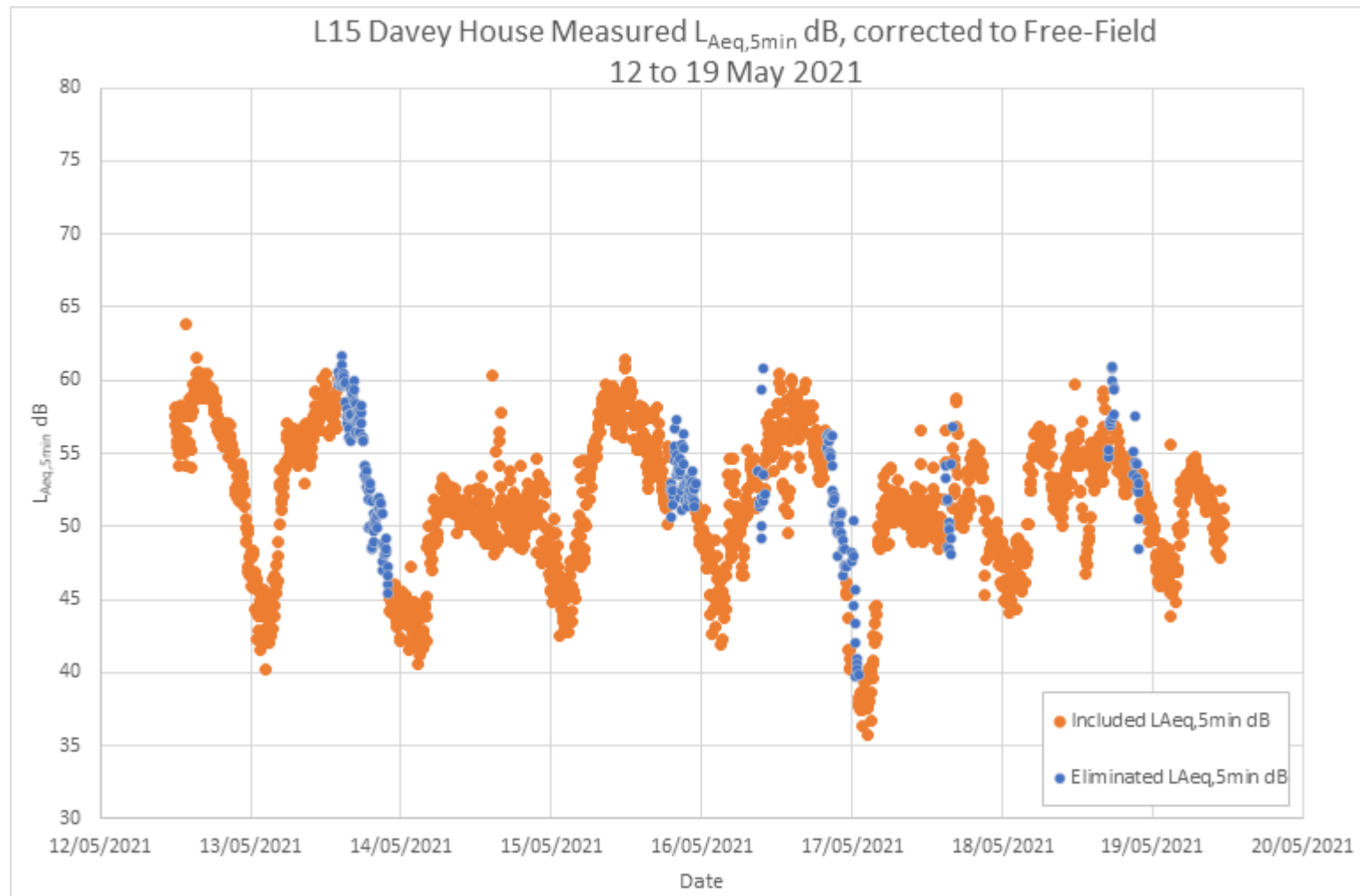


Plate A.16 Noise measurement data L16 Mathcot

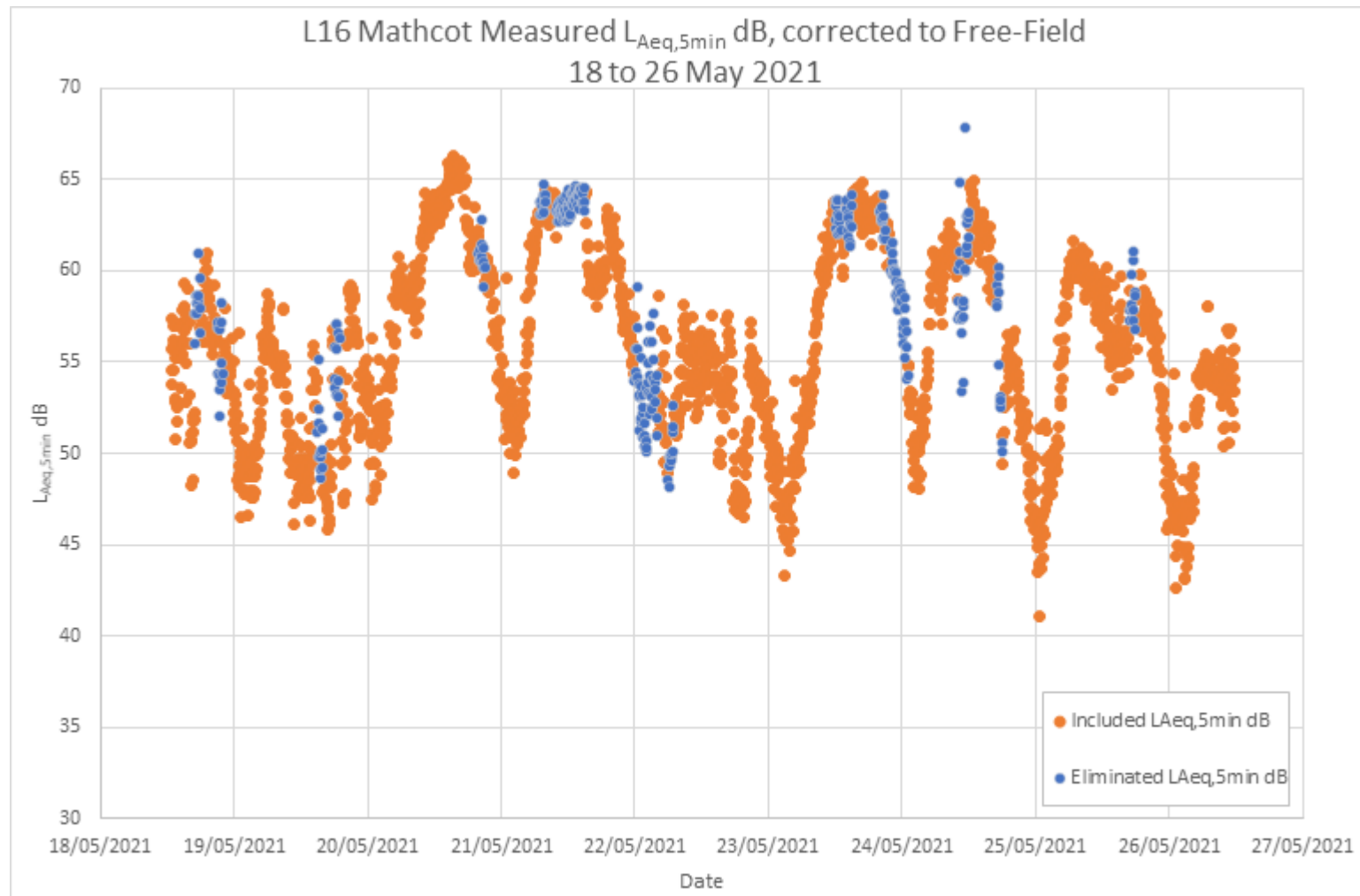


Plate A.17 Noise measurement data L17 Doggetts

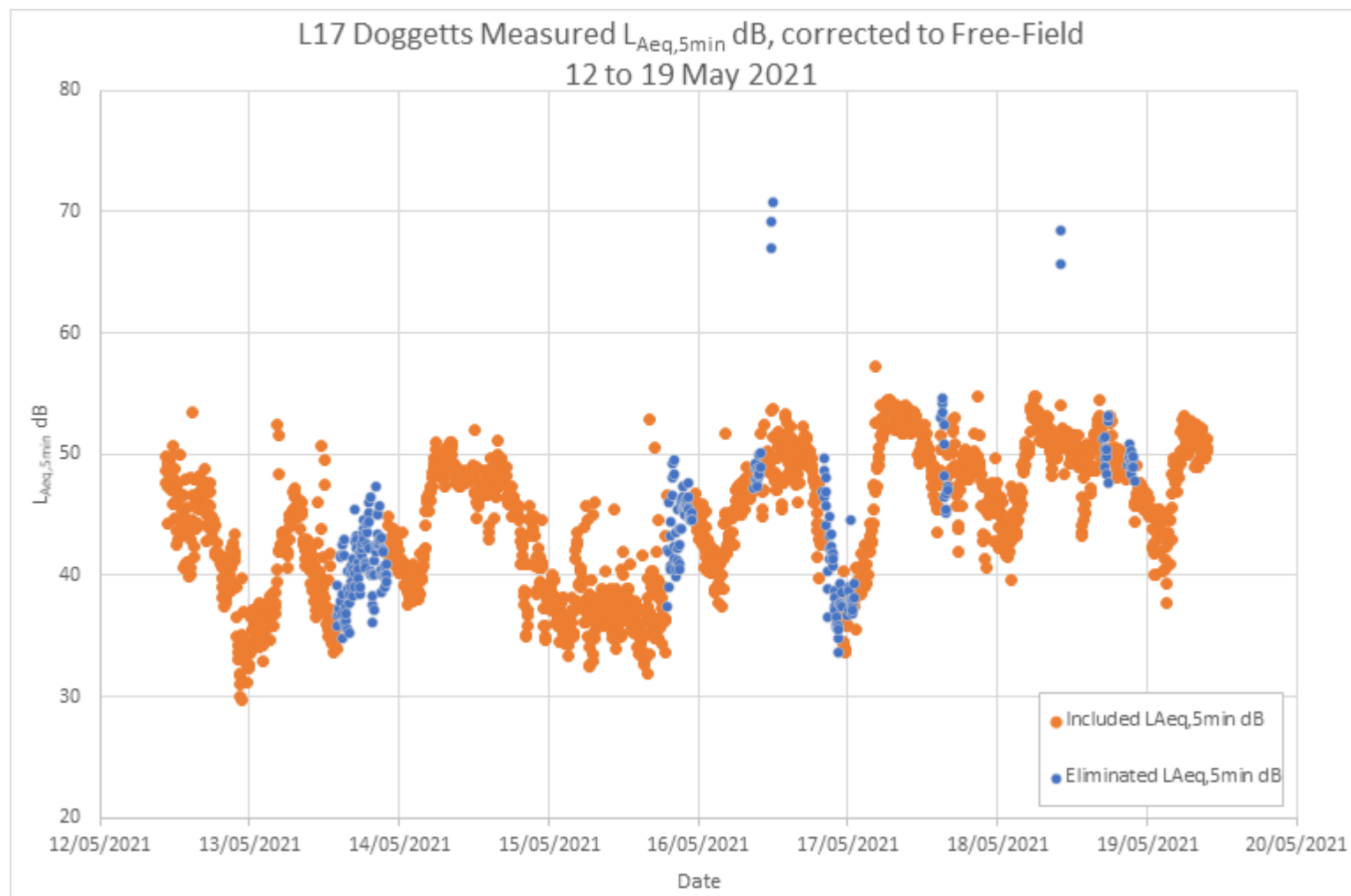


Plate A.18 Noise measurement data L18 2 Mill Mead Cottages

