

Noise Monitoring Assessment

Northparkes Mines
Quarter 3 , 2024,



Document Information

Noise Monitoring Assessment

Northparkes Mines

Quarter 3, 2024

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1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Evolution Mining (Northparkes) Pty Ltd to complete a Noise Monitoring Assessment (NMA) for Northparkes Mines (Northparkes), 27km Northwest of Parkes, NSW. The NMA has been completed to quantify operational noise emissions as per Conditions 1 to 5 of Schedule 3 of the Project Approval Conditions (PA #11_0060) and the Northparkes Noise Management Plan (NMP, 2019).

The assessment has been conducted in accordance with the following documents:

- NSW Environment Protection Authority (EPA) 2017, Noise Policy for Industry (NPI);
- NSW Environment Protection Authority (EPA's), Approved Methods for the measurement and analysis of environmental noise in NSW, 2022; and
- Standards Australia AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

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2 Noise Criteria

2.1 Operational Noise Criteria

This assessment has adopted criteria as per Conditions 1 to 5 of Schedule 3 of PA #11_0060 and the NMP, 2019 (see **Appendix B**) and is summarised below in **Table 1**.

Table 1 Noise Criteria				
Location	Day	Evening	Night	
	dB LAeq(15min)	dB LAeq(15min)	dB LAeq(15min)	dB LA1(1min)
All privately-owned land	35	35	35	45

Additionally, the conditions state:

Operational Noise generated by the project will be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy.

These limits apply under all meteorological conditions except the following:

- *during periods of rain or hail;*
- *average wind speeds at microphone height exceeds 5 m/s;*
- *wind speeds greater than 3 m/s at 10 metres above ground level; or*
- *temperature inversion conditions of up to 3 °C/100m or alternatively a stability class of G.*

Except for wind speed at the microphone height, the data to be used for determining meteorological conditions will be that recorded by the meteorological station located onsite. Operational noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.

These limits do not apply if NPM have an agreement with the relevant owner/s of the residences or land to generate higher noise levels, and NPM has advised the Department in writing of the terms of the agreement.

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3 Assessment Methodology

All attended noise monitoring surveys for this assessment were conducted in general accordance with the procedures described in Standards Australia AS 1055:2018, “Acoustics - Description and Measurement of Environmental Noise” and the NMP.

The acoustic instrumentation used carries appropriate and current NATA (or manufacturer) calibration certificates with records of all calibrations maintained by MAC as per Approved Methods for the measurement and analysis of environmental noise in NSW (EPA, 2022) and complies with AS/NZS IEC 61672.1-2019-Electroacoustics - Sound level meters - Specifications. Calibration of all instrumentation was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dBA.

3.1 Operational Noise Measurement Methodology

The locality surrounding the mine is primarily rural/residential. In accordance with the NMP, five representative receivers were selected for this assessment and are presented in **Table 2**.

Table 2 Noise Monitoring Locations			
ID	Location	Coordinate Locations, MGA55	
		Easting (m)	Northing (m)
NM1	Hubberstone	600687	6360754
NM2	Lone Pine	593669	6358933
NM3	Milpose	594827	6352971
NM4	Hillview	602993	6353469
NM5	Adavale	593568	6356920

Note: NM5 is an additional monitoring initiative by NPM.

Monitoring locations with respect to the mine site are shown visually in **Figure 1**.

Measurements were carried out using a Svantek Type 1, 977 noise analyser. The monitoring regime consisted of three 15-minute measurements during the daytime, evening, and night-time periods at each monitoring location. Throughout each survey, the operator quantified the contribution of significant noise sources where possible.



FIGURE 1
Locality Plan
MAC190810
Northparkes Mine

KEY

● Monitoring Locations



4 Results

4.1 Assessment Information

The noise monitoring assessment for the third quarter in the 2024 EPL period was conducted on Wednesday 11 September 2024 to Friday 13 September 2024 by Field Officer Kristian Allen.

4.2 Operational Noise Results

The monitoring assessment results for each location are presented in **Table 3** to **Table 7**. Each table contains results for each of the three 15-minute measurements for daytime, evening and night-time periods for each location including wind direction, wind speed and atmospheric stability class.

Table 3 Operator-Attended Noise Survey Results – Location NM1, Hubberstone

Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L _A max	L _A eq	L _A 90		
Day					
07:09 13/09/2024	59	43	26	WD: E WS: 0.1m/s Stab Class: A	Birds 24-65
07:24 13/09/2024	65	46	28		Traffic 25-61
07:39 13/09/2024	63	45	26		Aircraft 25-44
					Livestock 30-43
					NPM Inaudible
Site L _A eq(15min) Contribution					<35
Evening					
19:10 12/09/2024	55	39	33	WD: SW WS: 0.5m/s Stab Class: E	Traffic 30-55
					Insects 25-35
19:25 12/09/2024	46	34	32		NPM – Production 29-35
					(just audible to audible throughout)
					NPM – Impacts 40-46
19:40 12/09/2024	46	35	33		(infrequent 1-2 second durations)
					NPM – Haul Trucks 25-43
					(just audible to audible 50% measurements)
Site L _A eq(15min) Contribution					<35
Night					
00:59 12/09/2024	51	34	26	WD: SW WS: 0.1m/s Stab Class: D	Livestock 25-52
					Insects 23-41
01:14 12/09/2024	44	28	24		Traffic 25-68
					NPM – Production 25-35
					(barely audible to audible, first two periods)
01:29 12/09/2024	68	42	23		NPM - Haul Trucks 25-39
					(barely audible to audible <50% measurements)
Site L _A eq(15min) Contribution					<35
Site L _A 1(1min) Contribution					<45

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 4 Operator-Attended Noise Survey Results – Location NM2, Lone Pine

Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA	
	L _A max	L _A eq	L _A 90			
Day						
16:53 12/09/2024	60	43	36	WD: S WS: 2.0m/s Stab Class: E	Birds 30-65 Wind in Trees 32-58 Traffic 30-61 Aircraft 30-43 NPM Inaudible	
17:08 12/09/2024	65	42	37			
17:23 12/09/2024	62	41	33			
Site L _A eq(15min) Contribution			<35			
Evening						
20:07 12/09/2024	45	35	33	WD: SW WS: 0.5m/s Stab Class: D	Insects 25-38 MAC Operator 50 NPM – Production 29-35 (just audible to audible throughout) NPM – Heavy Vehicles 25-38 (just audible to audible >50% measurements) NPM – Impacts 38-45 (infrequent 1-2 second durations) NPM – Alarms <30 (infrequent 3-5 second durations)	
20:22 12/09/2024	49	36	33			
20:37 12/09/2024	50	33	30			
Site L _A eq(15min) Contribution			<35			
Night						
01:55 12/09/2024	63	39	26		WD: SW WS: 0.1m/s Stab Class: E	Insects 20-41 Traffic 25-63 NPM – Site Hum 24-28 (barely audible to just audible throughout) NPM – Production 25-39 (barely audible to audible, throughout last 2 periods) NPM – Heavy Vehicles 25-36 (just audible to audible <50% measurements)
02:10 12/09/2024	56	34	29			
02:25 12/09/2024	41	30	26			
Site L _A eq(15min) Contribution			<35			
Site L _A 1(1min) Contribution			<45			

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 5 Operator-Attended Noise Survey Results – Location NM3, Milpose

Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L _A max	L _A eq	L _A 90		
Day					
15:02 12/09/2024	63	39	30	WD: SW WS: 2.0m/s Stab Class: D	Wind 25-58 Birds 25-63 Agricultural Noise 27-45 Residential Noise 25-85 NPM Inaudible
15:17 12/09/2024	85	55	29		
15:32 12/09/2024	63	36	28		
Site L _A eq(15min) Contribution			<35		
Evening					
21:09 11/09/2024	54	32	28	WD: SW WS: 0.1m/s Stab Class: D	Birds 30-43 Insects 20-54 NPM – Ventilation Fan <25-30 (just audible to audible throughout) NPM – Production <25-33 (just audible to audible throughout)
21:24 11/09/2024	43	31	27		
21:39 11/09/2024	45	32	29		
Site L _A eq(15min) Contribution			<35		
Night					
22:00 11/09/2024	40	29	26	WD: SW WS: <0.5m/s Stab Class: F	Birds 25-35 Insects 20-53 NPM – Ventilation Fan <25-28 (just audible throughout) NPM – Production <25-32 (just audible to audible throughout)
22:15 11/09/2024	41	28	26		
22:30 11/09/2024	53	29	26		
Site L _A eq(15min) Contribution			<35		
Site L _A 1(1min) Contribution			<45		

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 6 Operator-Attended Noise Survey Results – Location NM4, Hillview

Time(hrs)/Date	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
Duration 15min	L _A max	L _A eq	L _A 90		
Day					
13:49 12/09/2024	55	40	30	WD: E WS: 1.0m/s Stab Class: B	Traffic 25-64 Birds 25-48 Aircraft 30-42 Wind in Trees 25-39 NPM – Haul Trucks <25 (barely audible <25% measurements)
14:04 12/09/2024	64	46	30		
14:19 12/09/2024	59	40	29		
Site L _A eq(15min) Contribution			<35		
Evening					
18:00 12/09/2024	70	49	36	WD: SW WS: 1.0m/s Stab Class: E	Traffic 28-60 Birds 25-70 Wind in Trees 25-45 Residential Noise 35-68 NPM Inaudible
18:15 12/09/2024	68	50	35		
18:30 12/09/2024	63	48	33		
Site L _A eq(15min) Contribution			<35		
Night					
23:59 11/09/2024	49	31	27	WD: SW WS: 0.1m/s Stab Class: F	Insects 25-52 Dogs Barking 30-49 Traffic 25-60 Residential Noise 30-78 Aircraft 30-42 NPM – Site 25-31 (audible throughout) NPM – Haul Trucks 25-39 (just audible to audible 50% measurements)
00:14 12/09/2024	60	33	28		
00:29 12/09/2024	78	53	29		
Site L _A eq(15min) Contribution			<35		
Site L _A 1(1min) Contribution			<45		

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 7 Operator-Attended Noise Survey Results – Location NM5, Adavale

Time(hrs)/Date Duration 15min	Noise Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L _A max	L _A eq	L _A 90		
Day					
15:59 12/09/2024	66	43	38	WD: S WS: 2.5m/s Stab Class: E	Wind in Trees 27-53
16:14 12/09/2024	55	40	34		Birds 25-66
16:29 12/09/2024	57	38	32		NPM Inaudible
Site L _A eq(15min) Contribution			<35		
Evening					
20:11 11/09/2024	52	30	27	WD: SW WS: 0.1m/s Stab Class: F	Insects 20-52
20:26 11/09/2024	43	29	27		NPM – Ventilation Fans 25-30 (just audible to audible throughout)
20:41 11/09/2024	38	30	28		NPM – Heavy Vehicles <25 (barely audible to just audible <50% measurements)
Site L _A eq(15min) Contribution			<35		
Night					
22:56 12/09/2024	46	29	27	WD: SW WS: 0.1m/s Stab Class: E	Insects 20-46
23:11 12/09/2024	34	27	26		NPM – Ventilation Fans 24-29 (just audible to audible throughout)
23:26 12/09/2024	37	26	25		NPM – Heavy Vehicles <25 (barely audible to just audible <25% measurements)
Site L _A eq(15min) Contribution			<35		
Site L _A 1(1min) Contribution			<45		

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

4.3 Road Noise Results

As an additional initiative to operational attended noise monitoring, Northparkes include two 1-hour attended noise monitoring measurements at the Hillview monitoring location (NM4) to quantify Northparkes road noise levels associated concentrate trucks movements (where present) and shift change traffic flows. **Table 8** presents the results of the road traffic noise measurements with a comparison against the road noise criteria outlined in the NMP which is consistent with the NSW Road Noise Policy (DECCW, 2011).

Table 8 Operator-Attended Road Noise Survey Results – Location NM4, Hillview

Time(hrs)/Date Duration 1 hour	Measured Noise Level dB LAeq(1hr)	Meteorology	Criteria dB LAeq(1hr)	Description and SPL dBA
13:49 12/09/2024 (Day)	44	WD: E WS: 1.0m/s Stab Class: B	55	Birds 25-48
				Traffic 25-64
				Wind in Trees 25-39
				Aircraft 30-42
				NPM – Haul Trucks <25
18:00 12/09/2024 (Evening)	48	WD: SW WS: 1.0m/s Stab Class: E	55	(barely audible to audible <25% measurements)
				NPM Concentrate Truck (offsite) 30-62
				(1 Pass)
				(Approx. 18 vehicles Enter/Exit NPM Site)
				Traffic 28-63
18:00 12/09/2024 (Evening)	48	WD: SW WS: 1.0m/s Stab Class: E	55	Birds 30-70
				Wind in Trees 30-45
				Residential Noise 35-68
				NPM Concentrate Truck (offsite) 30-64
				(2 Passes)
18:00 12/09/2024 (Evening)	48	WD: SW WS: 1.0m/s Stab Class: E	55	(Approx. 91 vehicles Enter/Exit NPM Site)

Note: NPM denotes Northparkes Mines.

Note: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Results of the road noise survey identify that the LAeq(1hr) noise contribution at NM4 is <50dBA for both measurements and hence, satisfy the relevant road noise criteria as outlined in the NMP and the RNP. Observations from MAC operator identified concentrate truck movements at a maximum of two movements per hour which is in line with previous NPM quarterly measurements.

4.4 Unattended Noise Results

Unattended noise monitors are installed at four attended monitoring locations. Data from the unattended monitors provide a real time method for monitoring noise events, although it is noted that the results include all noise sources (ie project noise and extraneous noise sources). The results are used as a management tool for the project site.

Averaged results of the LA90(15min) and LA1(15min) metrics from the seven-day monitoring period from Monday 9 September 2024 to Sunday 15 September 2024 for NM1, NM3, NM4 and NM5 are summarised in **Table 9**. **Appendix C** presents the unattended results in chart format.

Table 9 Unattended Noise Survey Results		
Period ¹	Noise Descriptor (dBA re 20 µPa)	
	Weekly Average LA90(15min)	Weekly Average LA1(15min)
Location NM1, Hubberstone		
Day	26	-
Evening	27	-
Night	27	52
Location NM3, Milpose		
Day	26	-
Evening	44	-
Night	24	52
Location NM4, Hillview		
Day	30	-
Evening	19	-
Night	19	59
Location NM5, Adavale		
Day	27	-
Evening	22	-
Night	24	48

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

5 Discussion

5.1 Operational Noise Discussion

5.1.1 Discussion of Results – Location NM1, Hubberstone

Attended measurement results for monitoring conducted at NM1, Hubberstone, for the quarter ending September 2024 noise survey, identified that NPM was inaudible during day measurement period and generally just audible throughout evening and night-time measurement periods.

Contributions from NPM were characterised as general production noise, heavy vehicle operations and impact noise. External noise sources including traffic, birds, livestock, and insects, were audible during the monitoring period.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM1.

5.1.2 Discussion of Results – Location NM2, Lone Pine

Attended measurement results for monitoring conducted at NM2, Lone Pine, for the quarter ending September 2024 noise survey, identified that NPM was inaudible during day measurement period and generally audible throughout evening and night-time measurement periods.

Contributions from NPM were characterised as general site hum, heavy vehicle operations, site alarms and general production noise. External noise sources including traffic, wind in trees, birds, insects, and aircraft were all audible during the monitoring periods.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM2.

5.1.3 Discussion of Results – Location NM3, Milpose

Attended measurement results for monitoring conducted at NM3, Milpose, for the quarter ending September 2024 noise survey, identified that NPM was inaudible during the day measurements and generally audible throughout evening and night-time measurements.

Contributions from NPM were characterised as general production noise and ventilation fan noise. External noise sources including birds, insects, wind gusts, agricultural and residential noise were all audible during the monitoring periods.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM3.

5.1.4 Discussion of Results – Location NM4, Hillview

Attended measurement results for monitoring conducted at NM4, Hillview, for the quarter ending September 2024 noise survey, identified that NPM barely audible for short periods during day measurements, inaudible during evening measurements, and audible throughout night-time measurements.

Contributions from NPM were characterised as general site noise and heavy vehicle operations. External noise sources including traffic, birds, insects, dogs barking, wind in trees, aircraft and residential noise were all audible during the monitoring period.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM4.

5.1.5 Discussion of Results – Location NM5, Adavale

Attended measurement results for additional monitoring conducted at NM5, Adavale, for the quarter ending September 2024 noise survey, indicated that NPM was inaudible during the day measurements and audible throughout evening and night-time measurements.

Contributions from NPM were characterised as ventilation fan noise and heavy vehicle operations. External noise sources including birds, insects, and wind in trees were all audible during the monitoring period.

In summary, the noise contribution from NPM satisfied the relevant noise criteria for all monitored assessment periods at Location NM5.

6 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Monitoring Assessment (NMA) on behalf of Evolution Mining (Northparkes) Pty Ltd. The assessment was completed to quantify site noise emissions against relevant noise criteria pertaining to NPM operations in accordance with Conditions 1 to 5 of Schedule 3 of the Development Consent Conditions (PA #11_0060) and the Northparkes, Noise Management Plan (NMP, 2019) for Quarter 3, ending September 2024.

Road noise monitoring identified that vehicle movements associated with shift change generated noise levels below the relevant road noise criteria specified in the RNP and NMP.

Attended monitoring has identified that operational emissions generated by NPM comply with relevant noise criteria at all monitoring locations for all assessment periods. Furthermore, project related noise emissions were generally just audible at all monitoring locations during, evening and night periods. NPM noise sources such as general production noise, ventilation fans, haul trucks operations, and general site hum were audible and extraneous non-mining sources such as wind in trees, traffic, birds, dogs barking, aircrafts, insects, and residential noise, were audible during the monitoring period.

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Appendix A – Glossary of Terms

A number of technical terms have been used in this report and are explained in **Table A1**.

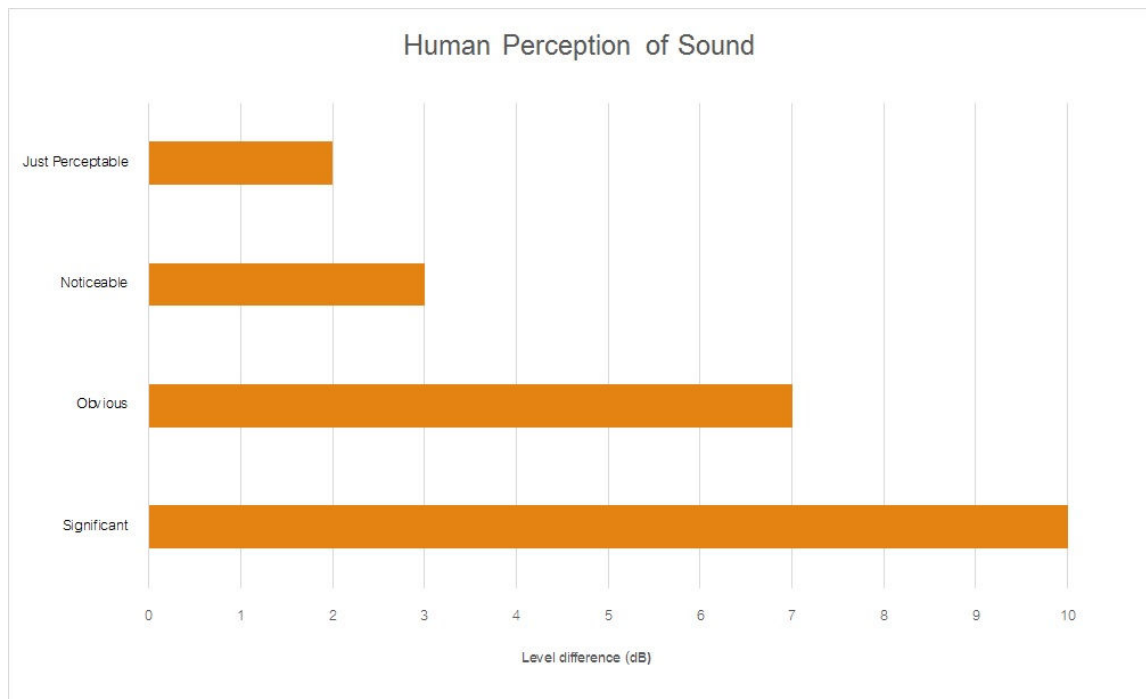
Table A1 Glossary of Acoustical Terms	
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The total noise associated with a given environment. Typically, a composite of sounds from all sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to sound.
Background Noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is usually represented by the LA90 descriptor
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Z-weighted or decibels Linear (unweighted).
Extraneous Noise	Sound resulting from activities that are not typical of the area.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A sound level which is exceeded 10% of the time.
LA90	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
LAeq	Represents the average noise energy or equivalent sound pressure level over a given period.
LAmx	The maximum sound pressure level received at the microphone during a measuring interval.
Masking	The phenomenon of one sound interfering with the perception of another sound. For example, the interference of traffic noise with use of a public telephone on a busy street.
RBL	The Rating Background Level (RBL) as defined in the NPI, is an overall single figure representing the background level for each assessment period over the whole monitoring period. The RBL, as defined is the median of ABL values over the whole monitoring period.
Sound power level (Lw or SWL)	This is a measure of the total power radiated by a source in the form of sound and is given by $10 \cdot \log_{10} (W/W_0)$. Where W is the sound power in watts to the reference level of 10^{-12} watts.
Sound pressure level (Lp or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from Lw in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA

Source	Typical Sound Pressure Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



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Appendix B – Regulatory Noise Limits

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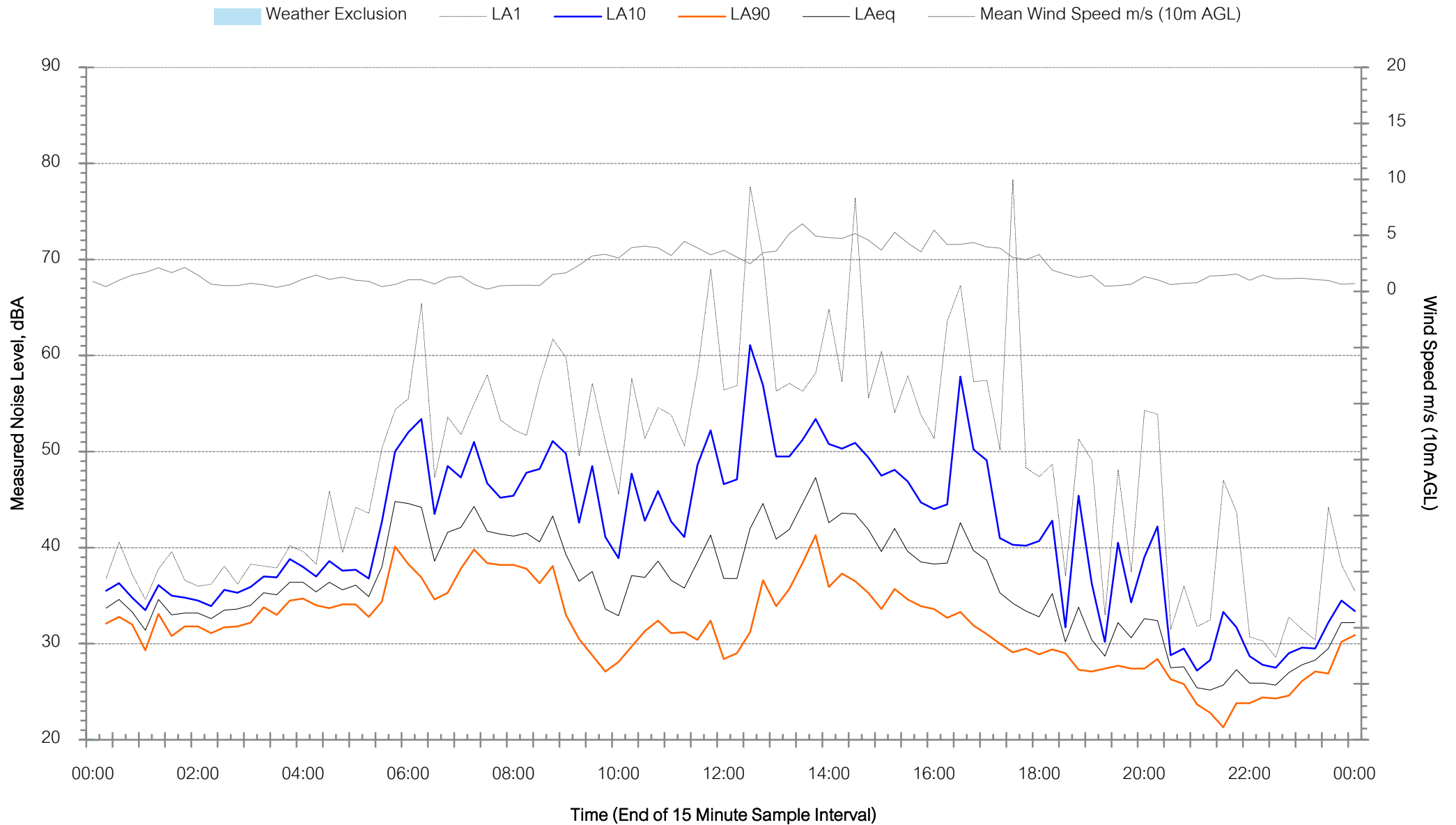
Table 1 NSW Development Consent Conditions – Schedule 3

Condition					Related Section in NMP
Noise Criteria					
1. The Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land.					Section 5.4.1
Table 2 Noise impact assessment criteria dB(A)					
Property		Day	Evening	Night	
		LAeq(15min)	LAeq(15min)	LAeq(15min) LA1(1min)	
All privately-owned land		35	35	35 45	
Note: To interpret the land referred to in Table 1, see the applicable figures in Appendix 4.					
Operational noise generated by the project is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 5 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.					
2. The Proponent shall only carry out the construction works associated with the upgrade of McClintocks Lane, the construction of the McClintocks Lane access road and the upgrade of the intersection of McClintocks Lane and Bogan Road during the day.					Section 5.4.1
3. During construction of the works referred to in condition 2 of schedule 3, the noise criteria in Table 1 do not apply to the residences located in the vicinity of the works. The Proponent shall implement all reasonable and feasible measures to minimise construction noise impacts on the residences in the vicinity of these works.					Section 6
4. The Proponent shall: a) implement best management practice to minimise the construction, operational and road noise of the project; b) operate a comprehensive noise management system that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval; c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply (see Appendix 5); and d) carry out regular monitoring to determine whether the project is complying with the relevant conditions of this approval, To the satisfaction of the Secretary.					Section 6 & Section 7
5. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must: a) be prepared in consultation with the EPA, and submitted to the Secretary prior to the commencement of construction; b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval; c) describe the proposed noise management system in detail; and d) include a monitoring program that: • evaluates and reports on: – the effectiveness of the noise management system; – compliance against the noise criteria in this approval; and – compliance against the noise operating conditions; • includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this approval and trigger for further attended monitoring); and • defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents					Section 6 & Section 7 <

Appendix C – Noise Monitoring Charts

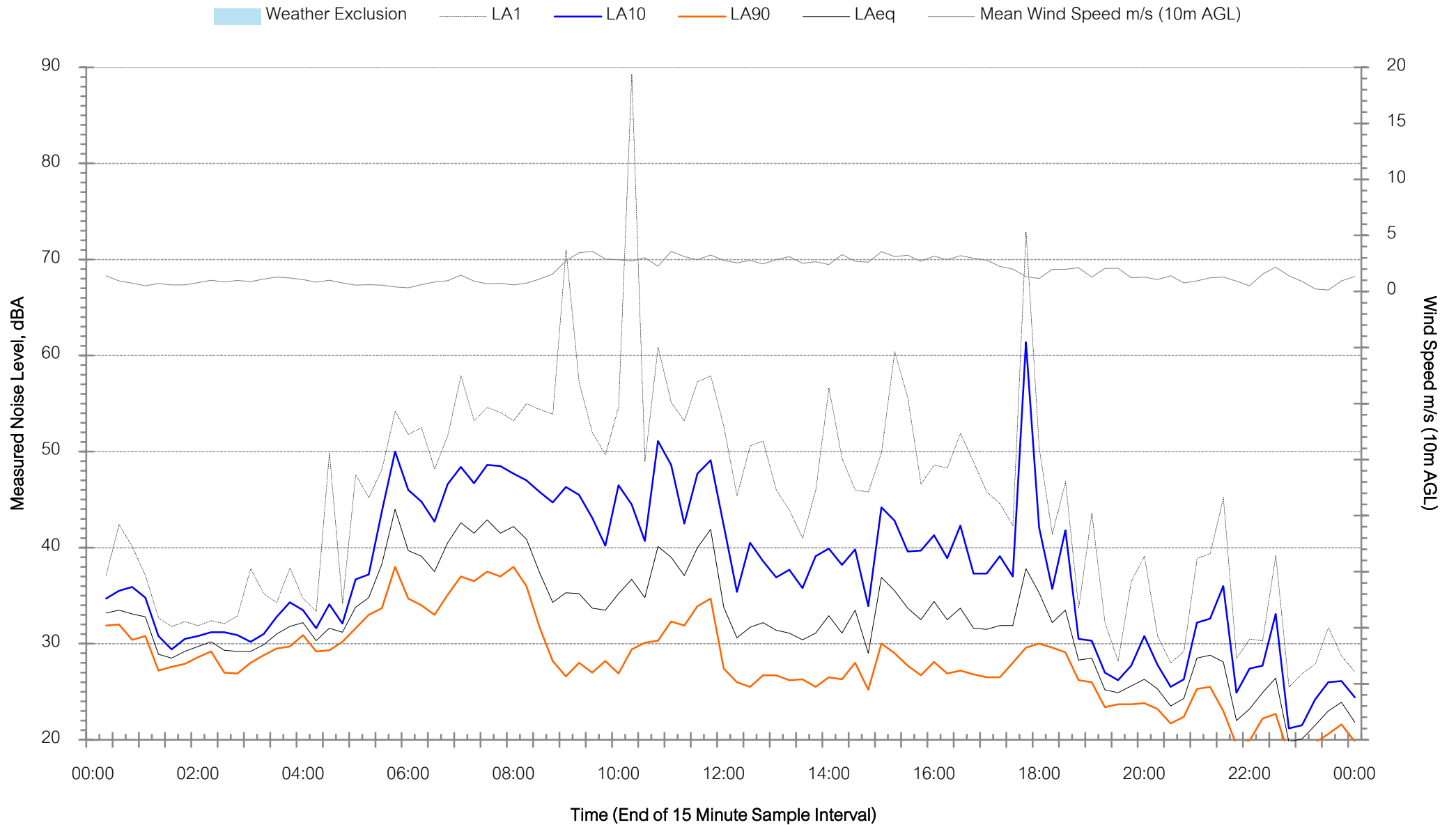
Background Noise Levels

NM1 - Hubberstone - Monday 9 September 2024



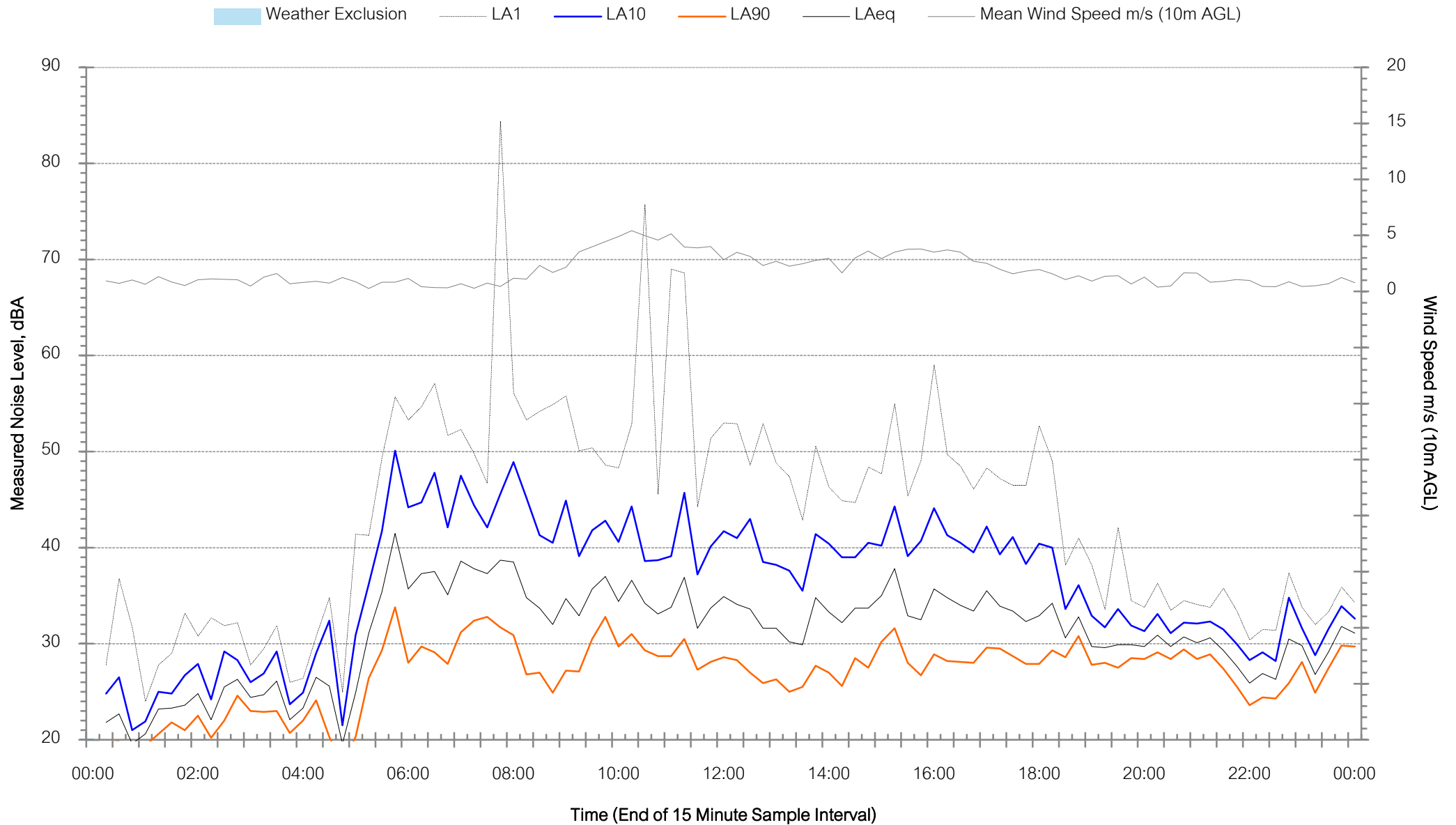
Background Noise Levels

NM1 - Hubberstone - Tuesday 10 September 2024



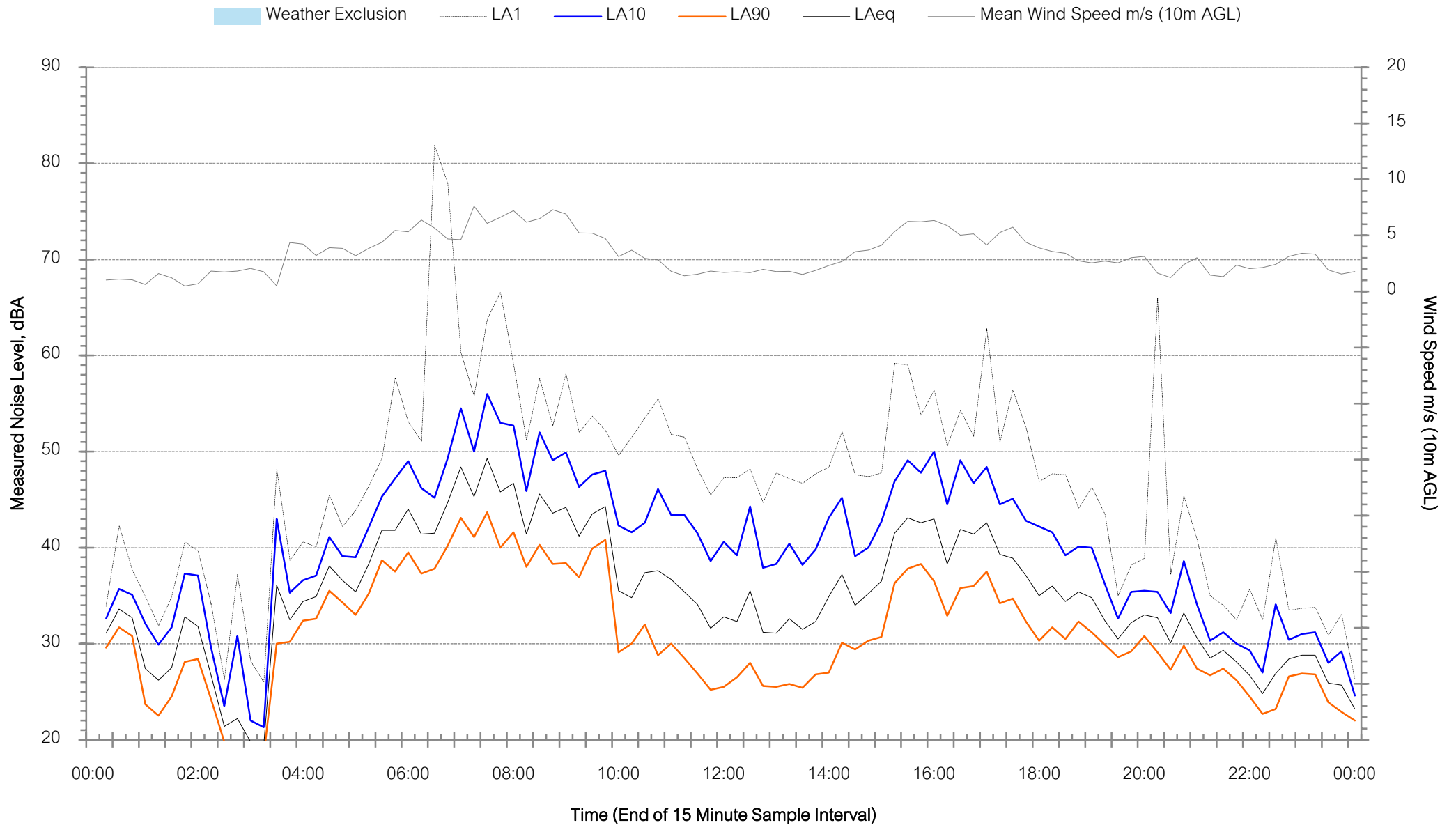
Background Noise Levels

NM1 - Hubberstone - Wednesday 11 September 2024



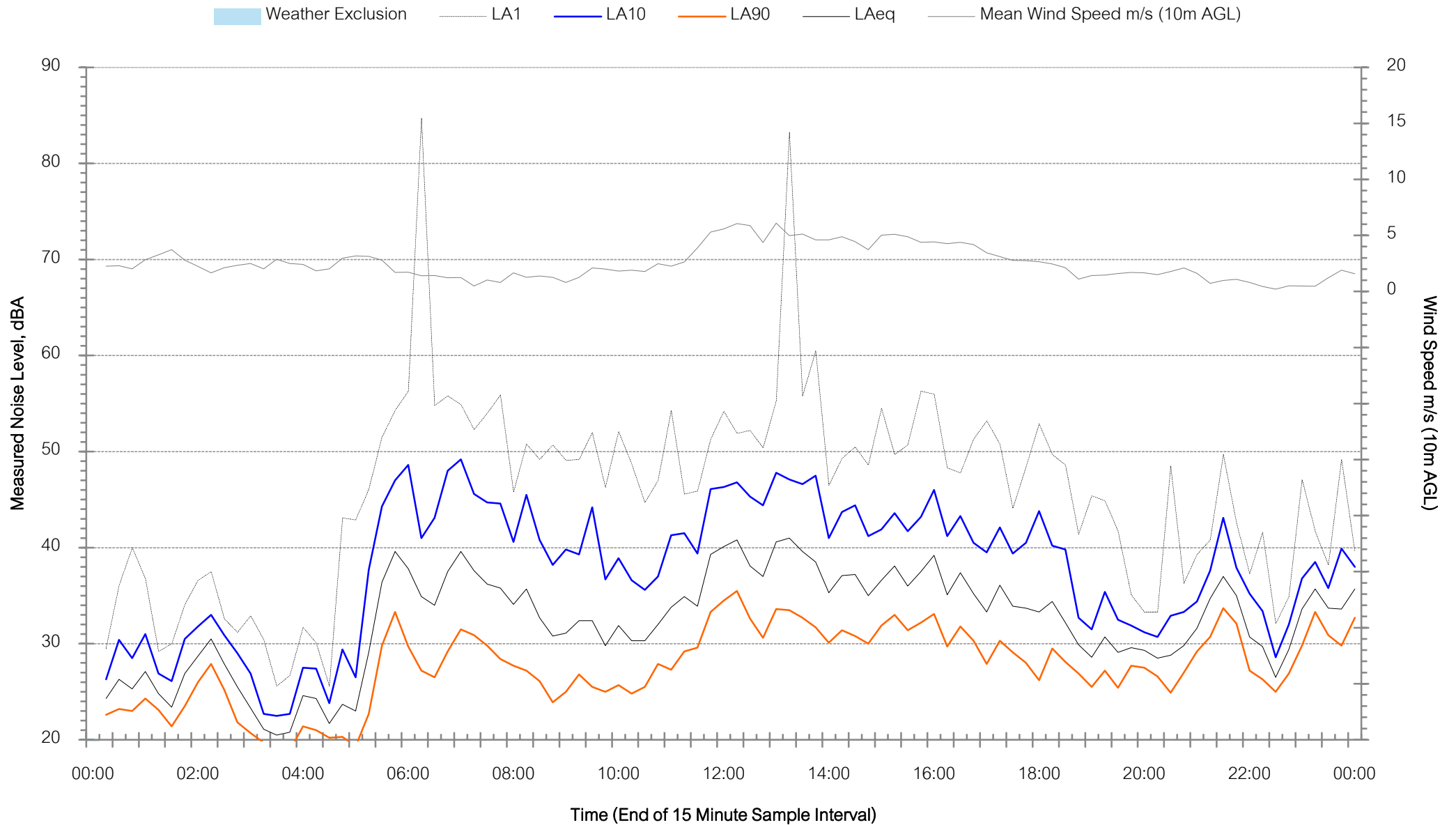
Background Noise Levels

NM1 - Hubberstone - Thursday 12 September 2024



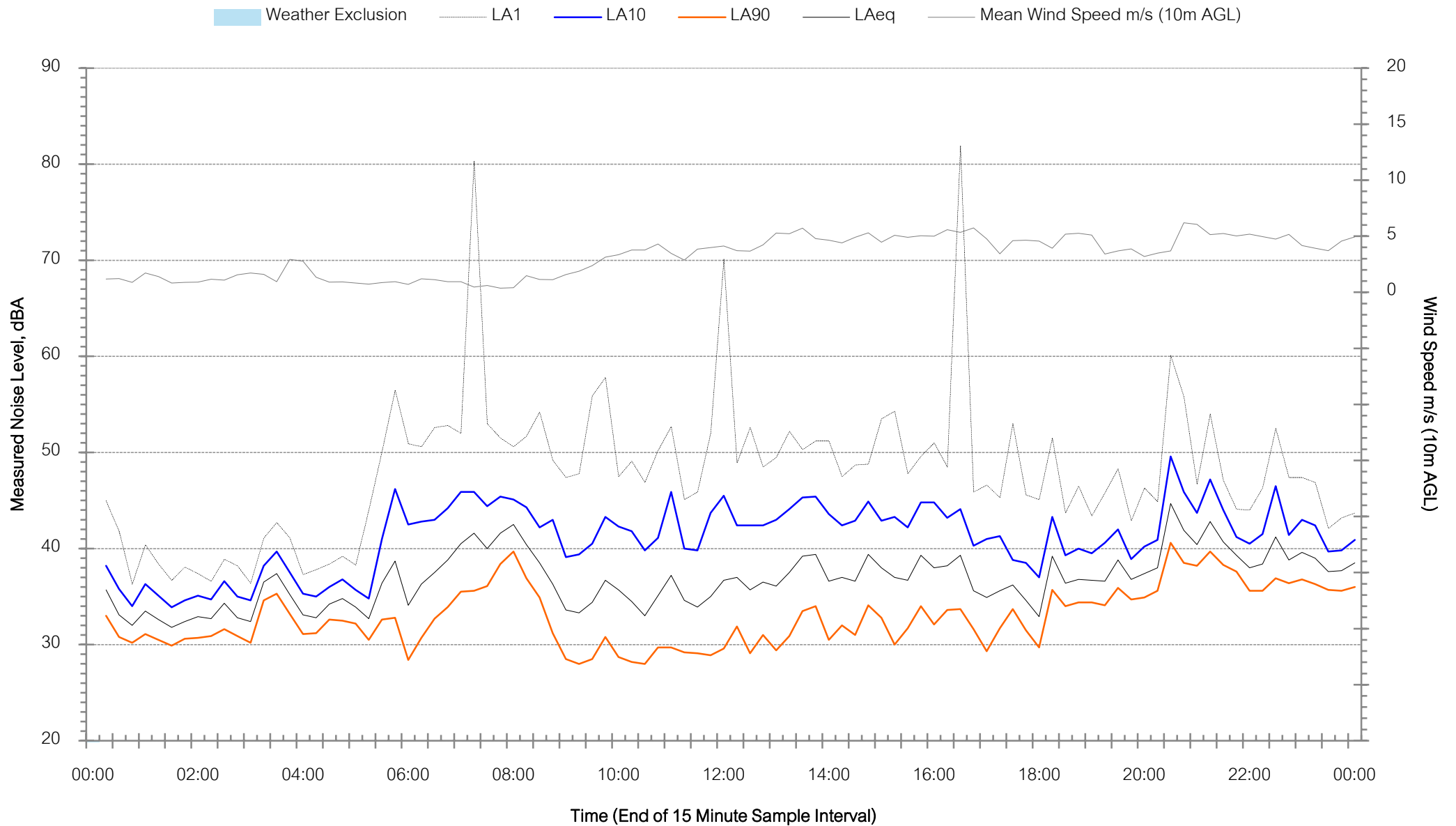
Background Noise Levels

NM1 - Hubberstone - Friday 13 September 2024



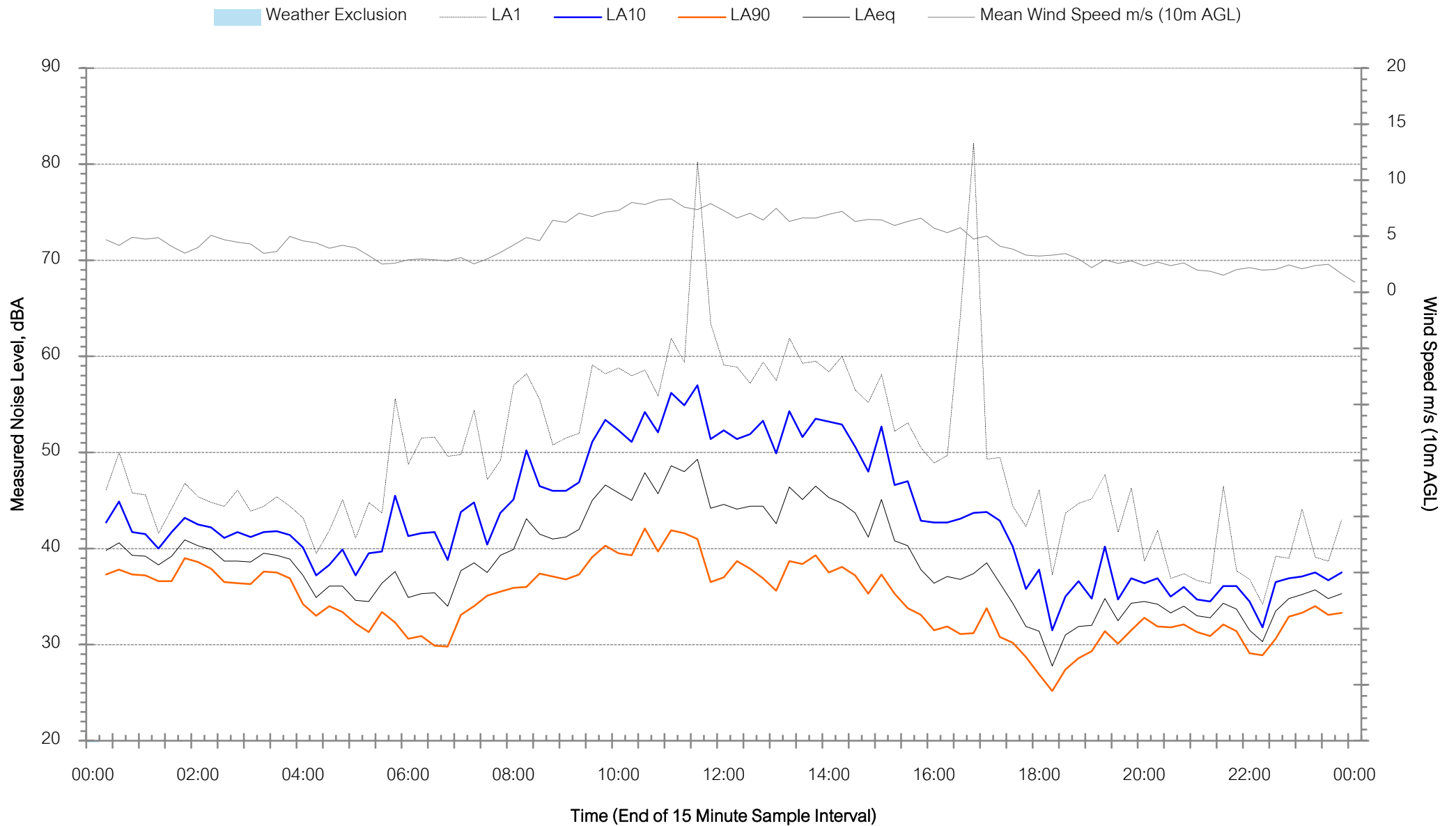
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NM1 - Hubberstone - Saturday 14 September 2024



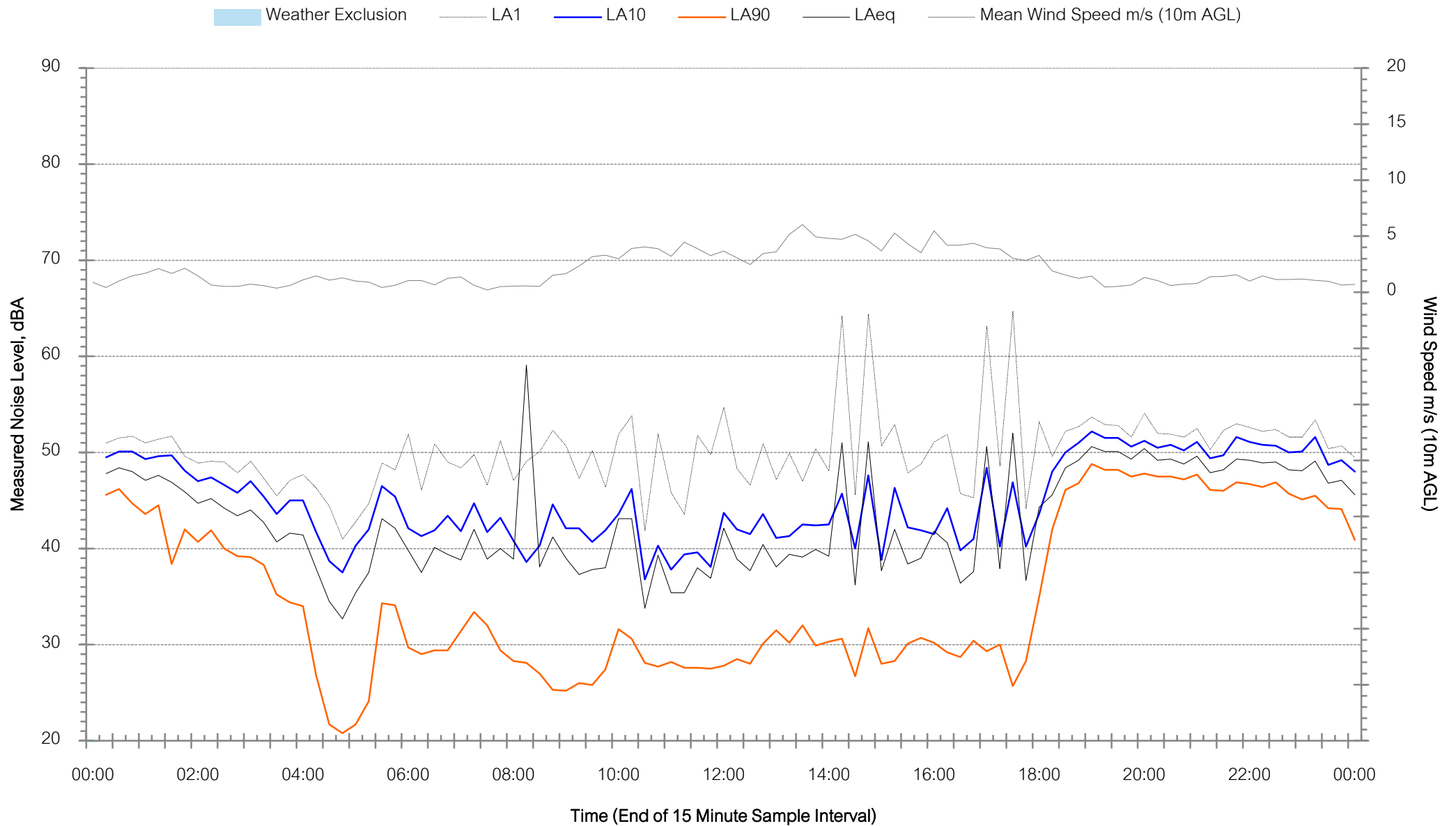
Background Noise Levels

NM1 - Hubberstone - Sunday 15 September 2024



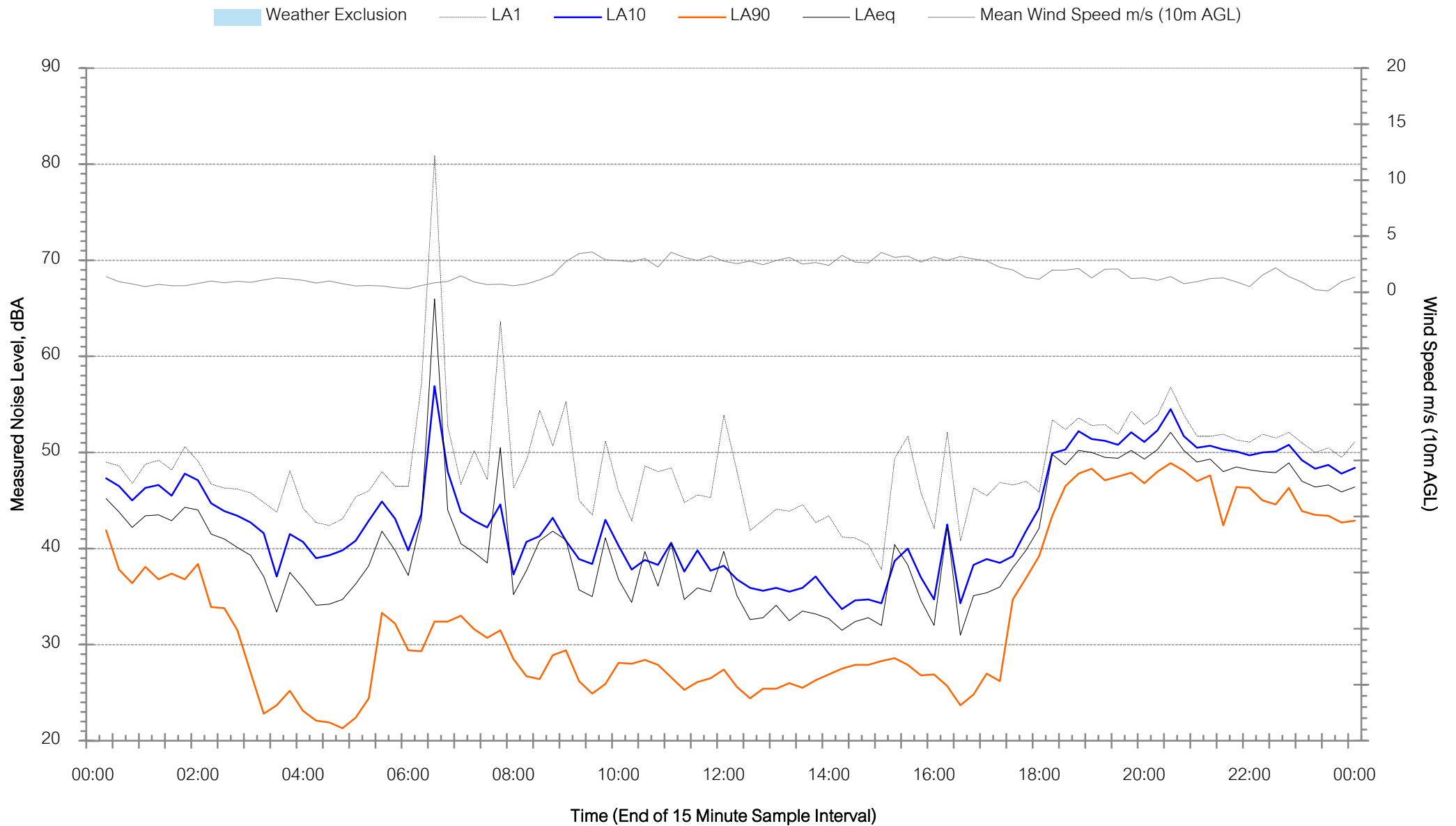
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NM3 - Milpose - Monday 9 September 2024



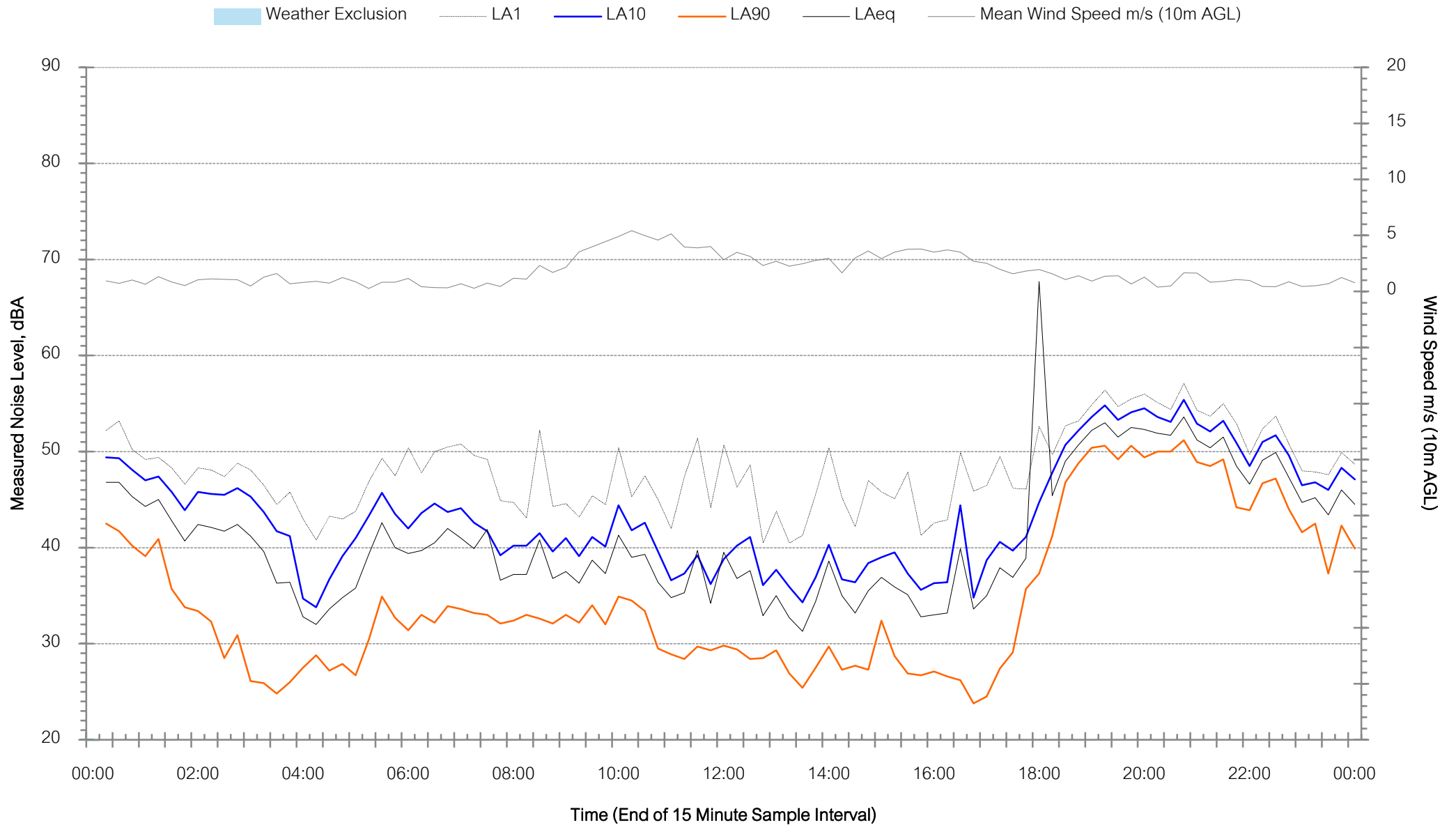
Background Noise Levels

NM3 - Milpose - Tuesday 10 September 2024



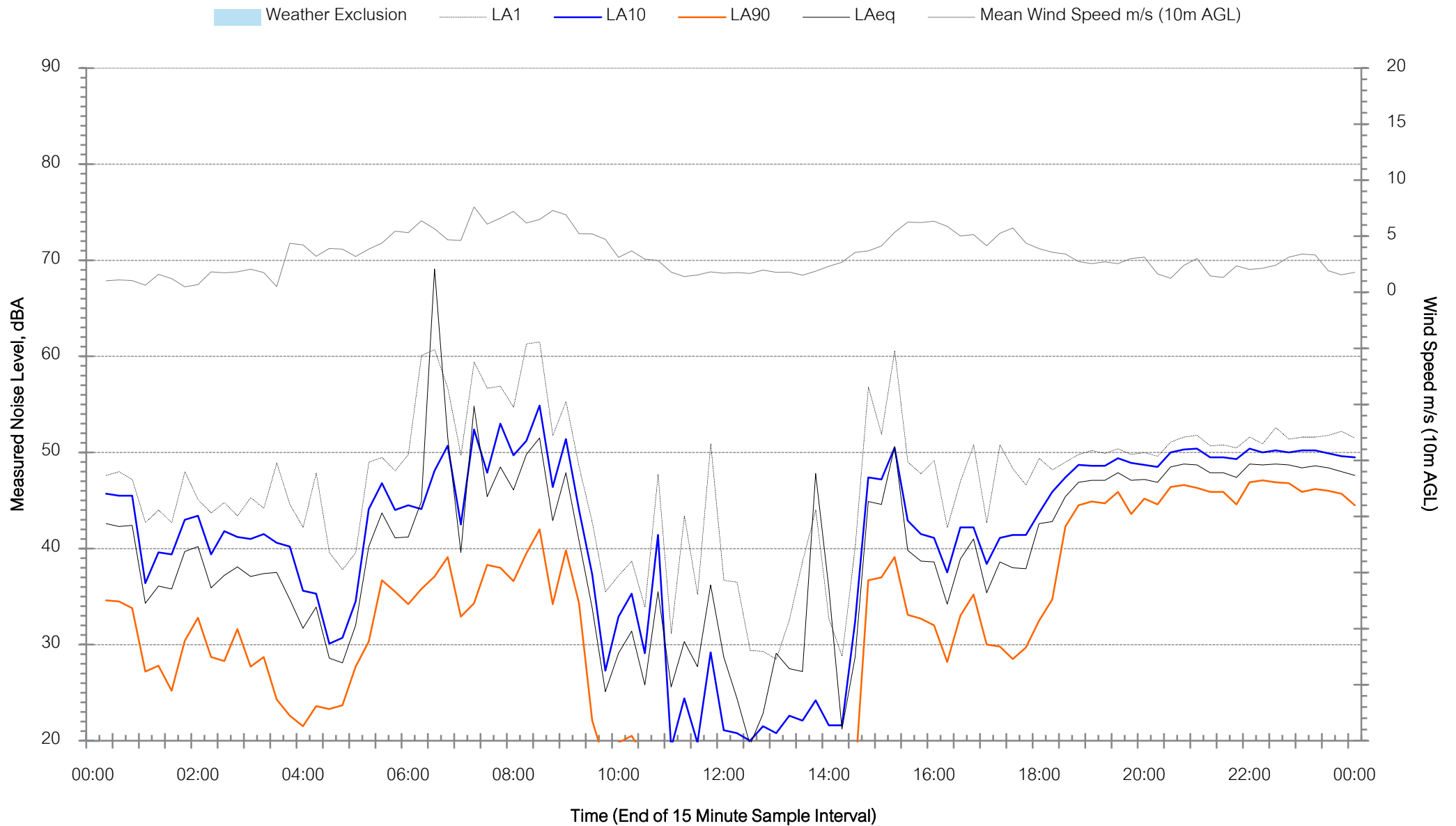
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NM3 - Milpose - Wednesday 11 September 2024



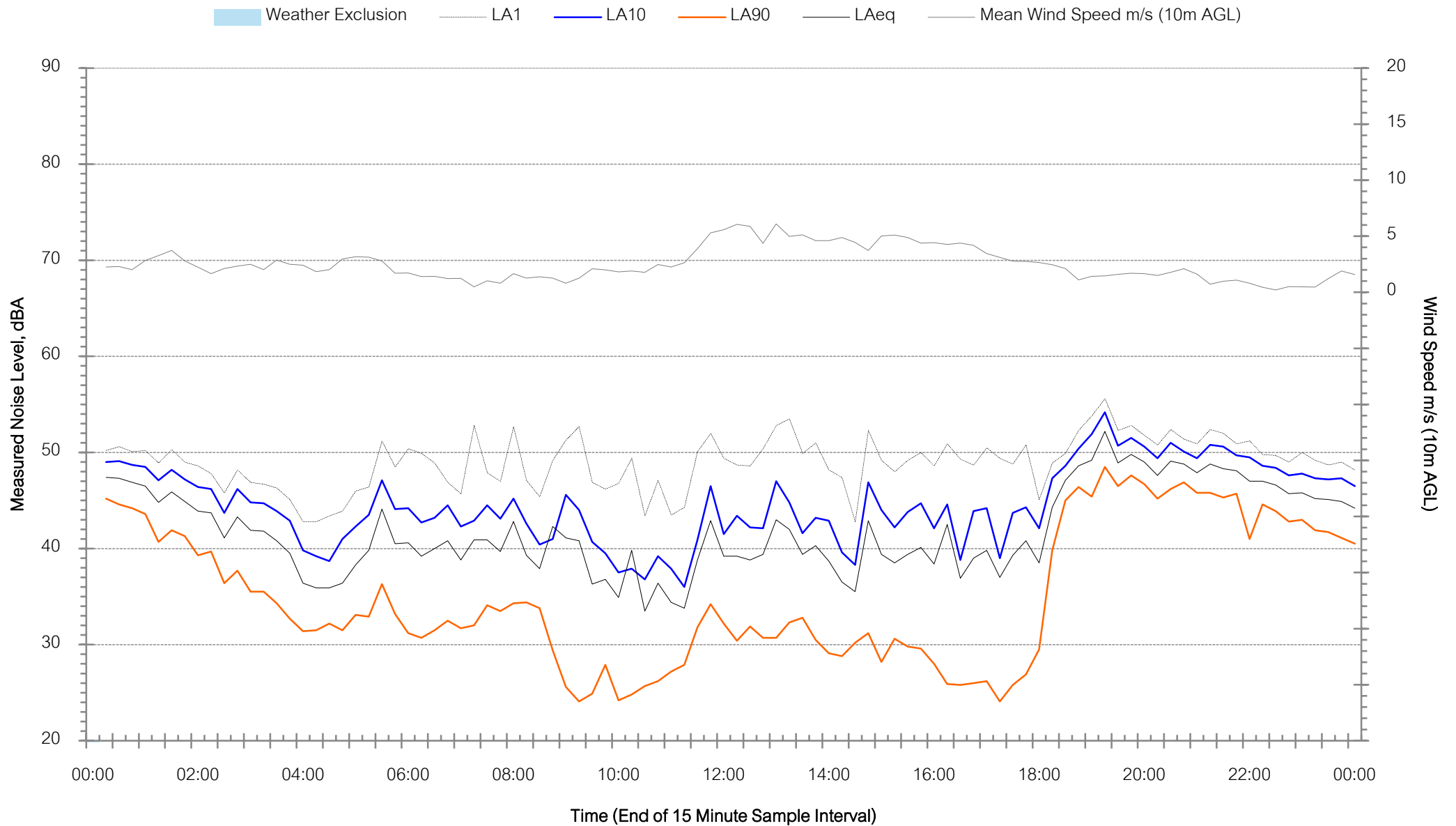
Background Noise Levels

NM3 - Milpose - Thursday 12 September 2024



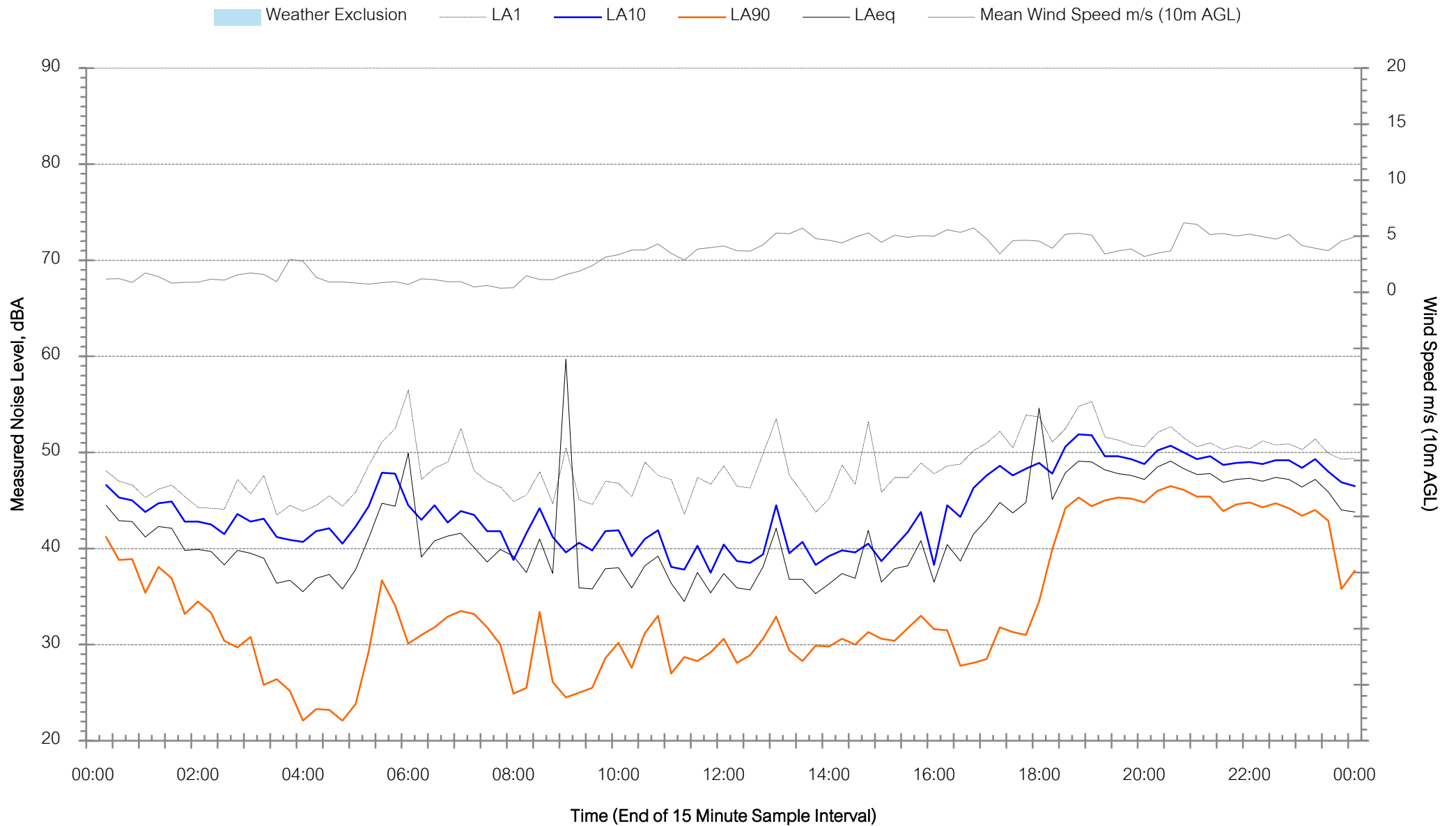
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NM3 - Milpose - Friday 13 September 2024



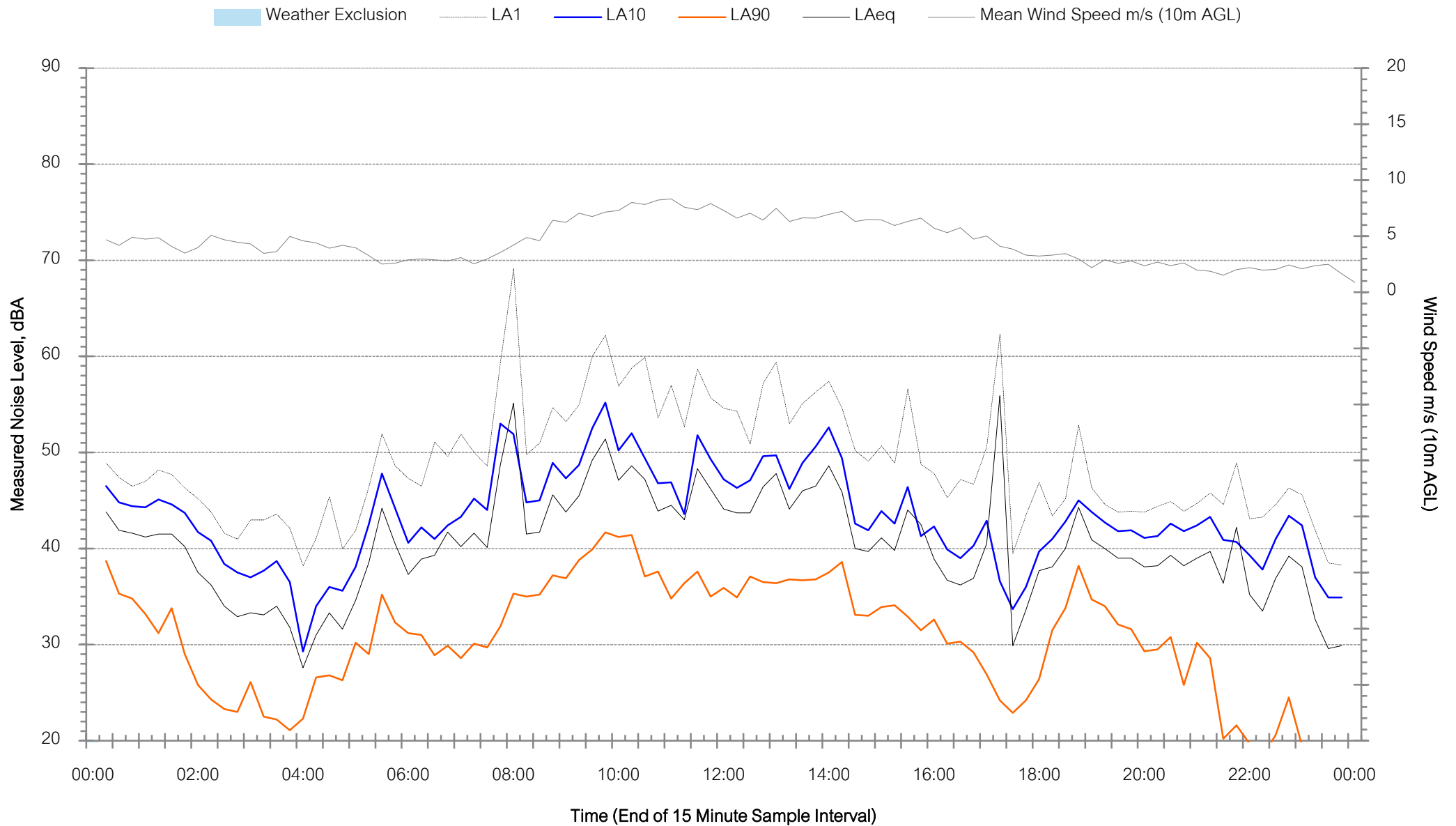
Background Noise Levels

NM3 - Milpose - Saturday 14 September 2024



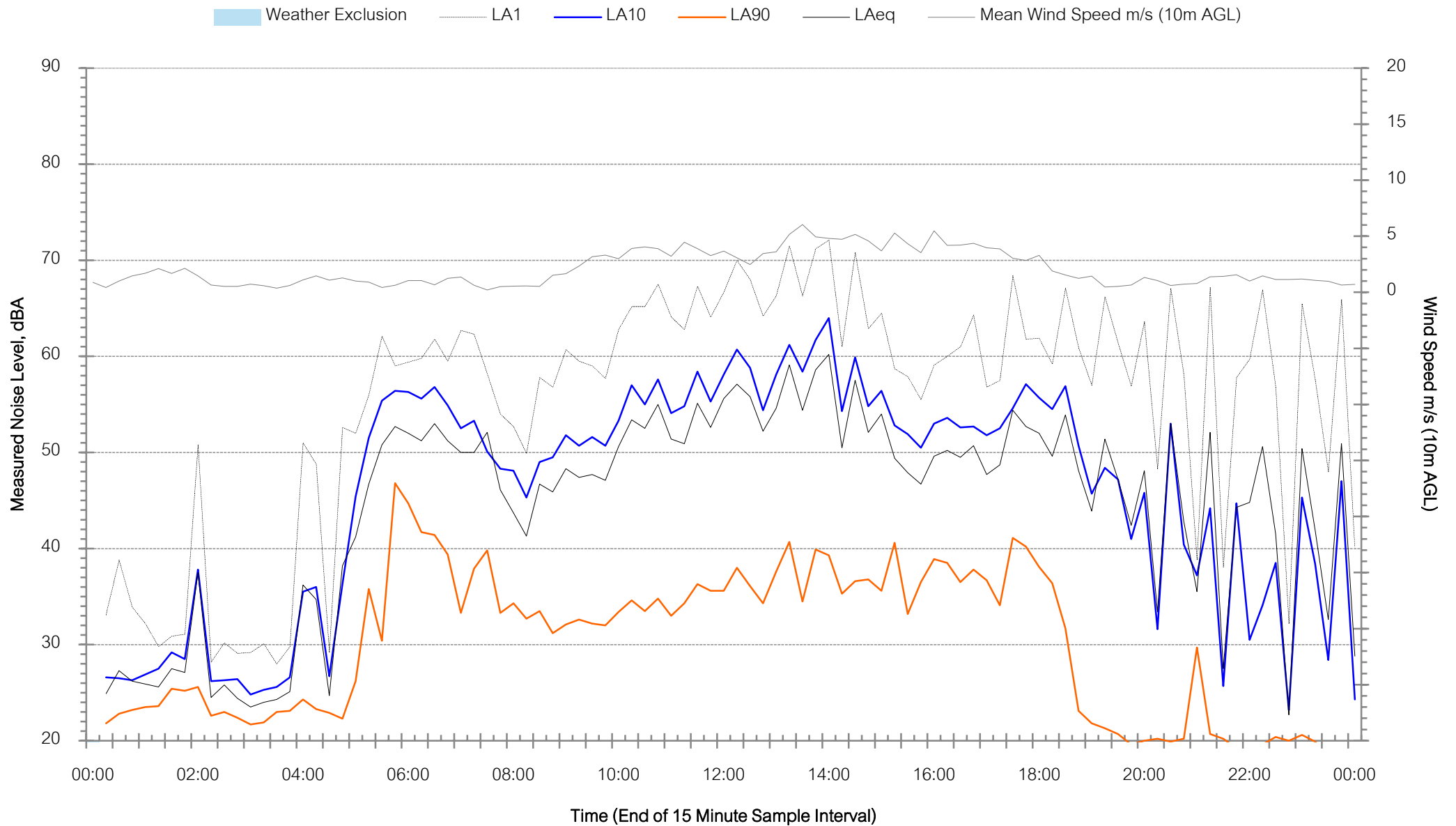
Background Noise Levels

NM3 - Milpose - Sunday 15 September 2024



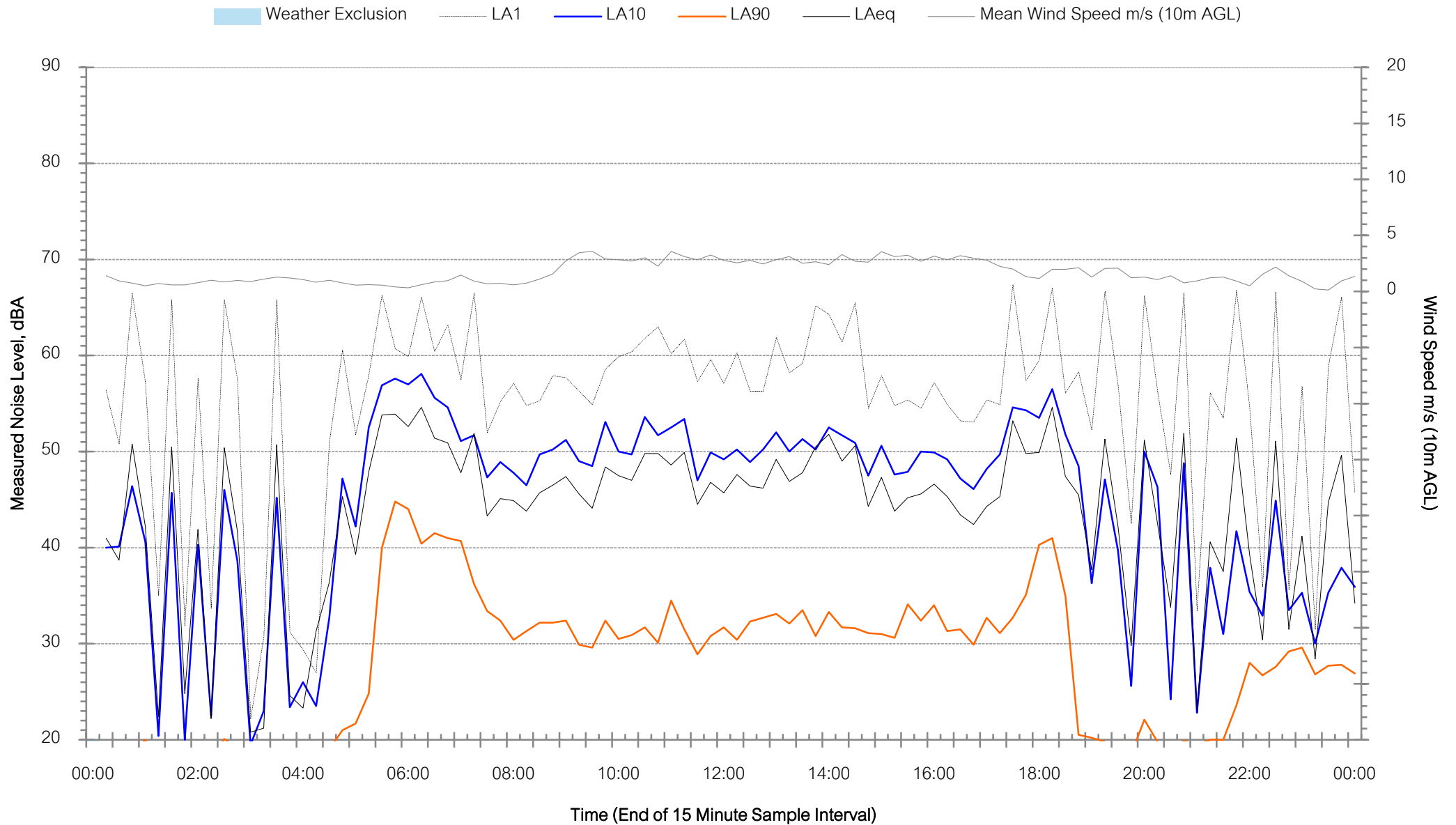
Background Noise Levels

NM4 - Hillview - Monday 9 September 2024



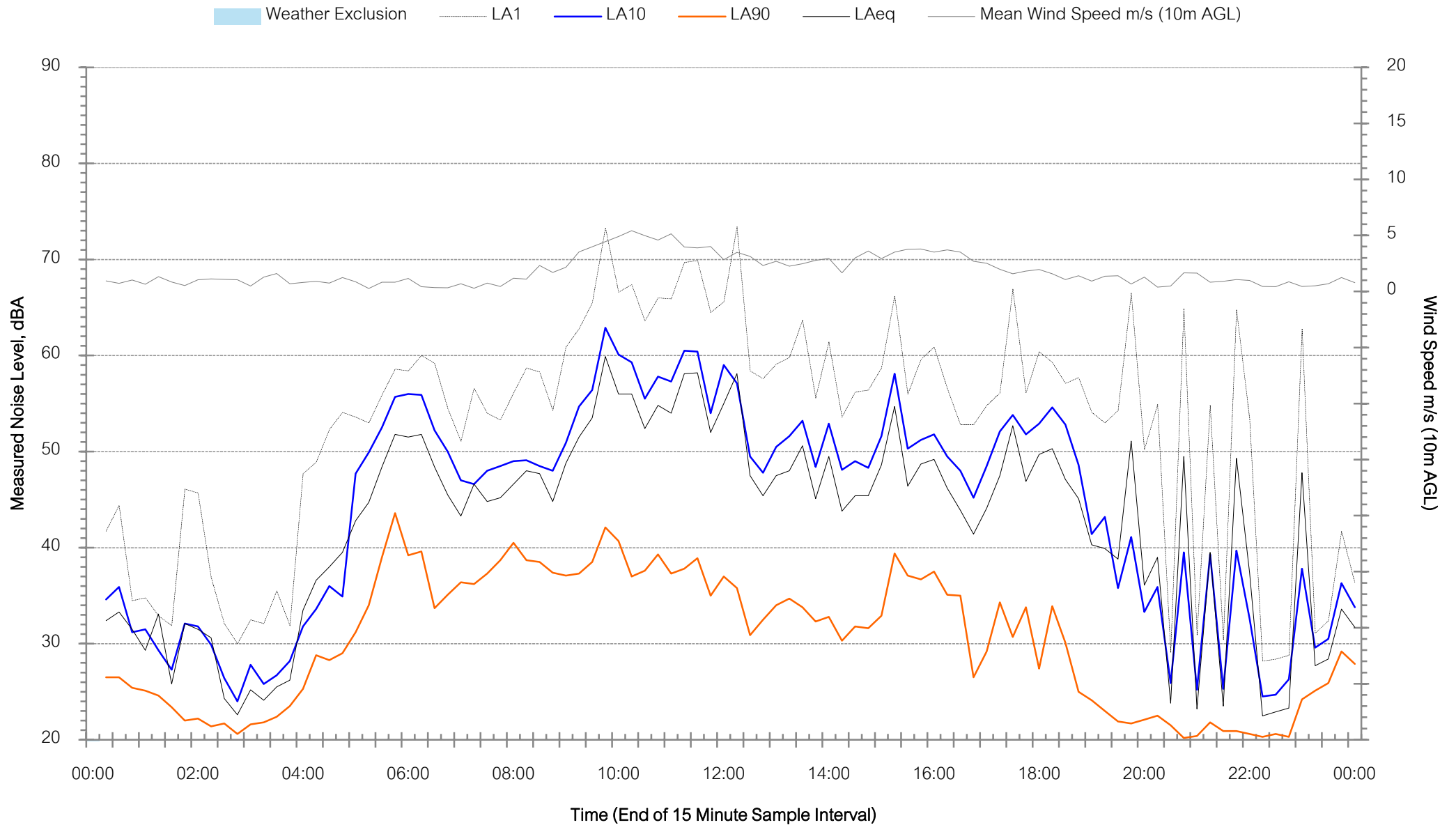
Background Noise Levels

NM4 - Hillview - Tuesday 10 September 2024



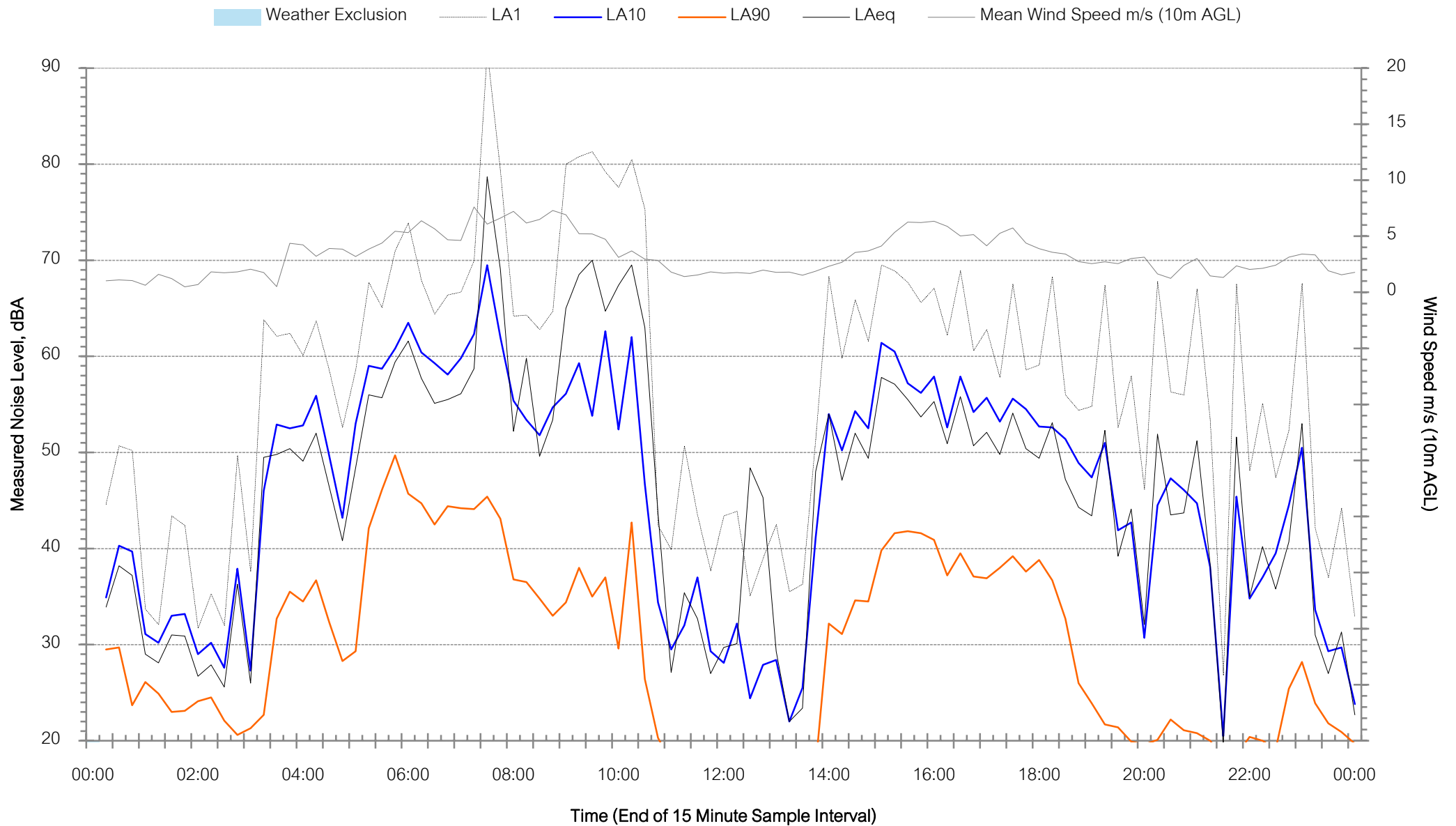
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NM4 - Hillview - Wednesday 11 September 2024



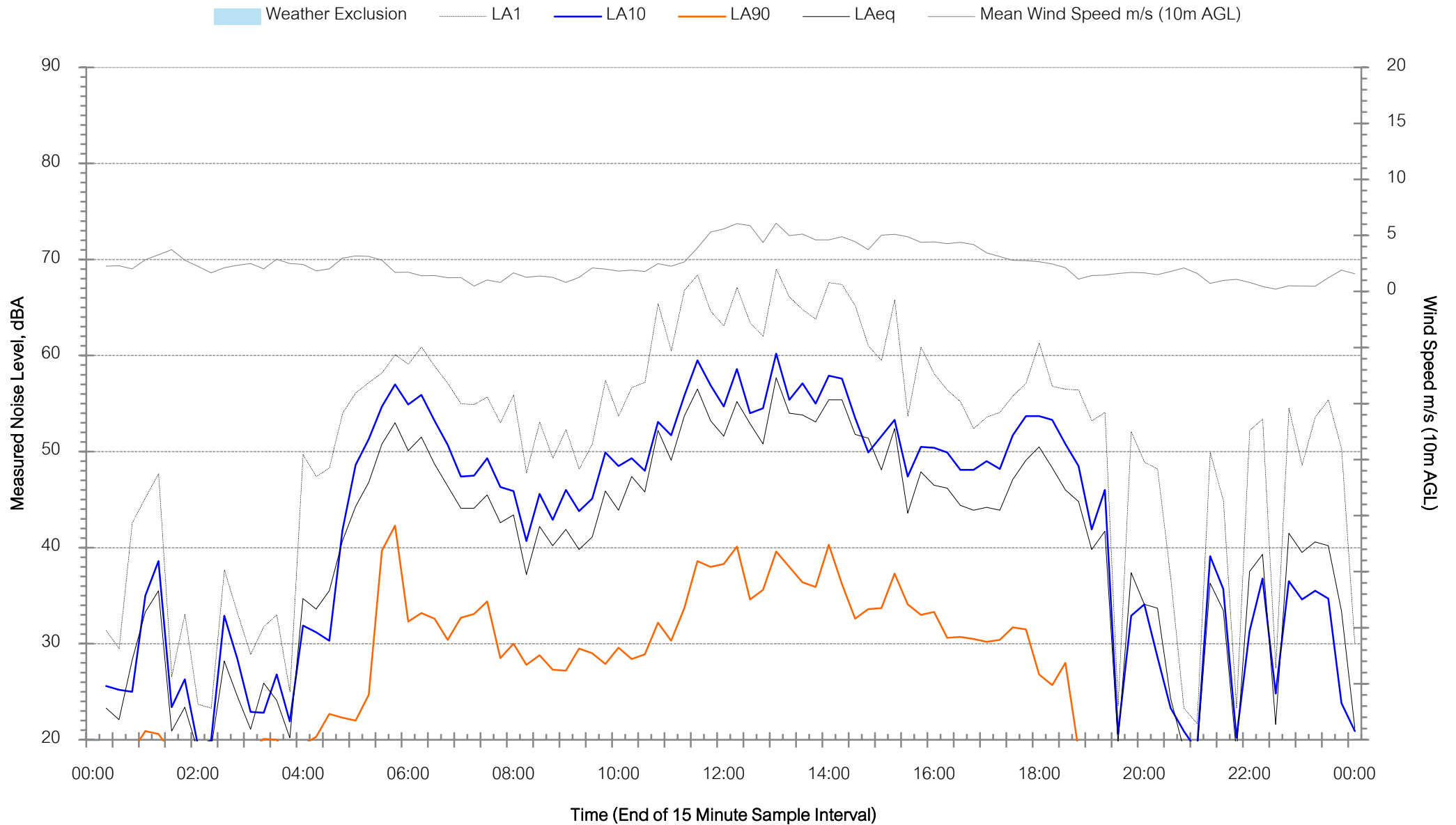
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NM4 - Hillview - Thursday 12 September 2024



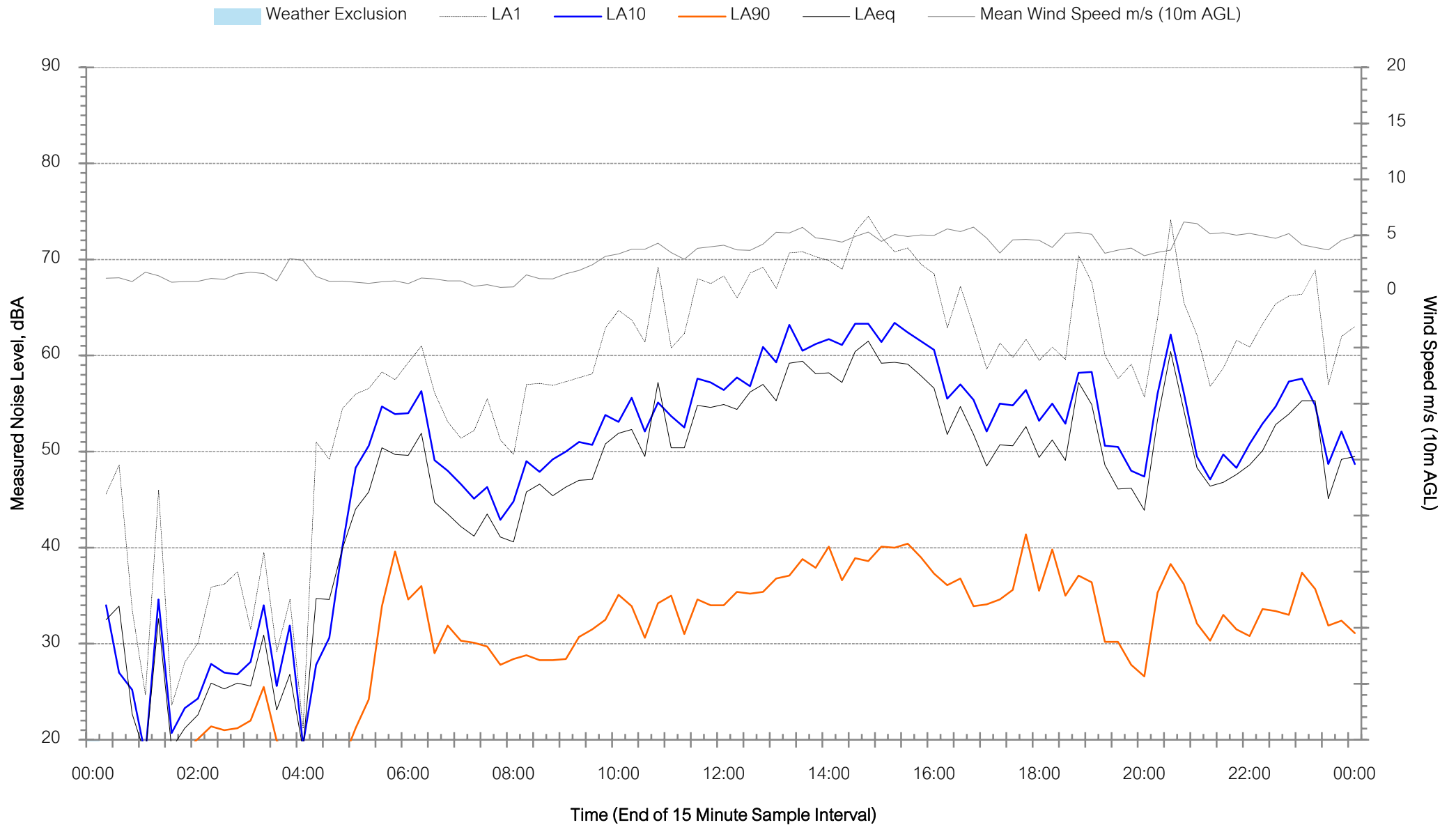
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NM4 - Hillview - Friday 13 September 2024



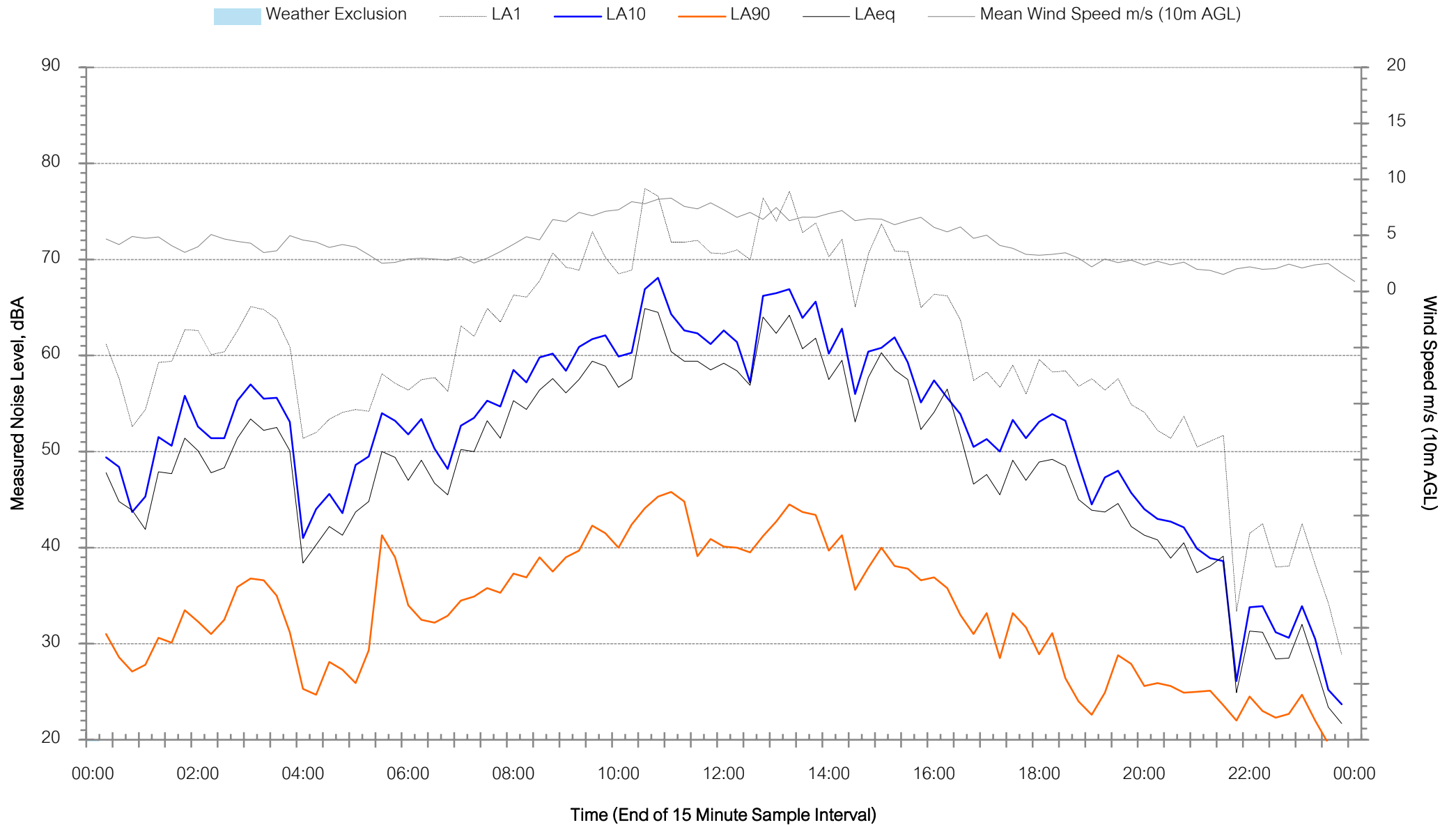
Background Noise Levels

NM4 - Hillview - Saturday 14 September 2024



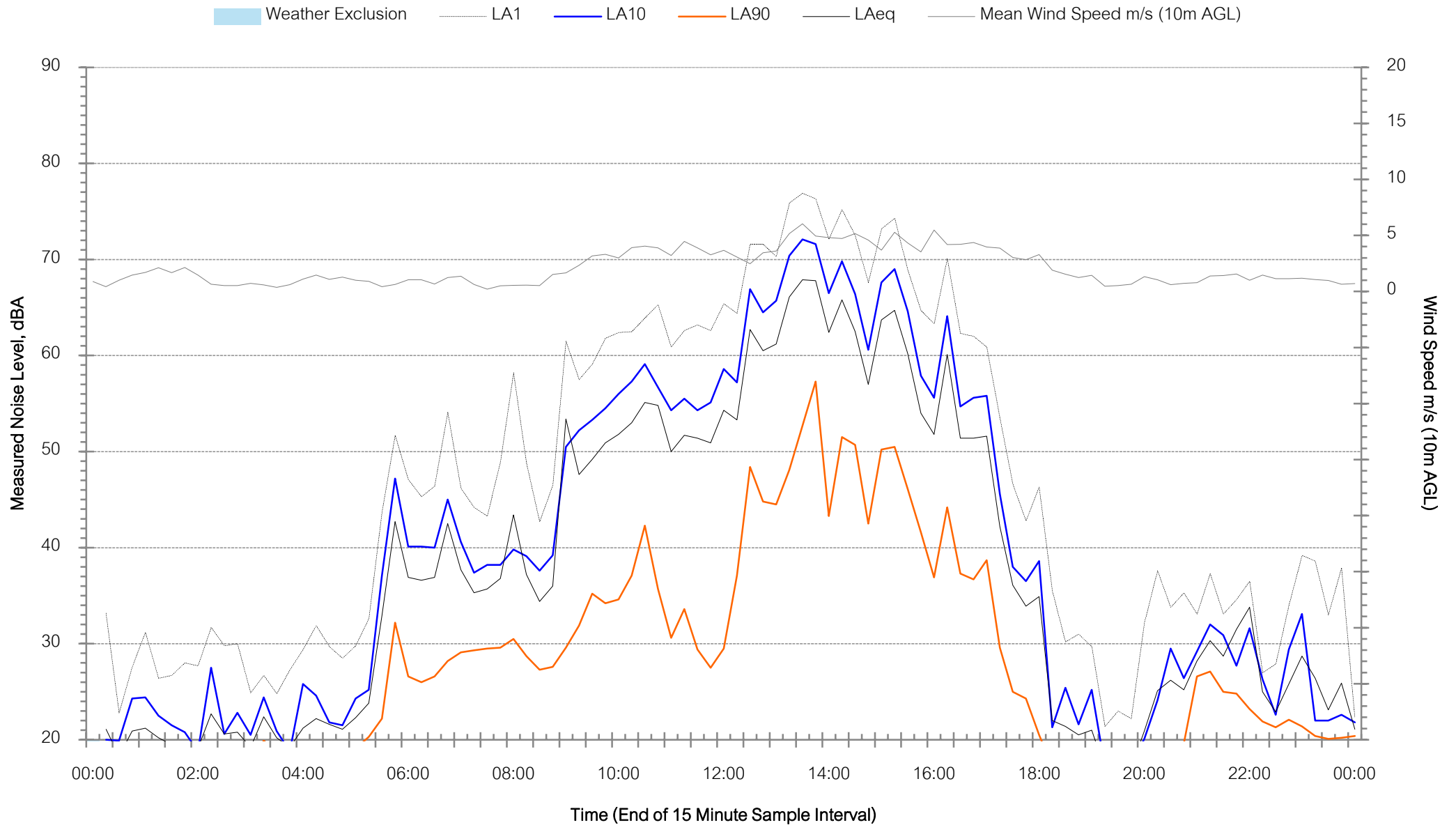
Background Noise Levels

NM4 - Hillview - Sunday 15 September 2024



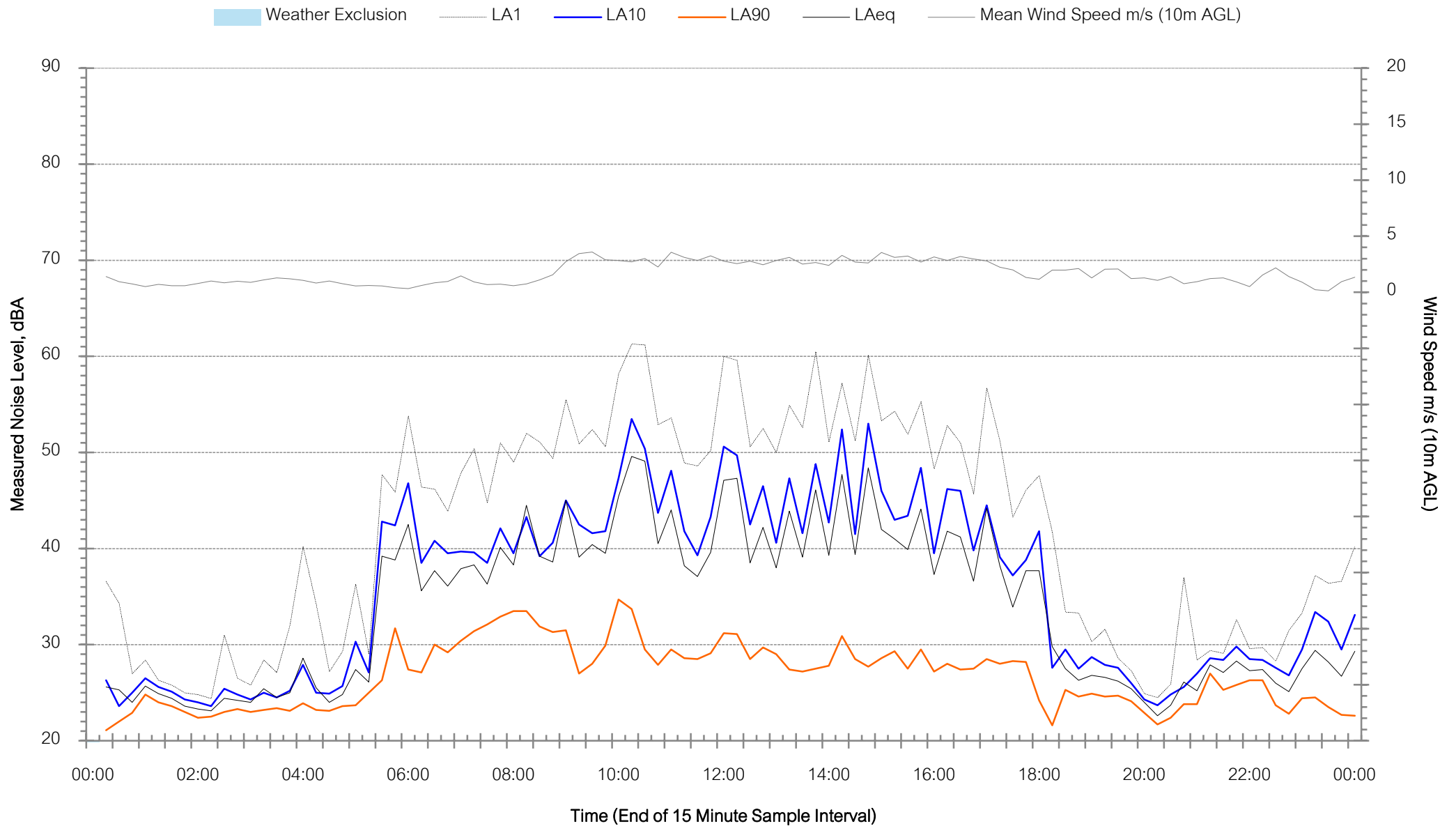
Background Noise Levels

NM5 - Adavale - Monday 9 September 2024



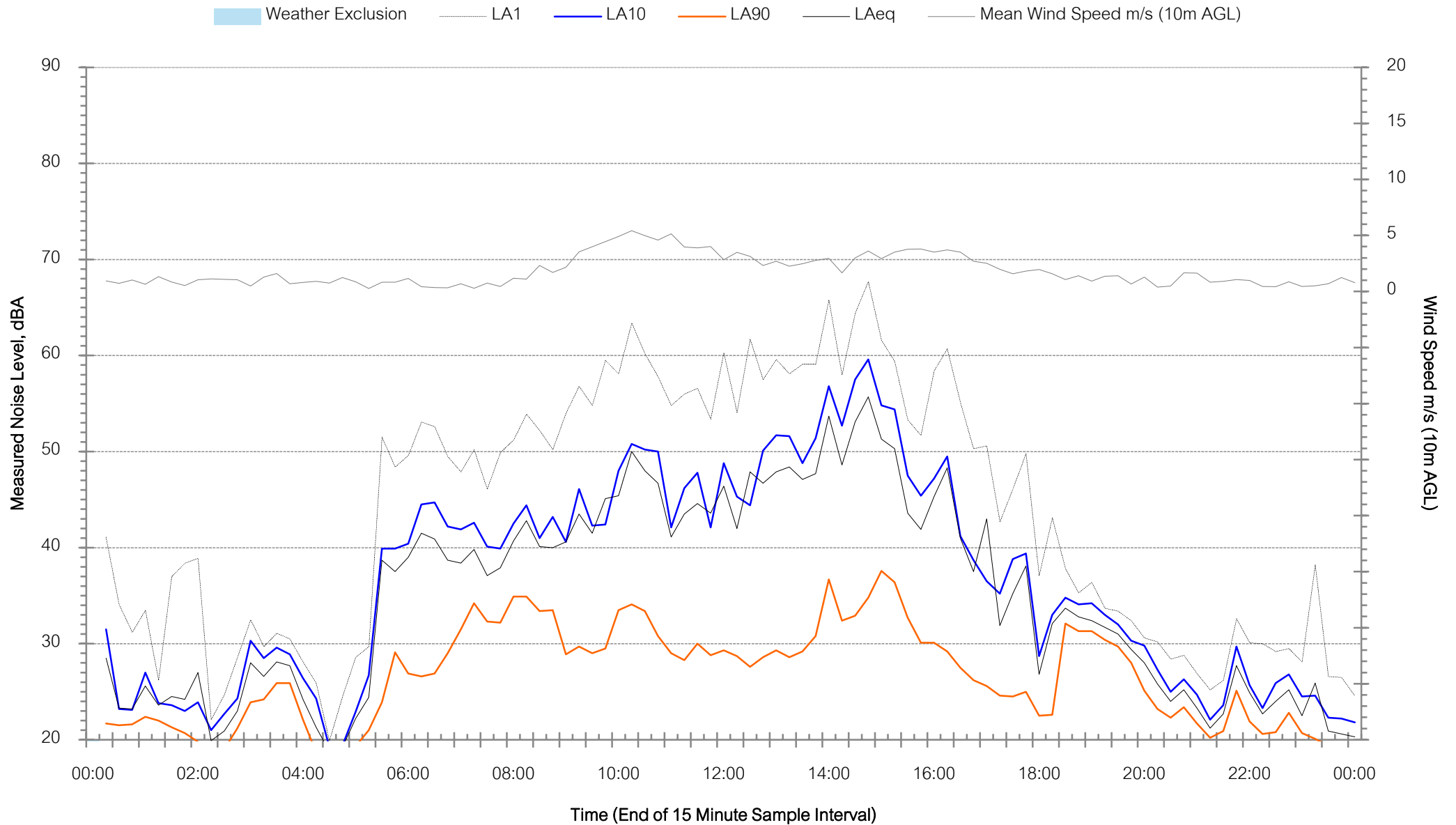
Background Noise Levels

NM5 - Adavale - Tuesday 10 September 2024



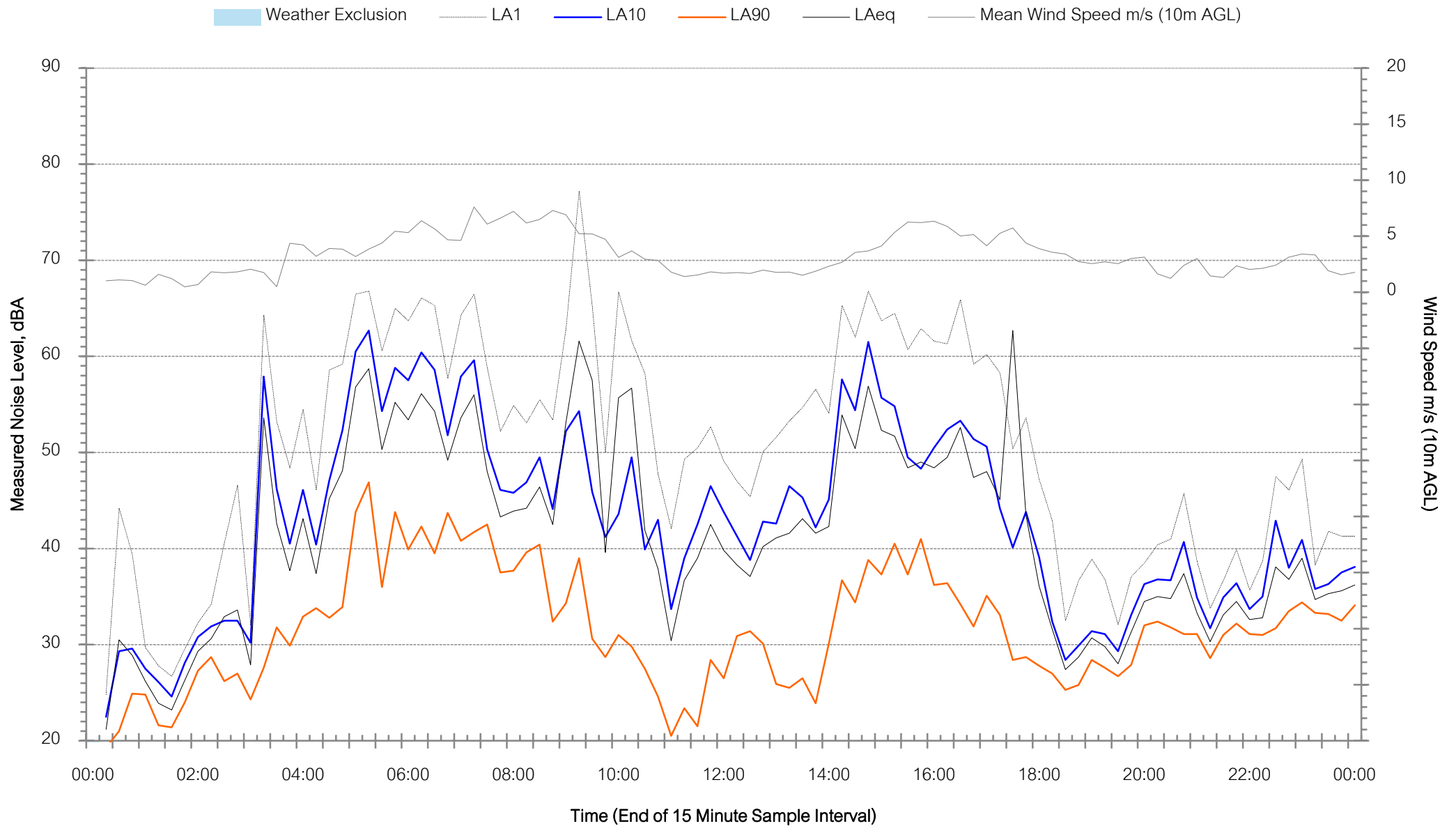
Background Noise Levels

NM5 - Adavale - Wednesday 11 September 2024



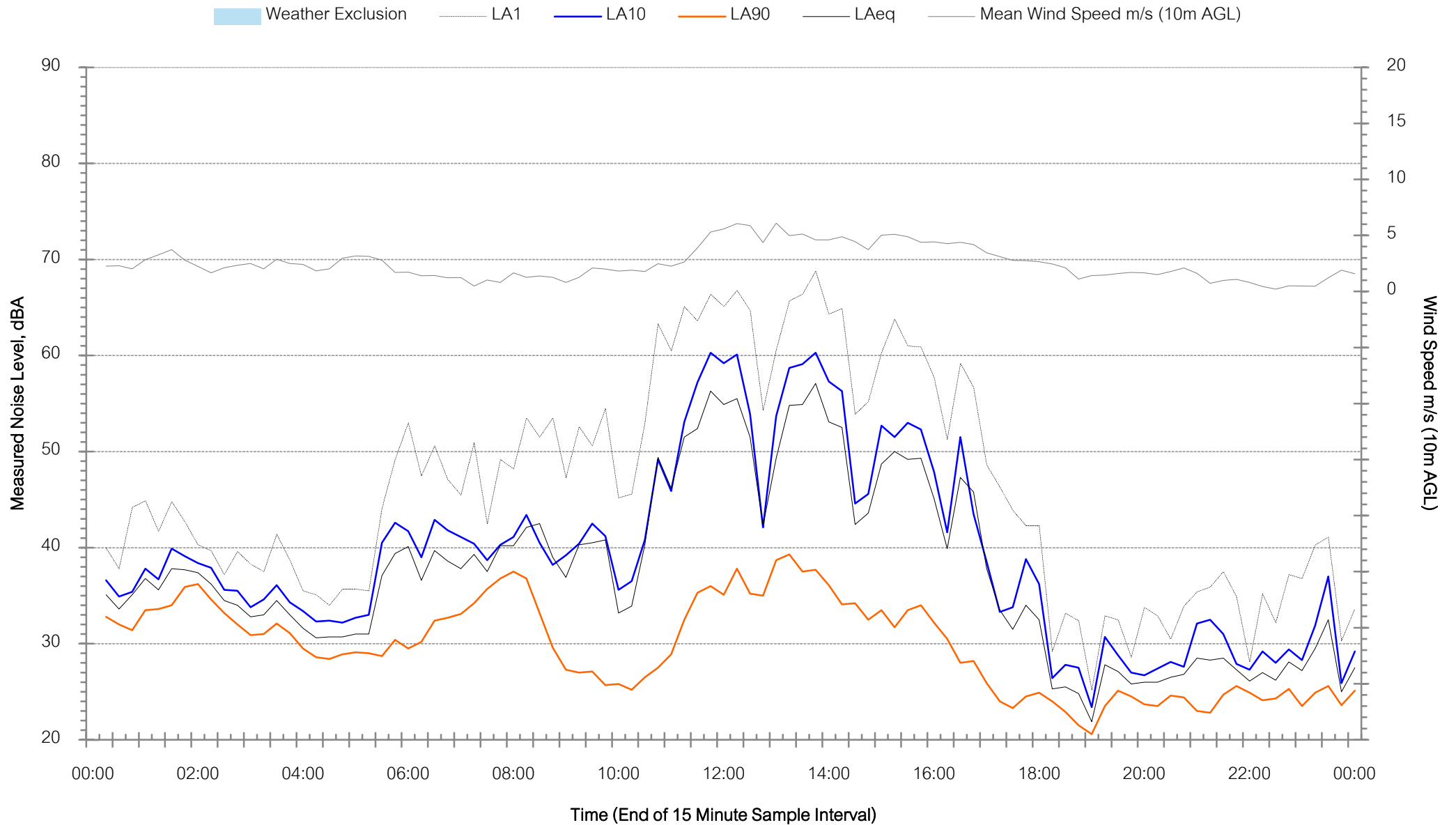
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NM5 - Adavale - Thursday 12 September 2024



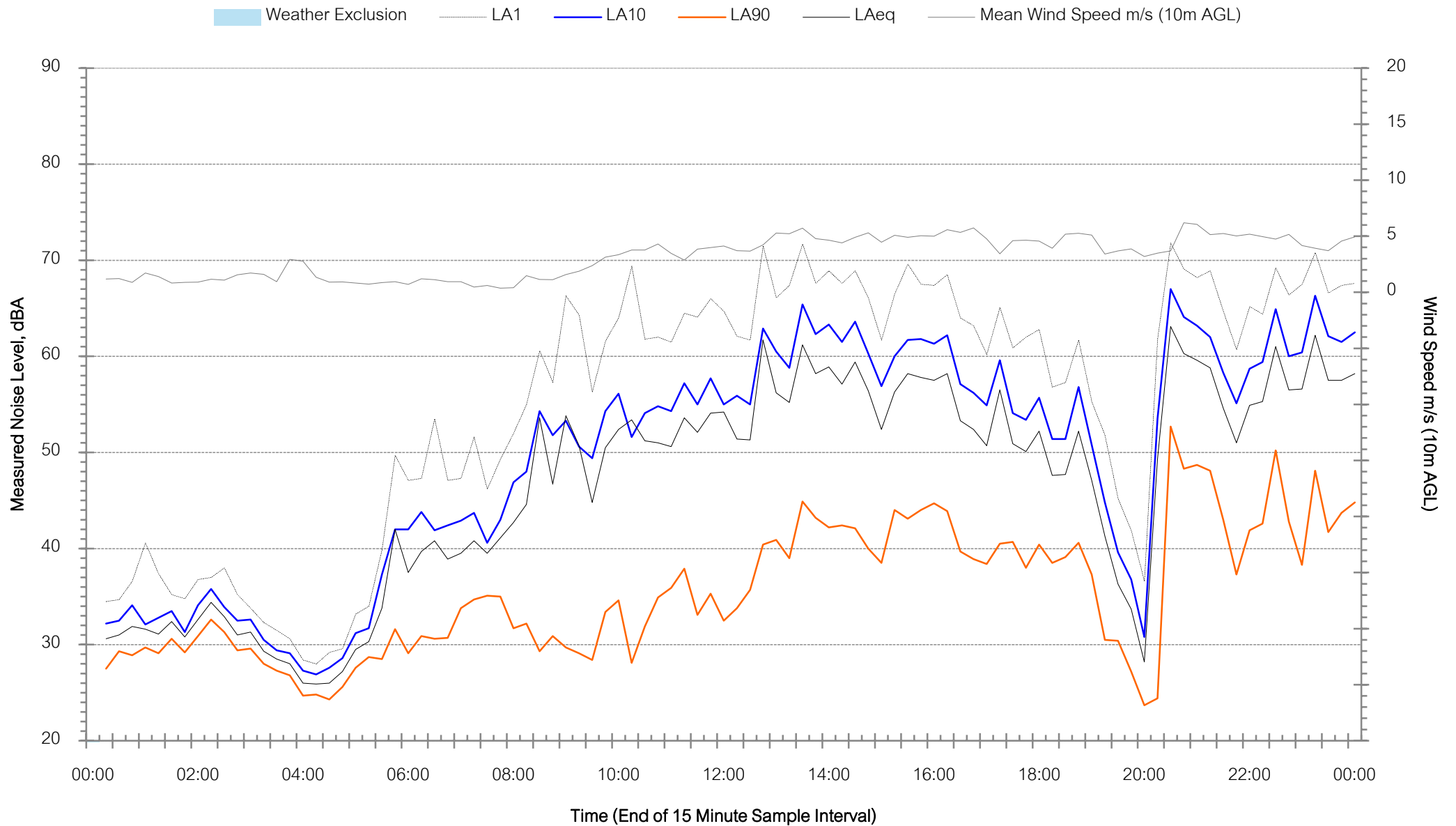
Background Noise Levels

NM5 - Adavale - Friday 13 September 2024



Background Noise Levels

NM5 - Adavale - Saturday 14 September 2024



Background Noise Levels

NM5 - Adavale - Sunday 15 September 2024



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