

1 February 2021

MAC201079-03LR1

Attention: Rachel McNeil
SLR Consulting Australia Pty Ltd
Suite 2B, 125 Bull Street
Newcastle West NSW 2302

Dear Rachel,

Memorandum: Acoustic Certification Review

McDonald's Operation, 164 Warringah Road, Beacon Hill, NSW.

1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by SLR Consulting Australia Pty Ltd (SLR) on behalf of McDonald's Australia Ltd (MCD) to conduct an Acoustic Certification (AC) of modified operating hours for the McDonald's Operation located at 164 Warringah Road, Beacon Hill, NSW (the 'operation'). The AC has been completed as part of the certification process for the operation and is required as part of Condition prescribed by Northern Beaches Council. The Condition from of the Development Consent states that:

a) Throughout the duration of the 24 month trial statements of certification must be obtained from a suitably qualified acoustic consultant and provided to Council in March 2021 and March 2022. These statements are to certify that noise and vibration from the development (including all plant and equipment and general operation noise sources) satisfies the relevant provision of the Protection of the Environment Operations Act 1997 and NSW Noise Policy for Industry. Acoustic monitoring during the trial period from midnight to 6 am period is to be undertaken for 3 periods of 5 consecutive nights (Saturday to Wednesday). The acoustic monitoring will be undertaken during the following times during the 24 month trial: Between 1st December 2020 and 28 February: and between 1st December 2021 and 28 February 2022.

This letter report provides a summary of certification monitoring conducted to date.

2 Methodology

2.1 Unattended Noise Monitoring

2.1.1 Monitoring Methodology

To quantify the ambient noise environment of the area, unattended noise monitoring was conducted at one location representative of the adjacent noise sensitive receivers on Cornish Avenue, Beacon Hill, NSW. The selected monitoring location (M1) is shown in **Figure 1** and is considered representative of surrounding residential receivers as per Fact Sheet B1.1 of the NPI.

The unattended noise survey was conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics – Description and Measurement of Environmental Noise".

The measurements were carried out using one Svantek SV200A directional noise analyser from Thursday 10 December 2020 to Saturday 12 December 2020 and from Thursday 17 December 2020 to Saturday 19 December 2020. The acoustic instrumentation used carries current NATA calibration 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 $\pm 0.5\text{dBA}$. All equipment carried appropriate and current NATA (or manufacturer) calibration certificates.

Data affected by adverse meteorological conditions have been excluded from the results in accordance with methodologies provided in Fact Sheet A4 of the NPI.

It was noted that the unattended noise monitor was deployed on Thursday 10 December 2020 and Thursday 17 December 2020 in order to monitor the required period to satisfy the DA condition. However, adverse weather conditions commencing on Saturday 12 December 2020 and Saturday 19 December 2020 resulted in the Thursday night and Friday night periods from each week being available for analysis. Furthermore, the COVID outbreak in the Northern Beaches cluster commenced on approximately Sunday 20 December 2020 which resulted in changed traffic conditions and reduced activities at the operation.

It would be inappropriate to assess any monitoring data from 20 December 2020 to 1 January 2021 as it may not be representative of typical ambient conditions surrounding the operation.

FIGURE 1
LOCALITY PLAN
REF: MAC201079



KEY

-  **M1** UNATTENDED MONITORING LOCATION
-  **A1** ATTENDED MONITORING LOCATION
-  **L1** HISTORIC UNATTENDED MONITORING LOCATION
-  **SITE LOCATION**

2.1.2 Unattended Noise Monitoring Results

The results of the long-term unattended noise monitoring are provided in **Table 1**, with the noise monitoring charts for the unattended monitoring assessment provided in **Attachment A**.

Table 1 Background Noise Monitoring Summary

Date	Measured Background Noise Level (LA90) dB ABL			Measured dB LAeq(period)		
	Day	Evening	Night	Day	Evening	Night
Thursday 10 December 2020	60	57	46	68	66	61
Friday 11 December 2020	57	56	44	69	65	60
Thursday 10 December 2020	-	56	45	68	68	62
Friday 11 December 2020	61	55	44	67	64	59
M1 – RBL / Leq Overall	60	56	45	68	66	61

Note: Excludes periods of wind or rain affected data. Meteorological data obtained from the Bureau of Meteorology Terry Hills t weather station AWS 33.69 151.22°E 199m AMSL.

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.

The results of the unattended noise monitoring demonstrate that there is only a minor decrease in ambient noise levels between the day and night periods, which is indicative of continuous traffic noise dominating an area.

To verify that the monitored ambient noise levels were being dominated by traffic noise from Cornish Avenue and Warringah Road, MAC have reviewed traffic noise data from the RMS Traffic Counter Station #55036, which is located approximately 300m west of the operation. **Table 2** presents the AADT traffic data from the counter station and the calculated day and night flow based on a typical 80/20 split.

Table 2 Warringah Road Traffic Data

Station #	Eastbound	Westbound
L1	26060	26175
Total Flows	52235	
Split	80% Day (15hr)	20% Night (9hr)
	41788	10447

The United States (US) Environment Protection Agency's road traffic calculation method was used to predict the LAeq noise levels from Warringah Road to the unattended monitoring location. This method is an internationally accepted theoretical traffic noise prediction model. **Table 3** provides the results of the traffic noise assessment.

Table 3 Road Traffic Noise Levels dB LAeq

Period ¹	Distance to Nearest Receiver (m)	Measured Noise Level	Calculated Traffic Noise
Residential Receivers			
Day	70	66	66
Night		61	61

Note 1: Day LAeq(15hr) 7am to 10pm, Night LAeq(9hr) 10pm to 7am.

The measured LAeq noise levels are consistent with the calculated traffic noise levels further demonstrating that the ambient environment is dominated by road traffic.

2.2 Attended Noise Monitoring

2.2.1 Monitoring Methodology

To supplement the unattended noise assessment and to directly quantify the ambient noise in the community surrounding the operation, attended noise monitoring was undertaken on Friday 18 December 2020. The attended noise monitoring was conducted at one location, A1 (see Figure 1), using one Svantek 971 noise analyser to quantify ambient noise levels and establish noise contributions from the operation.

The attended noise survey was conducted in general accordance with the procedures described in Australian Standard AS 1055:2018, "Acoustics – Description and Measurement of Environmental Noise". The acoustic instrumentation used carries current NATA calibration 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 $\pm 0.5\text{dBA}$. All equipment carried appropriate and current NATA (or manufacturer) calibration certificates.

The attended measurement was completed during calm and clear meteorological conditions and during typical night-time activities for the operation. The results of the short-term noise measurements and observations are summarised in **Table 4**.

The results of the attended noise monitoring demonstrates that the operation complies with the applicable Project Noise Trigger Levels and Maximum Trigger Levels established in the historic report (*Ref# MAC201079-01RP1, Muller Acoustic Consulting Pty Ltd, July 2020*). Furthermore, the results of the attended monitoring are consistent with the results of the predictive noise modelling presented in Section 6 of the historic report.

Table 4 Operator-Attended Noise Survey Results- ATT1

Date / Time (hrs)	Descriptor (dBA re 20 µPa)			Meteorology	Description and SPL, dBA
	L _A max	L _A eq	L _A 90		
18/12/2020 00:00	72	59	53	WD: E WS: 0.5m/s Rain: Nil	Insects 50-63
					Distant Traffic 50-55
					Passing Traffic 59-72
					Service Station 50-54
					Operation Mechanical Plant 33-35
					Operation Onsite Vehicle Indiscernible
Metric			dB L _A eq	dB L _A max	
Operation Contribution			34	35	
Criteria			43	57	
Compliant			✓	✓	
18/12/2020 00:15	72	56	50	WD: E WS: 0.5m/s Rain: Nil	Insects 55-60
					Distant Traffic 50-56
					Passing Traffic 60-72
					Operation Car Door Slam 56-57
					Operation Mechanical Plant 33-35
					Operation Onsite Vehicle Indiscernible
Metric			dB L _A eq	dB L _A eq	
Operation Contribution			34	35	
Criteria			43	57	
Compliant			✓	✓	
18/12/2020 00:30	74	59	55	WD: E WS: 0.2m/s Rain: Nil	Insects 56-60
					Distant Traffic 50-60
					Passing Traffic 55-74
					Operation Mechanical Plant 33-35
					Operation Onsite Vehicle Indiscernible
					Metric
Operation Contribution			34	35	
Criteria			43	57	
Compliant			✓	✓	
18/12/2020 0:45	74	59	50	WD: E WS: 0.2m/s Rain: Nil	Insects 65-67
					Distant Traffic 50-58
					Passing Traffic 55-74
					Operation Mechanical Plant 33-35
					Operation Onsite Vehicle Indiscernible
					Metric
Operation Contribution			34	35	
Criteria			43	57	
Compliant			✓	✓	

3 Discussion of Monitoring Results

The results of the unattended and attended noise monitoring demonstrate that the dominant noise source in the area is passing traffic along Cornish Avenue and on nearby Warringah Road, with continuous traffic noise audible throughout all monitoring. Other dominant noise sources included local insect noise which was a significant contributing source in the area.

Onsite vehicles were indiscernible from the dominant road traffic noise. Operation mechanical plant was audible during brief breaks in passing traffic on Cornish Avenue but was still difficult to discern and was predominantly masked by the continuous noise of traffic on Warringah Road. A detailed frequency analysis was undertaken of the attended noise monitoring data to isolate the mechanical plant contribution.

It is also noted that the unattended and attended noise monitoring were approximately 10m closer to the operation than either of the closest noise sensitive receivers and does not take into account any intervening boundary fences. Accordingly, the results of both the attended and unattended noise monitoring should be deemed worst case results with the received noise levels at the surrounding receivers assumed to be lower than those reported in **Table 4**.

Given the masking effect of the dominant noise sources, the low level noise emissions received at the monitoring location and the additional attenuation from additional distance and intervening barriers the received noise levels at surrounding receivers is not likely to cause disturbance at the dwellings.

4 Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned to conduct an Acoustic Certification (AC) of modified operating hours of the McDonald's Operation located at 164 Warringah Road, Beacon Hill, NSW. The AC has been completed as part of the certification process for the operation.

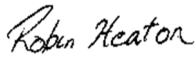
Unattended and attended noise monitoring has been conducted adjacent to the nearest residential receiver to the operation and with the operation noise contribution found to comply with the applicable project noise trigger levels and maximum trigger levels.

Furthermore, monitoring demonstrates that passing traffic noise dominates the ambient environment with the operation noise emissions masked by traffic noise at the monitoring location.

Given the masking effect of the dominant noise sources, the low level noise emissions received at the monitoring location and the additional attenuation due to additional offset distance to the residential dwellings and intervening barriers, the received noise levels at surrounding receivers is not likely to cause disturbance at the receiver dwellings.

We trust this certification is satisfactory, however if you have any further questions or would like to discuss, please contact the undersigned.

Yours sincerely



Robin Heaton
Acoustic Engineer
BEng (Hons)
rheaton@mulleracoustic.com



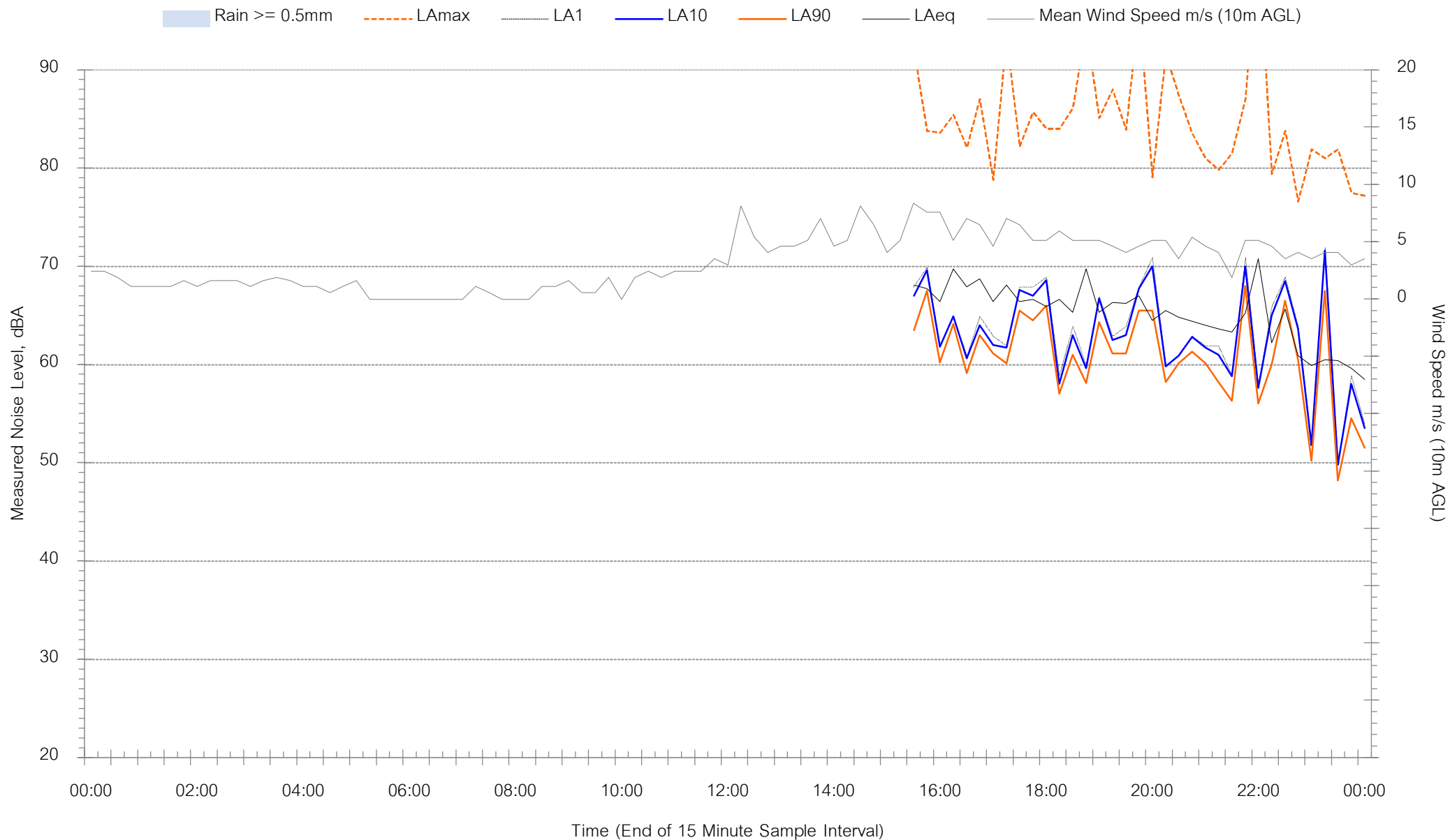
Oliver Muller
Principal Acoustic Scientist
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Attachment A – Noise Monitoring Charts

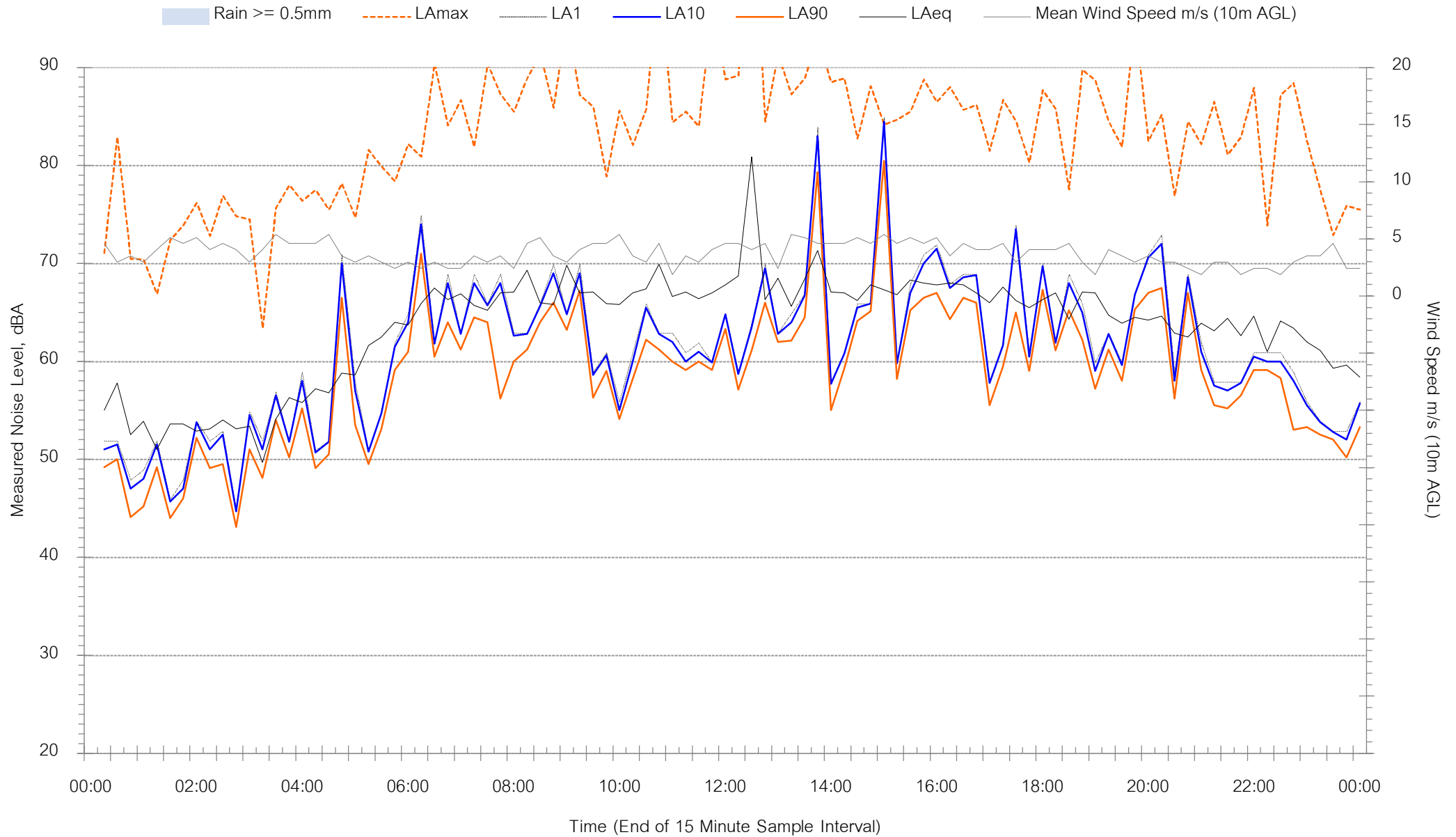
Background Noise Levels

McDonalds, Beacon Hill - Thursday 10 December 2020



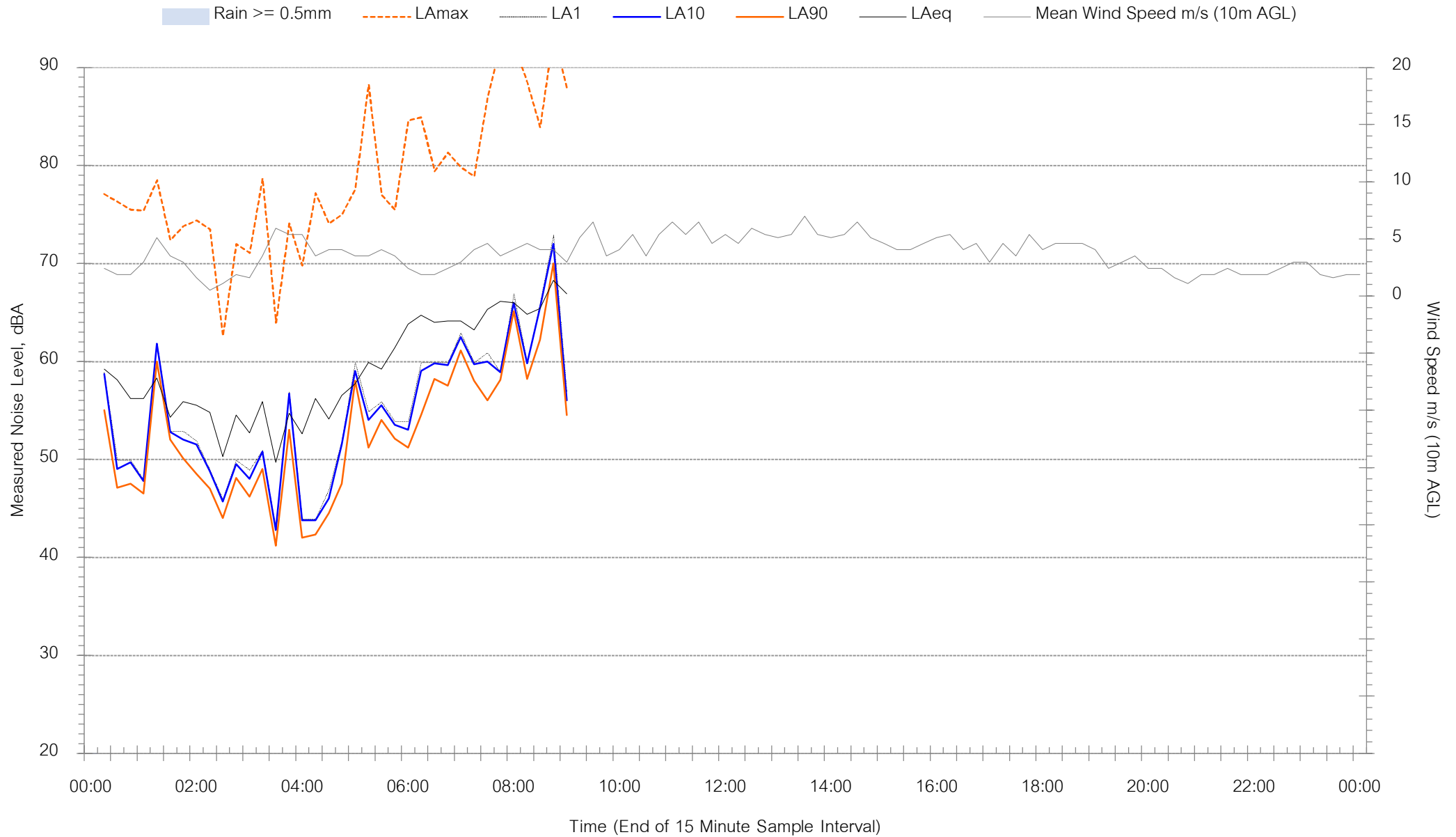
Background Noise Levels

McDonalds, Beacon Hill - Friday 11 December 2020



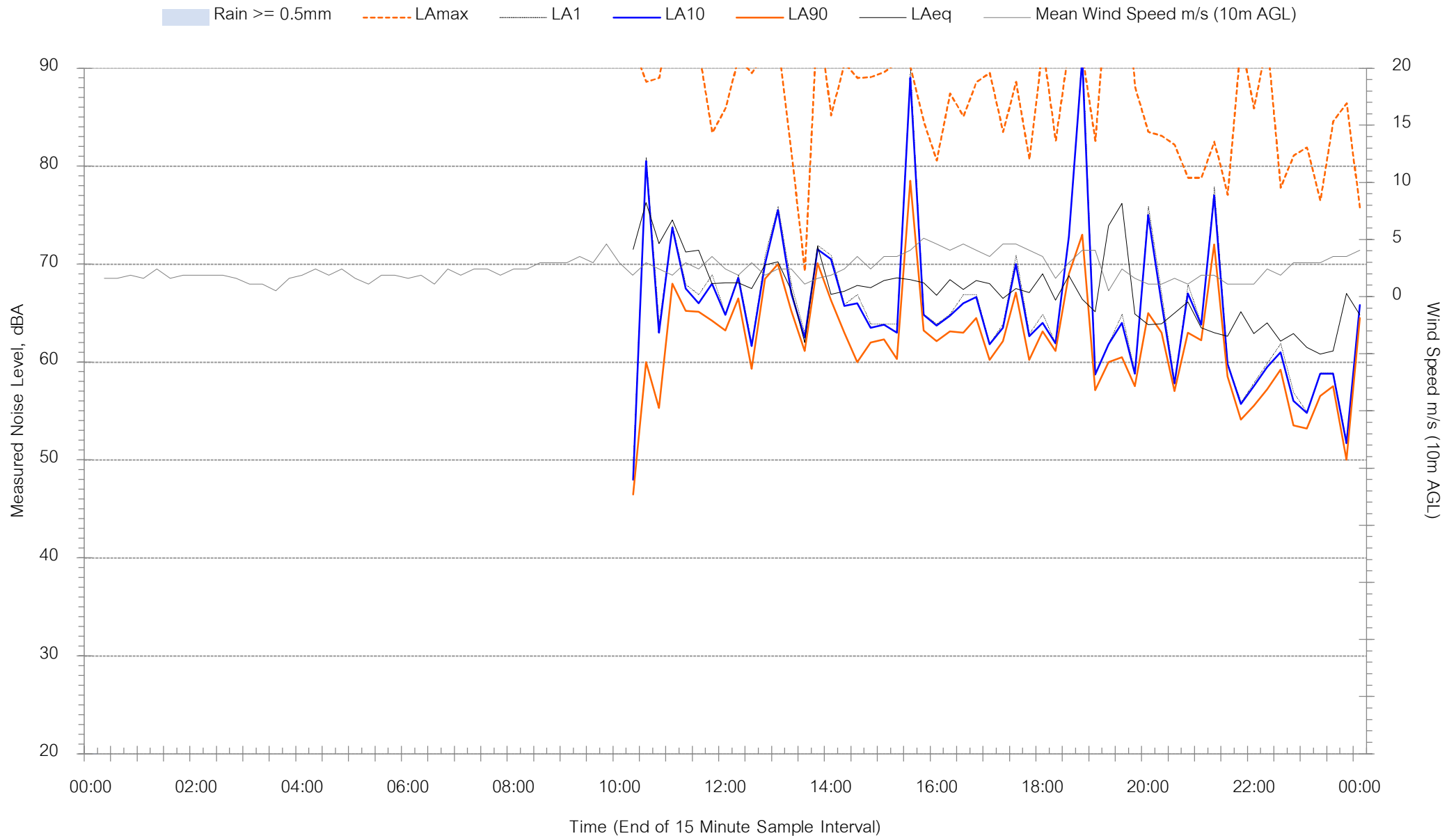
Background Noise Levels

McDonalds, Beacon Hill - Saturday 12 December 2020



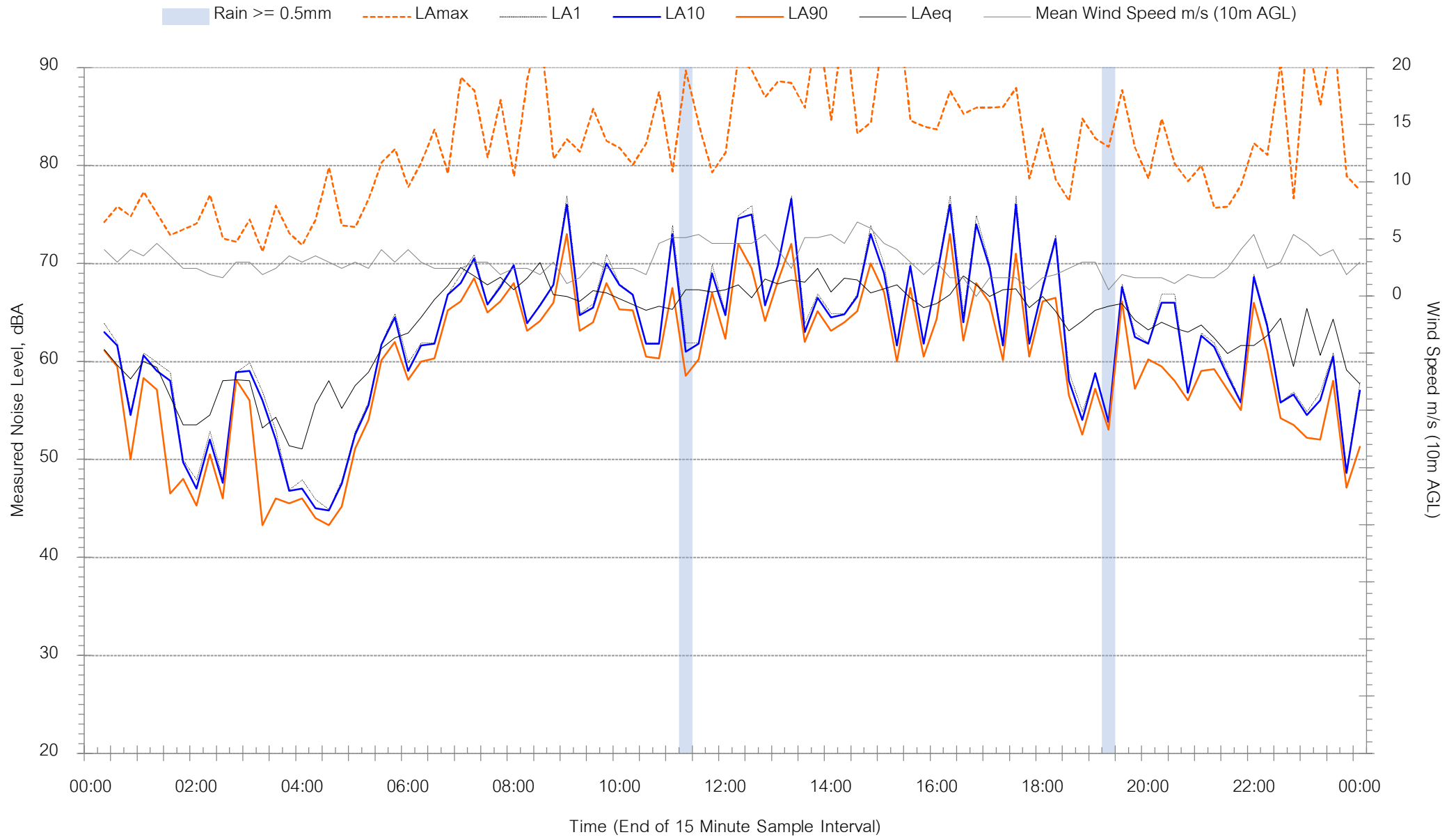
Background Noise Levels

McDonalds, Beacon Hill - Thursday 17 December 2020



Background Noise Levels

McDonalds, Beacon Hill - Friday 18 December 2020



Background Noise Levels

McDonalds, Beacon Hill - Saturday 19 December 2020

