

Prosiect Maen Hir

Solar a Storio Ynni



Preliminary Environmental Information Report Volume III

Appendix 10-3: Baseline Noise Conditions

Prosiect Maen Hir - September 2024

EN010156

lightsource bp



Baseline Noise Monitoring

Purpose of the Noise Survey

- 10.3.1 The purpose of the baseline noise survey is to characterise the existing ambient and background noise levels at nearby noise-sensitive receptors (NSRs). Characterising the local noise environment in this way will allow the impact of any noise generating sources associated with the Project to be assessed against the existing baseline conditions.
- 10.3.2 The ambient sound level refers to the equivalent continuous sound pressure, which is influenced by sources near and far. It is the averaged total sound level over a specified time period. This is the level which the noise from any noise generating sources associated with the construction phase will be compared against.
- 10.3.3 The background level, which is also called the L_{A90} value, is the level that is exceeded 90% of the time. This is the level which the noise from any noise generating sources associated with the Project is compared against.
- 10.3.4 The measured noise levels will be used for the following;
- Ambient noise levels
 - Construction phase noise assessment.
 - Operational assessment including noise from candidate fixed plant and equipment.
 - Background noise levels
 - Setting of limits to be achieved by fixed plant and equipment (where required).
 - Operational assessment including noise from candidate fixed plant and equipment.

Identifying Noise-sensitive Receptors

- 10.3.5 An initial screening exercise was undertaken to identify potential Noise Sensitive Receptors (NSR) located within a 500m buffer distance to the PEIR Boundary. An NSR refers to a receptor which is sensitive to noise such as humans, amenity spaces such as parks, footpaths, and buildings such as schools, hospitals and offices.
- 10.3.6 A buffer area of 500m has been chosen as operational noise emissions from solar developments are generally limited and based on experience of similar recent developments, significant impacts are unlikely beyond this distance.

10.3.7 The nearest NSRs to be considered are shown below in **Figures 10.3.1 to Figure 10.3.4.**

Figure 10.3.1: Identified Existing Sensitive Receptors

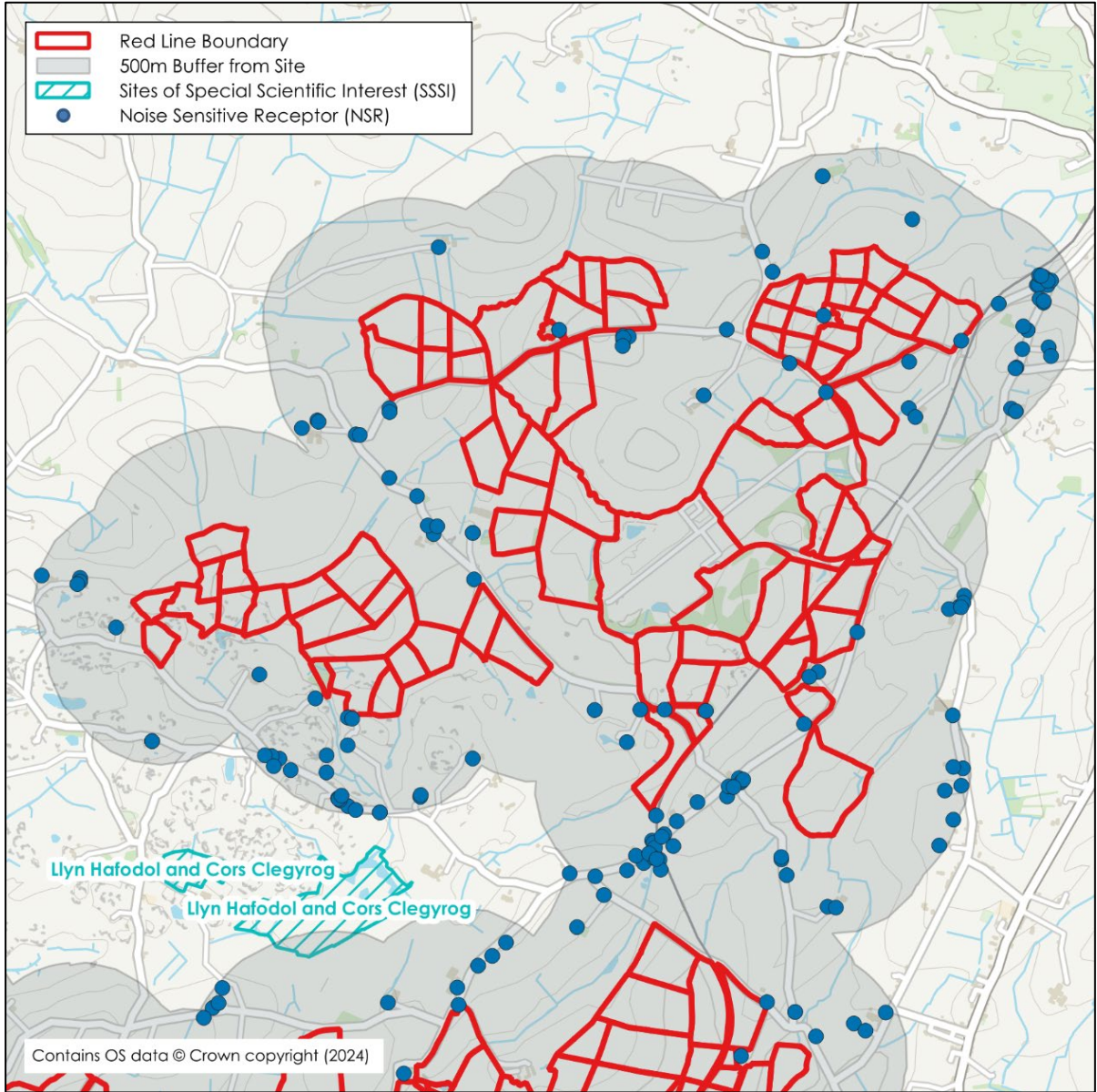


Figure 10.3.2: Identified Existing Sensitive Receptors

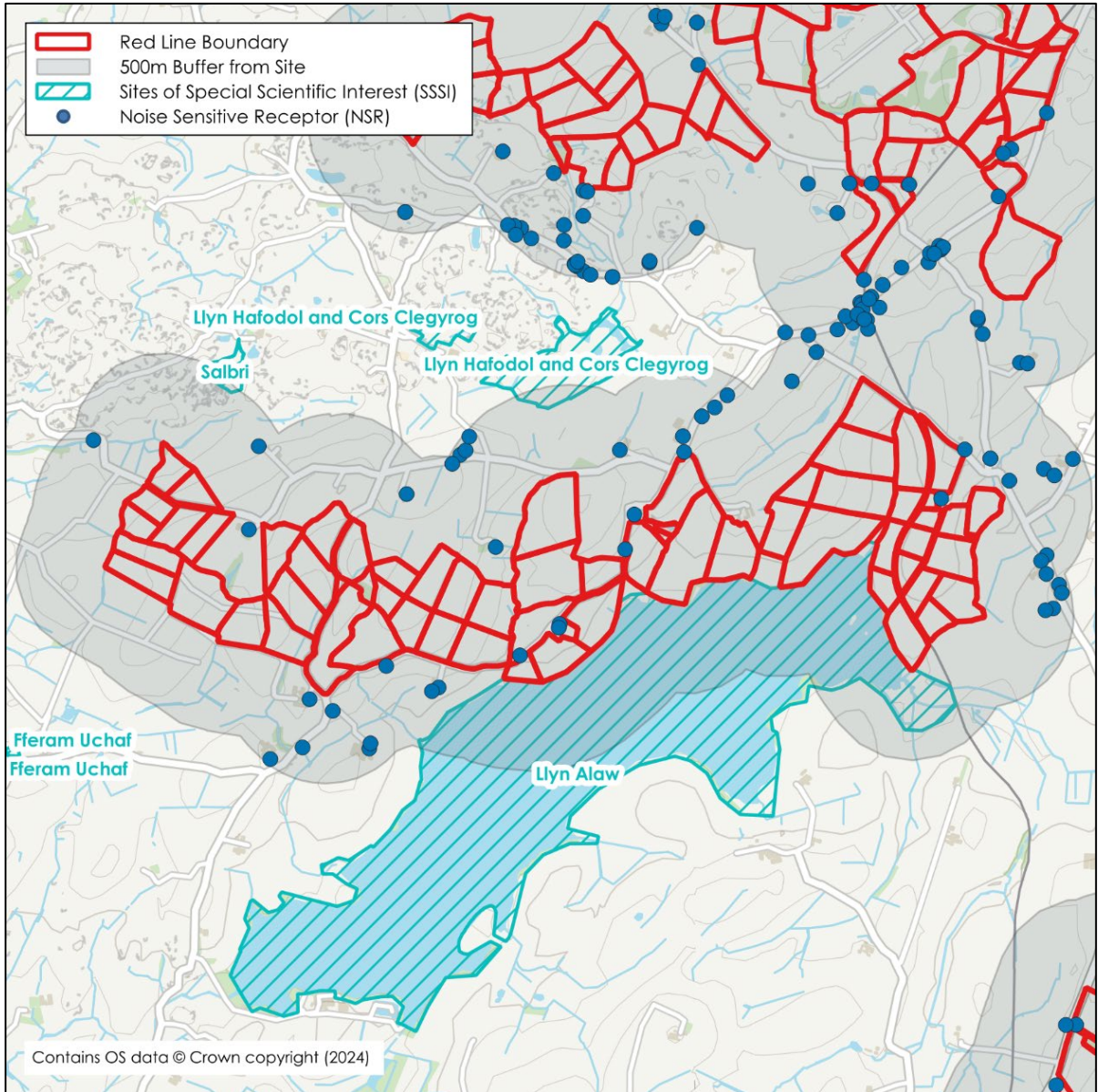


Figure 10.3.3: Identified Existing Noise-Sensitive Receptors

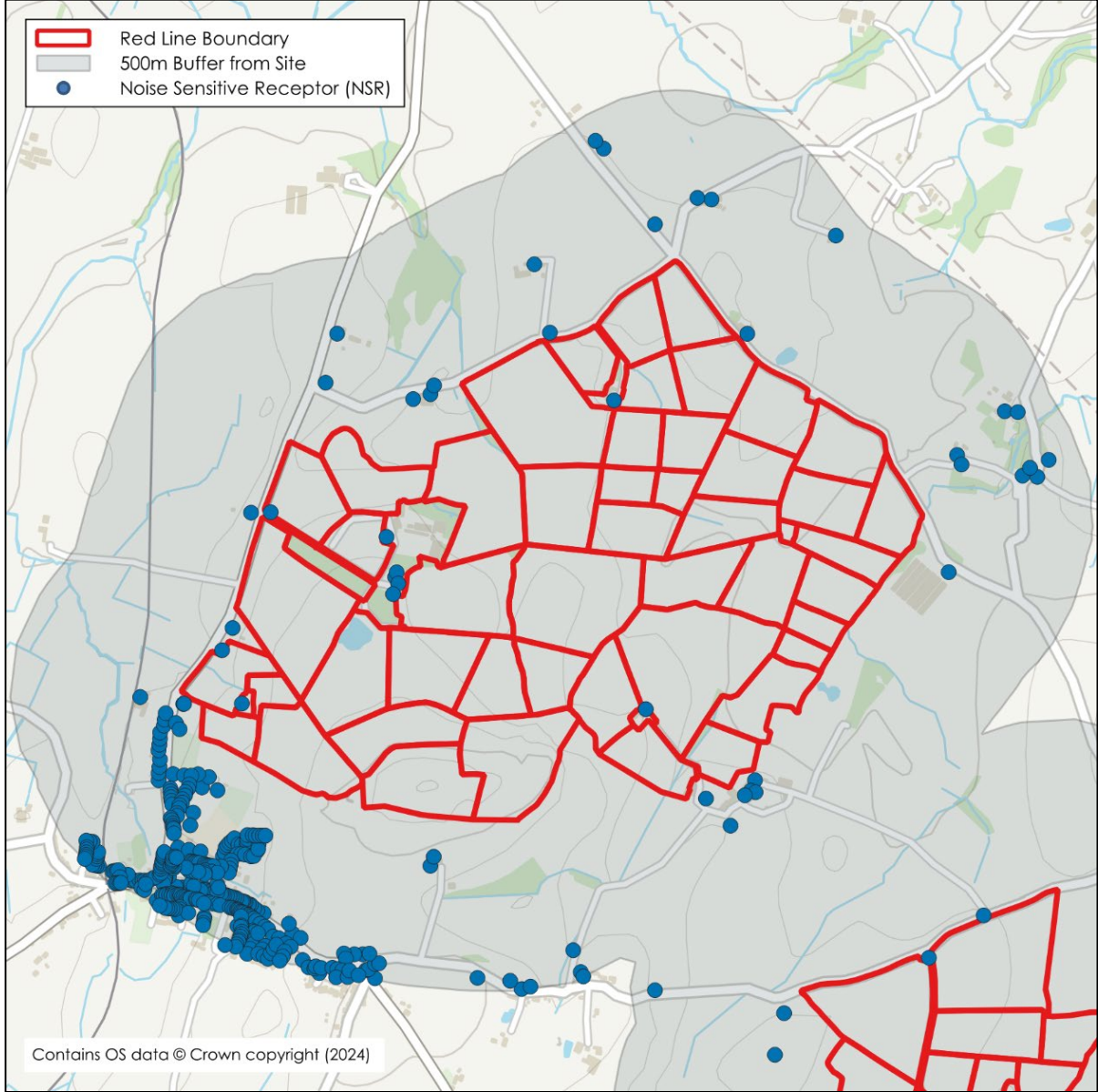
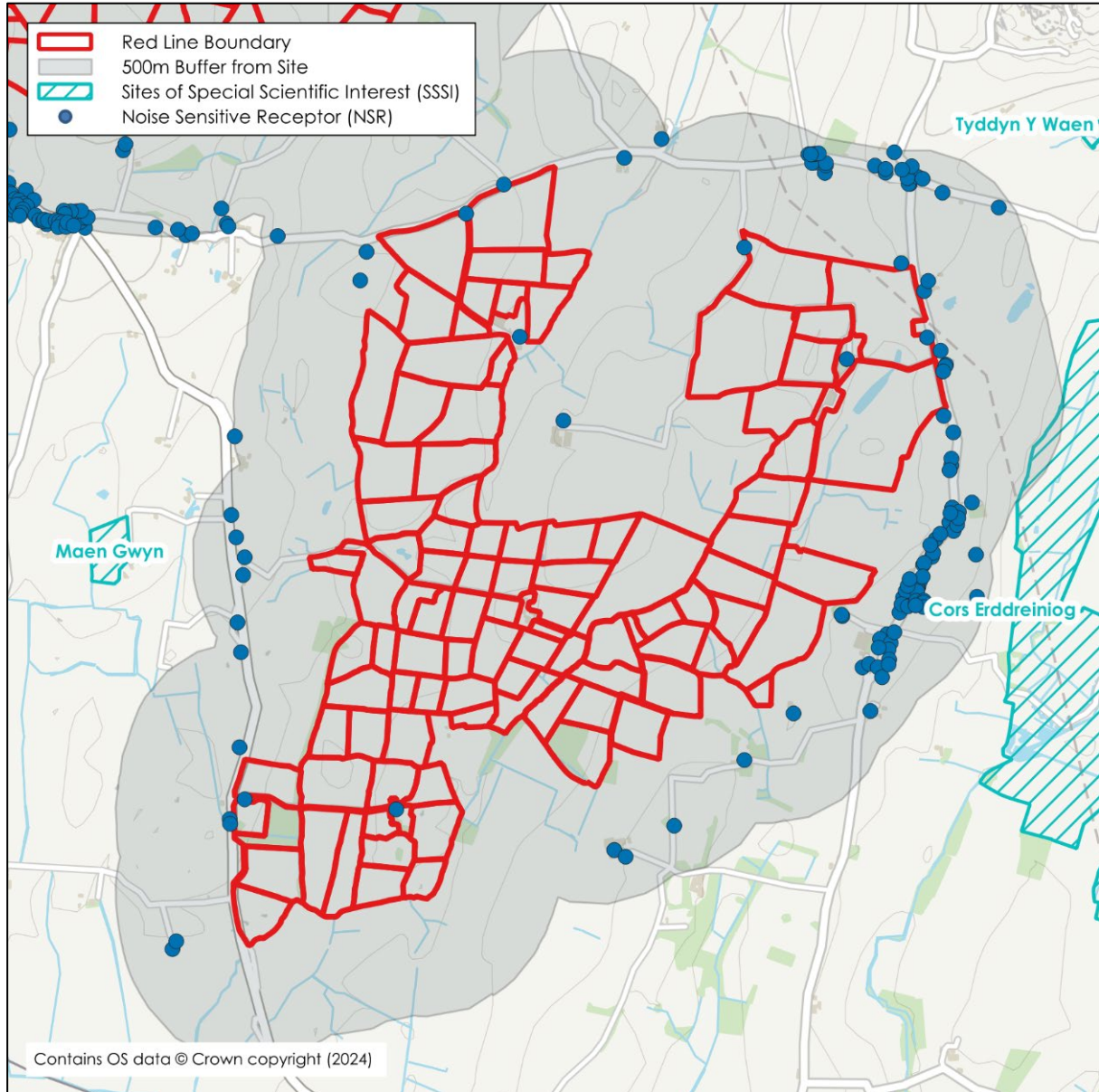


Figure 10.3.4: Identified Existing Noise-Sensitive Receptors



10.3.8 There is a network of Public Rights of Way (PRoW) both within the PEIR Boundary and across the surrounding area, and there are a number of statutory Designated Sites within 500m of The Project (represented as blue hatched areas on the above figures), including:

- Llyn Alaw SSSI, located along the southern boundary to Maen Hir Central;
- Salbri SSSI, located to the north of Maen Hir Central;
- Llyn Hafodol and Cor Clegyrog, SSSI, located to the north of Maen Hir Central;
- Cors Erddreiniog SSSI, located to the east of Maen Hir South;
- Angelsey and Llyn Fens Ramsar, located to the east Maen Hir South; and
- Angelsey Fens SAC located to the east Maen Hir South.

Measurement Locations

- 10.3.9 A walkover was undertaken on 30th and 31st August 2023, during which it was observed that the existing noise climate typically comprised natural and wildlife noise such as birdsong, and operational noise from agricultural land and farm buildings. Distant road traffic from rural road networks was observed to be audible, but infrequent. Wind turbines were sporadically located in neighbouring fields and were noted to be just distinguishable against the ambient noise levels during attendance.
- 10.3.10 Noise contours were reviewed to assist with the determination of noise monitoring locations. However, such noise contours have not been produced for the majority of Anglesey. Noise contours are produced at a strategic level for agglomerations with a population of more than 100,000 people; for major roads with more than 3,000,000 vehicle passages per year. With the exception of A55 and A5025, the remaining roads do not meet this criteria.
- 10.3.11 Following the walkover, noise monitoring locations were selected to provide representative noise data for the identified sensitive receptors. Where receptors were likely to experience similar ambient noise conditions (e.g., they are approximately the same distance from a main highway), they were grouped together and represented by one noise measurement location. A number of other factors were also taken into consideration when identifying these locations, including:
- Safety of the operators;
 - Security of monitoring equipment; and
 - Accessibility.
- 10.3.12 The noise survey methodology was issued to Public Protection Officers including the proposed monitoring locations and location of the NSRs for their review and comments. A response was received stating that they were satisfied with the methodology approach.
- 10.3.13 The resultant noise measurement locations are summarised below in Table 10.3.1. The measurement locations are also shown below in Figure 10.3.1 to Figure 10.3.3 below. NSRs have been grouped together and colour coded with a corresponding ML as per the figure keys shown.

Table 10.3.1 Grouping Justification

Location ID	Approx coordinates	Grouping justification
ML 1	53.384689 N 4.424531 W	Rural receptors in close proximity

Location ID	Approx coordinates	Grouping justification
ML 2	53.386192 N 4.405007 W	Rural receptors in close proximity, similar distance to road
ML 3	53.399836 N 4.375973 W	Rural receptors in close proximity
ML 4	53.380459 N 4.390943 W	Rural receptors in close proximity
ML 5	53.364478 N 4.446769 W	Rural receptors in close proximity
ML 6	53.357119 N 4.436240 W	Rural receptors in close proximity, audible wind turbines in vicinity
ML 7	53.361887 N 4.411958 W	Rural receptors in close proximity
ML 8	53.381081 N 4.380306 W	Rural receptors in close proximity
ML 9	52.351377 N 4.370245 W	Rural receptors in close proximity
ML 10	53.325558 N 4.343518 W	Rural receptors in close proximity, similar distance to road
ML 11	53.321823 N 4.313646 W	Rural receptors in close proximity, similar distance to road
ML 12	53.315799 N 4.348758 W	Rural receptors in close proximity
ML 13	53.304604 N 4.356087 W	Rural receptors in close proximity, similar distance to road

Figure 10.3.4: Baseline Measurement Locations

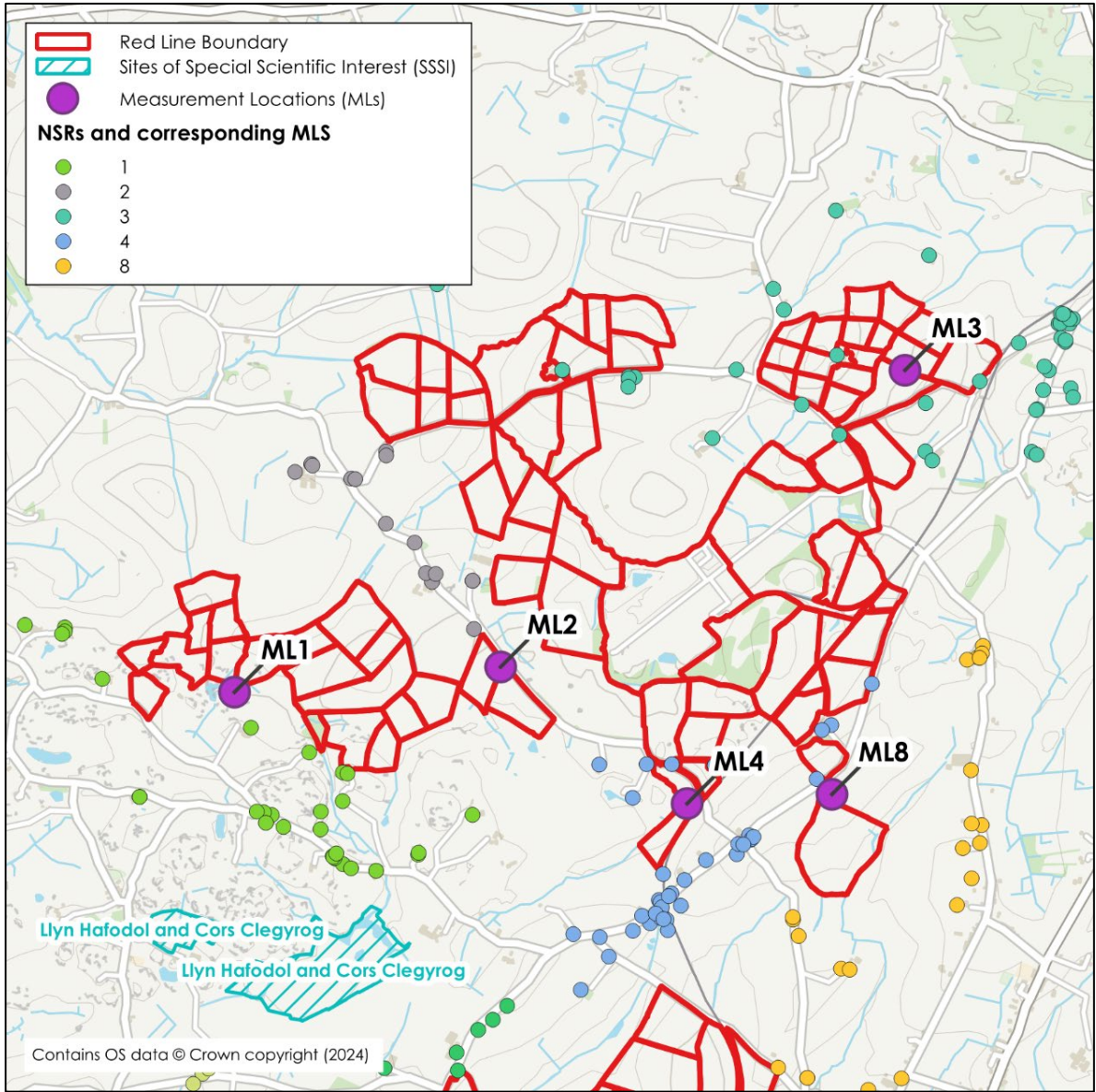


Figure 10.3.5: Baseline Measurement Locations

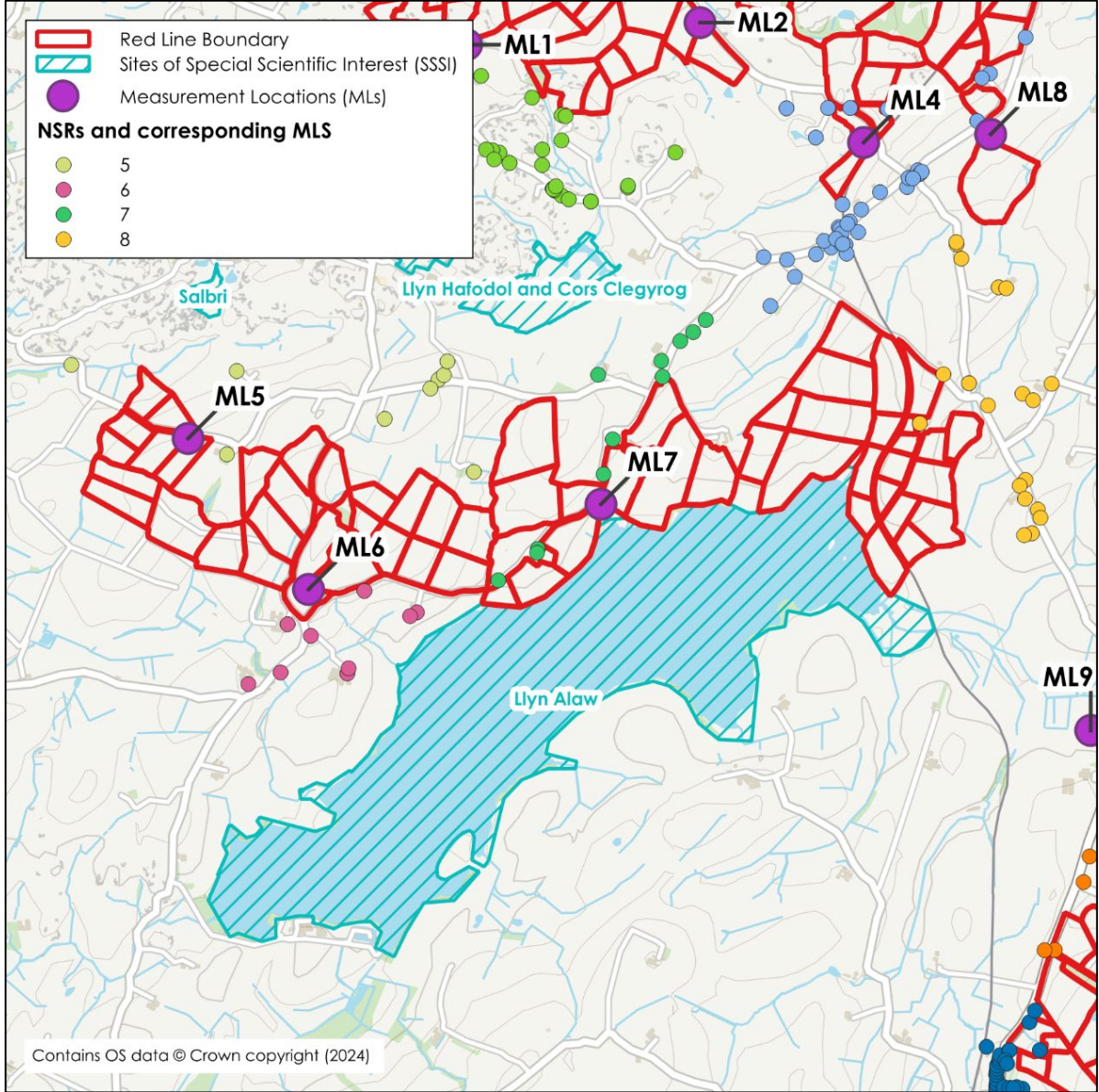
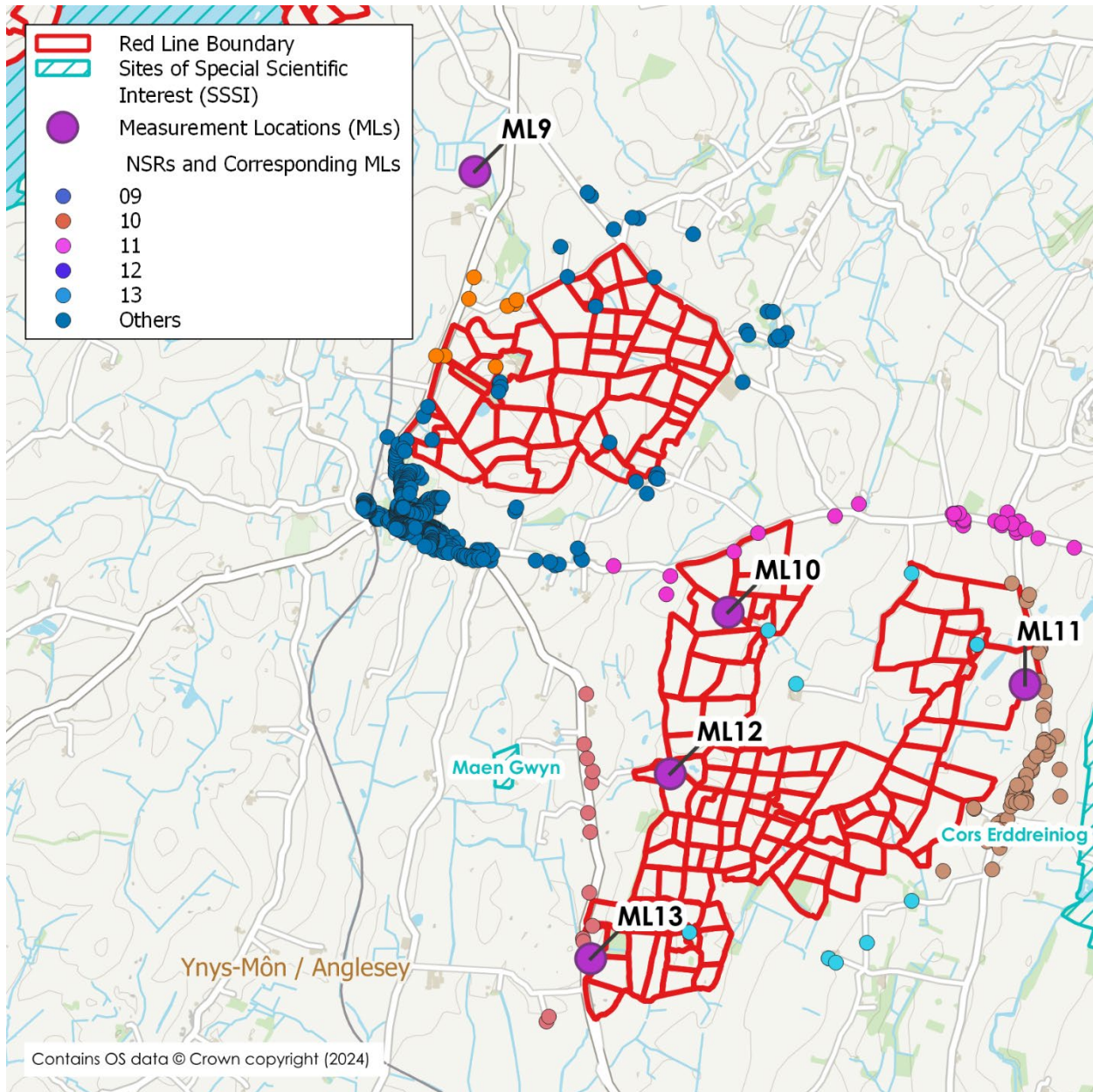


Figure 10.3.6: Baseline Measurement Locations



10.3.14 Given the rural location, the noise character across The Project was not observed to significantly differ.

10.3.15 Since the baseline noise survey was undertaken, there have been some changes to the PEIR Boundary and, as a result, there are some NSRs which are now within the PEIR Boundary that were not previously included when designing the noise survey (shown as other on Figure 10.3.6). At the ES Chapter stage, a full review will be undertaken and, where additional noise monitoring is required to ensure noise data is representative of these NSRs in the study area.

10.3.16 The MLs identified above are considered to provide sufficient coverage for the surrounding SSSI and PRoWs, as the existing noise environment does not differ significantly. This has also been agreed with the Local Authority.

Survey Methodology

Measurement Location 1 (ML1)

10.3.17 Unattended noise measurements were undertaken at Measurement Location 1 (ML1) from 14:37 on Wednesday 29th November 2023 until 07:00 on Thursday 7th December 2023. Measurement equipment at ML1 was established in free-field conditions at a height of circa. 1.5 m above local ground level. The noise climate was predominantly made up of wind and wildlife sounds, as well as water noises from a brook. There were no leaves on the bushes in this area. There were no audible sounds from either the nearby pylons or wind turbines identified in the surrounding area.

Measurement Location 2 (ML2)

10.3.18 Unattended noise measurements were undertaken at Measurement Location 2 (ML2) from 15:20 on Wednesday 29th November 2023 until 07:00 on Thursday 7th December 2023. The ambient noise climate at ML2 was dominated by the road adjacent to the area with occasional vehicles passing the area. There were also some wind and wildlife noise. No audible sound was identified from the distant wind turbines.

Measurement Location 3 (ML3)

10.3.19 Unattended noise measurements were undertaken at Measurement Location 3 (ML3) from 10:00 on Thursday 30th November 2023 until 07:00 on Thursday 7th December 2023. The dominant noise climate at ML3 was wind and wildlife noise, with occasional distance road noise and aircraft. There was no noise audible from the wind turbines.

Measurement Location 4 (ML4)

10.3.20 Unattended noise measurements were undertaken at Measurement Location 4 (ML4) from 10:45 on Thursday 30th November 2023 until 07:00 on Thursday 7th December 2023. The noise climate at ML4 was dominated by noise from works going on in field to the north, which included heavy machinery. It is unknown how long works will continue. ML4 was screened by the embankment. There was also noise from wind, wildlife, and some vehicles on the road. No livestock were identified around ML4, and no noise was audible from the distant wind turbines.

Measurement Location 5 (ML5)

10.3.21 Unattended noise measurements were undertaken at Measurement Location 5 (ML5) from 12:00 on Thursday 30th November until 07:00 on Thursday 7th December 2023. The noise climate at ML5 was dominated by noise from wind turbines to the west. A road was located adjacent to The Project, however no vehicles passed during the time spent at this location. The wind noise had increased from the levels heard at ML3 and ML4. There was some wildlife noise at ML5, along with evidence of recent animals, however no animals were identified.

Measurement Location 6 (ML6)

10.3.22 Unattended noise measurements were undertaken at Measurement Location 6 (ML6) from 12:00 on Thursday 30th November 2023 until 07:00 on Thursday 7th December 2023. Measurement equipment at ML6 (night) was established in free-field conditions at a height of circa. 1.5 m above local ground level. The noise climate at ML6 was dominated by noise from wind, with some impact from wind turbines, animals, including sheep in adjacent field, and some car movements on the adjacent road.

Measurement Location 7 (ML7)

10.3.23 Unattended noise measurements were undertaken at Measurement Location 7 (ML7) from 12:15 on Thursday 30th November 2023 until Thursday 7th December 2023. Measurement equipment at MP7 was established in free-field conditions at a height of circa. 1.5 m above local ground level. The noise climate at ML7 was dominated by noise from the road to the north of ML7, where occasional vehicle movement was observed. Additional noise sources included wildlife sounds, and potential water or wind turbine noise coming from the south towards Llyn Alaw reservoir. ML7 is located next to a public right of way.

Measurement Location 8 (ML8)

10.3.24 Unattended noise measurements were undertaken at Measurement Location 8 (ML8) from 12:00 on Tuesday 12th December 2023 until 12:00 on Thursday 14th December 2023. Measurement equipment at ML8 was established in free-field conditions at a height of circa. 1.5 m above local ground level.

Measurement Location 9 (ML9)

10.3.25 Unattended noise measurements were undertaken at Measurement Location 9 (ML9) from 13:00 on Tuesday 12th December 2023 until 15:00 on Monday 18th December 2023. Measurement equipment at ML9 was established in free-field conditions at a height of circa. 1.5 m above local ground level.

Measurement Location 10 (ML10)

10.3.26 Unattended noise measurements were undertaken at Measurement Location 1 (ML10) from 13:30 on Tuesday 12th December 2023 until 09:00 on Tuesday 19th December 2023. Measurement equipment at ML10 was established in free-field conditions at a height of circa. 1.5 m above local ground level.

Measurement Location 11 (ML11)

10.3.27 Unattended noise measurements were undertaken at Measurement Location 11 (ML11) from 15:00 on Tuesday 12th December 2023 until 09:00 on Tuesday 19th December 2023. Measurement equipment at ML11 was established in free-field conditions at a height of circa. 1.5 m above local ground level. The noise climate at ML11 was predominantly natural sounds such as birdsong and wind, with some faint aircraft noise. There were infrequent but audible cars passing along the road. There were no cattle located in the field at time of setting up the equipment. Operations were identified taking place towards a nearby farm, which were faintly audible at ML11.

Measurement Location 12 (ML12)

10.3.28 Unattended noise measurements were undertaken at Measurement Location 12 (ML12) from 15:10 on Tuesday 12th December 2023 until 10:00 on Tuesday 19th December 2023. Measurement equipment at ML12 was established in free-field conditions at a height of circa. 1.5 m above local ground level. The dominant noise source at ML12 were infrequent road noise and aircraft, along with natural sounds including birdsong. There were cattle in the adjacent fields but these were inaudible at the time of equipment set up.

Measurement Location 13 (ML13)

10.3.29 Unattended noise measurements were undertaken at Measurement Location 13 (ML13) from 16:00 on Tuesday 12th December 2023 until 11:00 on Tuesday 19th December 2023. Measurement equipment at ML13 was established in free-field conditions at a height of circa. 1.5 m above local ground level. The dominant noise source at ML13 was from infrequent cars along the road, along with natural sounds, and some aircraft noise.

Measurement Equipment

10.3.30 The baseline noise survey was undertaken using the Class 1 specification noise measurement equipment detailed in **Table 10.3.2**. Equipment was calibrated using a portable calibrator immediately before and after the measurements with no significant drift in calibration observed. The sound level meters, pre-amplifiers and microphones were calibrated to traceable standards at an accredited laboratory

within the 24 months prior to the measurements. The portable calibrators were calibrated within the 12 months preceding the date of the survey.

Table 10.3.2: Noise measurement equipment

Position	Equipment	Make & Model	Serial Number	Calibration Date
ML1, ML8	Sound Level Meter	FUSION	14150	12/09/2021
	Microphone	40CD	466798	
	Preamp	Internal	-	
ML2, ML9	Sound Level Meter	FUSION	14146	09/07/2023
	Microphone	40CD	556143	
	Preamp	Internal	-	
ML3, ML10	Sound Level Meter	FUSION	14153	10/11/2023
	Microphone	40CD	428496	
	Preamp	Internal	-	
ML4, ML11	Sound Level Meter	FUSION	14938	12/01/2023
	Microphone	40CD	504795	
	Pre-amp	Internal	-	
ML5, ML12	Sound Level Meter	FUSION	12079	25/04/2023
	Microphone	40CD	367009	
	Pre-amp	Internal	-	
ML6, ML13	Sound Level Meter	FUSION	14937	12/01/2023
	Microphone	40CD	504863	
	Pre-amp	Internal	-	
ML7	Sound Level Meter	FUSION	14939	12/01/2023

Position	Equipment	Make & Model	Serial Number	Calibration Date
	Microphone	40CD	504890	
	Pre-amp	Internal	-	
	Calibrator	CR515	98097	07/06/2023
	Calibrator	CR515	95399	13/04/2023

3.1 Meteorological Conditions

10.3.31 A summary of weather recorded during the survey using weather stations at ML1 and ML8 is presented below in **Table 10.3.3**.

Table 10.3.3 – Survey Period Weather Summary

Day	Average Wind Speed (m/s)	Average Wind Direction (°)	Rain Intensity (mm/h)	Average Temperature	Summary
29/11	2.78	NE	0.00	3.63	Cold and dry
30/11	3.59	ENE	0.04	3.53	Light rain at the beginning and end of the day
01/12	1.67	SSE	0.00	1.62	Cold and dry
02/12	3.30	SSE	0.18	2.93	Light rain in the evening
03/12	3.07	ESE	0.02	4.13	Cold and dry
04/12	5.62	NNE	0.24	5.65	Light rain throughout the day, winds pick up in the evening
05/12	3.07	ENE	0.02	5.54	Light rain in the morning
06/12	3.01	SE	0.04	4.41	Light rain in the evening
07/12	3.94	S	0.19	9.52	Warmer
08/12	2.27	SW	0.04	9.46	Light rain in early afternoon
09/12	5.49	SW	0.35	9.90	Stronger wind from early afternoon onwards

Day	Average Wind Speed (m/s)	Average Wind Direction (°)	Rain Intensity (mm/h)	Average Temperature	Summary
10/12	3.45	SW	0.16	9.21	Light rain in the morning
11/12	3.04	W	0.01	8.86	Relatively dry
12/12	2.32	ESE	0.11	8.00	Relatively dry
13/12	3.81	ENE	0.03	6.72	Relatively dry
14/12	0.52	SW	0.13	7.90	Light rain in the morning
15/12	1.50	SW	0.00	9.1	Dry
16/12	3.05	SW	0.11	9.7	Light rain in the morning and evening
17/12	3.44	SW	0.54	10.3	Warmer, rain in the evening
18/12	2.03	SW	0.28	11.0	Continuing to get warmer, rain in the morning
19/12	0.75	West	0.09	7.7	Light rain in the morning

3.2 Measurement Results

10.3.32 Tables 10.3.4 to 10.3.16 below present a summary of relevant survey results.

Table 10.3.4 – Summary of measured sound pressure levels at ML1

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	29/11/2023 15:00	8-hours	38	32
Night-time	29/11/2023 23:00	6-hours	44	34
Early Morning	30/11/2023 05:00	2-hours	43	37
Daytime	30/11/2023 07:00	16-hours	43	32
Night-time	30/11/2023 23:00	6-hours	33	32

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Early Morning	01/12/2023 05:00	2-hours	38	32
Daytime	01/12/2023 07:00	16-hours	40	31
Night-time	01/12/2023 23:00	6-hours	36	31
Early Morning	02/12/2023 05:00	2-hours	39	34
Daytime	02/12/2023 07:00	16-hours	41	35
Night-time	02/12/2023 23:00	6-hours	37	35
Early Morning	03/12/2023 05:00	2-hours	37	35
Daytime	03/12/2023 07:00	16-hours	43	35
Night-time	03/12/2023 23:00	6-hours	49	42
Early Morning	04/12/2023 05:00	2-hours	53	46
Daytime	04/12/2023 07:00	16-hours	51	46
Night-time	04/12/2023 23:00	6-hours	46	41
Early Morning	05/12/2023 05:00	2-hours	45	40
Daytime	05/12/2023 07:00	16-hours	42	35
Night-time	05/12/2023 23:00	6-hours	36	34
Early Morning	06/12/2023 05:00	2-hours	37	35

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	06/12/2023 07:00	16-hours	44	35
Night-time	06/12/2023 23:00	6-hours	46	38
Early Morning	07/12/2023 05:00	2-hours	44	38
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.5 – Summary of measured sound pressure levels at ML2

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	29/11/2023 23:00	8-hours	44	27
Night-time	29/11/2023 23:00	6-hours	38	29
Early Morning	30/11/2023 05:00	2-hours	39	32
Daytime	30/11/2023 07:00	16-hours	42	28
Night-time	30/11/2023 23:00	6-hours	25	18
Early Morning	01/12/2023 05:00	2-hours	36	21
Daytime	01/12/2023 07:00	16-hours	38	21
Night-time	01/12/2023 23:00	6-hours	29	21
Early Morning	02/12/2023 05:00	2-hours	36	26
Daytime	02/12/2023 07:00	16-hours	39	28
Night-time	02/12/2023 23:00	6-hours	28	22

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Early Morning	03/12/2023 05:00	2-hours	31	23
Daytime	03/12/2023 07:00	16-hours	40	28
Night-time	03/12/2023 23:00	6-hours	44	36
Early Morning	04/12/2023 05:00	2-hours	47	40
Daytime	04/12/2023 07:00	16-hours	45	37
Night-time	04/12/2023 23:00	6-hours	41	34
Early Morning	05/12/2023 05:00	2-hours	40	34
Daytime	05/12/2023 07:00	16-hours	39	25
Night-time	05/12/2023 23:00	6-hours	26	21
Early Morning	06/12/2023 05:00	2-hours	31	23
Daytime	06/12/2023 07:00	16-hours	42	28
Night-time	06/12/2023 23:00	6-hours	44	33
Early Morning	07/12/2023 05:00	2-hours	46	36
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.6 – Summary of measured sound pressure levels at ML3

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	30/11/2023 11:00	8-hours	41	30

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Night-time	30/11/2023 23:00	6-hours	32	24
Early Morning	01/12/2023 05:00	2-hours	38	24
Daytime	01/12/2023 07:00	16-hours	40	26
Night-time	01/12/2023 23:00	6-hours	35	28
Early Morning	02/12/2023 05:00	2-hours	41	34
Daytime	02/12/2023 07:00	16-hours	45	34
Night-time	02/12/2023 23:00	6-hours	34	26
Early Morning	03/12/2023 05:00	2-hours	35	25
Daytime	03/12/2023 07:00	16-hours	40	30
Night-time	03/12/2023 23:00	6-hours	42	37
Early Morning	04/12/2023 05:00	2-hours	46	40
Daytime	04/12/2023 07:00	16-hours	44	38
Night-time	04/12/2023 23:00	6-hours	38	33
Early Morning	05/12/2023 05:00	2-hours	40	32
Daytime	05/12/2023 07:00	16-hours	42	30
Night-time	05/12/2023 23:00	6-hours	34	25

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Early Morning	06/12/2023 05:00	2-hours	38	27
Daytime	06/12/2023 07:00	16-hours	44	34
Night-time	06/12/2023 23:00	6-hours	40	33
Early Morning	07/12/2023 05:00	2-hours	42	34

¹ arithmetic average background noise level (LA90,15mins) during measurement period

Table 10.3.7 – Summary of measured sound pressure levels at ML4

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	30/11/2023 11:00	8-hours	39	25
Night-time	30/11/2023 23:00	6-hours	26	18
Early Morning	01/12/2023 05:00	2-hours	37	19
Daytime	01/12/2023 07:00	16-hours	37	24
Night-time	01/12/2023 23:00	6-hours	30	20
Early Morning	02/12/2023 05:00	2-hours	37	24
Daytime	02/12/2023 07:00	16-hours	37	28
Night-time	02/12/2023 23:00	6-hours	29	22
Early Morning	03/12/2023 05:00	2-hours	33	23
Daytime	03/12/2023 07:00	16-hours	38	26

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Night-time	03/12/2023 23:00	6-hours	37	33
Early Morning	04/12/2023 05:00	2-hours	40	36
Daytime	04/12/2023 07:00	16-hours	42	35
Night-time	04/12/2023 23:00	6-hours	36	30
Early Morning	05/12/2023 05:00	2-hours	37	29
Daytime	05/12/2023 07:00	16-hours	41	23
Night-time	05/12/2023 23:00	6-hours	25	19
Early Morning	06/12/2023 05:00	2-hours	32	20
Daytime	06/12/2023 07:00	16-hours	41	27
Night-time	06/12/2023 23:00	6-hours	34	30
Early Morning	07/12/2023 05:00	2-hours	35	32

¹ arithmetic average background noise level (LA90,15mins) during measurement period

Table 10.3.8 – Summary of measured sound pressure levels at ML5

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	30/11/2023 11:00	8-hours	38	29
Night-time	30/11/2023 23:00	6-hours	25	19
Early Morning	01/12/2023 05:00	2-hours	36	26

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Daytime	01/12/2023 07:00	16-hours	37	25
Night-time	01/12/2023 23:00	6-hours	34	32
Early Morning	02/12/2023 05:00	2-hours	39	35
Daytime	02/12/2023 07:00	16-hours	42	35
Night-time	02/12/2023 23:00	6-hours	32	29
Early Morning	03/12/2023 05:00	2-hours	32	23
Daytime	03/12/2023 07:00	16-hours	41	31
Night-time	03/12/2023 23:00	6-hours	44	40
Early Morning	04/12/2023 05:00	2-hours	47	42
Daytime	04/12/2023 07:00	16-hours	42	37
Night-time	04/12/2023 23:00	6-hours	38	34
Early Morning	05/12/2023 05:00	2-hours	39	34
Daytime	05/12/2023 07:00	16-hours	42	30
Night-time	05/12/2023 23:00	6-hours	33	31
Early Morning	06/12/2023 05:00	2-hours	35	32
Daytime	06/12/2023 07:00	16-hours	44	35

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Night-time	06/12/2023 23:00	6-hours	48	45
Early Morning	07/12/2023 05:00	2-hours	47	44
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.9 – Summary of measured sound pressure levels at ML6

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	30/11/2023 11:00	12-hours	25	21
Night-time	30/11/2023 23:00	6-hours	25	19
Early Morning	01/12/2023 05:00	2-hours	36	26
Daytime	01/12/2023 07:00	16-hours	38	27
Night-time	01/12/2023 23:00	6-hours	32	29
Early Morning	02/12/2023 05:00	2-hours	39	34
Daytime	02/12/2023 07:00	16-hours	44	36
Night-time	02/12/2023 23:00	6-hours	32	28
Early Morning	03/12/2023 05:00	2-hours	37	24
Daytime	03/12/2023 07:00	16-hours	40	33
Night-time	03/12/2023 23:00	6-hours	43	40
Early Morning	04/12/2023 05:00	2-hours	46	43

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	04/12/2023 07:00	16-hours	46	41
Night-time	04/12/2023 23:00	6-hours	40	37
Early Morning	05/12/2023 05:00	2-hours	40	36
Daytime	05/12/2023 07:00	16-hours	42	31
Night-time	05/12/2023 23:00	6-hours	31	28
Early Morning	06/12/2023 05:00	2-hours	33	28
Daytime	06/12/2023 07:00	16-hours	45	35
Night-time	06/12/2023 23:00	6-hours	51	44
Early Morning	07/12/2023 05:00	2-hours	48	41
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.10 – Summary of measured sound pressure levels at ML7

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	30/11/2023 13:00	8-hours	38	28
Night-time	30/11/2023 23:00	6-hours	29	22
Early Morning	01/12/2023 05:00	2-hours	38	24
Daytime	01/12/2023 07:00	16-hours	47	26
Night-time	01/12/2023 23:00	6-hours	32	27

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Early Morning	02/12/2023 05:00	2-hours	38	32
Daytime	02/12/2023 07:00	16-hours	42	35
Night-time	02/12/2023 23:00	6-hours	37	34
Early Morning	03/12/2023 05:00	2-hours	35	29
Daytime	03/12/2023 07:00	16-hours	42	31
Night-time	03/12/2023 23:00	6-hours	42	38
Early Morning	04/12/2023 05:00	2-hours	47	45
Daytime	04/12/2023 07:00	16-hours	47	45
Night-time	04/12/2023 23:00	6-hours	42	40
Early Morning	05/12/2023 05:00	2-hours	43	41
Daytime	05/12/2023 07:00	16-hours	45	34
Night-time	05/12/2023 23:00	6-hours	31	27
Early Morning	06/12/2023 05:00	2-hours	34	27
Daytime	06/12/2023 07:00	16-hours	43	33
Night-time	06/12/2023 23:00	6-hours	49	44
Early Morning	07/12/2023 05:00	2-hours	46	42

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.11 – Summary of measured sound pressure levels at ML8

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	12/12/2023 12:00	8-hours	49	30
Night-time	12/12/2023 23:00	6-hours	46	35
Early Morning	13/11/2023 05:00	2-hours	50	41
Daytime	13/12/2023 07:00	16-hours	48	32
Night-time	13/12/2023 23:00	6-hours	45	34
Early Morning	14/12/2023 05:00	2-hours	43	35
Daytime	14/12/2023 07:00	5-hours	41	32
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.12 – Summary of measured sound pressure levels at ML9

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	12/12/2023 13:00	8-hours	44	34
Night-time	12/12/2023 23:00	6-hours	39	30
Early Morning	13/11/2023 05:00	2-hours	46	39
Daytime	13/12/2023 07:00	16-hours	44	37

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Night-time	13/12/2023 23:00	6-hours	42	29
Early Morning	14/12/2023 05:00	2-hours	42	33
Daytime	14/12/2023 07:00	16-hours	38	32
Night-time	14/12/2023 23:00	6-hours	31	24
Early Morning	15/12/2023 05:00	2-hours	34	26
Daytime	15/12/2023 07:00	16-hours	50	39
Night-time	15/12/2023 23:00	6-hours	54	43
Early Morning	16/12/2023 05:00	2-hours	53	43
Daytime	16/12/2023 07:00	16-hours	57	47
Night-time	16/12/2023 23:00	6-hours	64	53
Early Morning	17/12/2023 05:00	2-hours	63	52
Daytime	17/12/2023 07:00	16-hours	60	49
Night-time	17/12/2023 23:00	6-hours	55	44
Early Morning	18/12/2023 05:00	2-hours	53	44
Daytime	18/12/2023 07:00	8-hours	52	45
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.13 – Summary of measured sound pressure levels at ML10

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Daytime	12/12/2023 14:00	8-hours	40	27
Night-time	12/12/2023 23:00	6-hours	36	28
Early Morning	13/11/2023 05:00	2-hours	44	36
Daytime	13/12/2023 07:00	16-hours	43	28
Night-time	13/12/2023 23:00	6-hours	40	31
Early Morning	14/12/2023 05:00	2-hours	41	34
Daytime	14/12/2023 07:00	16-hours	43	33
Night-time	14/12/2023 23:00	6-hours	28	23
Early Morning	15/12/2023 05:00	2-hours	32	26
Daytime	15/12/2023 07:00	16-hours	50	40
Night-time	15/12/2023 23:00	6-hours	56	48
Early Morning	16/12/2023 05:00	2-hours	56	48
Daytime	16/12/2023 07:00	16-hours	60	52
Night-time	16/12/2023 23:00	6-hours	65	57
Early Morning	17/12/2023 05:00	2-hours	64	57
Daytime	17/12/2023 07:00	16-hours	61	52

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Night-time	17/12/2023 23:00	6-hours	57	48
Early Morning	18/12/2023 05:00	2-hours	55	47
Daytime	18/12/2023 07:00	16-hours	51	45
Night-time	18/12/2023 23:00	6-hours	30	22
Early Morning	19/12/2023 05:00	2-hours	38	28
Daytime	19/12/2023 07:00	2-hours	42	33
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.14 – Summary of measured sound pressure levels at ML11

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	12/12/2023 15:00	8-hours	42	25
Night-time	12/12/2023 23:00	6-hours	40	28
Early Morning	13/11/2023 05:00	2-hours	48	39
Daytime	13/12/2023 07:00	16-hours	45	36
Night-time	13/12/2023 23:00	6-hours	36	29
Early Morning	14/12/2023 05:00	2-hours	44	36
Daytime	14/12/2023 07:00	16-hours	44	32
Night-time	14/12/2023 23:00	6-hours	29	25

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Early Morning	15/12/2023 05:00	2-hours	29	25
Daytime	15/12/2023 07:00	16-hours	46	37
Night-time	15/12/2023 23:00	6-hours	49	41
Early Morning	16/12/2023 05:00	2-hours	47	40
Daytime	16/12/2023 07:00	16-hours	52	44
Night-time	16/12/2023 23:00	6-hours	56	49
Early Morning	17/12/2023 05:00	2-hours	56	49
Daytime	17/12/2023 07:00	16-hours	53	45
Night-time	17/12/2023 23:00	6-hours	51	42
Early Morning	18/12/2023 05:00	2-hours	51	41
Daytime	18/12/2023 07:00	16-hours	50	42
Night-time	12/12/2023 23:00	6-hours	31	24
Early Morning	19/12/2023 05:00	2-hours	37	27
Daytime	19/12/2023 07:00	3-hours	42	33
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.15 – Summary of measured sound pressure levels at ML12

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Daytime	12/12/2023 15:00	8-hours	39	26
Night-time	12/12/2023 23:00	6-hours	37	27
Early Morning	13/11/2023 05:00	2-hours	44	36
Daytime	13/12/2023 07:00	16-hours	43	30
Night-time	13/12/2023 23:00	6-hours	36	27
Early Morning	14/12/2023 05:00	2-hours	38	31
Daytime	14/12/2023 07:00	16-hours	41	35
Night-time	14/12/2023 23:00	6-hours	27	20
Early Morning	15/12/2023 05:00	2-hours	36	26
Daytime	15/12/2023 07:00	16-hours	43	36
Night-time	15/12/2023 23:00	6-hours	55	46
Early Morning	16/12/2023 05:00	2-hours	54	47
Daytime	16/12/2023 07:00	16-hours	51	44
Night-time	16/12/2023 23:00	6-hours	47	39
Early Morning	17/12/2023 05:00	2-hours	44	38
Daytime	17/12/2023 07:00	16-hours	43	38

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Night-time	17/12/2023 23:00	6-hours	31	21
Early Morning	18/12/2023 05:00	2-hours	35	26
Daytime	18/12/2023 07:00	16-hours	42	35
Night-time	18/12/2023 23:00	6-hours	31	24
Early Morning	19/12/2023 05:00	2-hours	37	27
Daytime	19/12/2023 07:00	3-hours	42	33
¹ arithmetic average background noise level (LA90,15mins) during measurement period				

Table 10.3.16 – Summary of measured sound pressure levels at ML13

Period	Start Time	Duration	dB LAeq,T	dB LA90,T ¹
Daytime	12/12/2023 16:00	8-hours	50	32
Night-time	12/12/2023 23:00	6-hours	38	29
Early Morning	13/11/2023 05:00	2-hours	48	38
Daytime	13/12/2023 07:00	16-hours	51	36
Night-time	13/12/2023 23:00	6-hours	42	31
Early Morning	14/12/2023 05:00	2-hours	51	36
Daytime	14/12/2023 07:00	16-hours	52	36
Night-time	14/12/2023 23:00	6-hours	38	24

Period	Start Time	Duration	dB LAeq,T	dB LA90,T¹
Early Morning	15/12/2023 05:00	2-hours	48	26
Daytime	15/12/2023 07:00	16-hours	55	42
Night-time	15/12/2023 23:00	6-hours	53	45
Early Morning	16/12/2023 05:00	2-hours	52	45
Daytime	16/12/2023 07:00	16-hours	58	50
Night-time	16/12/2023 23:00	6-hours	61	54
Early Morning	17/12/2023 05:00	2-hours	63	55
Daytime	17/12/2023 07:00	16-hours	60	52
Night-time	17/12/2023 23:00	6-hours	55	47
Early Morning	18/12/2023 05:00	2-hours	55	47
Daytime	18/12/2023 07:00	16-hours	58	49
Night-time	18/12/2023 23:00	6-hours	37	23
Early Morning	19/12/2023 05:00	2-hours	48	29
Daytime	19/12/2023 07:00	4-hours	42	33
¹ arithmetic average background noise level (LA90,15mins) during measurement period				