Appendix 10A

Noise Survey and Baseline

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A1 Introduction

An environmental noise survey has been undertaken to determine the existing noise climate in and around the site. This appendix details the baseline noise survey and results.

A1.1 Noise survey receptor locations

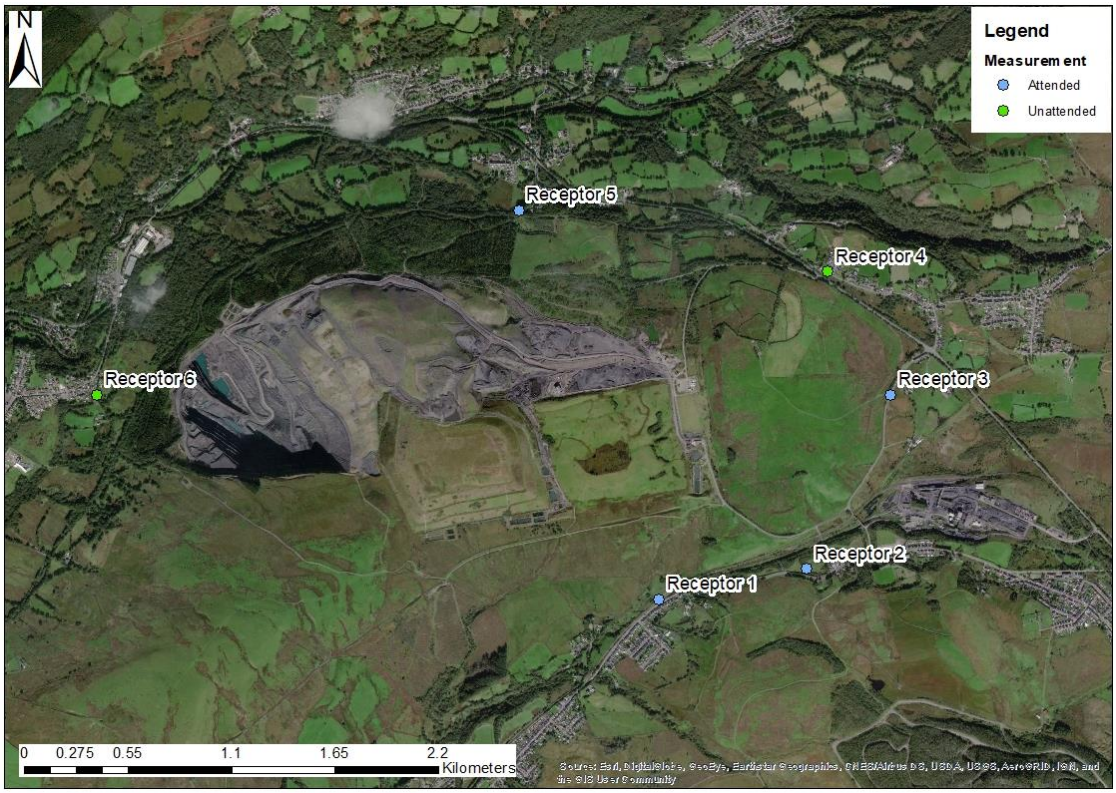


Figure 1: Noise survey locations

A1.2 Instrumentation

The sound level meters and microphones are Class 1 conforming to BS EN 61672-1:2013. All equipment is calibrated annually according to international standards, together with traceable records. Calibration certificates can be provided upon request. Onsite calibration checks were conducted and no drift in noise levels recorded. The monitoring equipment used is described in Table 1.

Table 1: Noise survey instrumentation

Description	Serial Number	Item Type
NOR 140 SLM Kit A (AAcW)	1403425	SLM
NOR Microphone 1225 (Nor 140 Kit A)	98510	Microphones
NOR Preamp 1209 (Nor 140 Kit A)	12578	Miscellaneous
Nor 1251 Calibrator	33849	Calibrator

A1.3 Measurement Methodology

At each location L_{Aeq}, L_{A10}, L_{A90}, L_{Amax} metric values were measured. All broadband measurements were A-weighted and used a fast time constant (0.125s).

The sound level meter was mounted on a tripod with the microphone set approximately at 1.2m-1.5m above local ground level. All measurements were taken under acoustically free-field conditions, except where otherwise stated. A windshield was fitted to the microphone.

A1.4 Summary of measured noise levels

Table 2: Summary of measured baseline noise levels during noise surveys

Noise Survey Location	Assessment locations at which this survey location is used in the noise assessments	Noise level, $L_{Aeq,T}$		
		Daytime (0700-1900)	Evening (1900-2300)	Night-time (2300-0700)
1	R8, R10	48	47	33
2	R7, R9, R12, R13	49	51	44
3	R6, R14	56	56	34
4	R4, R5	51	42	43
5	R1, R2, R3, R11	46	41	38
6	None	Baseline noise levels monitored at this location were cut short by equipment failure and the noise climate contaminated by domestic noise. A repeat survey here was planned but due to the Covid-related lockdown it was not possible to carry this out. The construction and operational noise assessments, however, demonstrate that regardless of baseline noise levels, the noise from the scheme will not produce any likely significant effects.		

A1.5 Attended Measurements

A1.5.1 Location 1

Location Description:
Location 1 is at the southern end of the proposed site looking north towards the site. This is a gentle slopping up area to the east. Dips down to the north to a stream then a steep incline after the stream to the north onto the proposed site.

Environment and Observations:

Measurement Duration:
Thu 05/03/2020 13:50
to
Fri 06/03/2020 03:46

Weather Conditions:
Wind Speed: 0-3.2MPS
Wind Direction: N
Summary: 8Deg C down to -3Deg C
Very low cloud all day clearing at night.

Personnel: 2

Additional Comments:
At this location traffic dominates the area followed by a gentle trickle from the lower stream.

Table 3: Summary of averaged sound pressure levels at noise survey location 1

Period	Sound Pressure Level, dB(A) (re 20 µPa)			
	L_{90}	L_{eq}	L_{10}	L_{max}
Day (07:00-19:00)	37	48	52	65 - 66
Evening (19:00-23:00)	32	47	50	62 - 66
Night (23:00-07:00)	29	33	34	50 - 59

Table 4: Detail of measured sound pressure levels at location 1

Date	Time [hh:mm:ss]		Sound Pressure Level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L_{90}	L_{eq}	L_{10}	L_{max}	
Day							
05/03/2020	13:50	00:15:00	37.9	47.6	51.0	66.2	To the left of houses and north of railway. Constant dog barking. Dominant source traffic on the main road to the south.

Date	Time [hh:mm:ss]		Sound Pressure Level, dB(A) (re 20 µPa)				Comments
	Start	**Duration**	**L_{90}**	**L_{eq}**	**L_{10}**	**L_{max}**	
05/03/2020	15:27	00:15:00	35.9	49.1	53.6	64.9	As above
Evening							
05/03/2020	20:42	00:10:00	31.5	45.3	48.2	62.1	Traffic is main noise source along with the stream
05/03/2020	21:55	00:10:00	33.3	48.3	51.3	65.9	As above
Night							
06/03/2020	02:26	00:10:00	29.7	31.1	31.4	50.3	Distant dogs barking along with running stream
06/03/2020	03:36	00:10:00	28.0	34.6	37.3	59.4	1 car per min. Getting colder dominant sound is a small river then owls. Hooting then distant traffic

A1.5.2 Location 2

Location Description:

Location 2 was moved 250 metres to the west away from traveller's accommodation. It is at the southern end of the proposed site looking north towards the site. This is a gentle slopping up area to the east.

Measurement Duration:
Thu 05/03/2020 13:27
to
Fri 06/03/2020 03:31

Weather Conditions:
Wind Speed: 1.2 m/s
Wind Direction: N
Summary: 8Deg C down to -3Deg C
Very low cloud all day clearing at night.

Personnel: 2

Additional Comments:
Dominated by road traffic noise at this location. When traffic is not present, crackle of the pylons above was noticeable.

Environment and Observations:

Table 5: Summary of averaged sound pressure levels at noise survey location 2

Period	Sound Pressure Level, dB(A) (re 20 µPa)			
	L_{90}	L_{eq}	L_{10}	L_{max}
Day (07:00-19:00)	41	49	53	62-64
Evening (19:00-23:00)	26	51	56	66-67
Night (23:00-07:00)	33	46	45	52-67

Table 6: Detail of measured sound pressure levels at location 2

Date	Time [hh:mm:ss]		Sound Pressure Level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L_{90}	L_{eq}	L_{10}	L_{max}	
Day							
05/03/2020	13:27	00:15:00	42.4	49.6	53.3	62.0	Most dominant sound is a road to south along with earth movers on proposed site.
05/03/2020	15:06	00:15:00	39.8	49.1	53.0	63.7	Dominant sound is traffic to the south
Evening							

Date	**Time [hh:mm:ss]**		**Sound Pressure Level, dB(A) (re 20 µPa)**				**Comments**
	Start	Duration	L_{90}	L_{eq}	L_{10}	L_{max}	
05/03/2020	20:27	00:10:00	26.5	52.4	57.1	66.0	Traffic to the south along with pylons about 60m away
05/03/2020	21:39	00:10:00	24.5	50.0	54.8	67.3	5 car passages during this time. Dominant sound traffic followed by crackling pylon sound + wildlife
Night							
06/03/2020	02:11	00:10:00	31.1	35.6	37.6	52.3	Frozen ground buzzing + cracking from pylon. Dogs barking at traveller accommodation
06/03/2020	03:21	00:10:00	34.0	46.2	44.9	66.6	Sound from pylon is dominant sound then distant traffic.

A1.5.3 Location 3

Location Description:

Environment and Observations:

Measurement Duration:
Thu 05/03/2020 12:56
to
Fri 06/03/2020 03:14

Weather Conditions:
Wind Speed: 0 1.2 m/s
Wind Direction: N
Summary: 8Deg C down to -3Deg C
Very low cloud all day clearing at night.

Personnel: 2

Additional Comments:
Dominated by road traffic noise.

Table 7: Summary of averaged sound pressure levels at noise survey location 3

Period	Sound Pressure Level, dB(A) (re 20 µPa)			
	L_{90}	L_{eq}	L_{10}	L_{max}
Day (07:00-19:00)	40	56	54	69-82
Evening (19:00-23:00)	28	58	48	73-75
Night (23:00-07:00)	24	34	35	59-62

Table 8: Detail of measured sound pressure levels at location 3

Date	Time [hh:mm:ss]		Sound Pressure Level, dB(A) (re 20 µPa)				Comments
	Start	Duration	L_{90}	L_{eq}	L_{10}	L_{max}	
Day							
05/03/2020	12:56	00:15:00	42.1	57.9	56.1	81.7	Dominant sound is A4221. Noise from people departing hostel.
05/03/2020	14:43	00:15:00	37.1	50.1	51.4	69.4	Road traffic from A4221
Evening							
05/03/2020	20:09	00:10:00	26.9	51.8	50.4	74.6	As above
05/03/2020	21:21	00:10:00	28.0	57.8	47.8	72.6	As above
Night							
06/03/2020	01:54	00:10:00	23.5	34.7	38.6	61.6	Distant traffic and flowing water
06/03/2020	03:04	00:10:00	24.5	32.2	31.4	58.9	As above

A2.1.4 Location 5

Location Description:
Location 5 is north of the proposed site. Main road A4221 north of location.

Measurement Duration:
Thu 05/03/2020 12:32
to
Fri 06/03/2020 03:46

Weather Conditions:
Wind Speed: 2.4 m/s
Wind Direction: N
Summary: 8Deg C down to -3Deg C
Very low cloud all day clearing at night.

Personnel: 2

Additional Comments:
Road traffic noise from A421 dominates.

Environment and Observations:

Table 9: Summary of averaged sound pressure levels at noise survey location 5

Period	**Sound Pressure Level, dB(A) (re 20 µPa)**			
	L90	Leq	L10	Lmax
Day (07:00-19:00)	42	47	48	65-68
Evening (19:00-23:00)	38	42	44	60-66
Night (23:00-07:00)	35	39	42	50-55

Table 10: Detail of measured sound pressure levels at location 5

Date	**Time [hh:mm:ss]**		**Sound Pressure Level, dB(A) (re 20 µPa)**				**Comments**
	Start	Duration	L_{90}	L_{eq}	L_{10}	L_{max}	
Day							
05/03/2020	12:32	00:15:00	43.3	47.6	48.9	67.5	Dominant source is road traffic noise from A4221.
05/03/2020	14:21	00:15:00	41.5	45.0	47.1	64.8	As above
Evening							
05/03/2020	19:48	00:10:00	39.1	42.6	44.6	65.6	Distant traffic to the north
05/03/2020	21:02	00:10:00	36.2	40.0	42.7	59.7	As above
Night							
06/03/2020	01:36	00:10:00	34.9	38.2	40.4	50.4	Distant traffic, running water and wildlife
06/03/2020	02:46	00:10:00	34.0	38.5	41.8	55.4	As above

A1.6 Unattended measurements

A1.6.1 Location 4

Location Description:

Environment and Observations:

Measurement Duration:
Thu 05/03/2020 12:03
to
Fri 06/03/2020 11:03

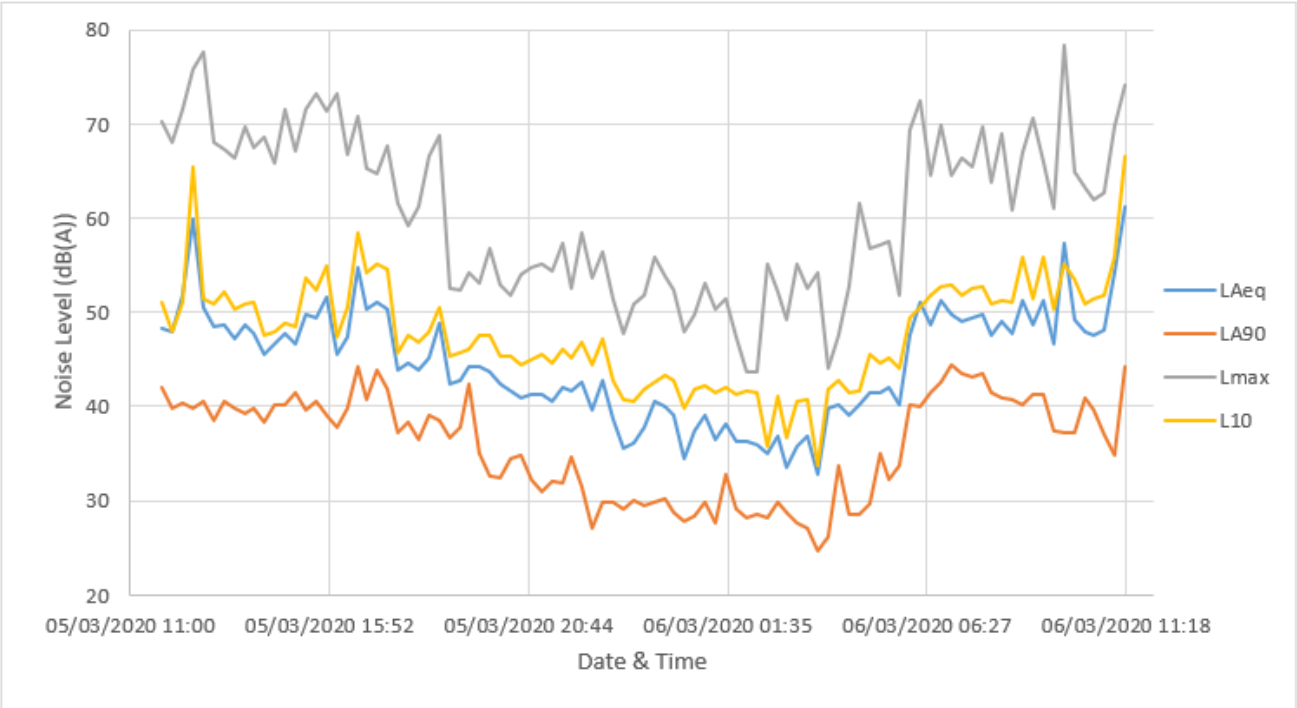
Logging Interval:
00:15:00

Weather Conditions:

Additional Comments:

[RE1]

Figure 2: Noise level time history for the unattended measurement at location 4



A1.6.2 Location 6

Location Description:

Environment and Observations:

Measurement Duration:
Thu 05/03/2020 12:15
to
Fri 06/03/2020 20:15

Logging Interval:
00:15:00

Weather Conditions:

Additional Comments:

Figure 3: Noise level time history for the unattended measurement at location 6