



Tweed Valley Hospital Carpark

March Report

Project ID	20211491.6
Document Title	March Report
Attention To	ADCO Constructions Pty Ltd

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	5/04/2022	20211491.6/0504A/R0/JJM	JJMzz		GW
1	6/06/2022	20211491.6/0606A/R1/JJMZZ	TJA		TJA
2	14/07/2022	20211491.6/1407A/R2/JJMZZ	MD		TJA

TABLE OF CONTENTS

1	INTRODUCTION	4
2	SITE DESCRIPTION AND SENSITIVE RECEIVERS.....	5
3	VIBRATION CRITERIA	7
4	VIBRATION MONITORING	7
4.1	MEASUREMENT EQUIPMENT	7
4.2	MEASUREMENT RESULTS	7
5	NOISE MONITORING	9
5.1	DEFINITION OF TERMS.....	9
5.2	NOISE MANAGEMENT CRITERIA.....	10
5.3	EQUIPMENT USED	10
5.4	MEASURED NOISE LEVELS	10
6	DUST.....	12
6.1	ASSESSMENT CRITERIA.....	12
6.2	MEASUREMENT DETAILS	12
6.2.1	Equipment.....	12
6.2.2	Period.....	12
6.3	MEASUREMENT RESULTS	13
7	CONCLUSION.....	15
	APPENDIX 1 – NOISE MONITORING RESULTS	16
	APPENDIX 2 – VIBRATION MONITORING RESULTS	17
	APPENDIX 3 – DUST MONITORING RESULTS.....	18
	APPENDIX 4 – SITE PHOTO OF MONITORING LOCATION	19

1 INTRODUCTION

Acoustic Logic has been engaged to carry out noise, dust and vibration monitoring for the impacts associated with the earthworks, excavation, and construction components of the Tweed Valley Hospital Carpark.

- Vibration Monitoring: 1st of March to 31st of March 2022; and
- Noise Monitoring: 1st of March to 31st of March 2022; and
- Dust Monitoring: 1st of March to 31st of March 2022.

The location of the site is shown in [Figure 2-1](#) below. The location of the on-site monitors relative to the site has also been shown in [Figure 2-1](#).

The following Noise, Dust and Vibration Management levels have been derived from the Construction Noise, Dust and Vibration Management Plan, document reference 20211491.1/2911A/R2/OB.

2 SITE DESCRIPTION AND SENSITIVE RECEIVERS

The subject site is located on Cudgen Rd, Kingscliff as indicated in [Figure 2-1](#). The land uses surrounding the proposed multi-storey carpark site are existing commercial, residential and educational receivers. The nearest potentially most affected receivers are:

- **Receiver 1:** Tweed Regional Aquatic Centre – Kingscliff (east)
- **Receiver 2:** Residential dwellings located on 32-58 Cudgen Road (east)
- **Receiver 3:** Residential dwelling located at 792 Cudgen Road (south)
- **Receiver 4:** TAFE NSW – Kingscliff (south)
- **Receiver 5:** Residential dwelling located at 764 Cudgen Road (south)
- **Receiver 6:** Residential receivers at 6-30 John Robb Way (west)

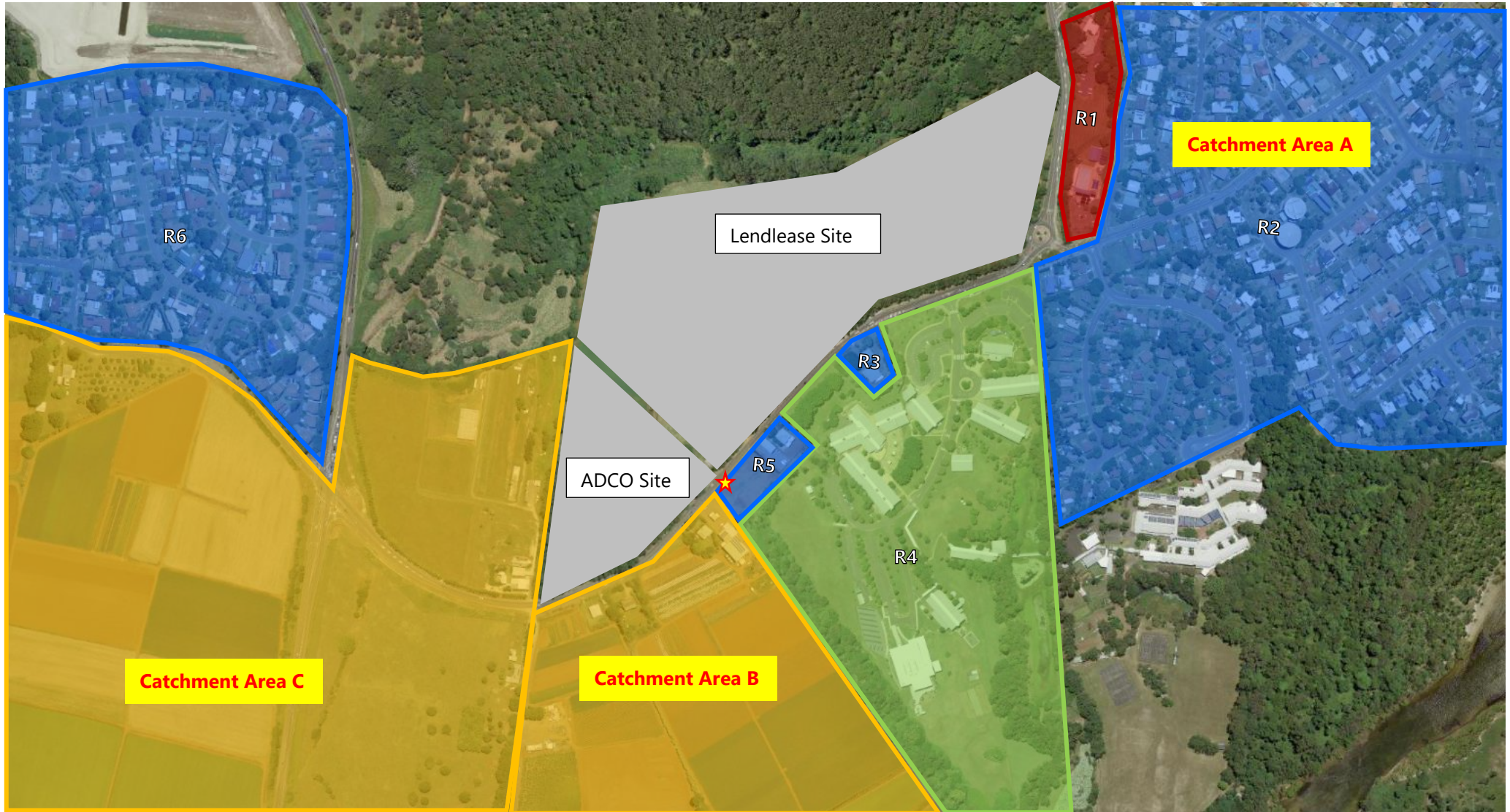


Figure 2-1 –Site and Sensitive Receiver Locations

- Industrial/Agricultural
- Commercial Receiver
- ★ Monitoring Location

- Site
- Residential Receiver
- Educational/Tafe

3 VIBRATION CRITERIA

The following vibration monitoring criteria has been derived from the Construction Noise, Dust and Vibration Management Plan, document reference: 20211491.1/2911A/R2/OB.

CONSTRUCTION VIBRATION CRITERIA

Vibration criteria for the nearest receivers will be based on the following documents:

- DIN 4150, *Vibration in Buildings (2016-12)*;
- EPA *“Assessing Vibration: A technical guideline”*; and
- ASHRAE Handbook 2007.

Summarised Recommended Vibration Limits

The summarised vibration criteria are presented in the table below.

Table 9 – Recommended Vibration Limit

Vibration Receiver	Recommended Vibration Limits PPV (mm/s)
Residential Buildings	5
Commercial/Other Buildings	20

4 VIBRATION MONITORING

4.1 MEASUREMENT EQUIPMENT

Vibration monitoring was conducted using one Texcel ETM vibration monitors with an external tri-axial geophone. The monitor is programmed to store statistical vibration data over every 5-minute period, along with any ‘triggered’ events that occur throughout the monitoring period. The following Section presents the results of vibration monitoring for the period between the 1st of March to the 31st of March 2022.

4.2 MEASUREMENT RESULTS

Table 1 – Vibration Monitoring Results

Vibration Geophone Location	Date	Maximum Measured Vibration Level mm/s	Criteria Vibration Level	Complies
Monitoring Location	2022-03-01	0.65	5mm/s PPV	Yes
	2022-03-02	0.57		Yes
	2022-03-03	0.69		Yes
	2022-03-04	0.7		Yes
	2022-03-05	0.79		Yes
	2022-03-06	0.99		Yes
	2022-03-07	1.23		Yes
	2022-03-08	5.94 ^{Note 1}		Yes
	2022-03-09	0.9		Yes
	2022-03-10	0.77		Yes
	2022-03-11	2.51		Yes
	2022-03-12	0.84		Yes
	2022-03-13	0.66		Yes
	2022-03-14	1.01		Yes
	2022-03-15	0.77		Yes
	2022-03-16	1.17		Yes
	2022-03-17	1.04		Yes
	2022-03-18	0.84		Yes
	2022-03-19	1.48		Yes
	2022-03-20	0.64		Yes
	2022-03-21	0.94		Yes
	2022-03-22	1.11		Yes
	2022-03-23	1.18		Yes
	2022-03-24	0.94		Yes
	2022-03-25	0.89		Yes
	2022-03-26	0.79		Yes
	2022-03-27	5 ^{Note 2}		Yes
	2022-03-28	0.97		Yes
	2022-03-29	0.71		Yes
	2022-03-30	0.83		Yes
	2022-03-31	1.2		Yes

(1) Replacement vibration/noise/dust monitors.

(2) Lawn maintenance/mowing taken place around perimeter fencing of monitoring location.

5 NOISE MONITORING

5.1 DEFINITION OF TERMS

Environmental noise is complex in nature. The noise level fluctuates from moment to moment and the noise characteristic can vary depending on the particular noise source in the vicinity (for example road, railway, and factory).

For this reason, various terms and descriptors have been developed to quantify the noise environment in a way that reflects human perception. The terms used in this noise assessment are described below:

dB(A)

Unit of loudness. The higher the number, the louder the noise. A change in noise level of up to 3 dB(A) is barely perceptible. A 5 dB(A) change is noticeable. A 10 dB(A) change is subjectively a doubling of noise.

Noise Descriptors

For time varying noise sources (such as traffic noise and general environmental noise) it is not possible to assess noise impacts based on a single instantaneous measurement. It is necessary to measure noise over a discrete period until a representative sample of noise has been obtained.

The descriptors used in this assessment are defined below.

L₁

The sound pressure level that is exceeded for 1 percent of the time for which the given sound is measured.

L₁₀

The sound pressure level that is exceeded for 10 percent of the time for which the given sound is measured.

L₉₀

The sound pressure level that is exceeded for 90 percent of the time for which the given sound is measured.

L_{Aeq}

Equivalent sound pressure level – steady sound level that, over a specified period, would produce the same energy equivalence as the fluctuating sound level actually occurring.

5.2 NOISE MANAGEMENT CRITERIA

NOISE MANAGEMENT LEVEL

Establishment of criteria for construction noise requirements will be in accordance with the following documents.

- NSW Environmental Protection Authority, 'Interim Construction Noise Guideline';
- Australian Standard AS2107:2016; and
- Australian Standards AS2436:2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

Location	Management level, dB(A) L_{eq} (15 min)
Residential Receivers	Recommended Standard Hours "Noise Affected" Level – 55 "Highly Noise Affected" Level - 75
Commercial Receivers	70
Educational Receivers	45 (Internal)
Office Areas	
X-Ray Areas	50(Internal)

5.3 EQUIPMENT USED

Unattended noise monitoring was conducted using a *SiteHive Hexanode 134* noise and dust monitor. The monitor was programmed to store 15-minute statistical noise levels throughout the monitoring period. Measurements were taken on A-frequency weighting and fast time weighting.

5.4 MEASURED NOISE LEVELS

The available measured noise levels have been analysed by this office and the graphed noise data presented in Appendix 1.

Please note that the presented data represents the available monitoring data for the period described in [Table 2](#). Summarised results are also in [Table 2](#) below.

Table 2 – Noise Monitoring Results

Date	Measured typical worst noise level dB(A) L_{eq} 15min	Noise Management Level dB(A) L_{eq} 15min <i>"Highly Affected Noise"</i>	Exceedance
2022-03-01	Note 1	75	No
2022-03-02	Note 1		
2022-03-03	Note 1		
2022-03-04	Note 1		
2022-03-05	Note 1		
2022-03-06	Note 1		
2022-03-07	Note 1		
2022-03-08	68		
2022-03-09	69		
2022-03-10	70		
2022-03-11	70		
2022-03-12	66		
2022-03-13	67		
2022-03-14	70		
2022-03-15	69		
2022-03-16	70		
2022-03-17	70		
2022-03-18	70		
2022-03-19	65		
2022-03-20	64		
2022-03-21	69		
2022-03-22	69		
2022-03-23	70		
2022-03-24	69		
2022-03-25	70		
2022-03-26	65		
2022-03-27	68		
2022-03-28	72		
2022-03-29	67		
2022-03-30	70		
2022-03-31	68		

Note 1: Equipment malfunction due to QLD/NSW flood/excessive rainfall experience within this period.

6 DUST

6.1 ASSESSMENT CRITERIA

Dust monitoring has been conducted to measure mechanically generated respirable PM_{2.5} dust particles (< 2.5µm) and PM₁₀ dust particles (< 10µm), which are generally understood to be the main health concern in airborne dust. The air quality limits are based on the standards outlined in Department of the Environment's *National Environment Protection (Ambient Air Quality) Measure* and NSW EPA's air quality categories.

It should be noted that the dust monitoring results can be influenced by events such as fires and dust storms, thus the PM₁₀ limit has an allowance of 5 days per year to account for the effects of such events.

The PM_{2.5} and PM₁₀ goals are summarised below.

Table 3 – PM_{2.5} and PM₁₀ Goals (24-Hour Average)

Pollutant	Averaging Time	Maximum Concentration
PM _{2.5}	24 hours	25 µg/m ³
PM ₁₀	24 hours	50 µg/m ³

The EPA has air quality categories based on particle concentration over a one hour average. As per the Construction Noise, Dust and Vibration management Plan, this project has targeted the 'Poor' category as a reference, **however, the assessment level is the 24-hour average.**

Table 4 – PM_{2.5} and PM₁₀ Goals (1-Hour Average)

Pollutant	Air Quality Category	Maximum Concentration
PM _{2.5}	Poor	62-97 µg/m ³
PM ₁₀		80-120 µg/m ³

6.2 MEASUREMENT DETAILS

6.2.1 Equipment

The dust monitoring was conducted using a *SiteHive Hexanode 134* noise and dust monitor.

6.2.2 Period

Dust monitoring was conducted from 01/03/2022 to 31/03/2022.

6.3 MEASUREMENT RESULTS

The **daily average** PM_{2.5} and PM₁₀ concentration levels are presented below.

Table 5 – 24hr Average PM_{2.5} and PM₁₀ Concentration

Date	24hr Average PM _{2.5} and PM ₁₀ Concentration					
	PM _{2.5} Level (µg/m ³)	PM _{2.5} Limit (µg/m ³)	Complies	PM ₁₀ Level (µg/m ³)	PM ₁₀ Limit (µg/m ³)	Complies
1/03/2022 – 8/03/2022	Note 1	25	Yes	Note 1	50	Yes
9/03/2022	13		Yes	51		Yes ^{Note2}
10/03/2022	12		Yes	34		Yes
11/03/2022	11		Yes	33		Yes
12/03/2022	6		Yes	22		Yes
13/03/2022	7		Yes	24		Yes
14/03/2022	6		Yes	22		Yes
15/03/2022	9		Yes	24		Yes
16/03/2022	8		Yes	29		Yes
17/03/2022	9		Yes	29		Yes
18/03/2022	9		Yes	30		Yes
19/03/2022	8		Yes	25		Yes
20/03/2022	10		Yes	28		Yes
21/03/2022	8		Yes	25		Yes
22/03/2022	7		Yes	25		Yes
23/03/2022	8		Yes	35		Yes
24/03/2022	6		Yes	22		Yes
25/03/2022	4		Yes	17		Yes
26/03/2022	2		Yes	9		Yes
27/03/2022	3		Yes	15		Yes
28/03/2022	5		Yes	21		Yes
29/03/2022	4		Yes	12		Yes
30/03/2022	3		Yes	12		Yes
31/03/2022	4		Yes	13		Yes

(1) Extreme rainfall event triggering Dust Exceedances (Not ADCO Construction works)

(2) Significant rainfall between 12am-3am which affected resulting 24Hr average.

The **daily maximum 1hour** PM_{2.5} and PM₁₀ concentration levels are presented below.

Table 6 – 1Hr Maximum PM_{2.5} and PM₁₀ Concentration

Date	Maximum 1hr Average PM _{2.5} and PM ₁₀ Concentration					
	PM _{2.5} Level (µg/m ³)	PM _{2.5} Limit (µg/m ³)	Complies	PM ₁₀ Level (µg/m ³)	PM ₁₀ Limit (µg/m ³)	Complies
1/03/2022 – 8/03/2022	Note 1	62-97	Yes	Note 1	80-120	Yes
9/03/2022	28		Yes	107		Yes
10/03/2022	17		Yes	53		Yes
11/03/2022	22		Yes	65		Yes
12/03/2022	11		Yes	45		Yes
13/03/2022	11		Yes	37		Yes
14/03/2022	9		Yes	37		Yes
15/03/2022	14		Yes	35		Yes
16/03/2022	10		Yes	57		Yes
17/03/2022	14		Yes	59		Yes
18/03/2022	12		Yes	41		Yes
19/03/2022	17		Yes	42		Yes
20/03/2022	16		Yes	44		Yes
21/03/2022	10		Yes	35		Yes
22/03/2022	12		Yes	54		Yes
23/03/2022	12		Yes	56		Yes
24/03/2022	10		Yes	42		Yes
25/03/2022	10		Yes	45		Yes
26/03/2022	4		Yes	17		Yes
27/03/2022	9		Yes	39		Yes
28/03/2022	21		Yes	86		Yes
29/03/2022	14		Yes	54		Yes
30/03/2022	10		Yes	31		Yes
31/03/2022	9		Yes	54		Yes

(1) Extreme rainfall event triggering Dust Exceedances (Not ADCO Construction works)

7 CONCLUSION

Acoustic Logic Consultancy has carried out noise, dust and vibration monitoring for the month of March at the Tweed Valley Hospital Carpark. Earthworks and excavation are noted as the major activities undertaken during this monitoring period.

This monitoring report presents the noise and vibration monitoring for the periods as follows:

- Vibration Monitoring: 1st of March to 31st of March 2022; and
- Noise Monitoring: 1st of March to 31st of March 2022; and
- Dust Monitoring: 1st of March to 31st of March 2022.

We note:

- 1- Extreme weather events are noted from 1st March 2022 to 9th March 2022. Due to the excessive rainfall, the Dust/Noise Monitor malfunctioned.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

A large black rectangular redaction box covering the signature of the representative.

Acoustic Logic Pty Ltd

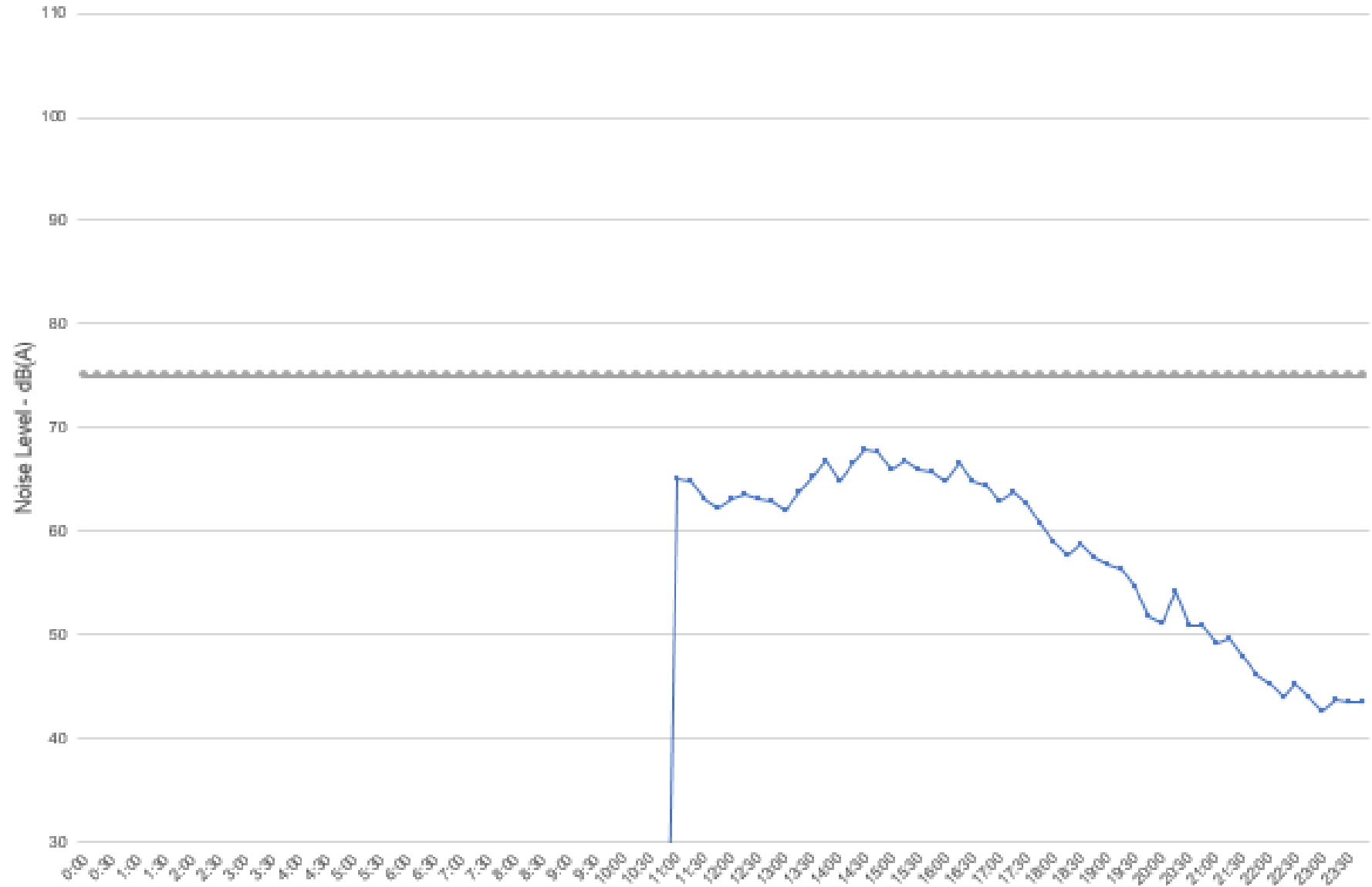
A black rectangular redaction box covering the contact information of Acoustic Logic Pty Ltd.

APPENDIX 1 – NOISE MONITORING RESULTS



Noise Monitoring: 08/03/2022

— Leq — Highly Noise Effected

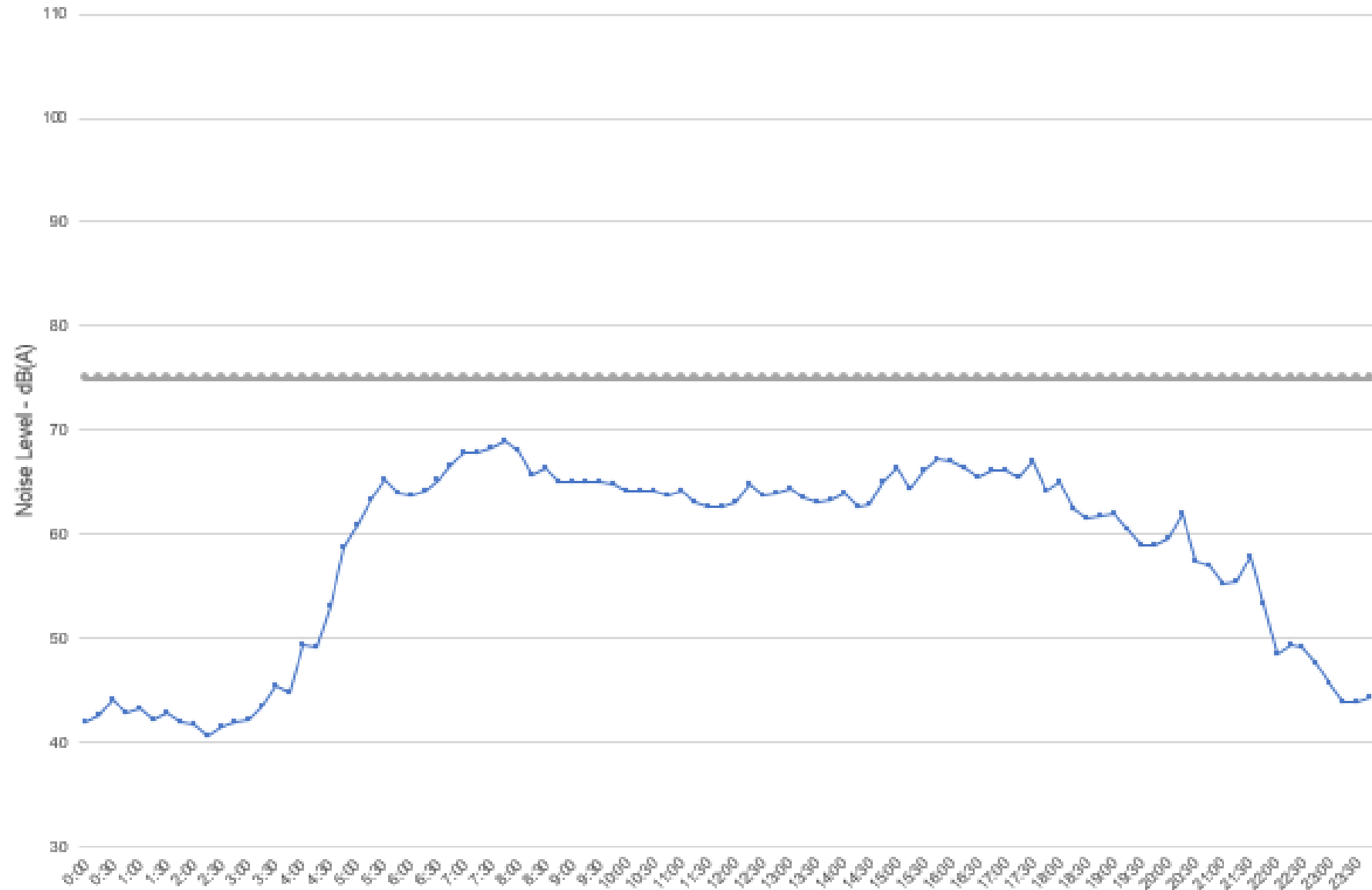




**ACOUSTIC
LOGIC**

Noise Monitoring: 09/03/2022

— Leq — Highly Noise Effected

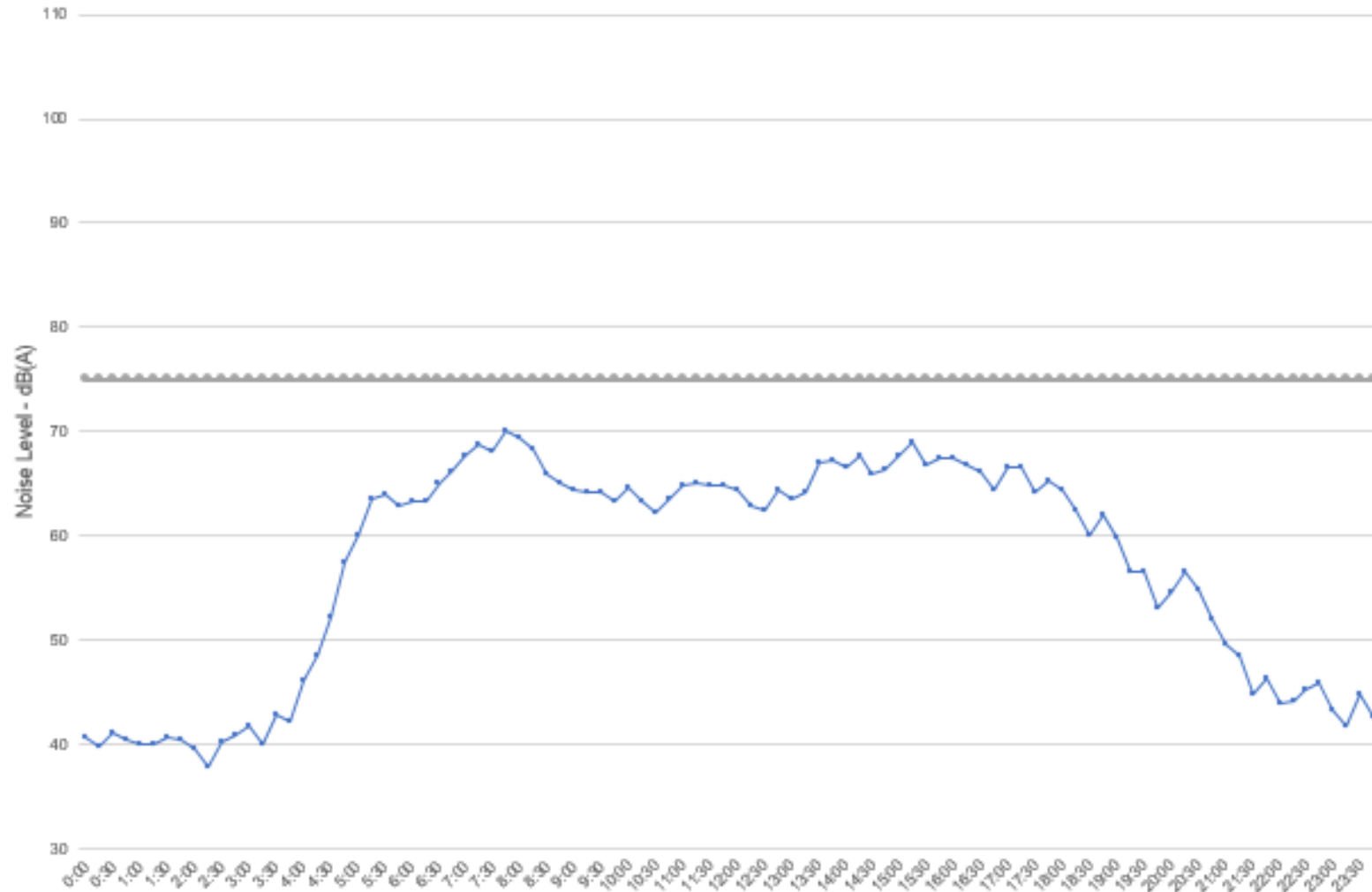




ACOUSTIC LOGIC

Noise Monitoring: 10/03/2022

— Leq — Highly Noise Effected

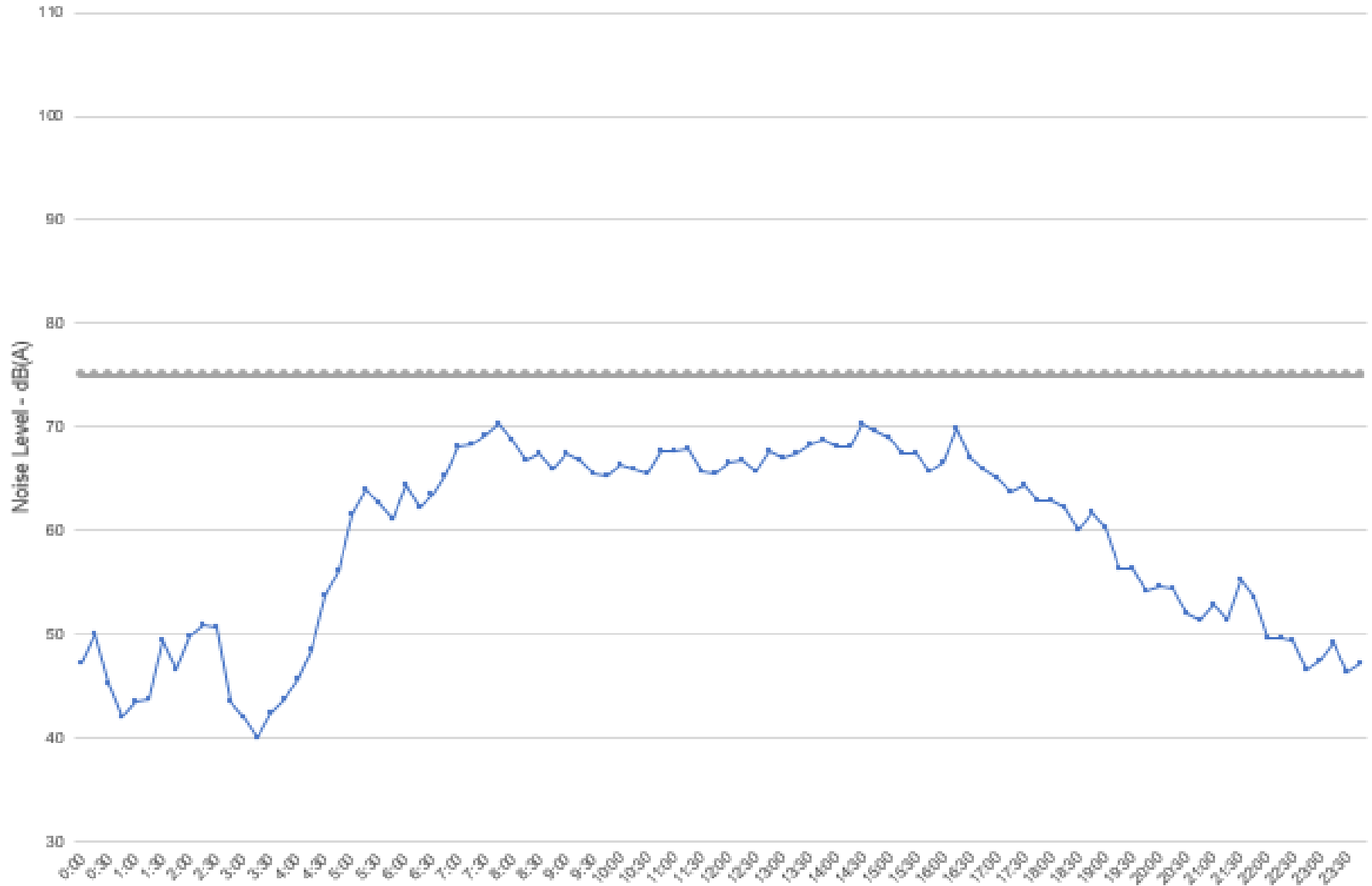




ACOUSTIC LOGIC

Noise Monitoring: 11/03/2022

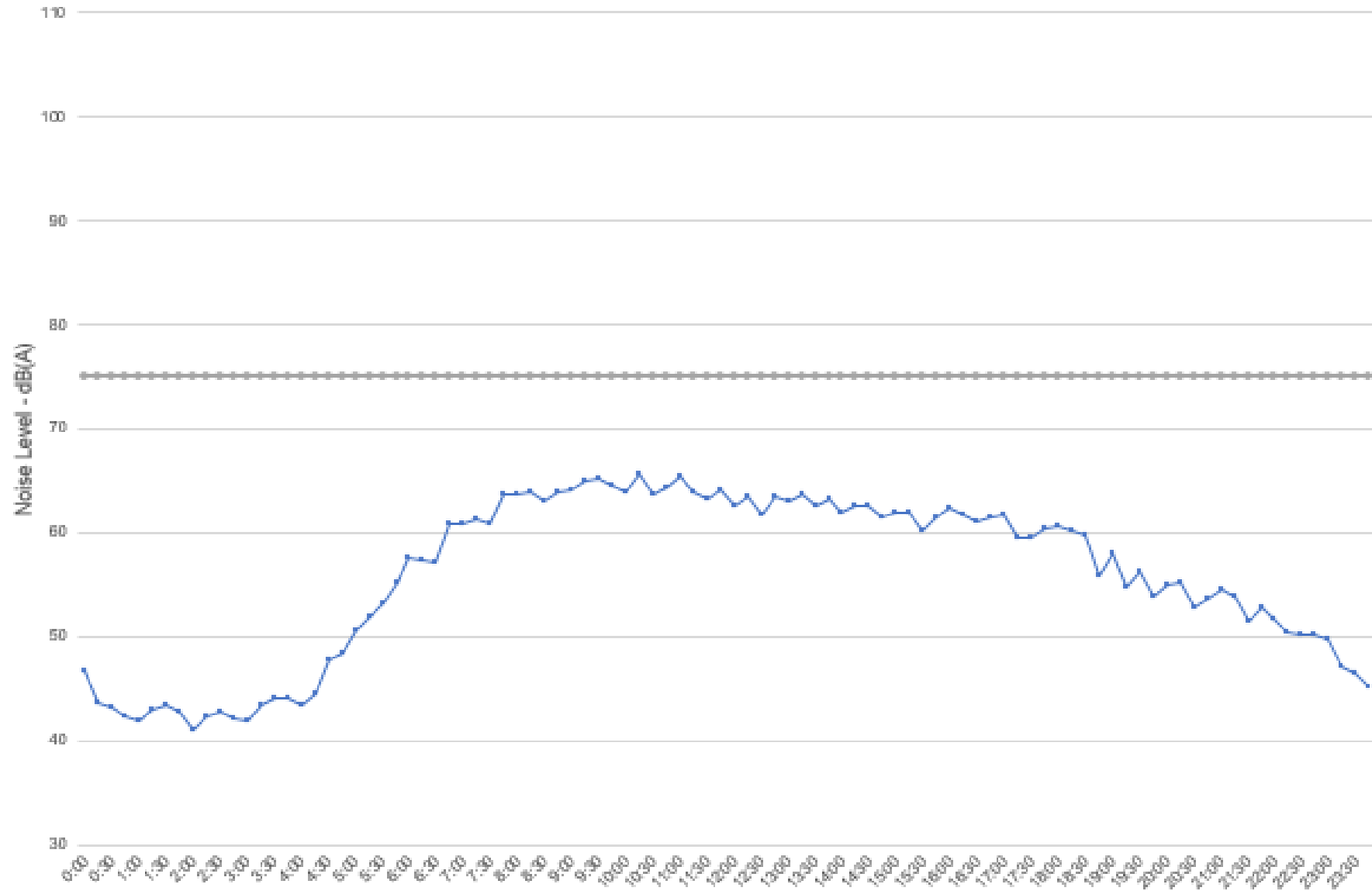
— Leq — Highly Noise Effected





Noise Monitoring: 12/03/2022

— Leq — Highly Noise Effected





**ACOUSTIC
LOGIC**

Noise Monitoring: 13/03/2022

— Leq — Highly Noise Effected

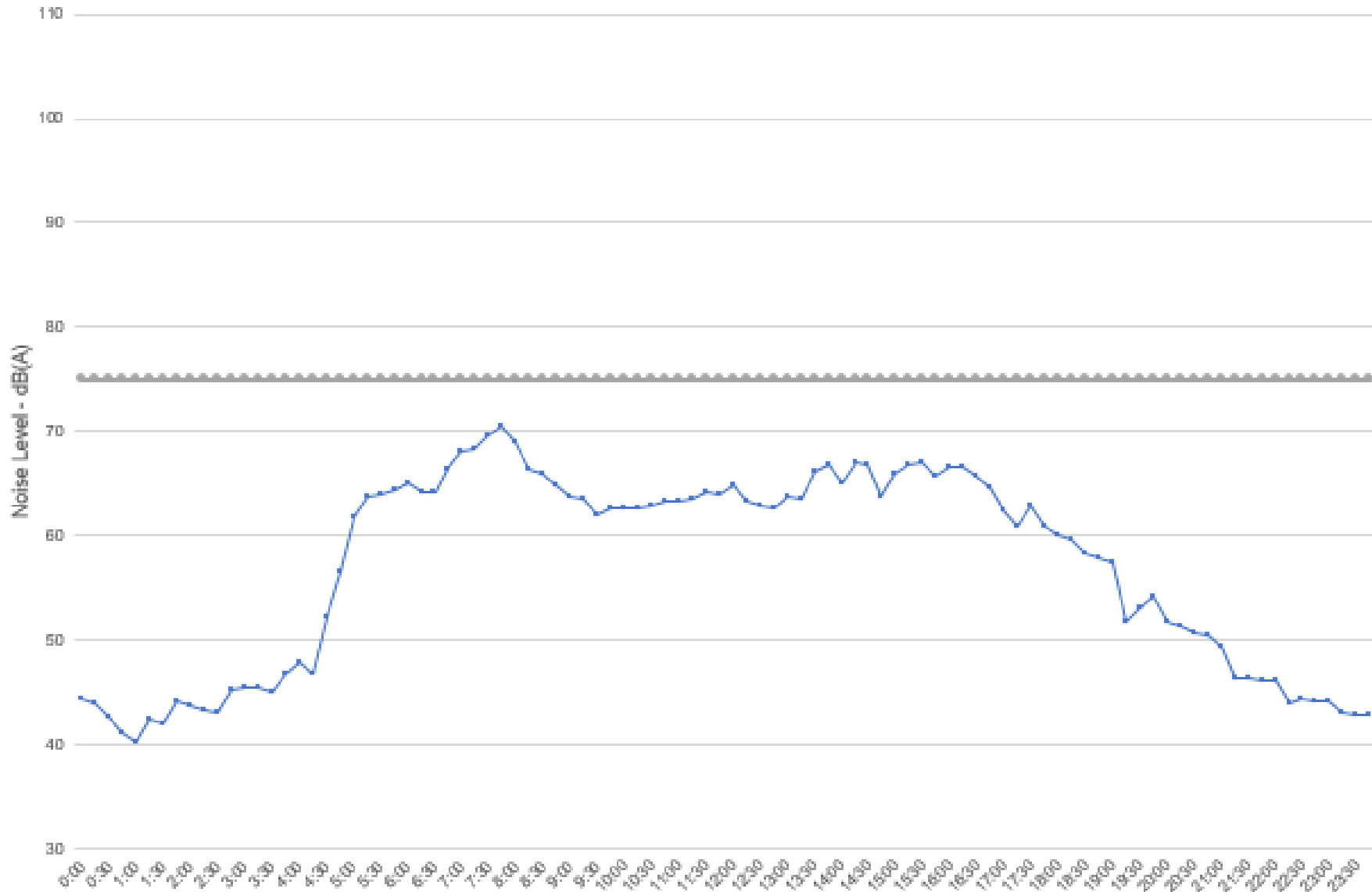




ACOUSTIC LOGIC

Noise Monitoring: 14/03/2022

— Leq — Highly Noise Effected

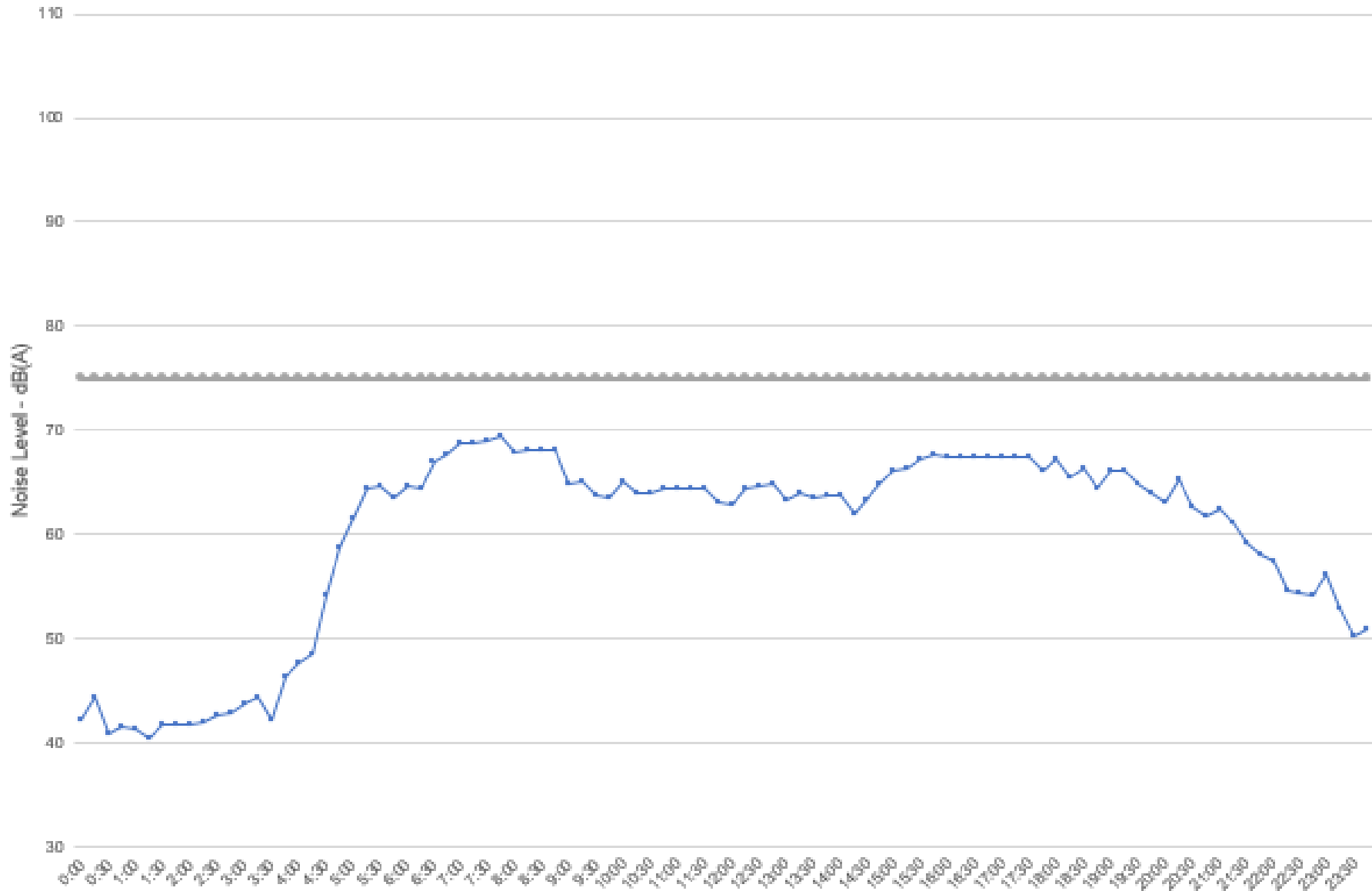




ACOUSTIC LOGIC

Noise Monitoring: 15/03/2022

— Leq — Highly Noise Effected

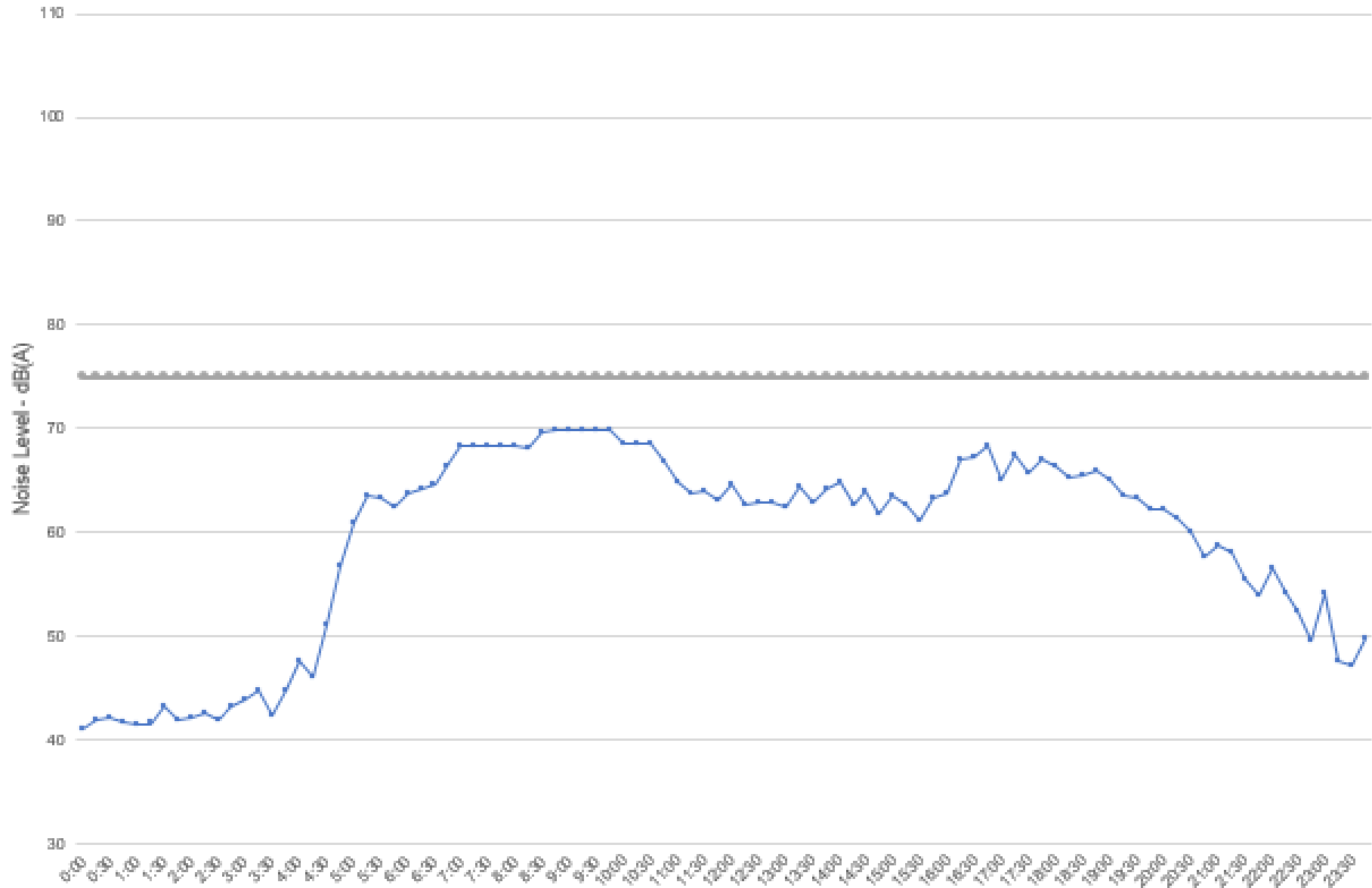




**ACOUSTIC
LOGIC**

Noise Monitoring: 16/03/2022

— Leq — Highly Noise Effected

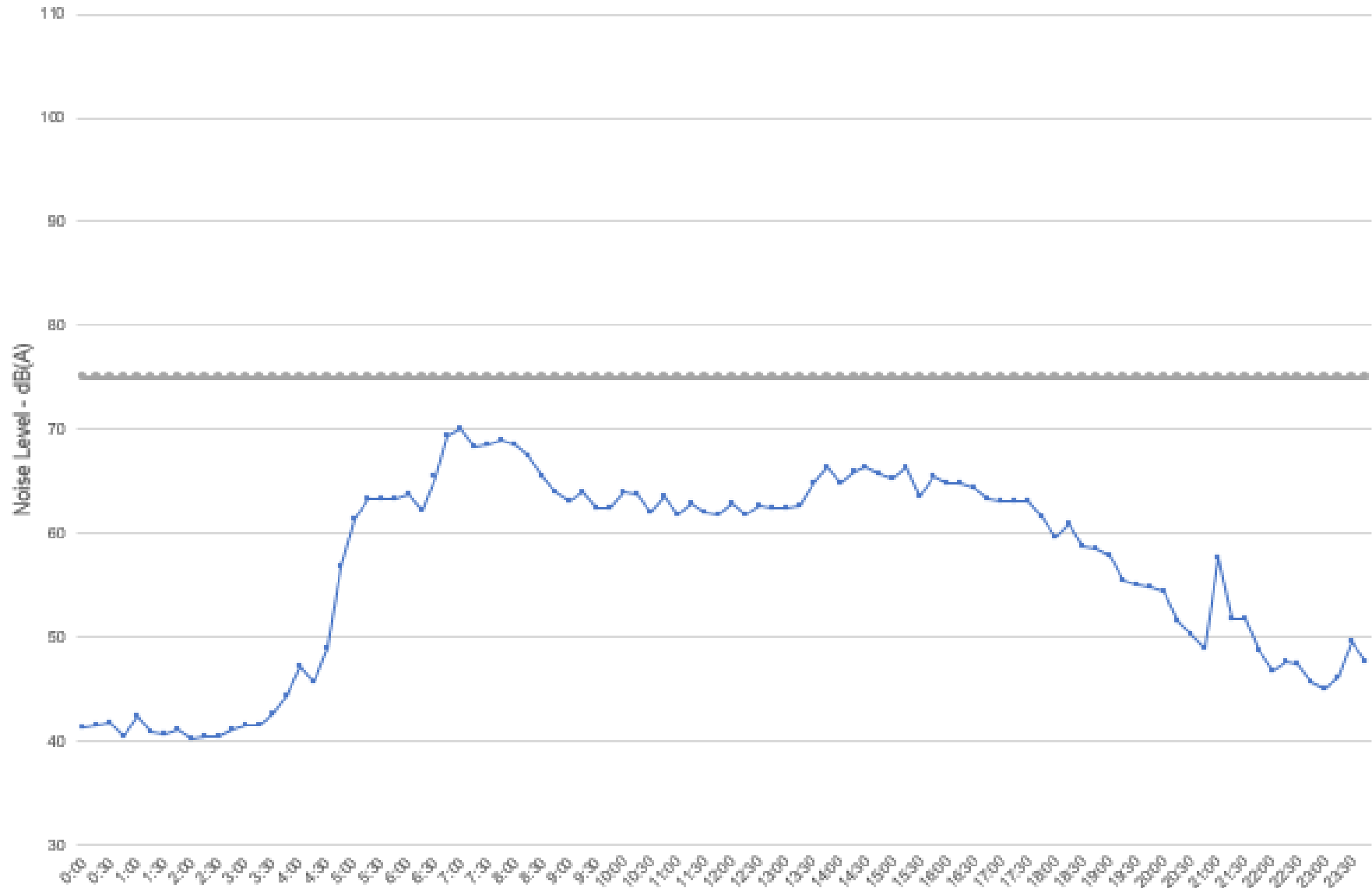




**ACOUSTIC
LOGIC**

Noise Monitoring: 17/03/2022

— Leq — Highly Noise Effected

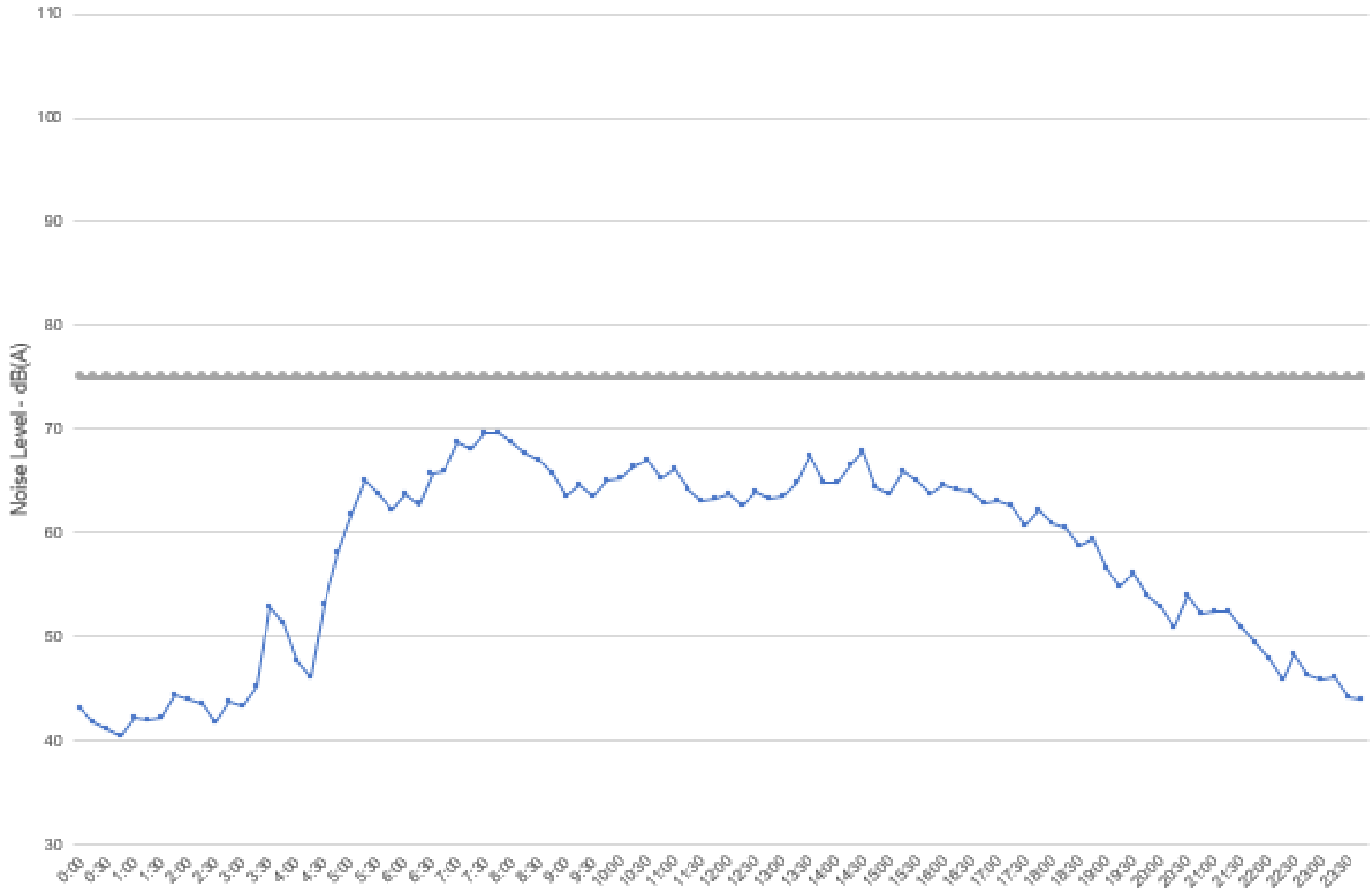




**ACOUSTIC
LOGIC**

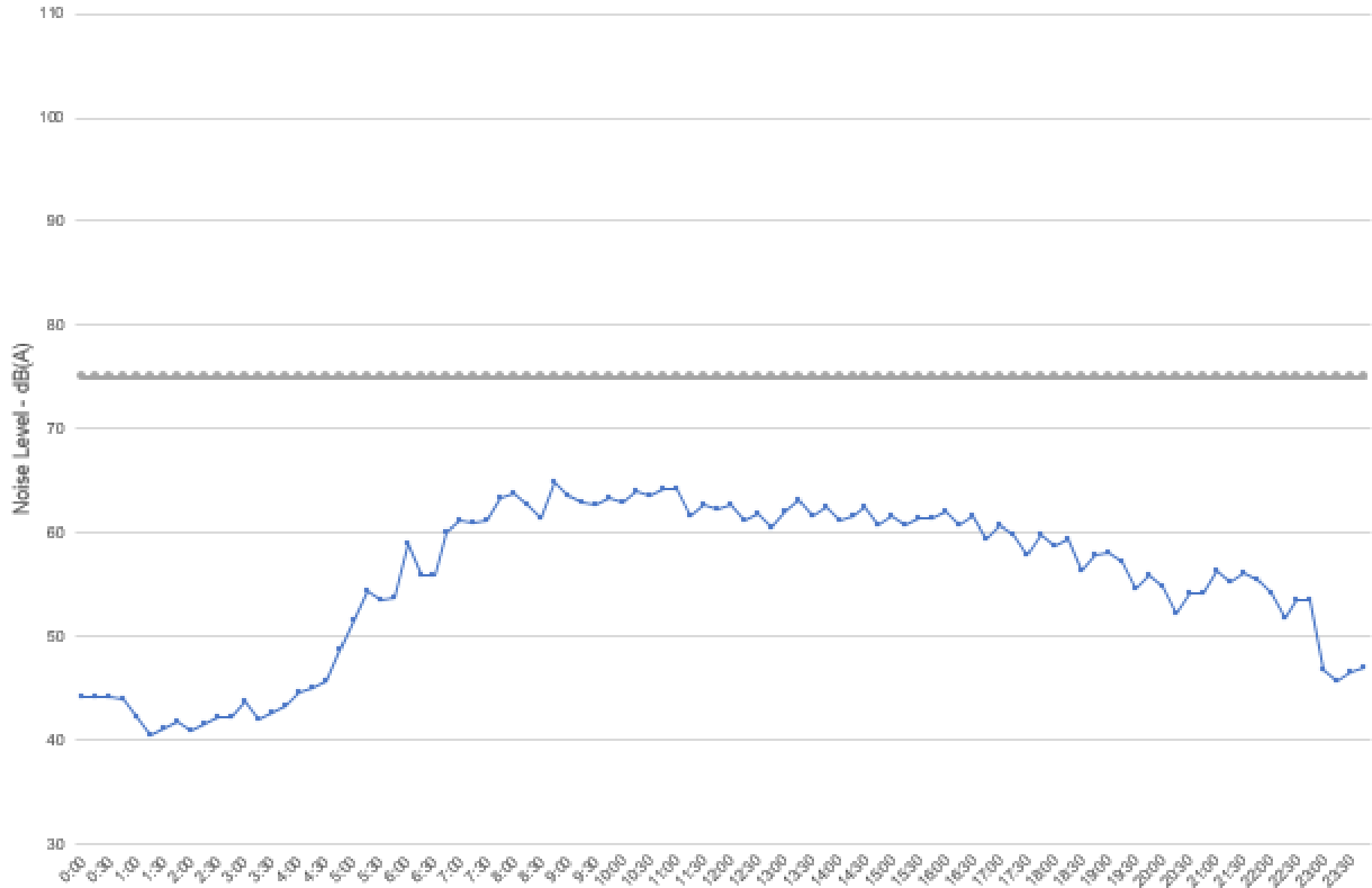
Noise Monitoring: 18/03/2022

— Leq — Highly Noise Effected





— Leq — Highly Noise Effected

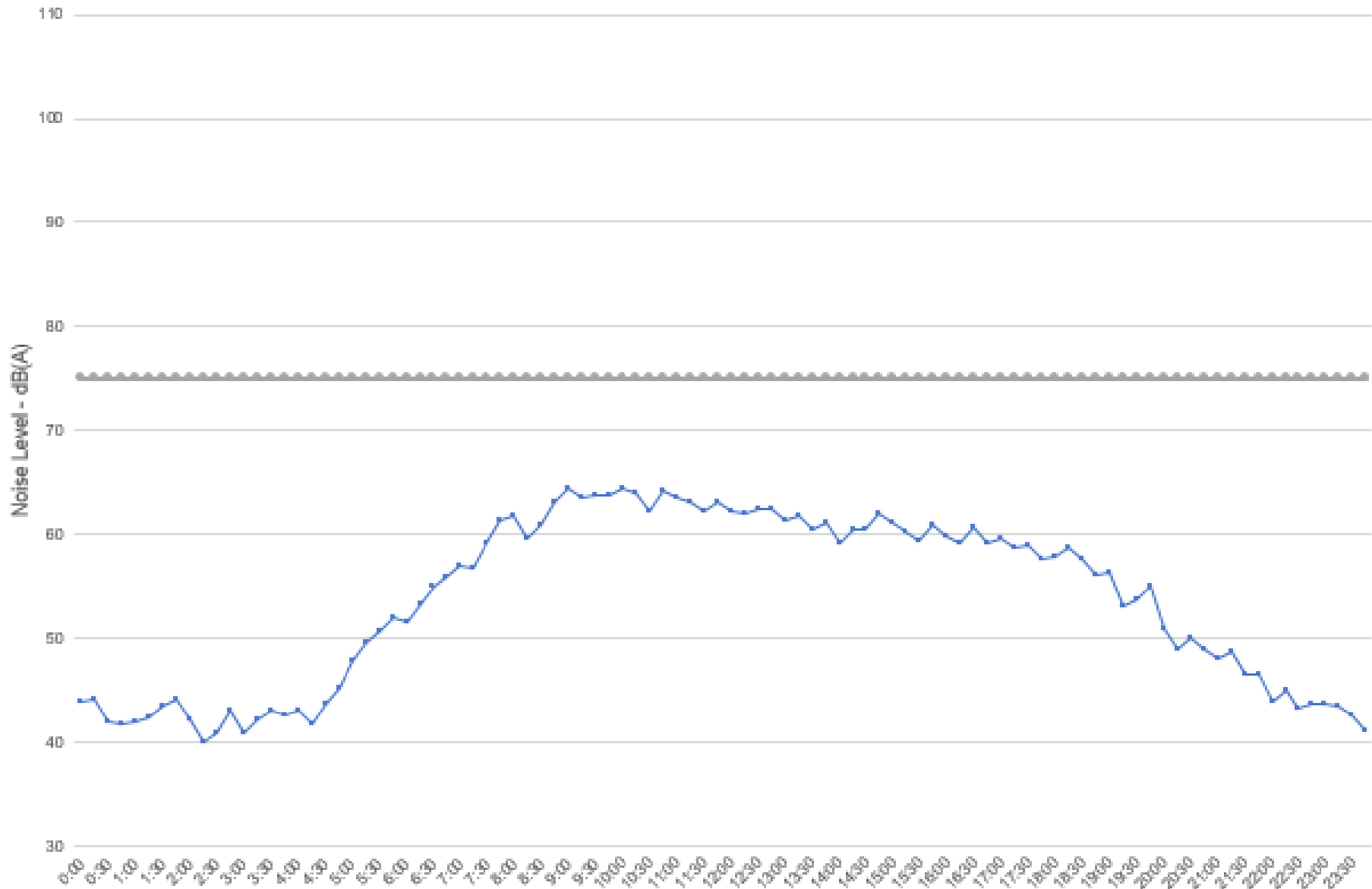




ACOUSTIC LOGIC

Noise Monitoring: 20/03/2022

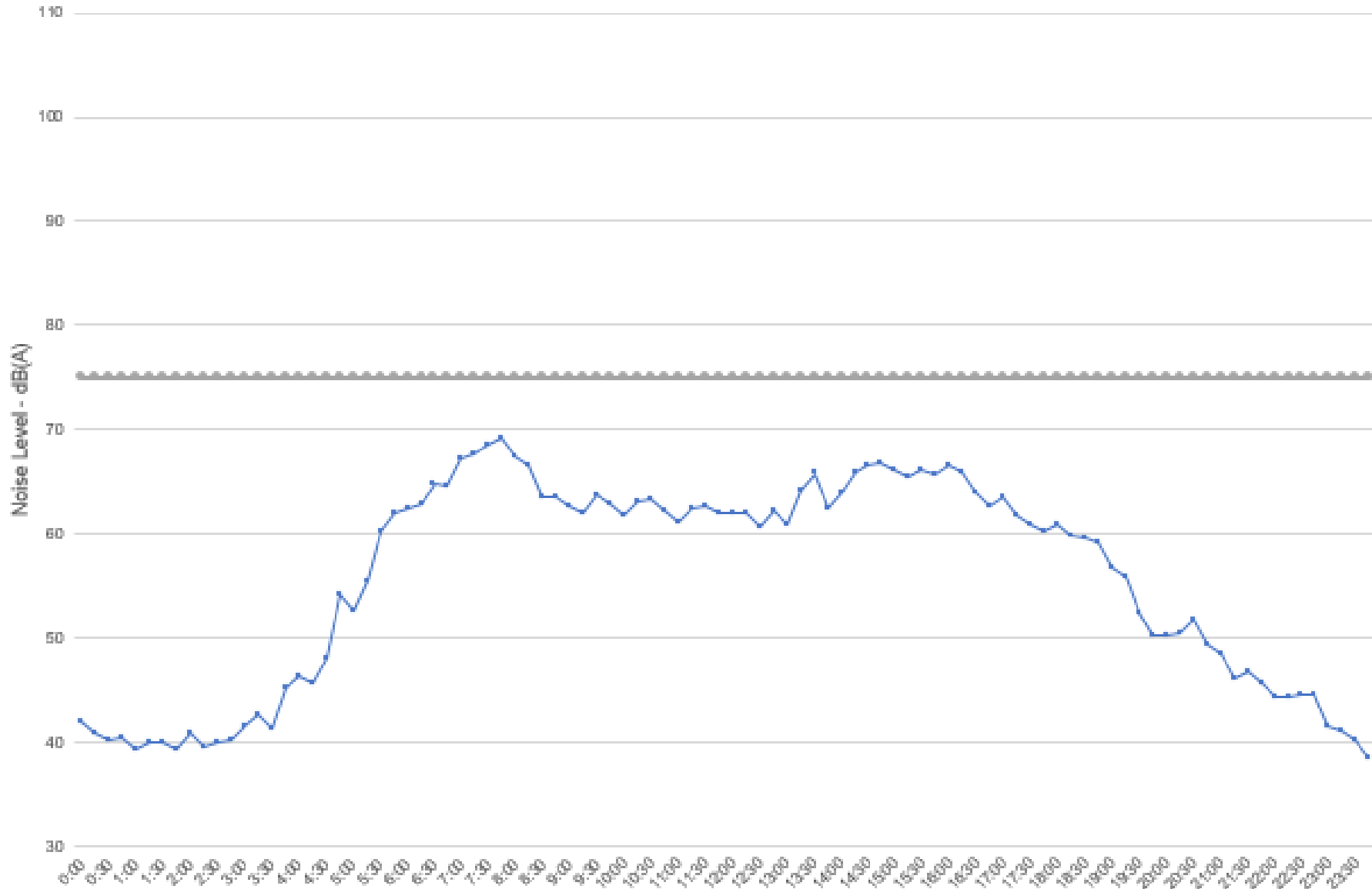
— Leq — Highly Noise Effected





Noise Monitoring: 21/03/2022

— Leq — Highly Noise Effected





ACOUSTIC LOGIC

Noise Monitoring: 22/03/2022

— Leq — Highly Noise Effected

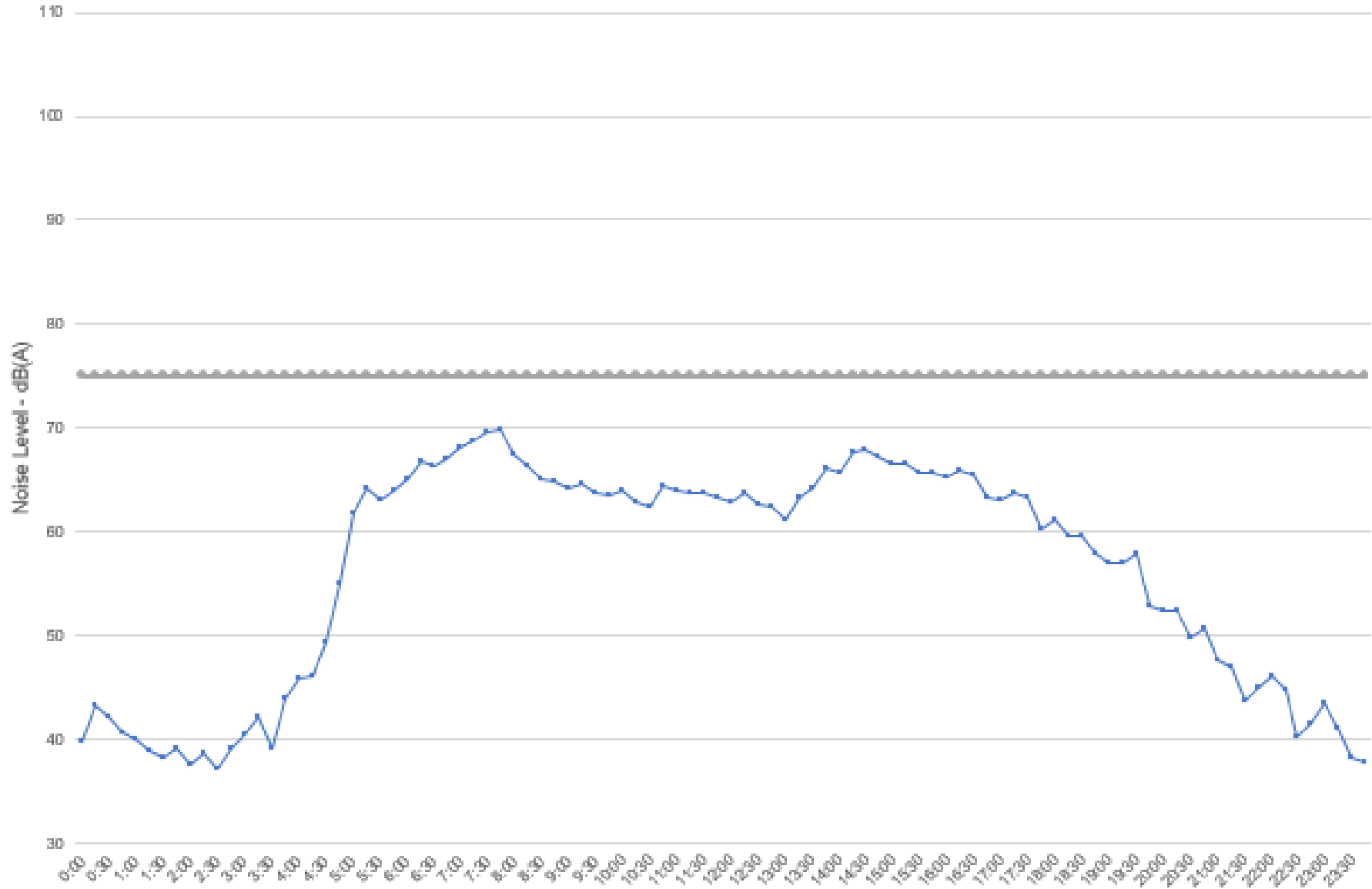




**ACOUSTIC
LOGIC**

Noise Monitoring: 23/03/2022

— Leq — Highly Noise Effected





Noise Monitoring: 24/03/2022

— Leq — Highly Noise Effected





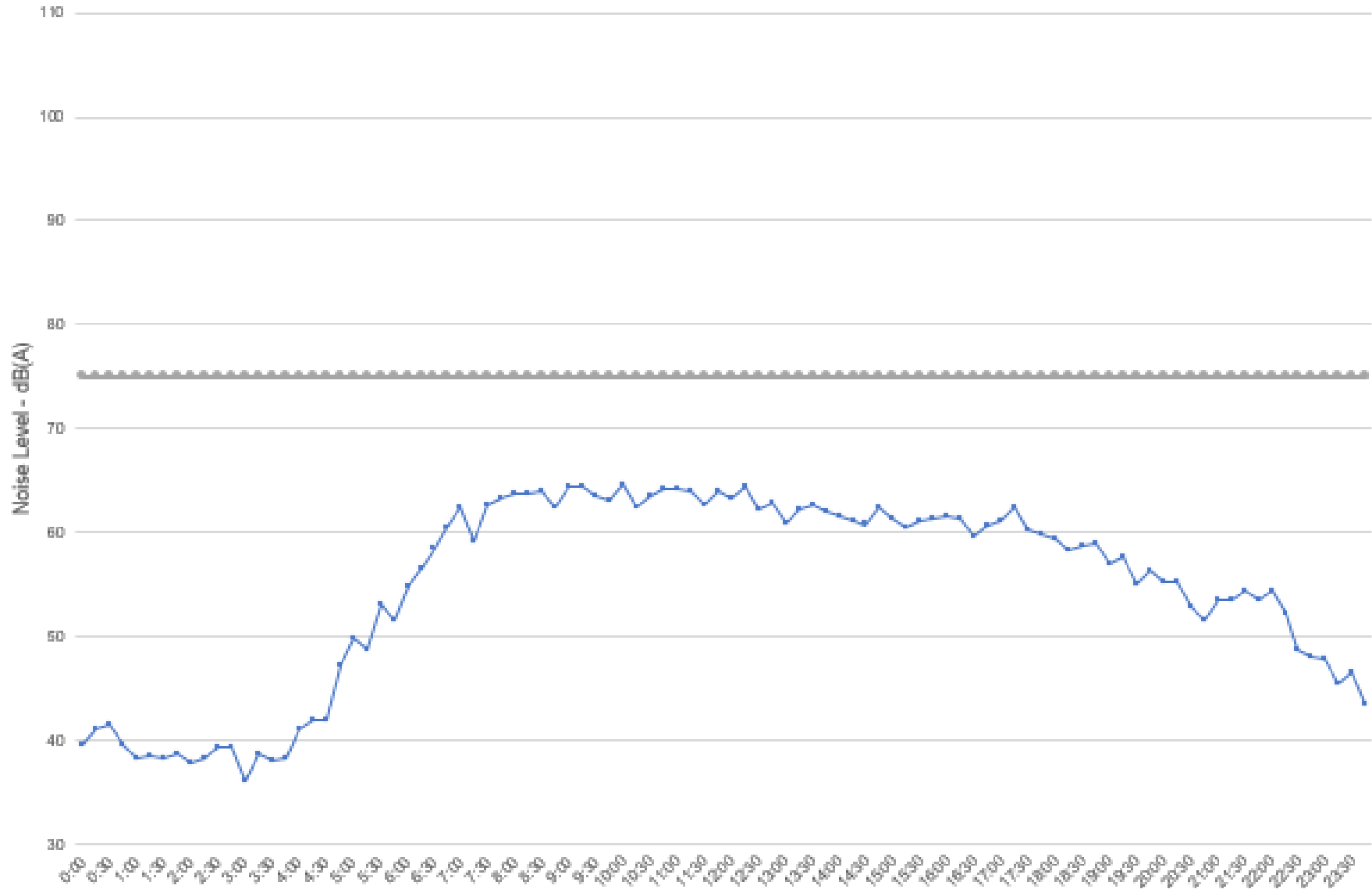
ACOUSTIC LOGIC

Noise Monitoring: 25/03/2022

— Leq — Highly Noise Effected



— Leq — Highly Noise Effected

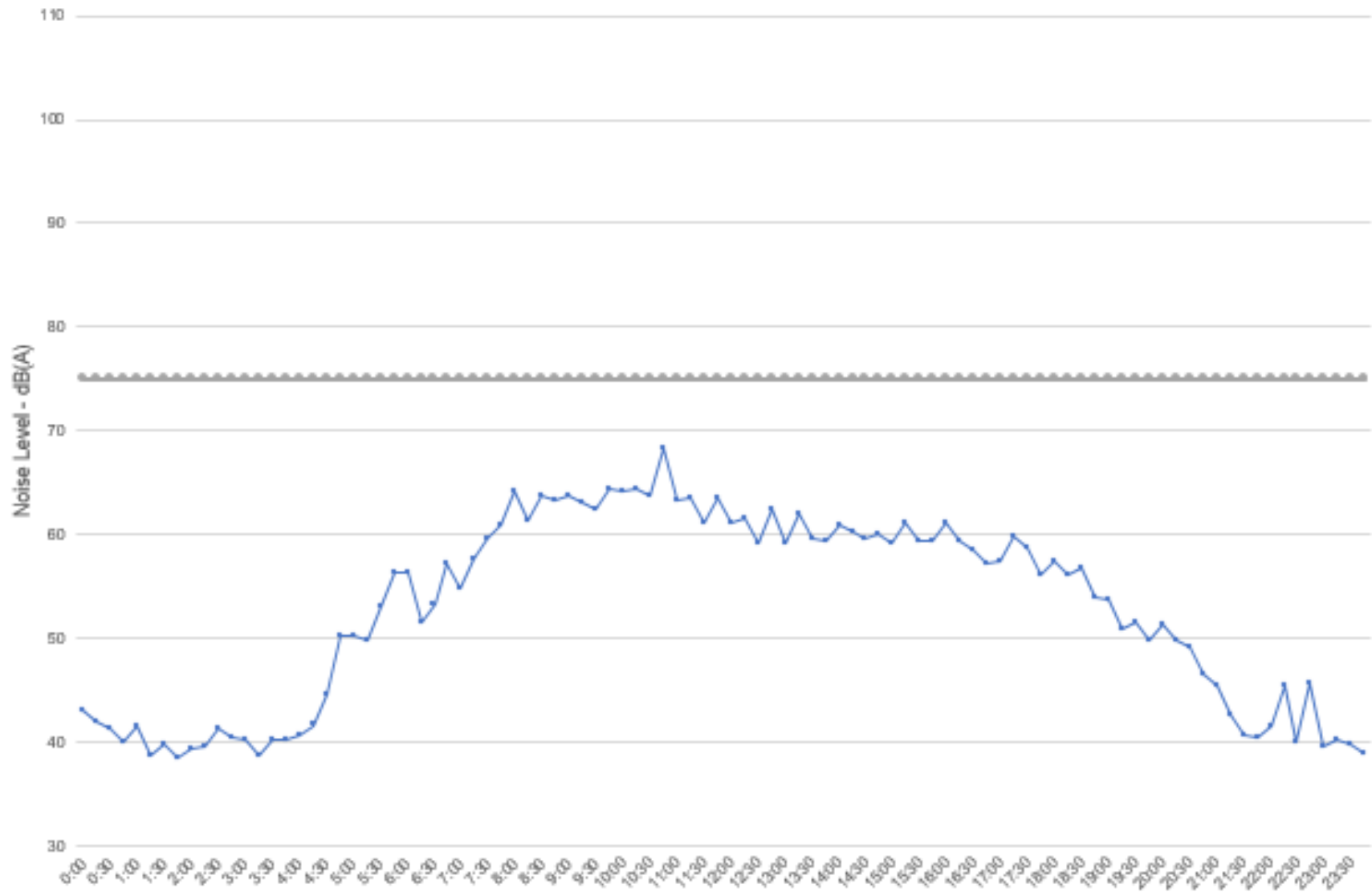




ACOUSTIC LOGIC

Noise Monitoring: 27/03/2022

— Leq — Highly Noise Effected

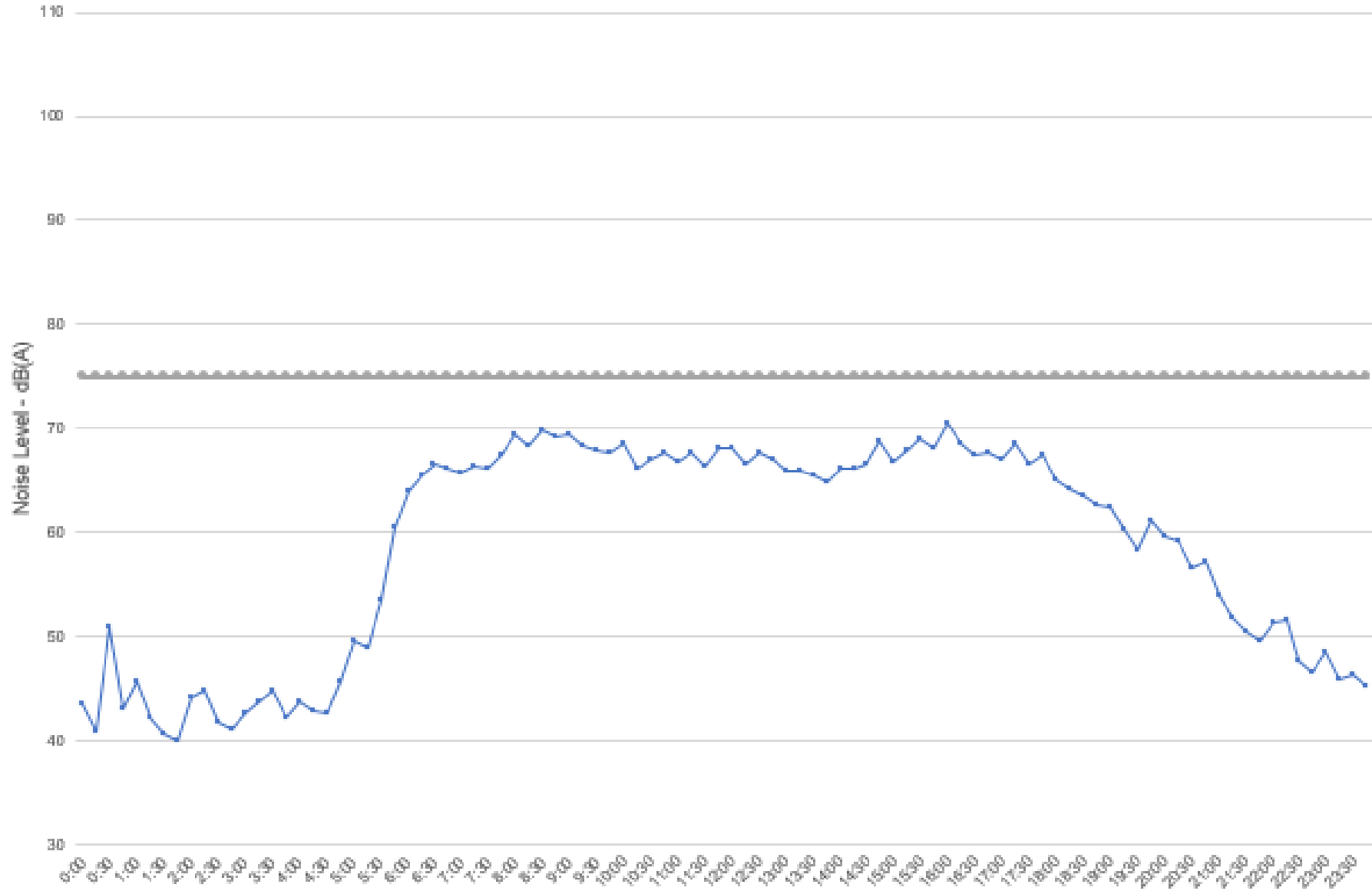




ACOUSTIC LOGIC

Noise Monitoring: 28/02/2022

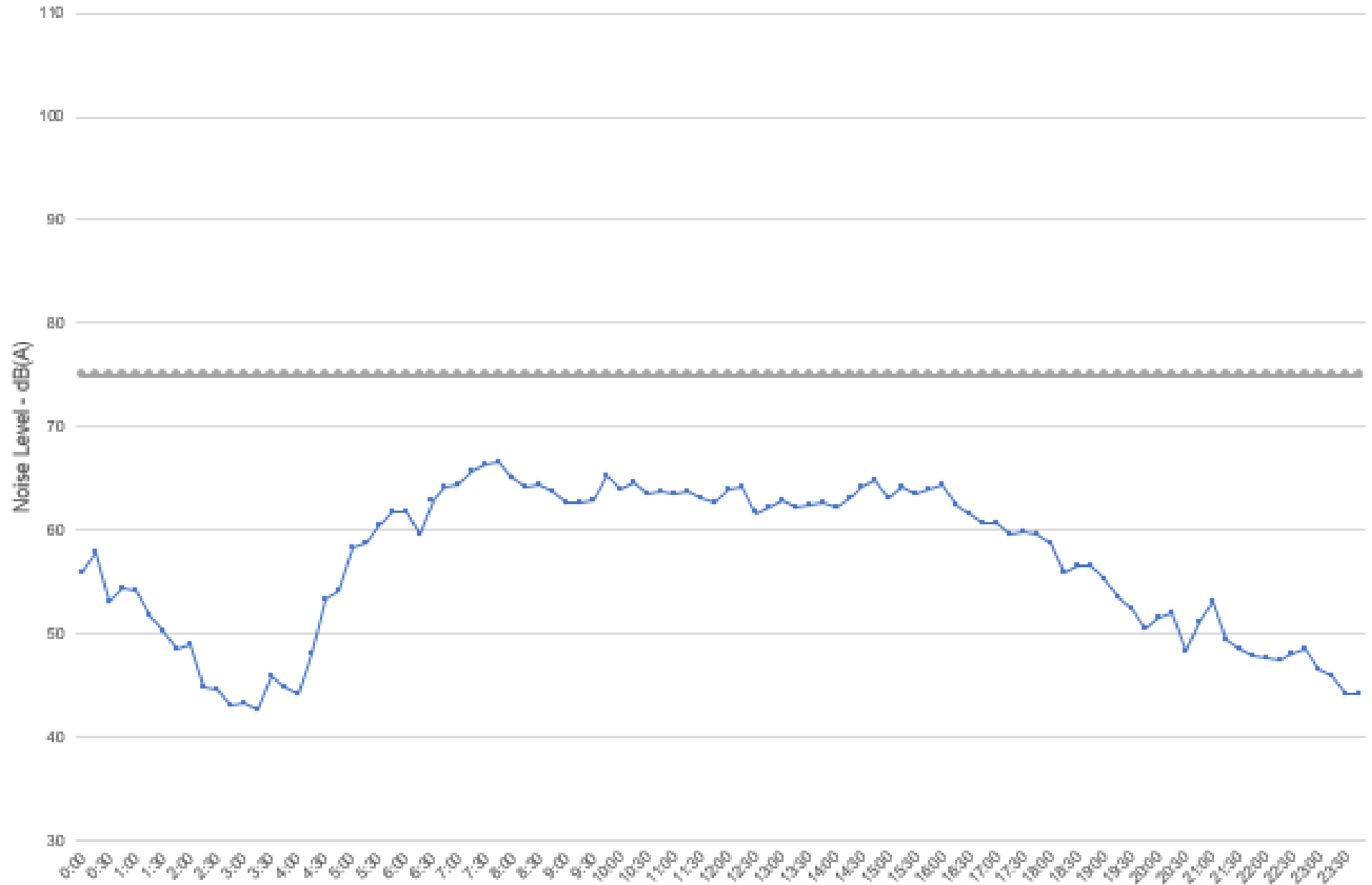
— Leq — Highly Noise Effected





Noise Monitoring: 29/03/2022

— Leq — Highly Noise Effected

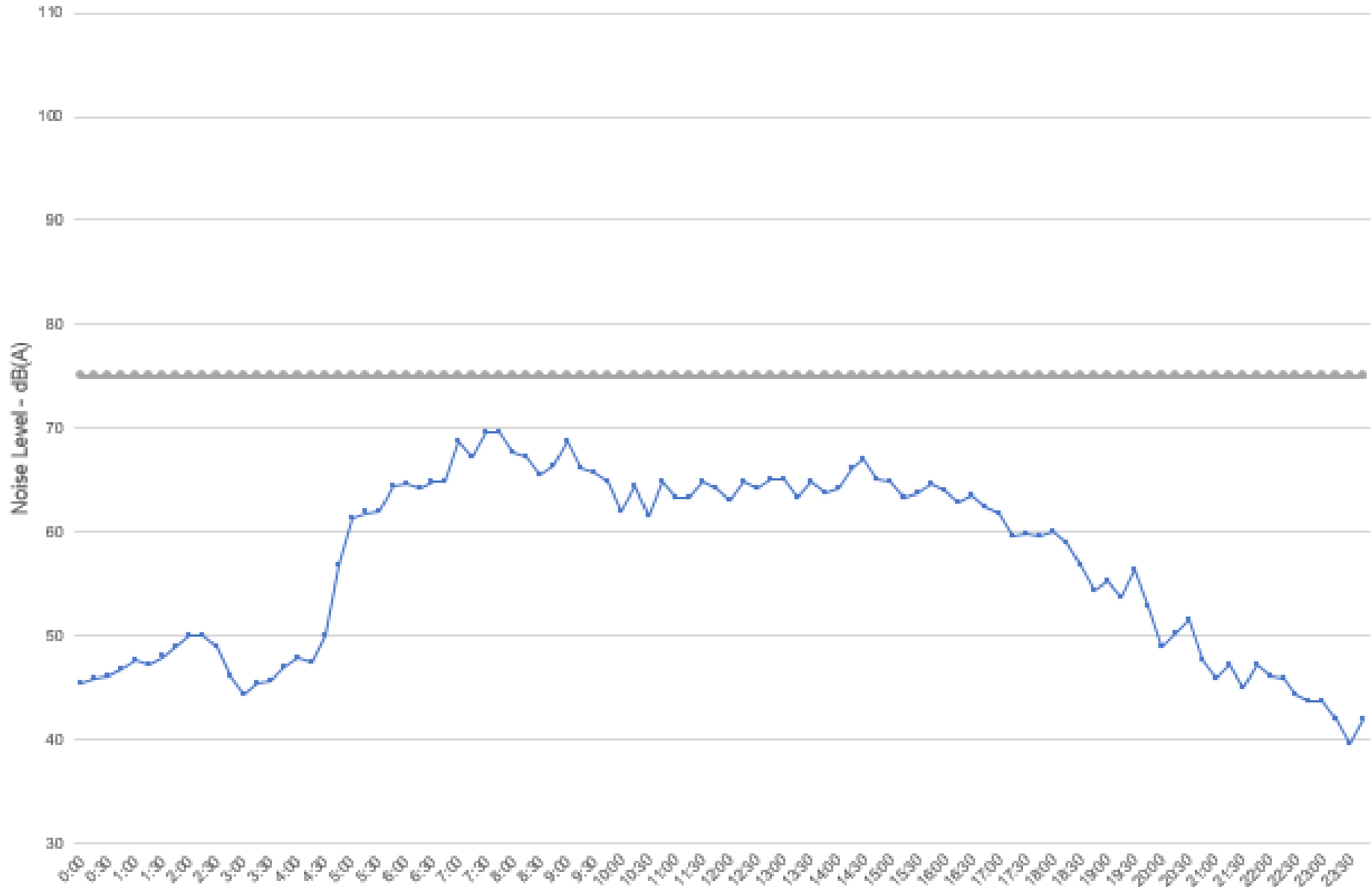




**ACOUSTIC
LOGIC**

Noise Monitoring: 30/03/2022

— Leq — Highly Noise Effected



— Leq — Highly Noise Effected



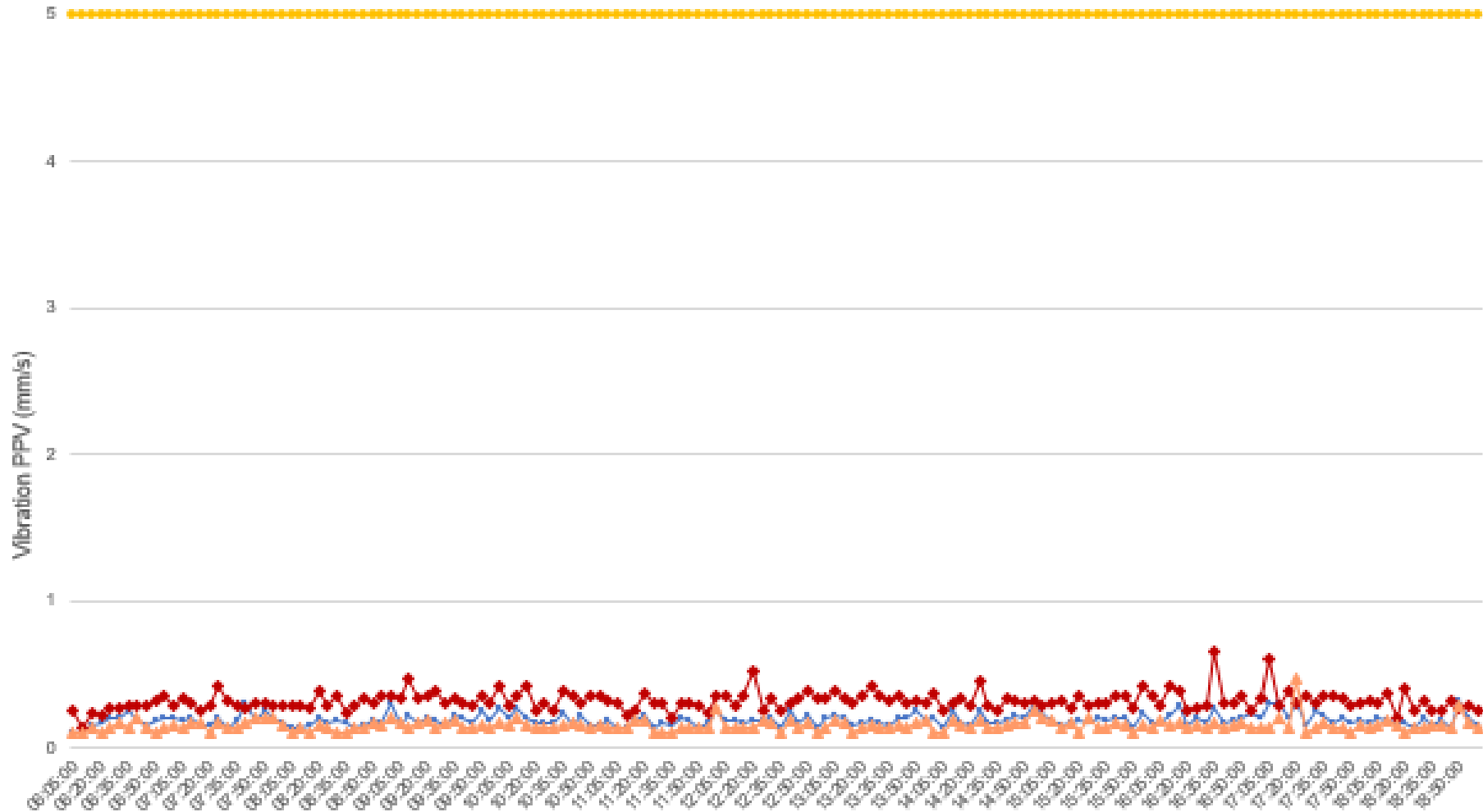
APPENDIX 2 – VIBRATION MONITORING RESULTS



**ACOUSTIC
LOGIC**

Vibration Monitoring: 01/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit

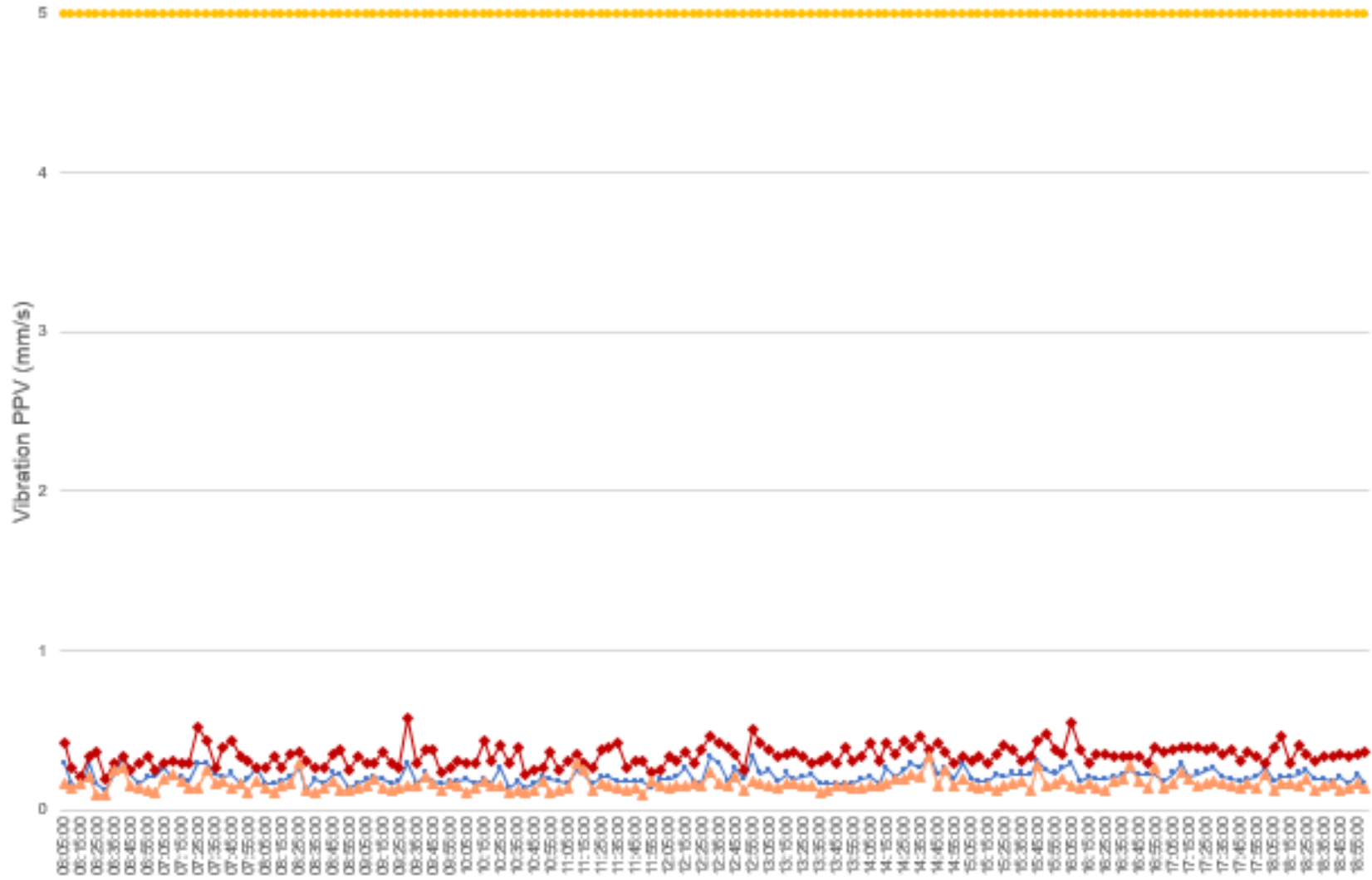




ACOUSTIC LOGIC

Vibration Monitoring: 02/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit

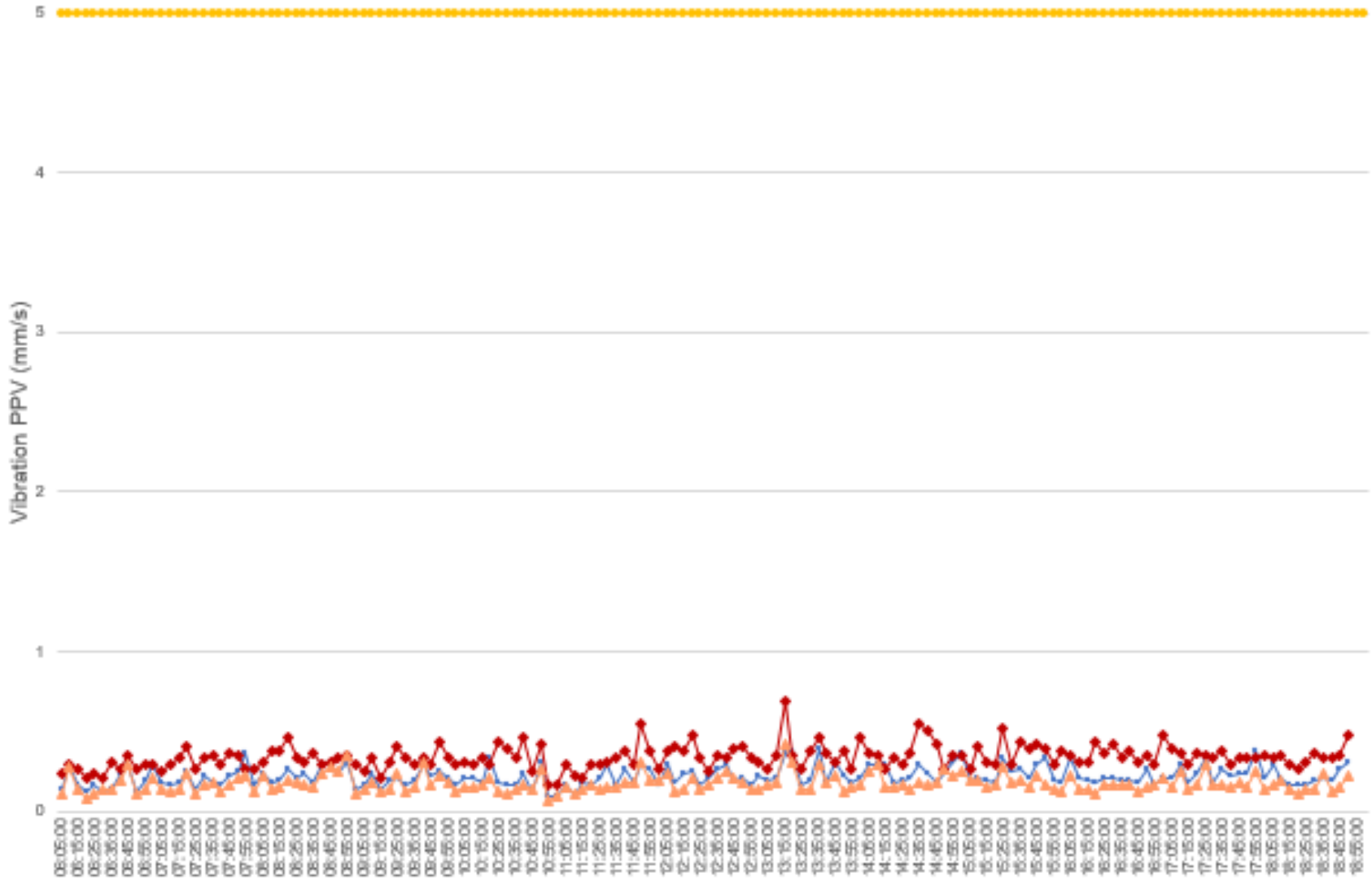




ACOUSTIC LOGIC

Vibration Monitoring: 03/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit

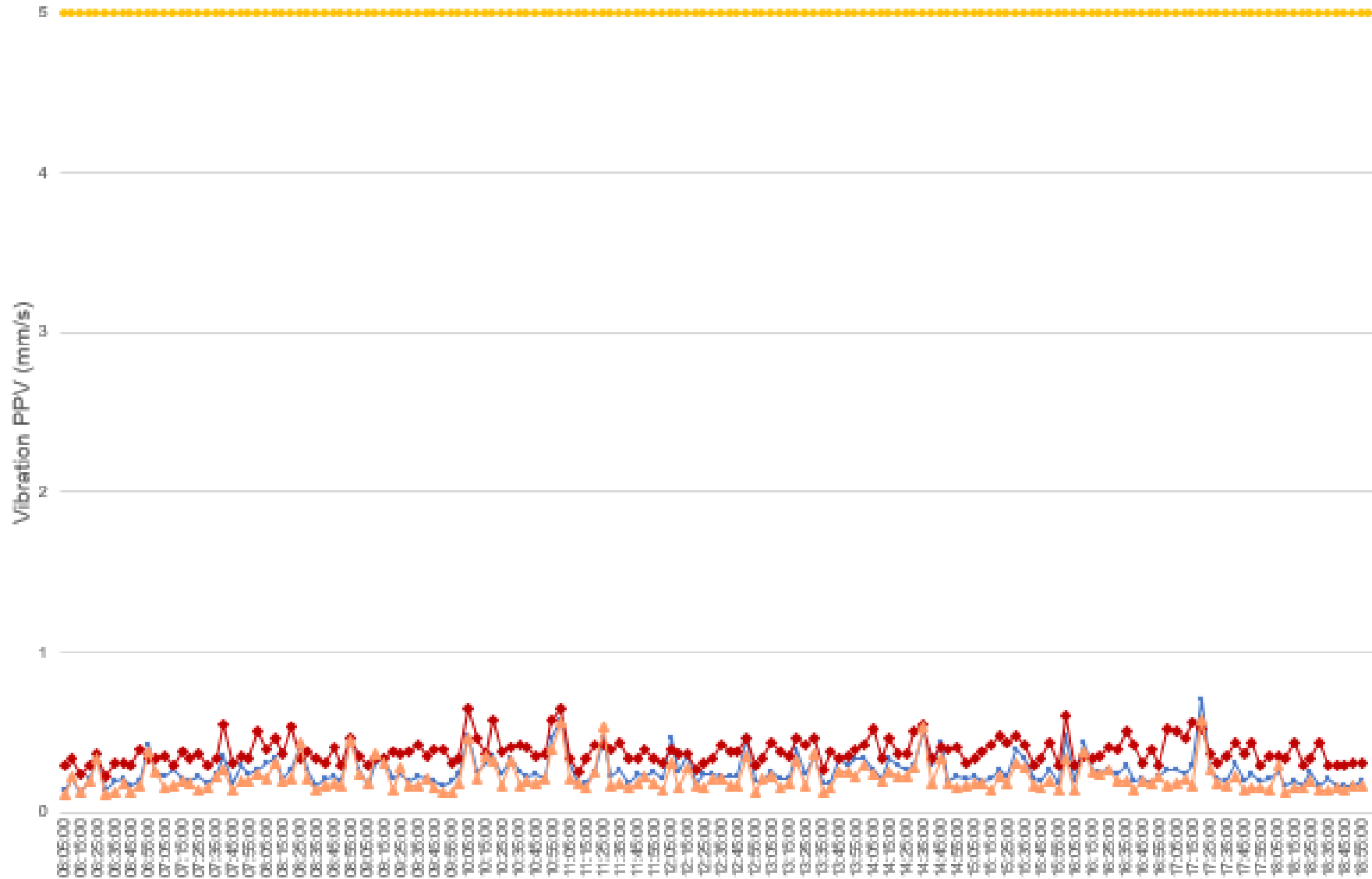




ACOUSTIC LOGIC

Vibration Monitoring: 04/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit

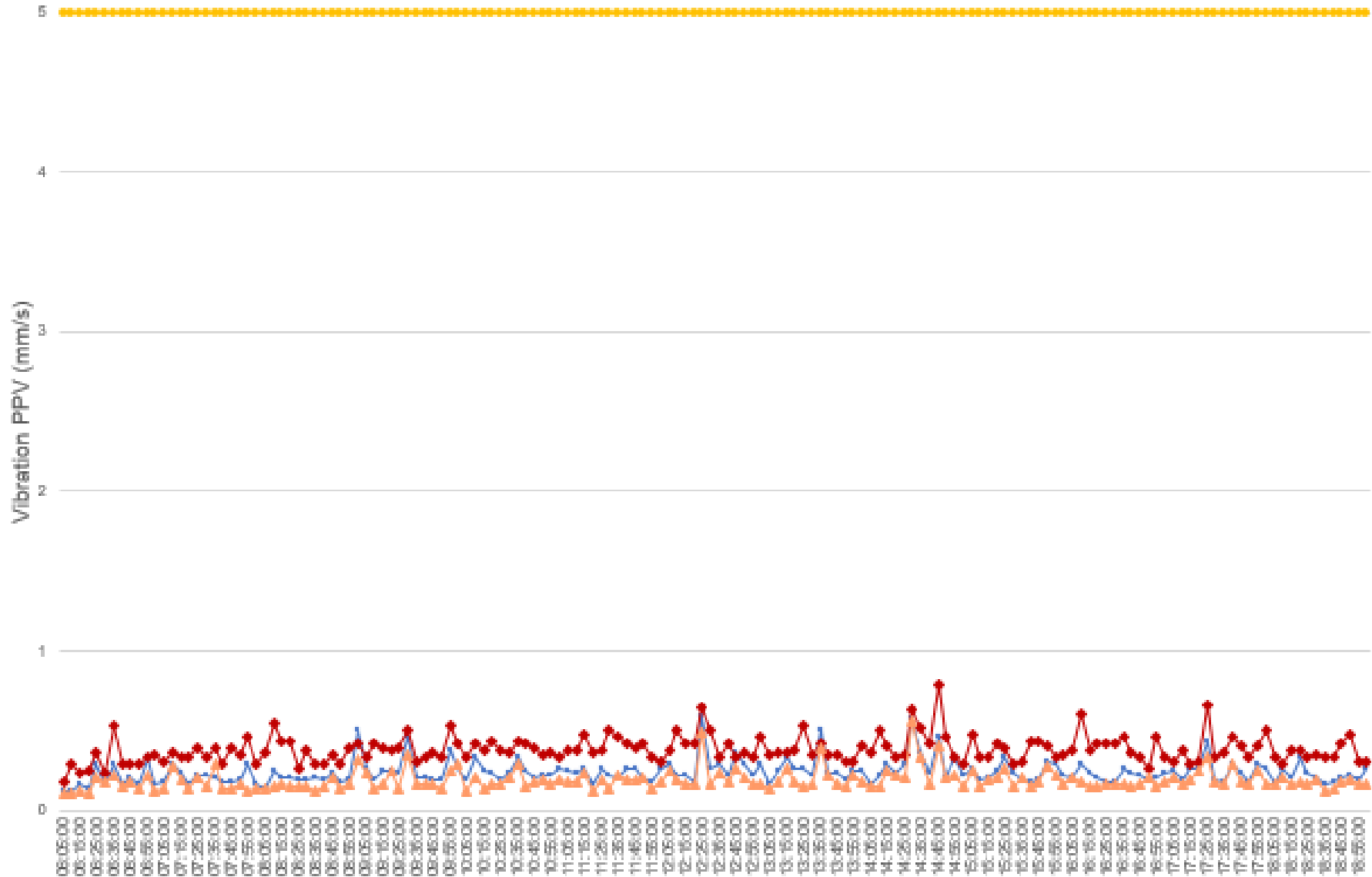




ACOUSTIC LOGIC

Vibration Monitoring: 05/03/2022

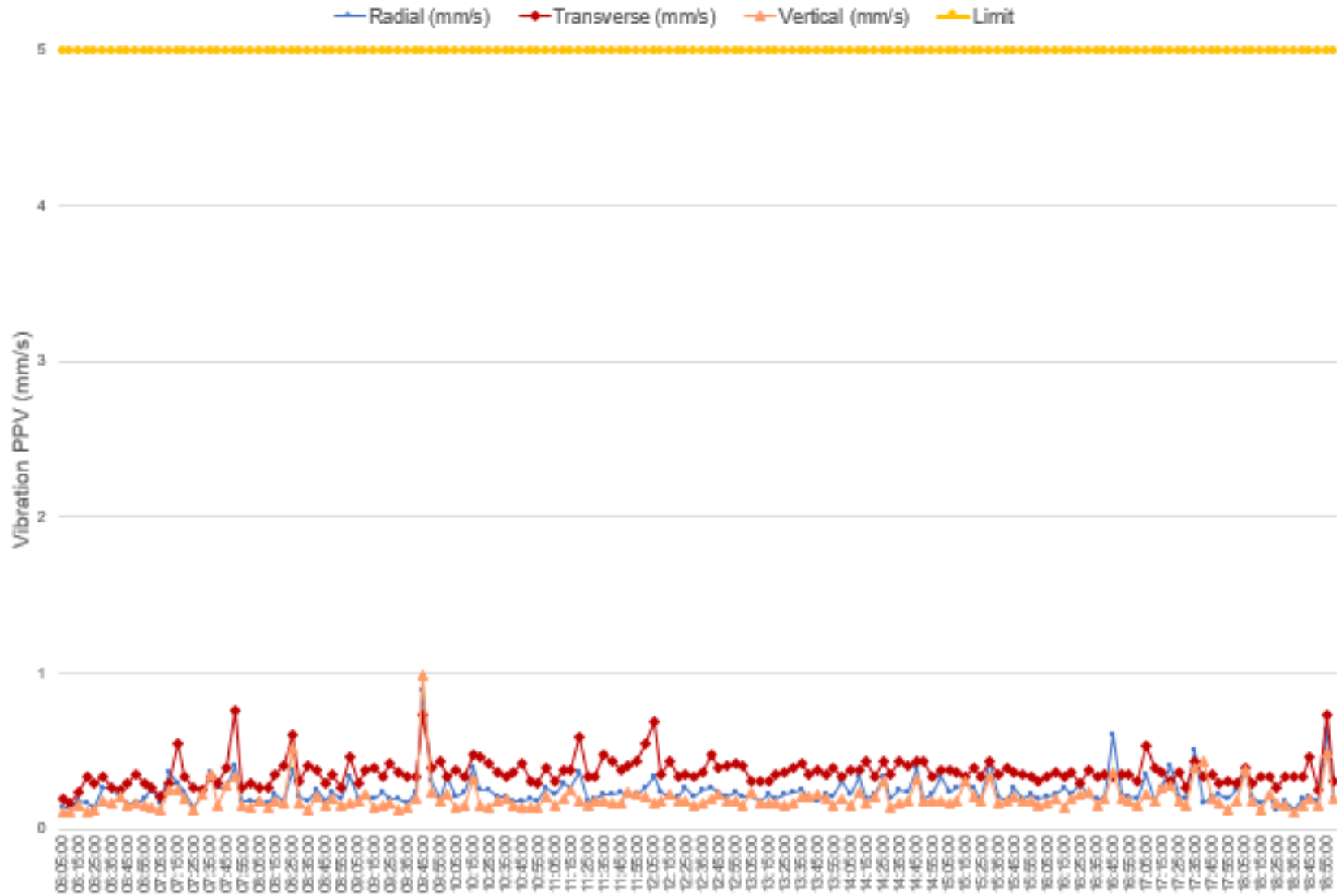
— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit





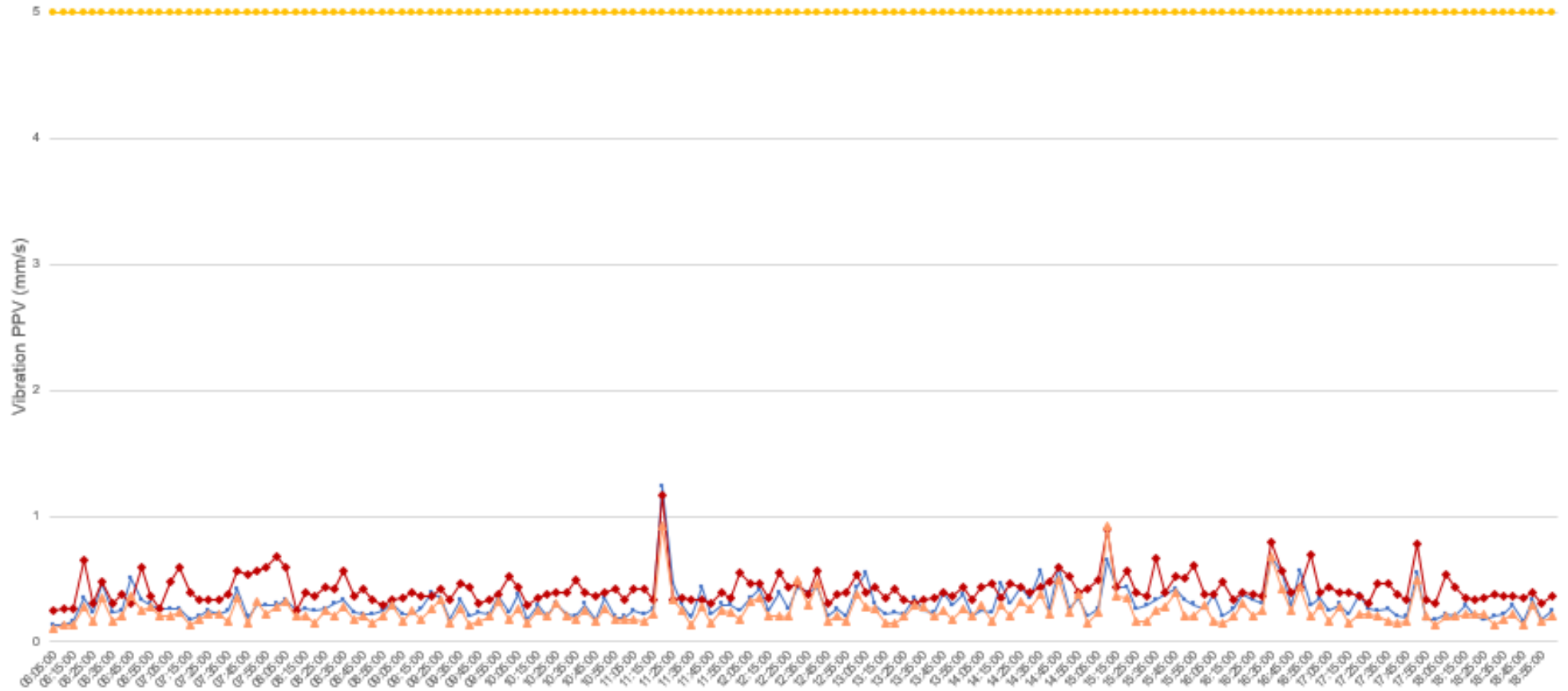
ACOUSTIC LOGIC

Vibration Monitoring: 06/03/2022



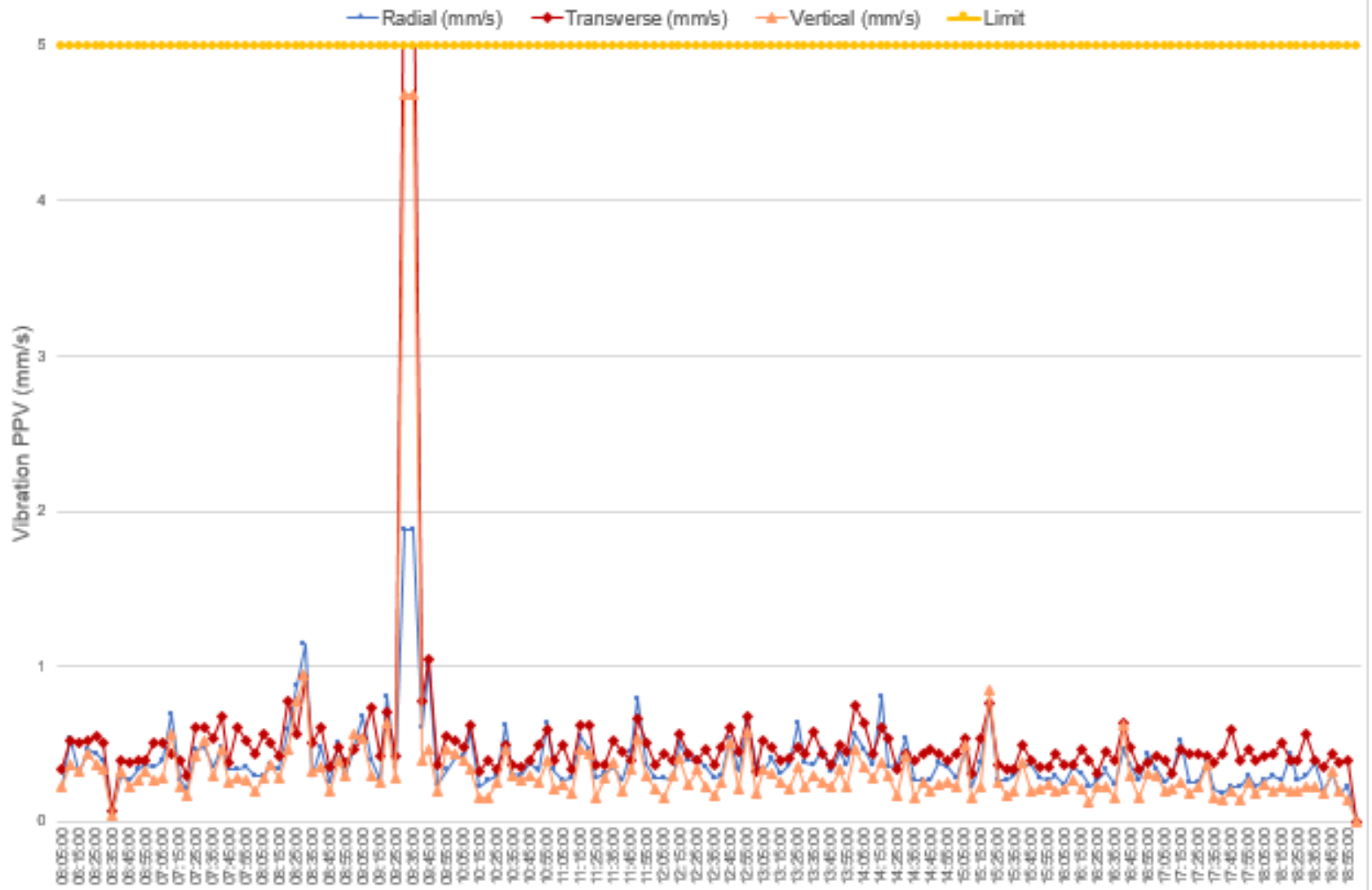
Vibration Monitoring: 07/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit

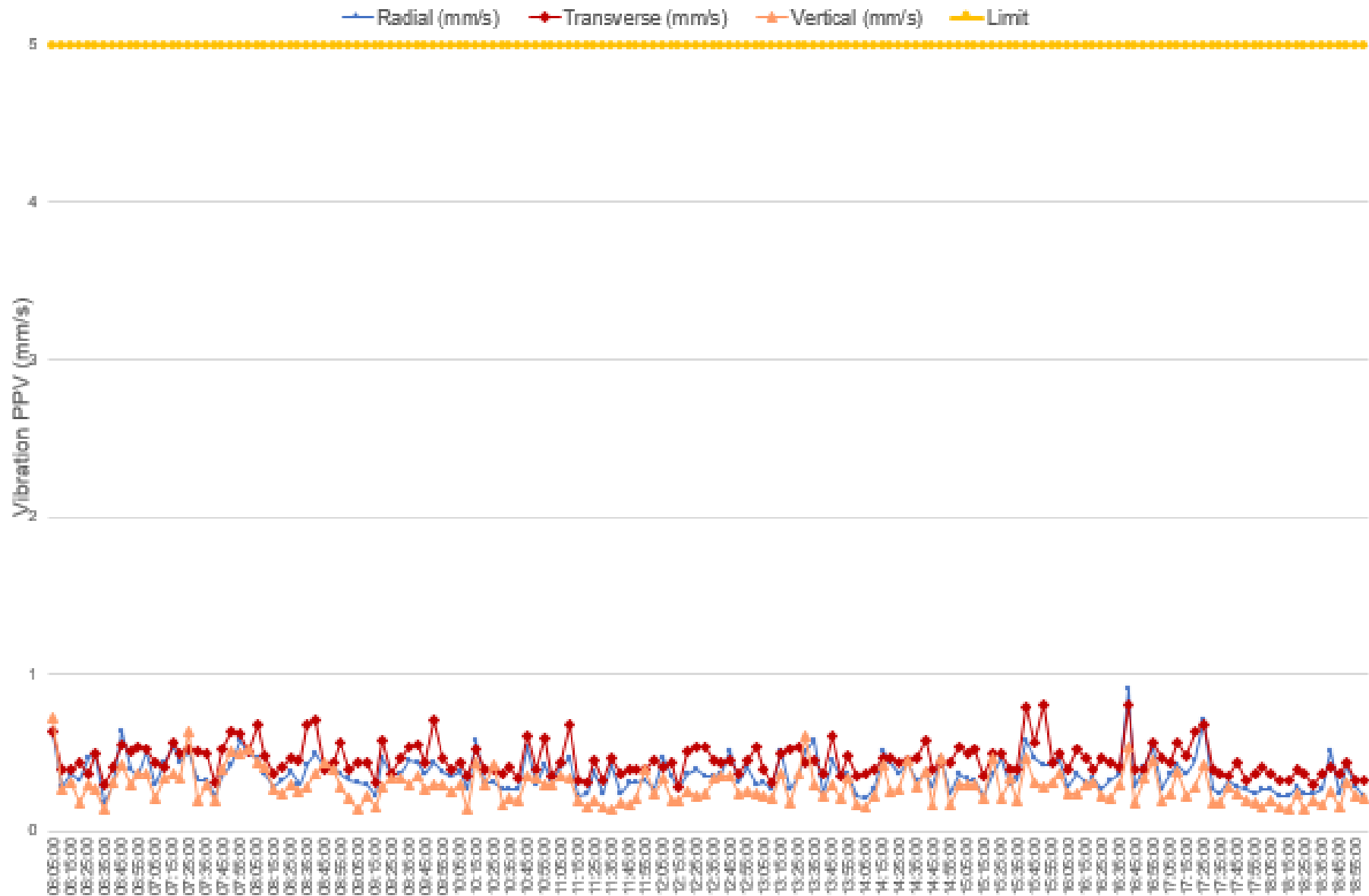




Vibration Monitoring: 08/03/2022



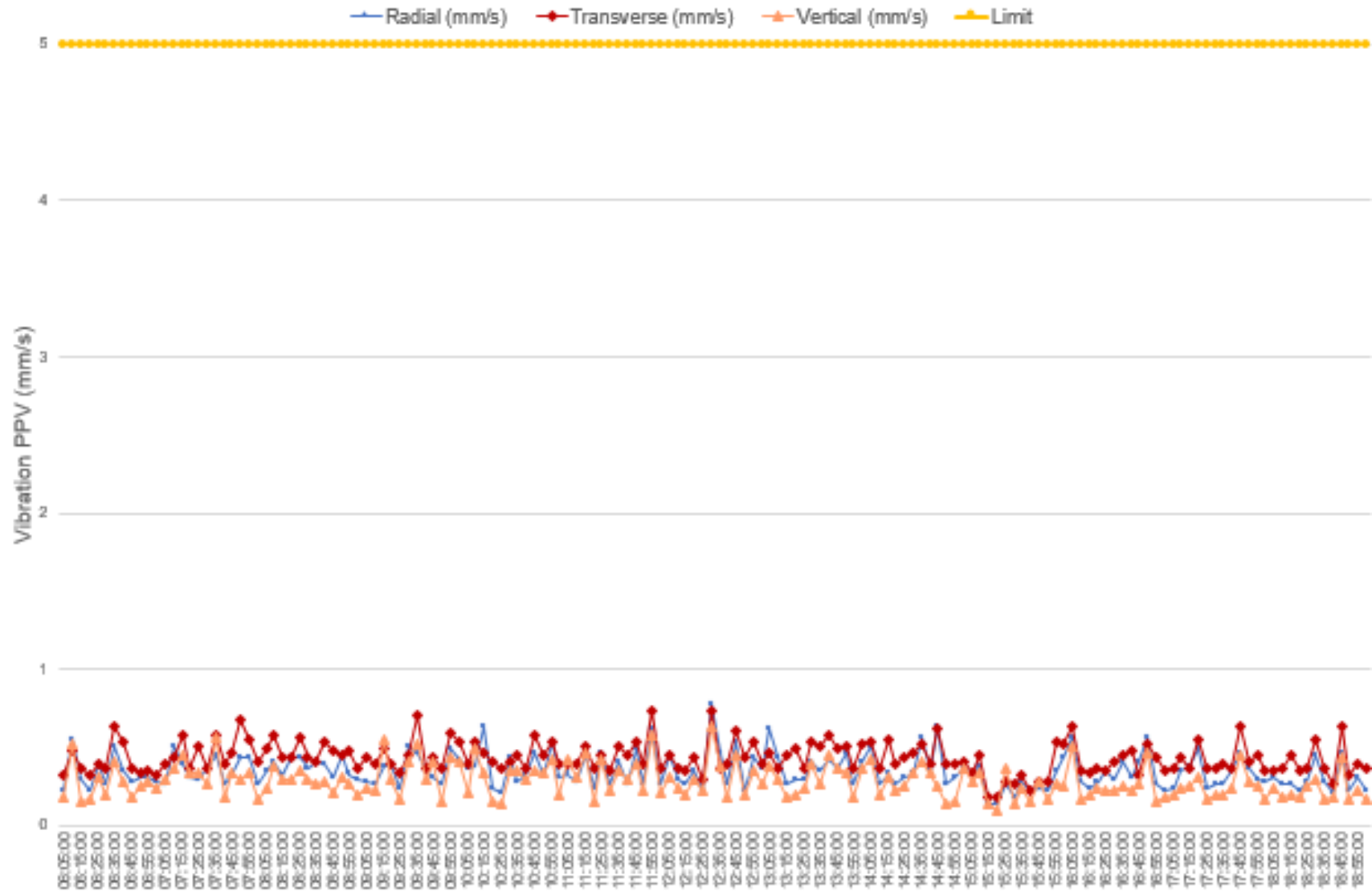
Vibration Monitoring: 09/03/2022



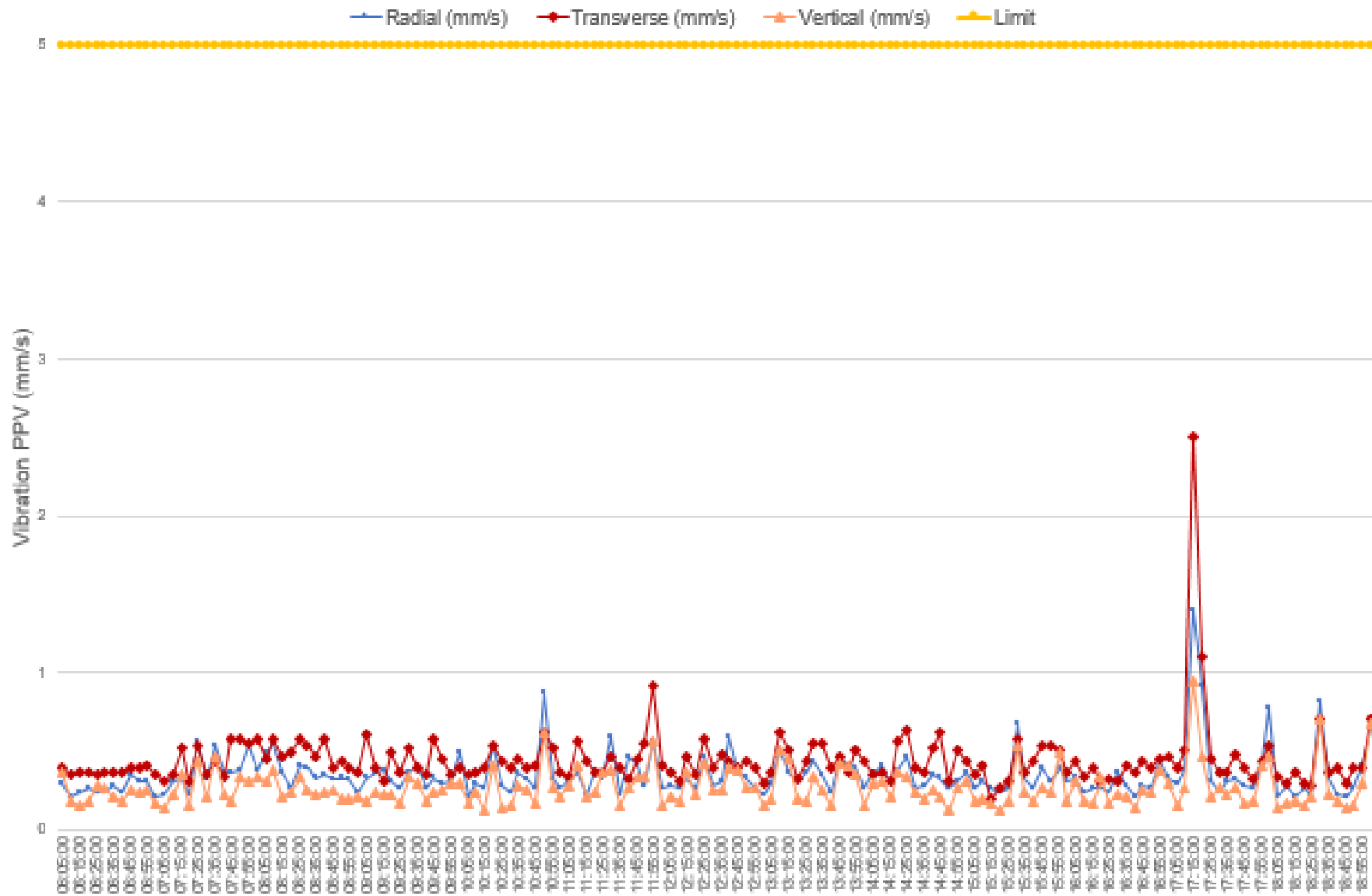


ACOUSTIC LOGIC

Vibration Monitoring: 10/03/2022



Vibration Monitoring: 11/03/2022

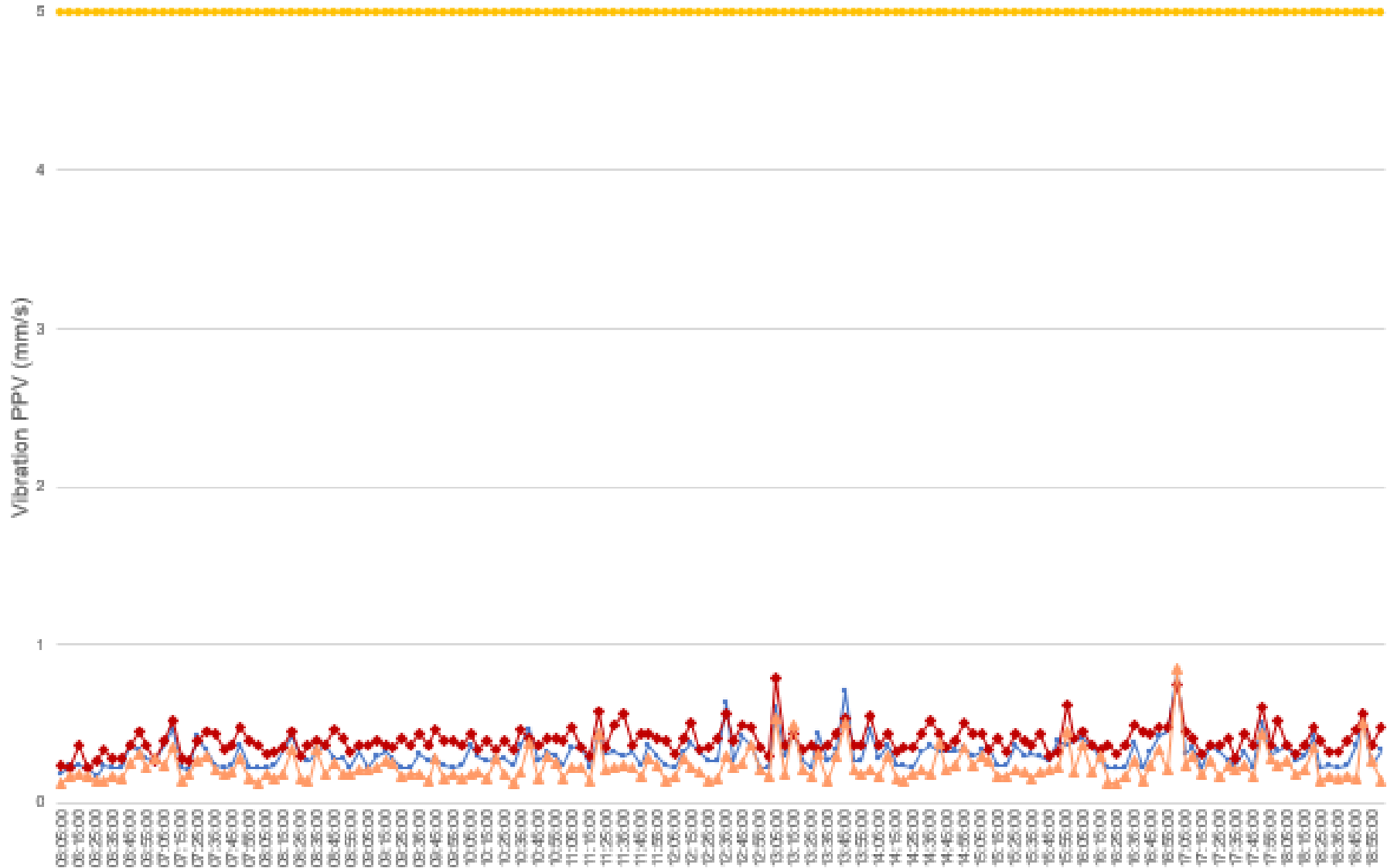




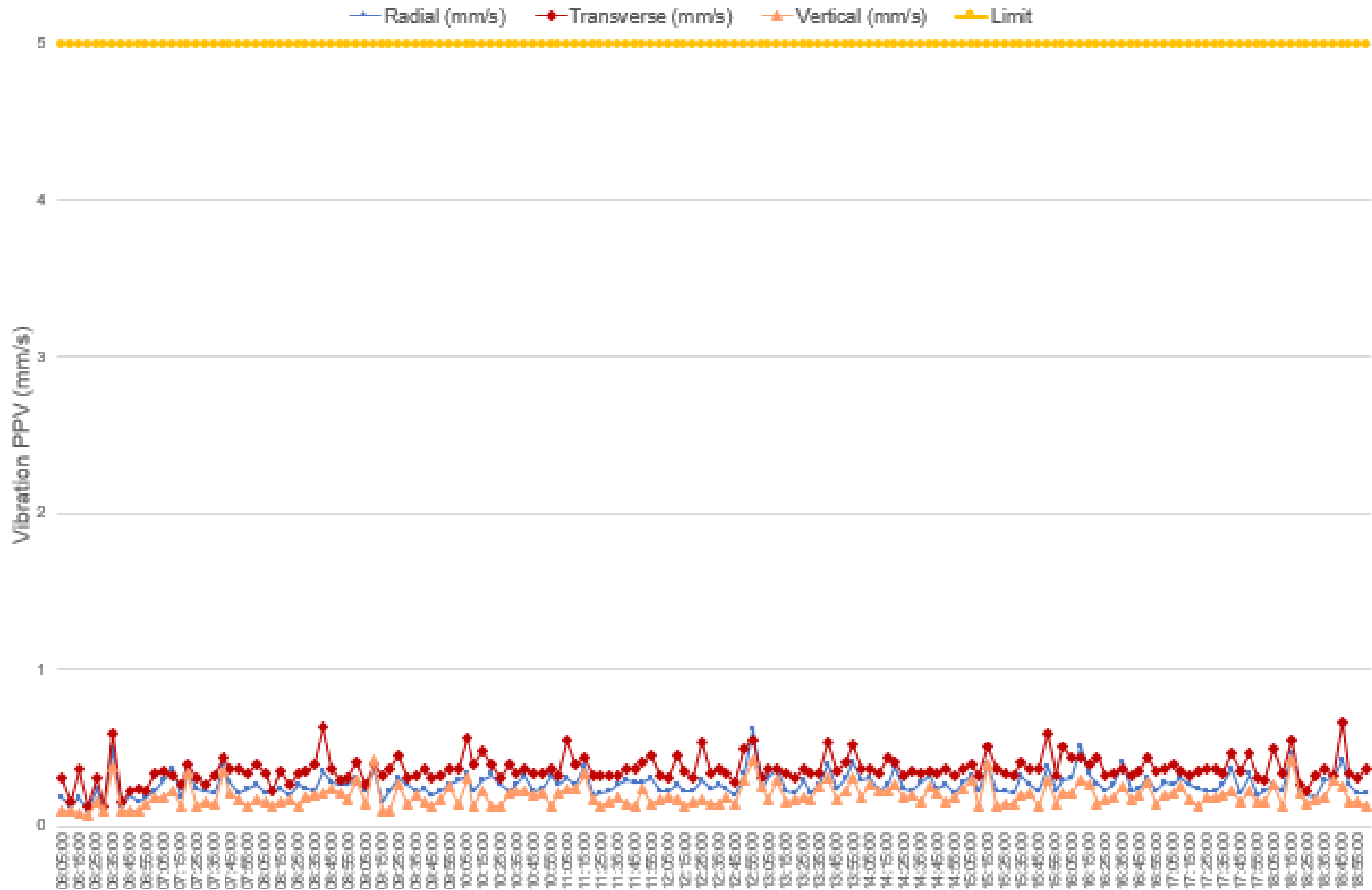
ACOUSTIC LOGIC

Vibration Monitoring: 12/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit



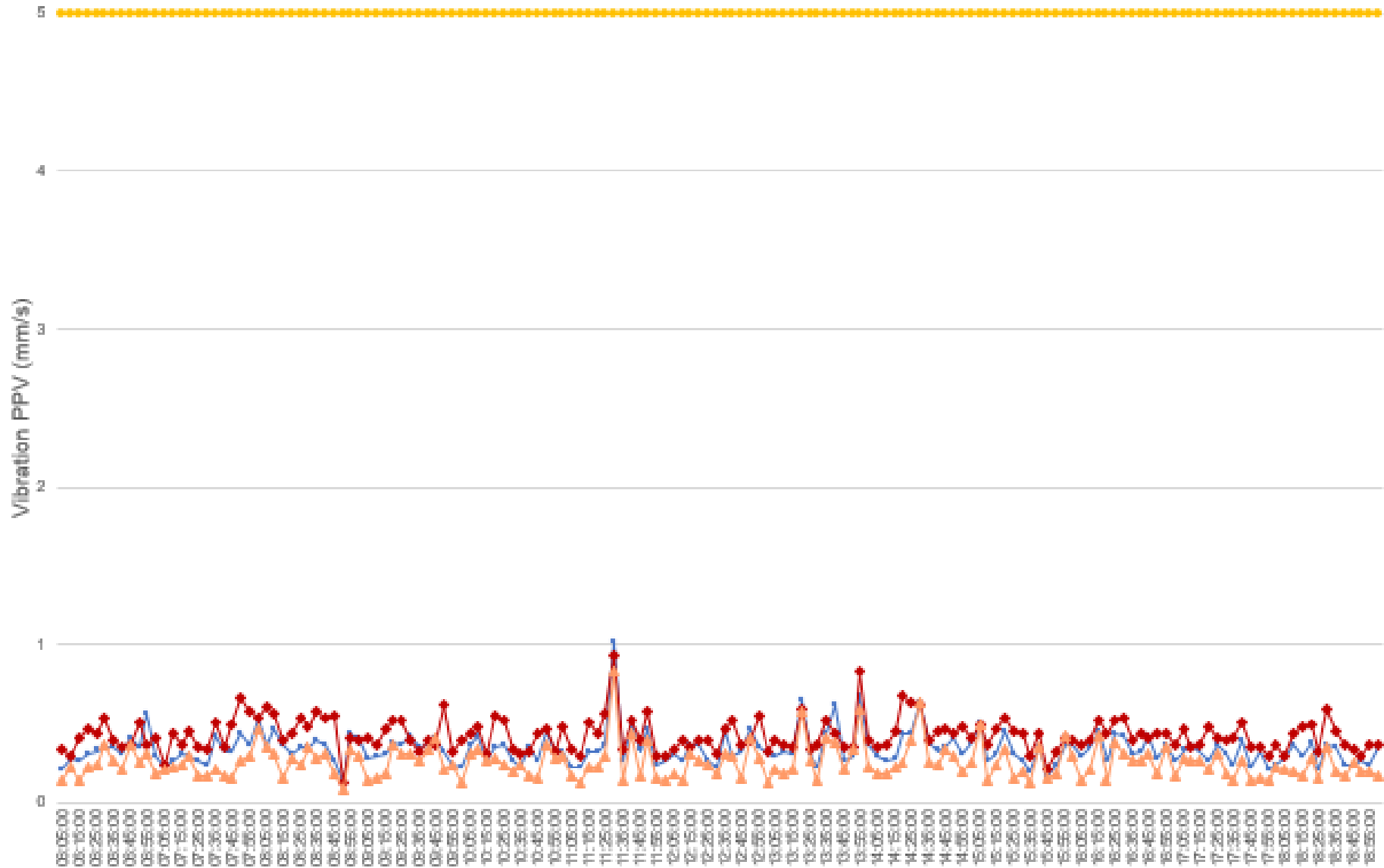
Vibration Monitoring: 13/03/2022



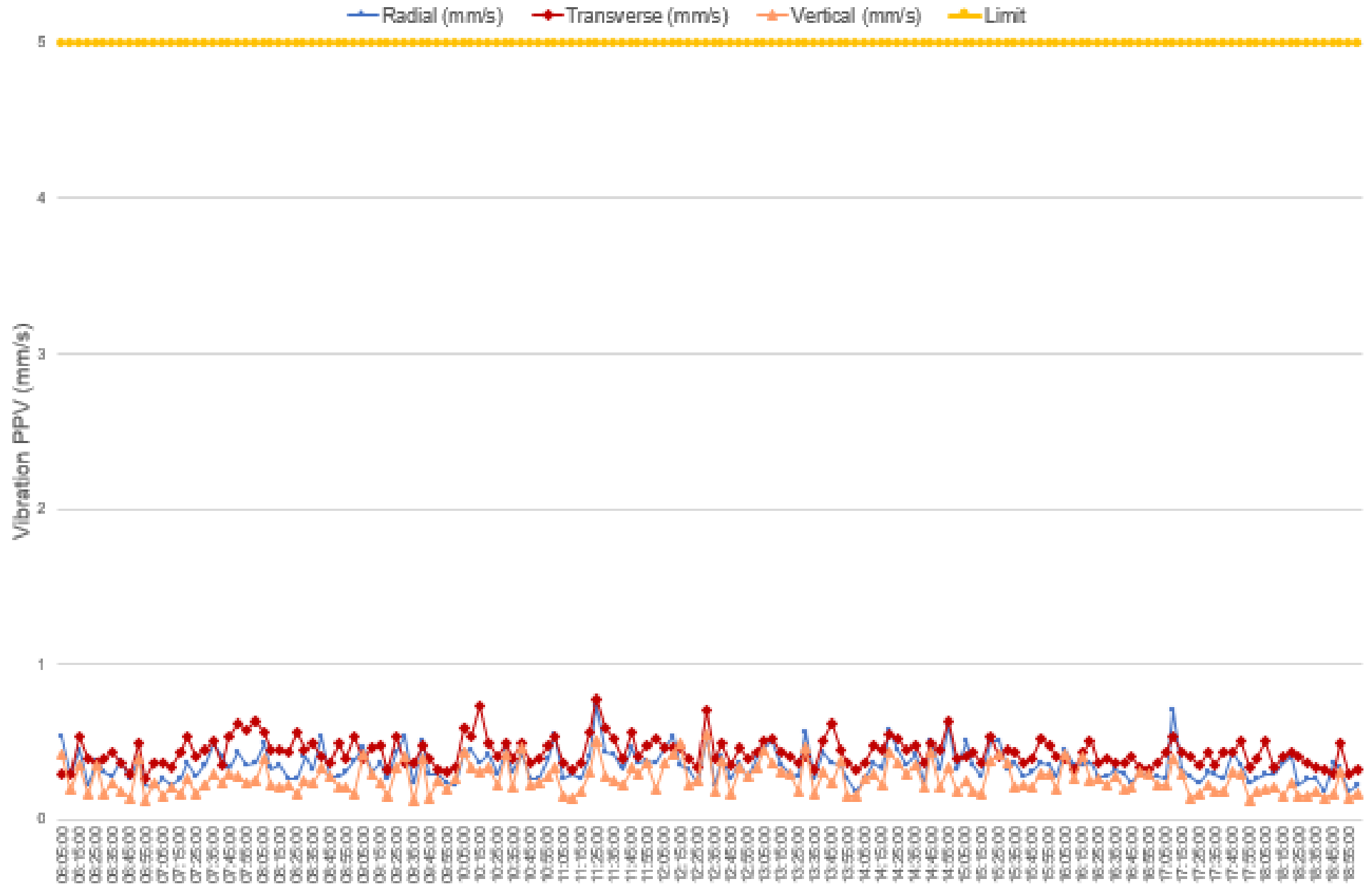


Vibration Monitoring: 14/03/2022

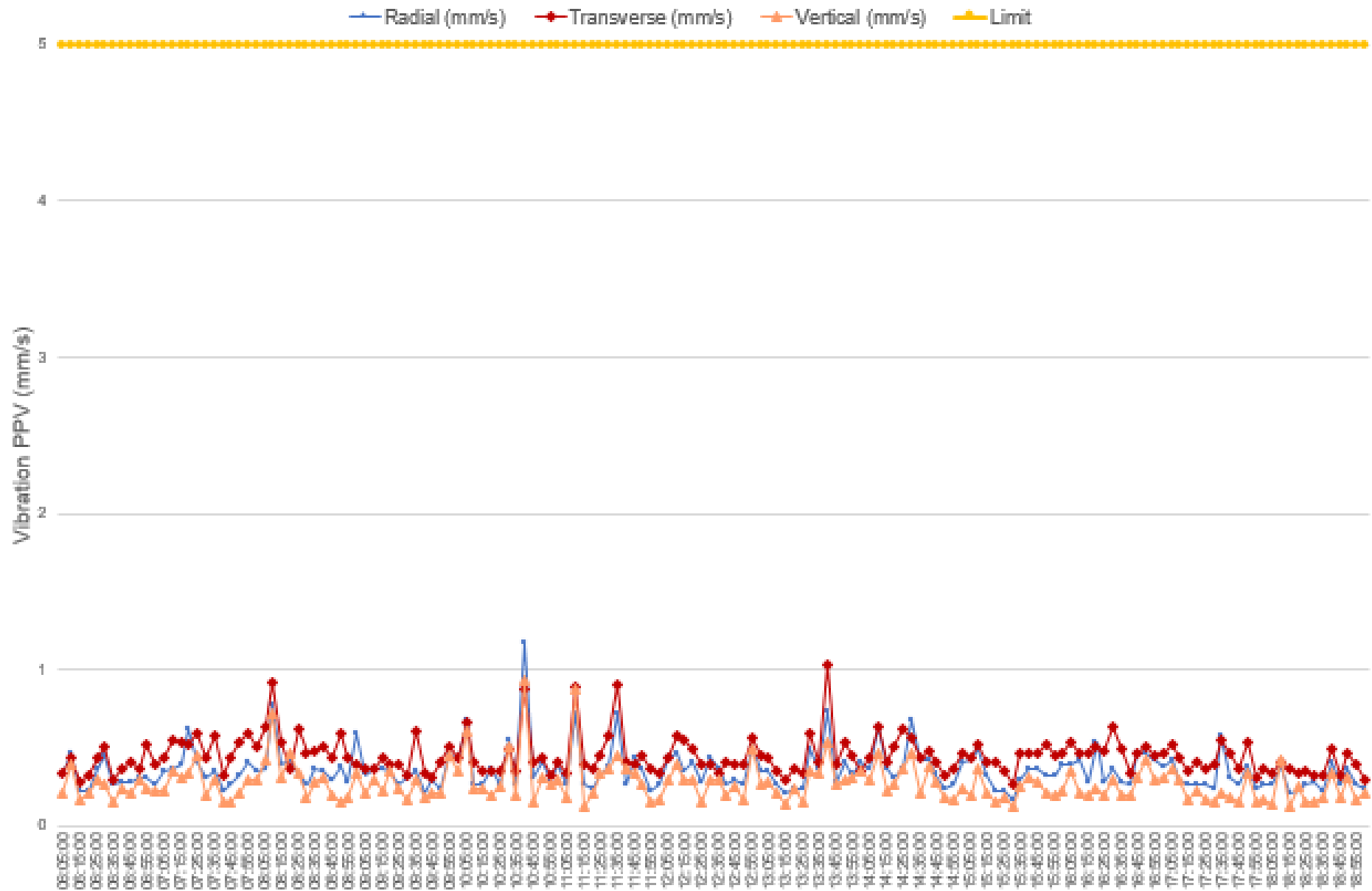
Radial (mm/s) Transverse (mm/s) Vertical (mm/s) Limit



Vibration Monitoring: 15/03/2022



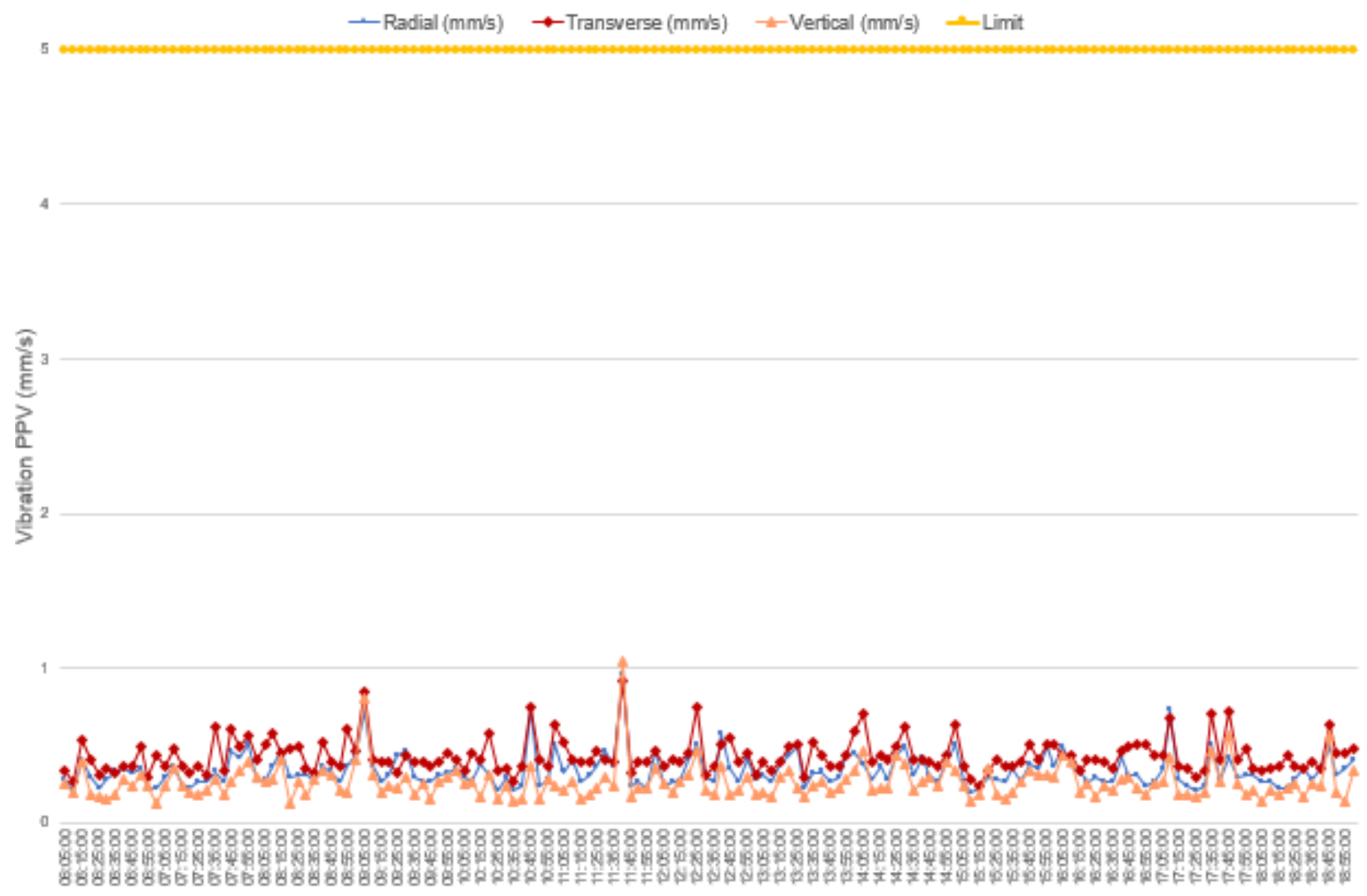
Vibration Monitoring: 16/03/2022





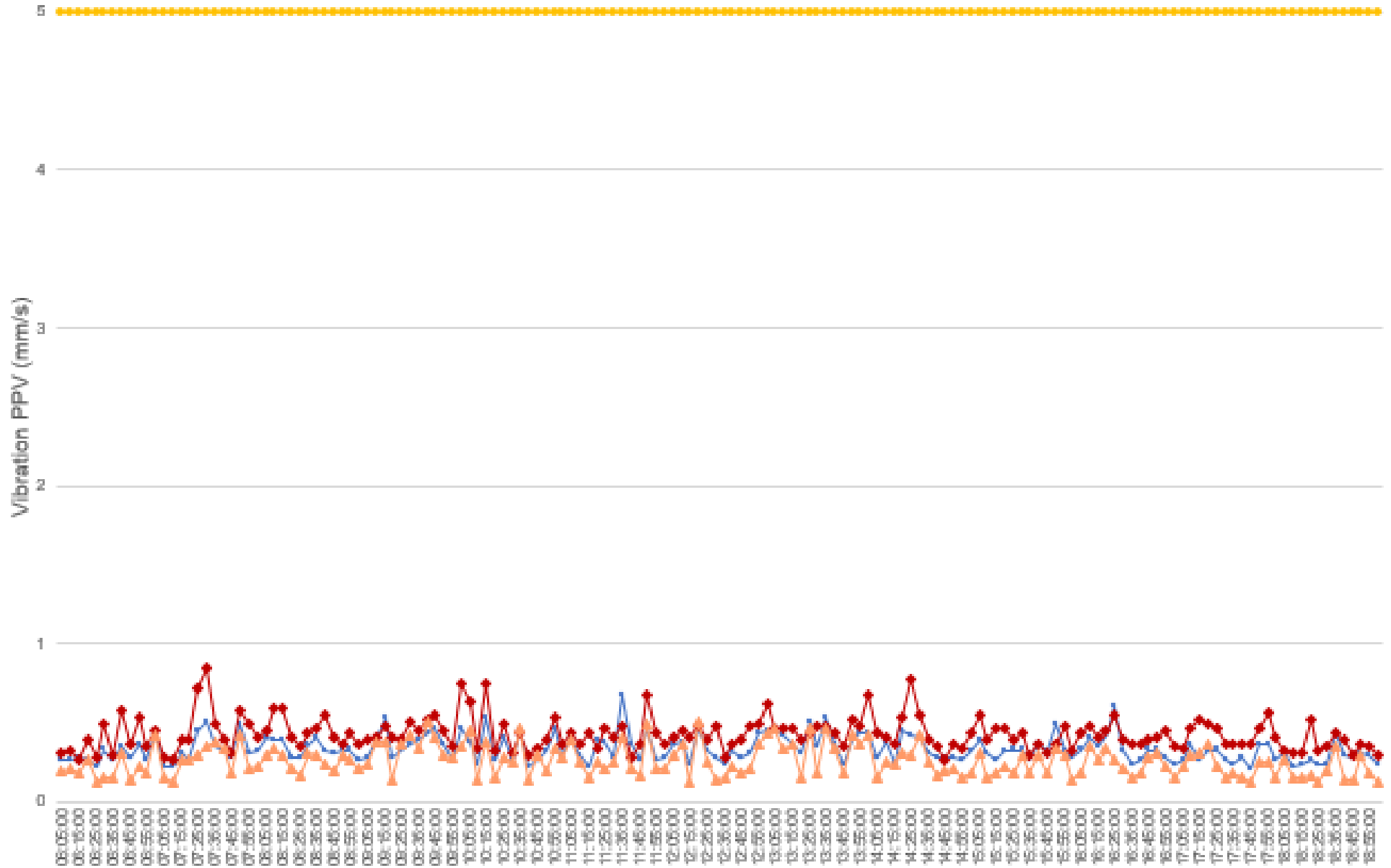
ACOUSTIC LOGIC

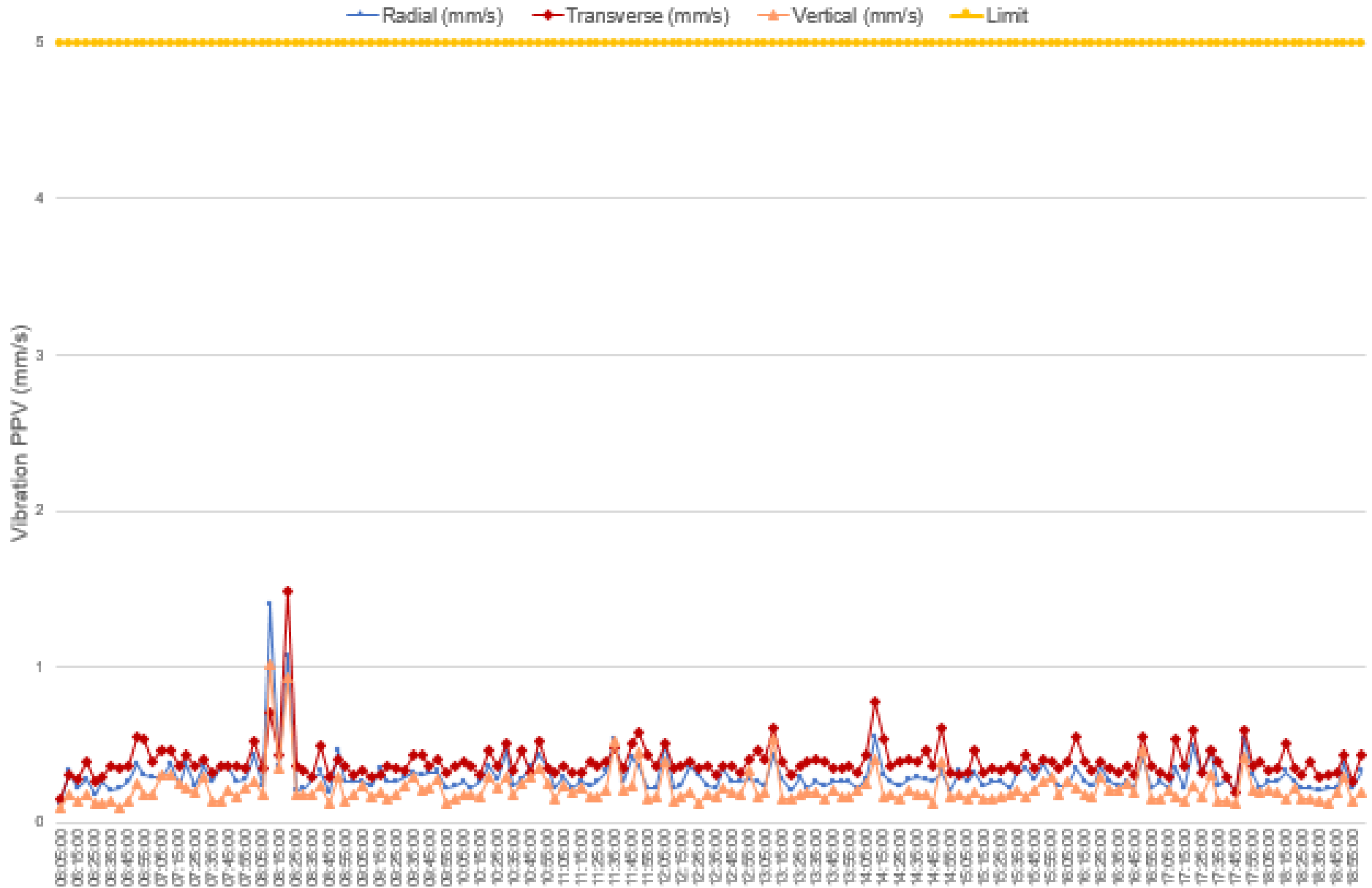
Vibration Monitoring: 17/03/2022





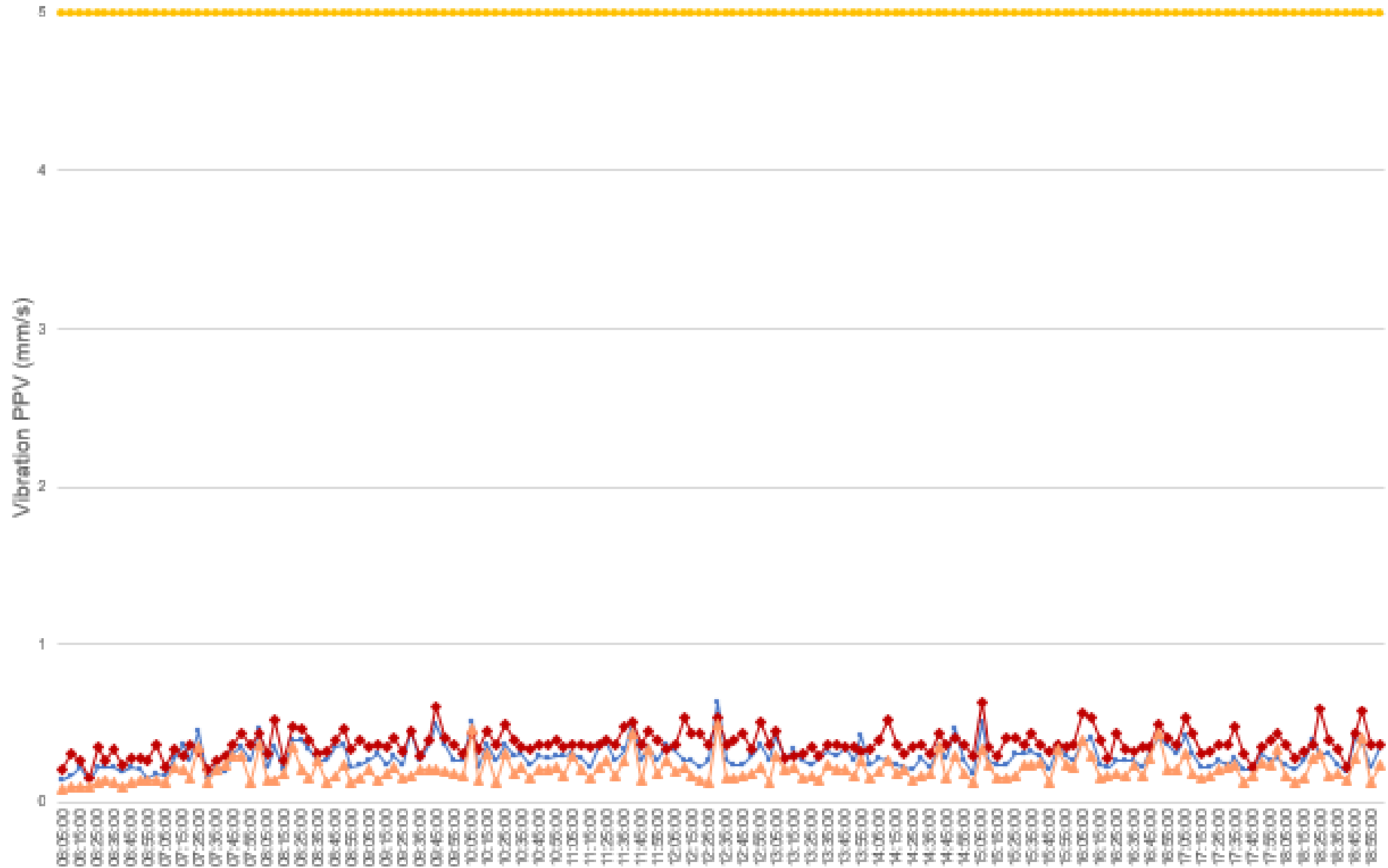
Radial (mm/s) Transverse (mm/s) Vertical (mm/s) Limit





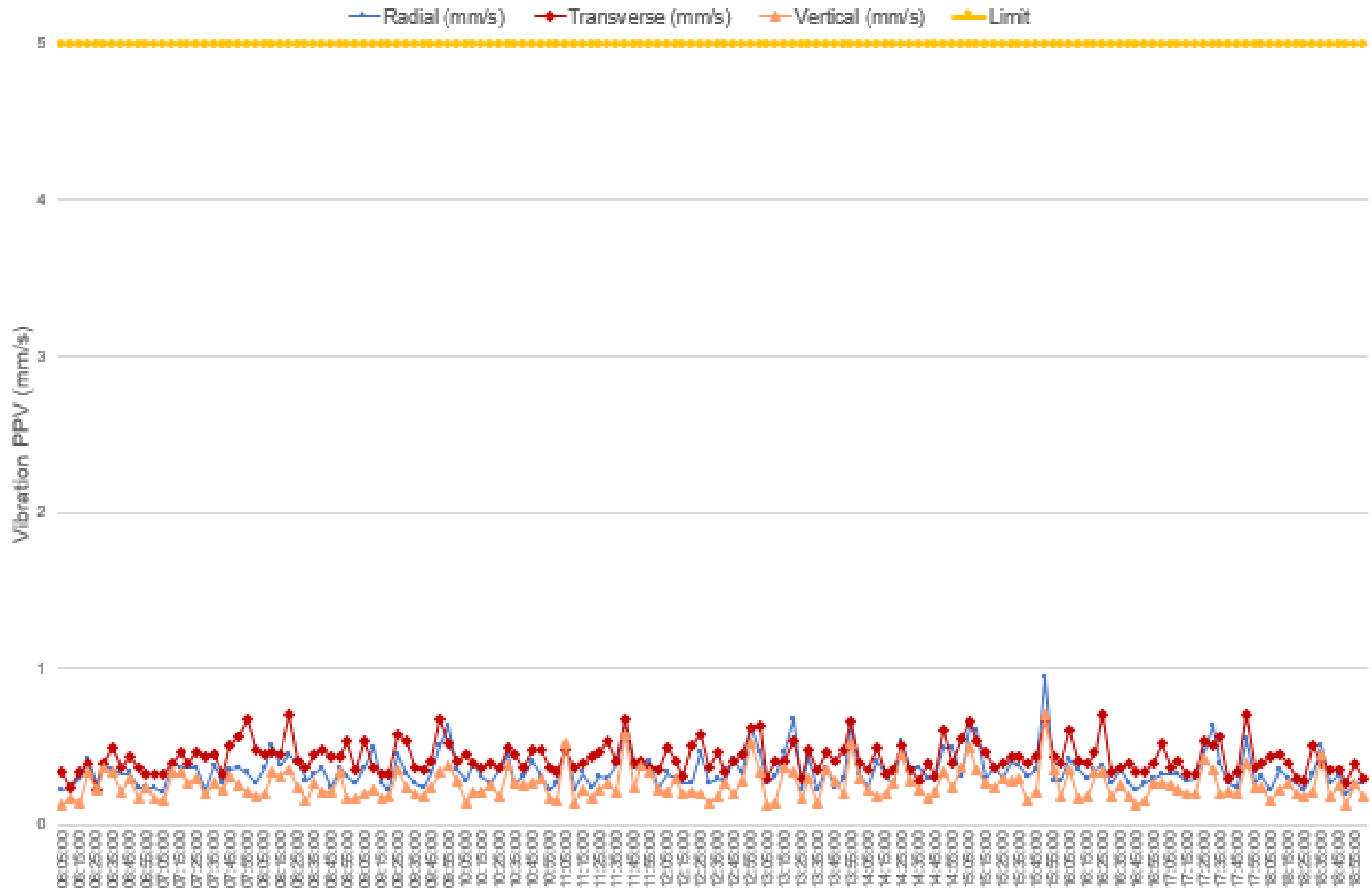


—•— Radial (mm/s) —•— Transverse (mm/s) —•— Vertical (mm/s) —▲— Limit



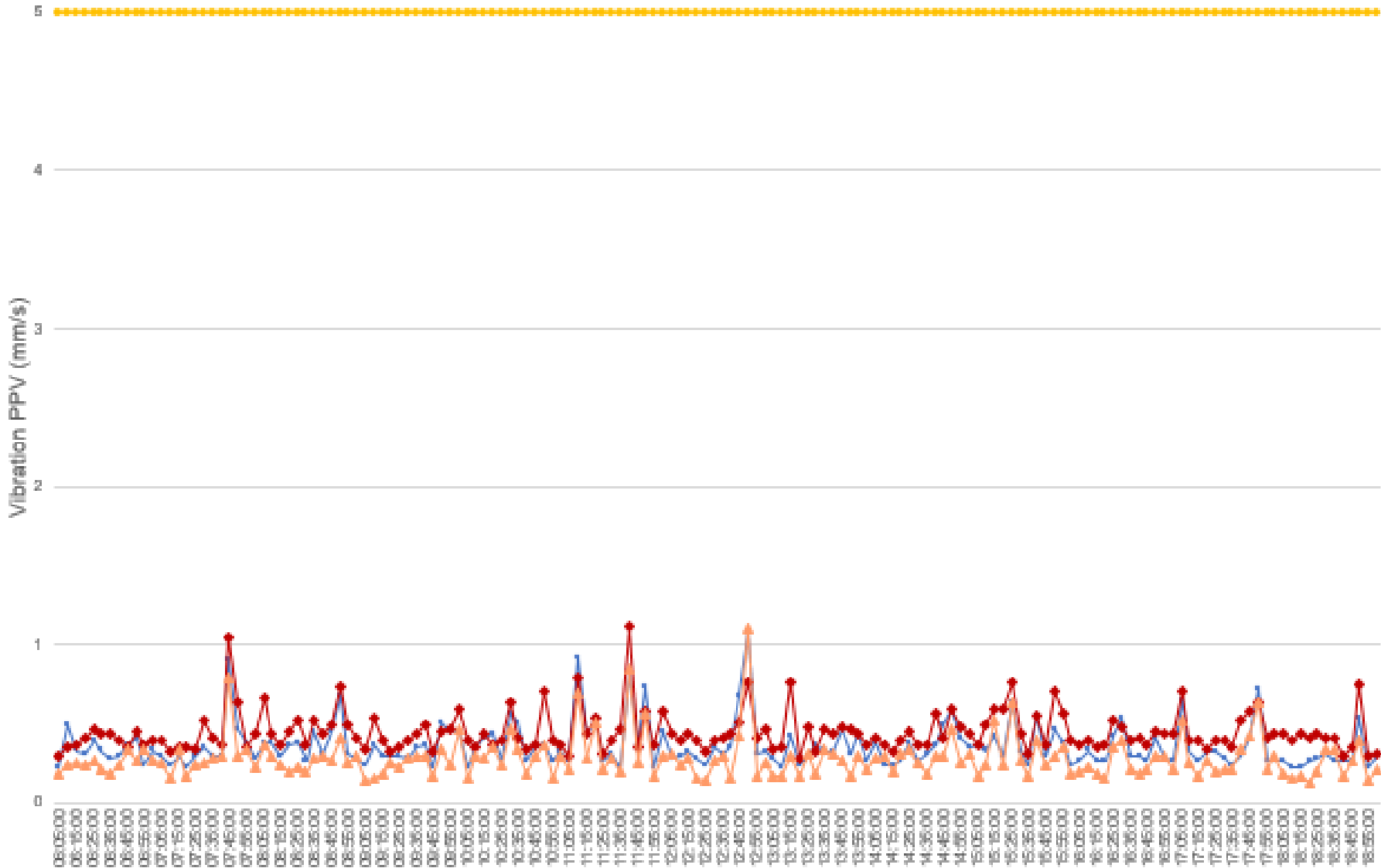


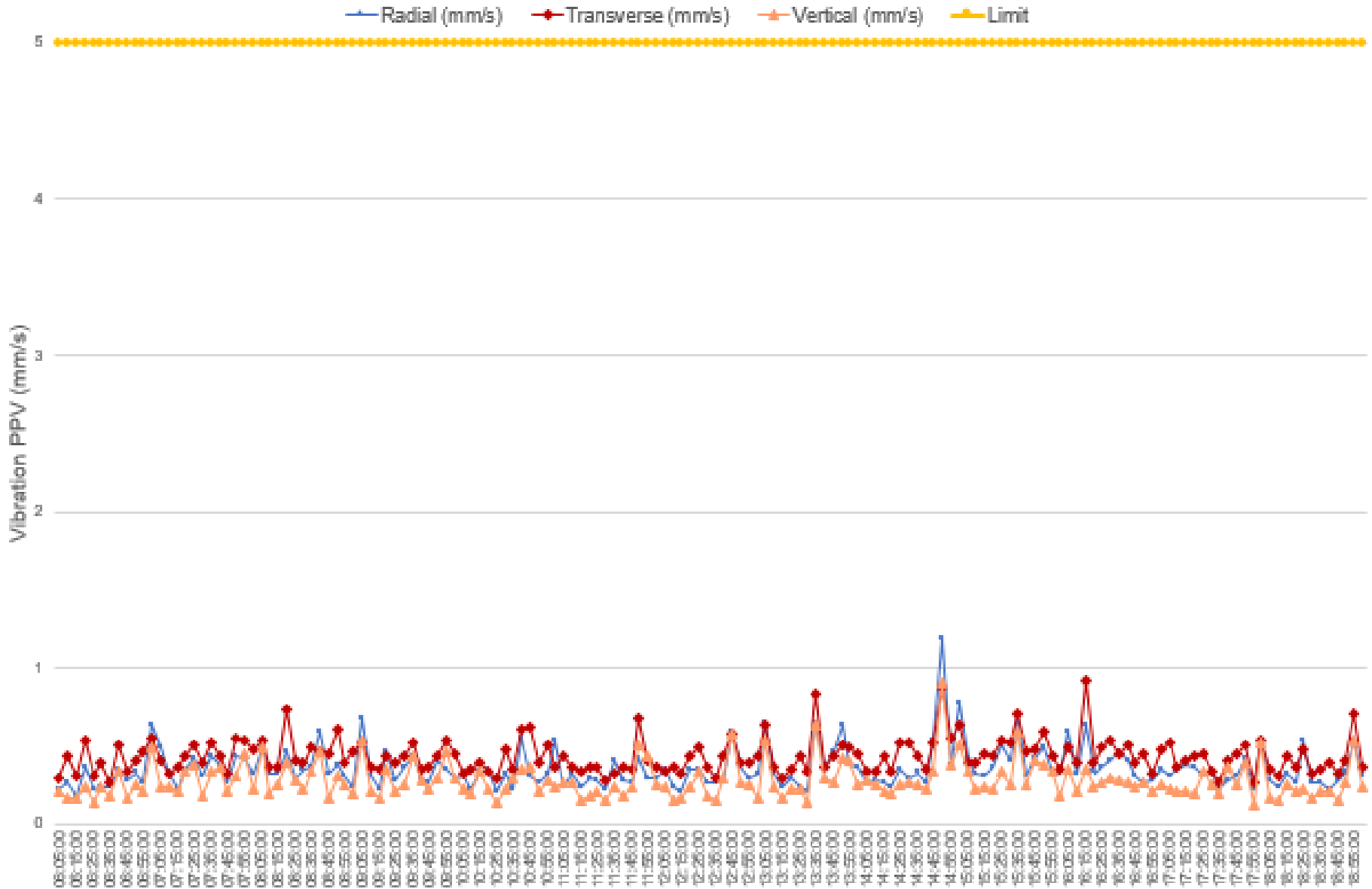
Vibration Monitoring: 21/03/2022

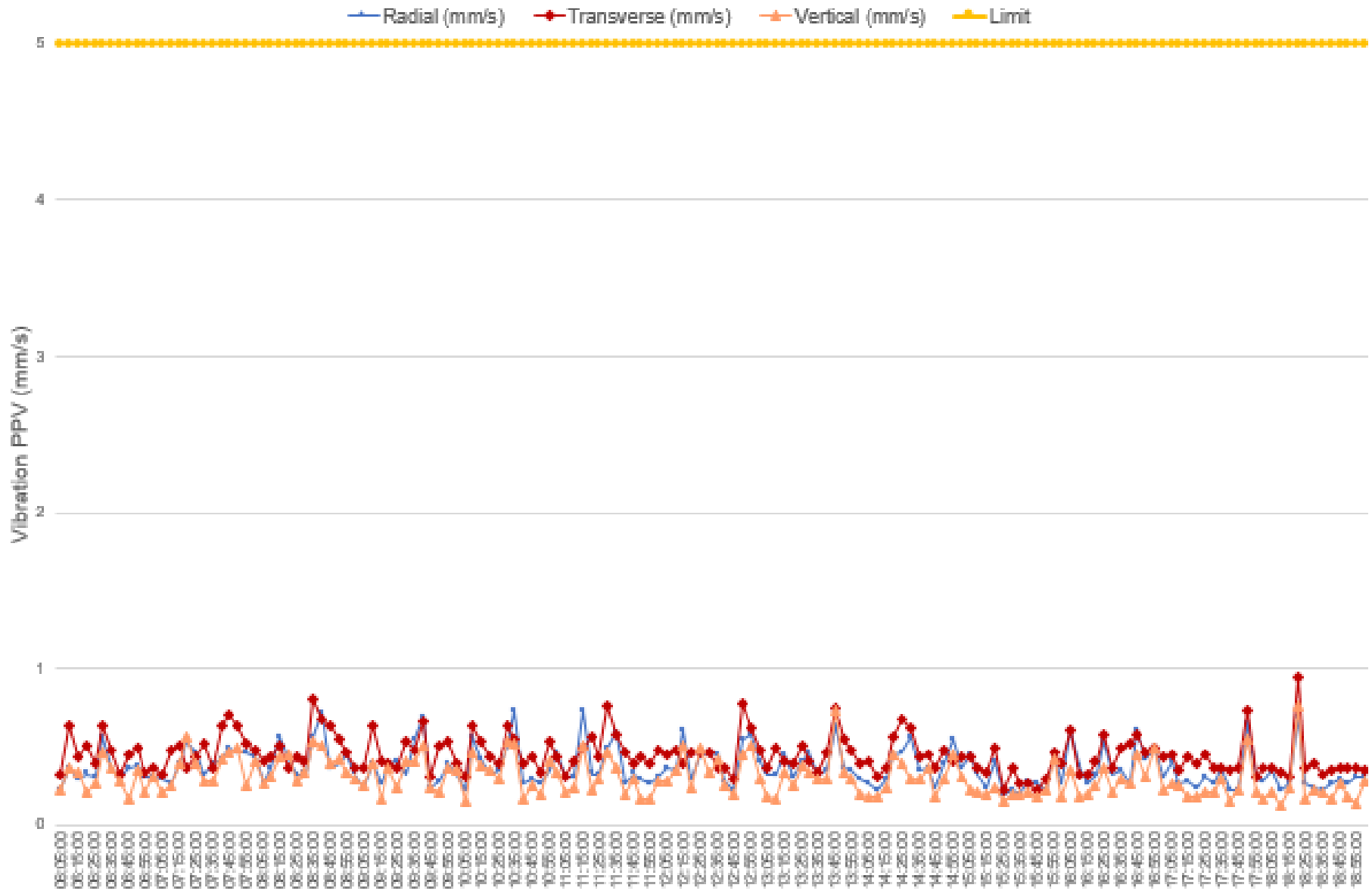




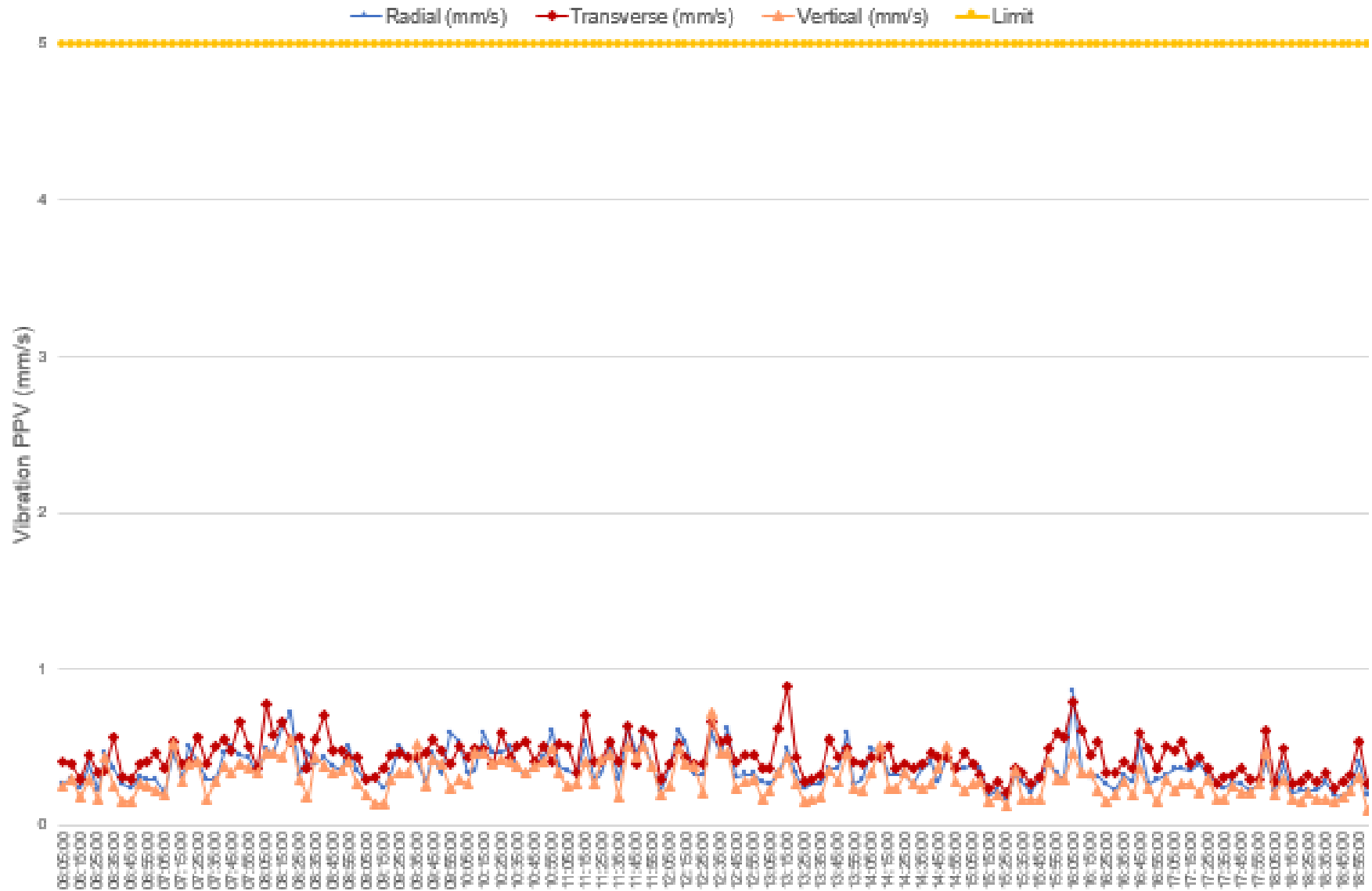
— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit





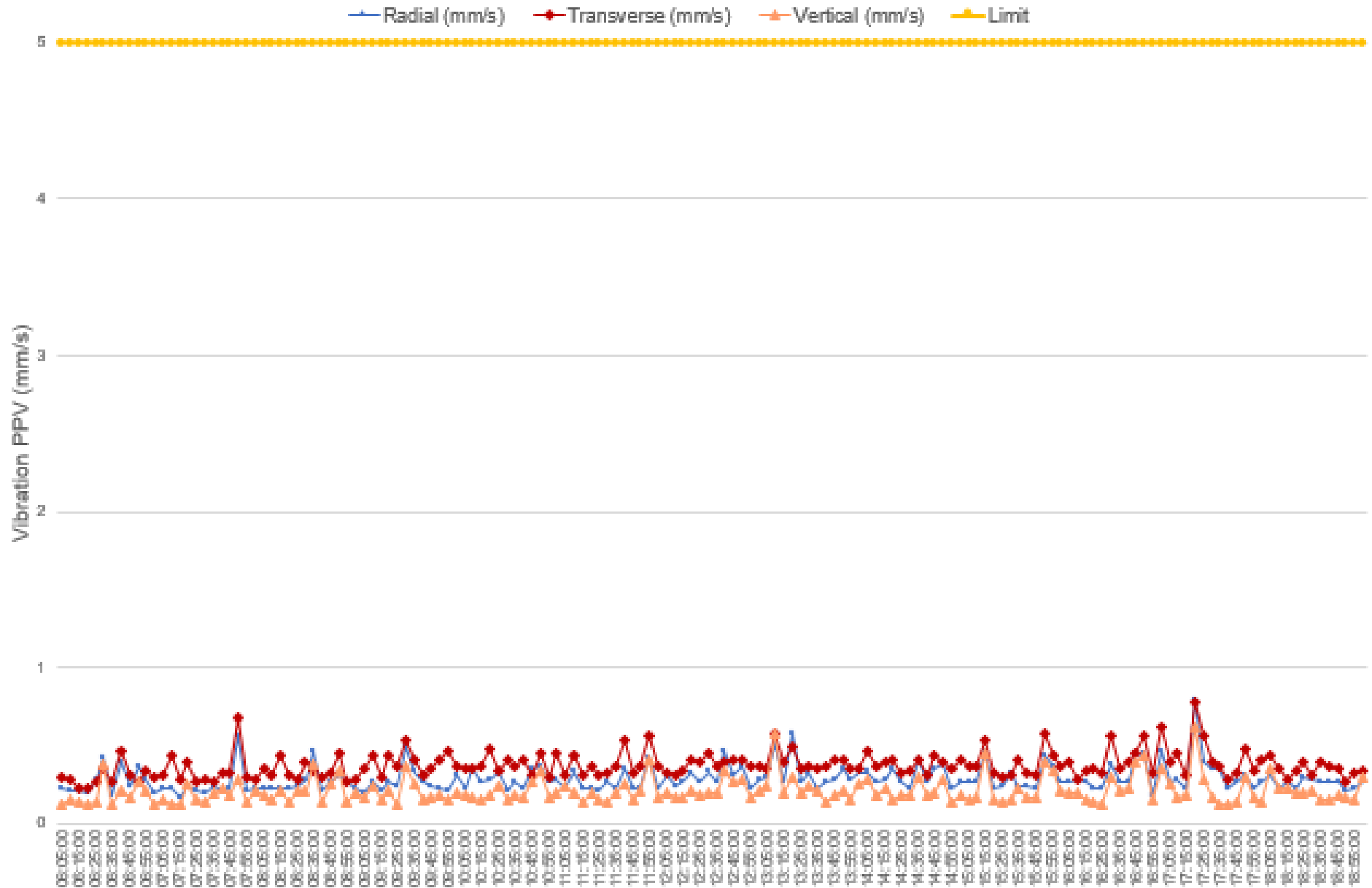


Vibration Monitoring: 25/03/2022

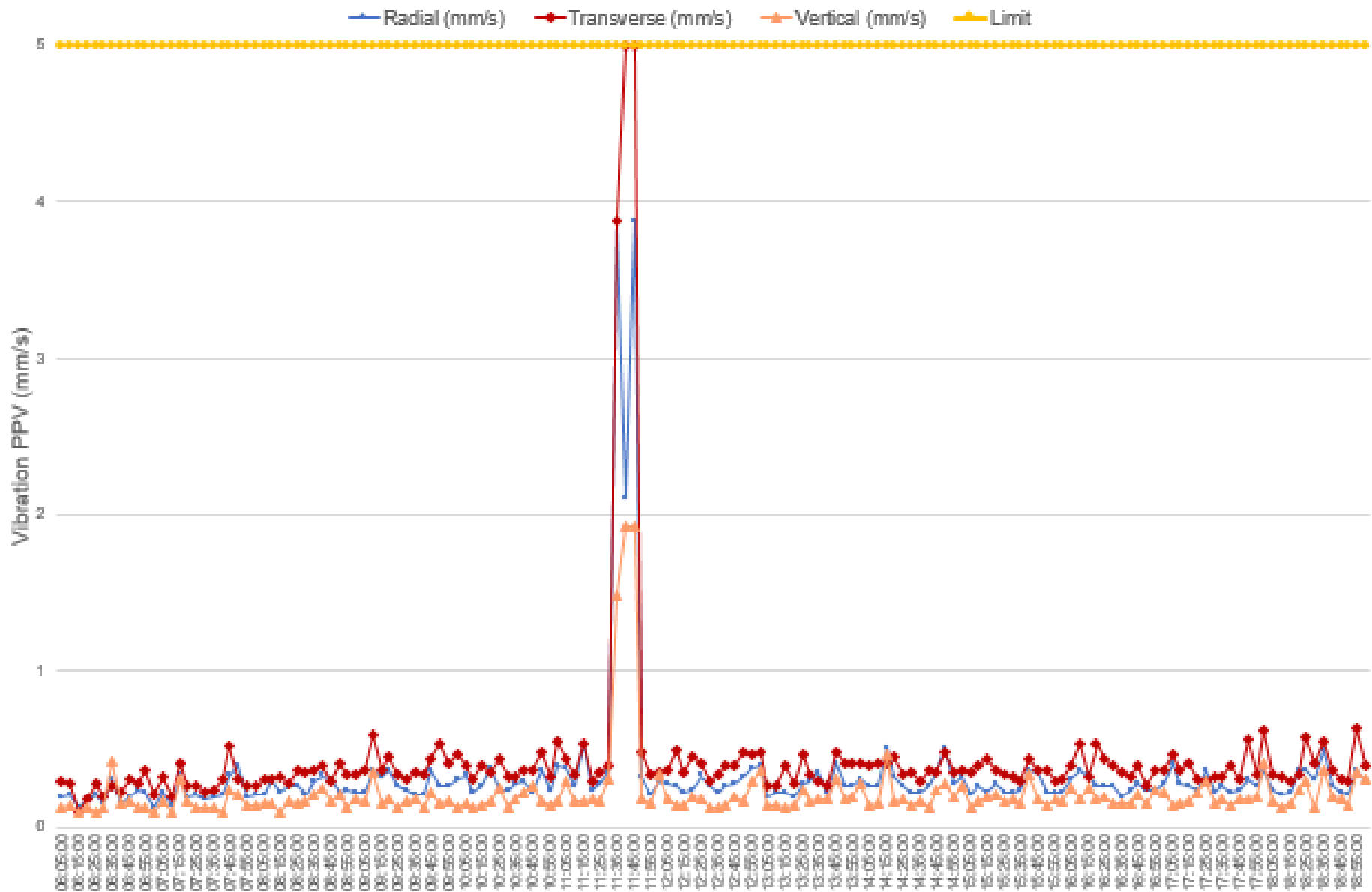




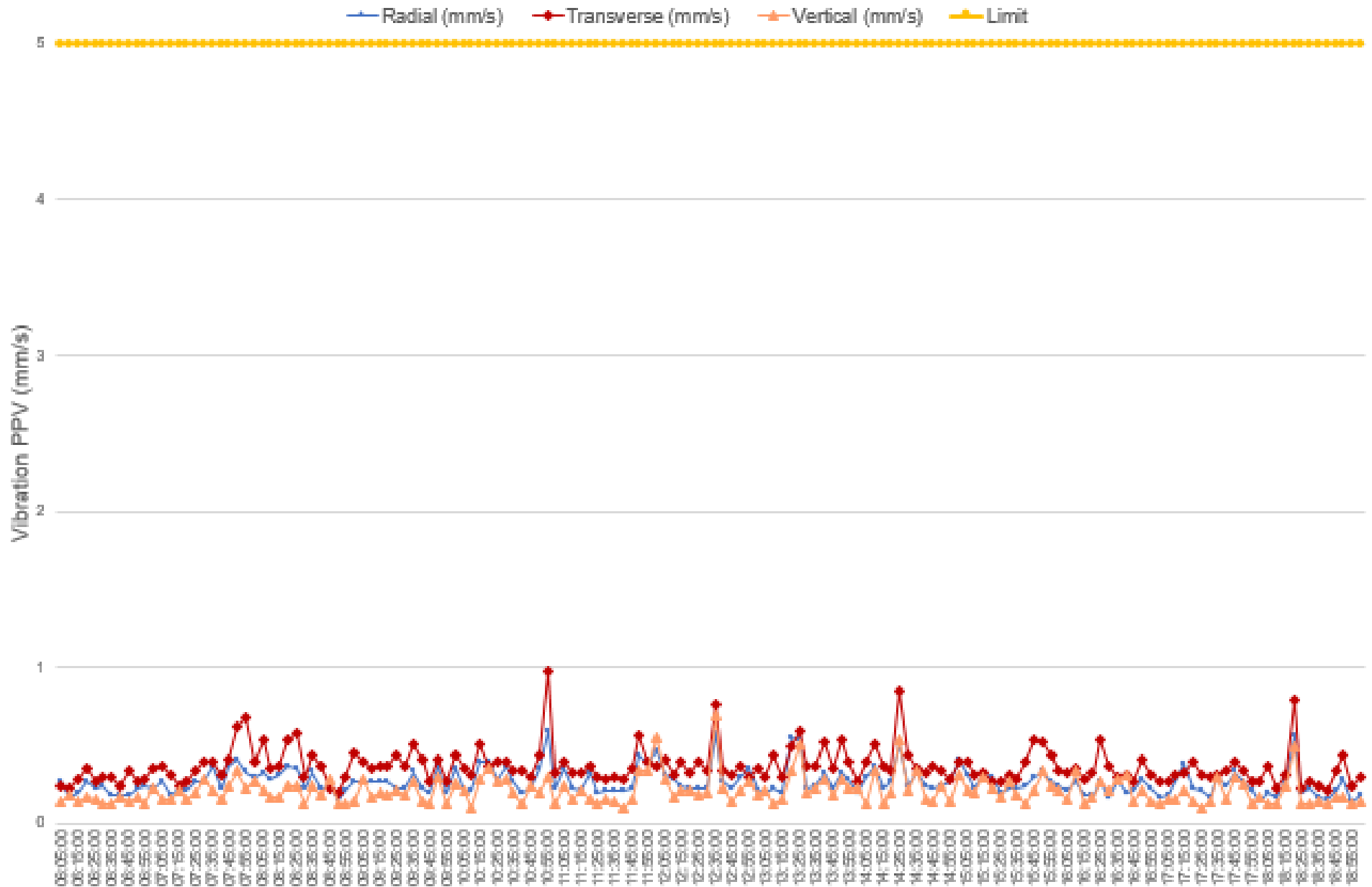
Vibration Monitoring: 26/03/2022



Vibration Monitoring: 27/03/2022



Vibration Monitoring: 28/03/2022

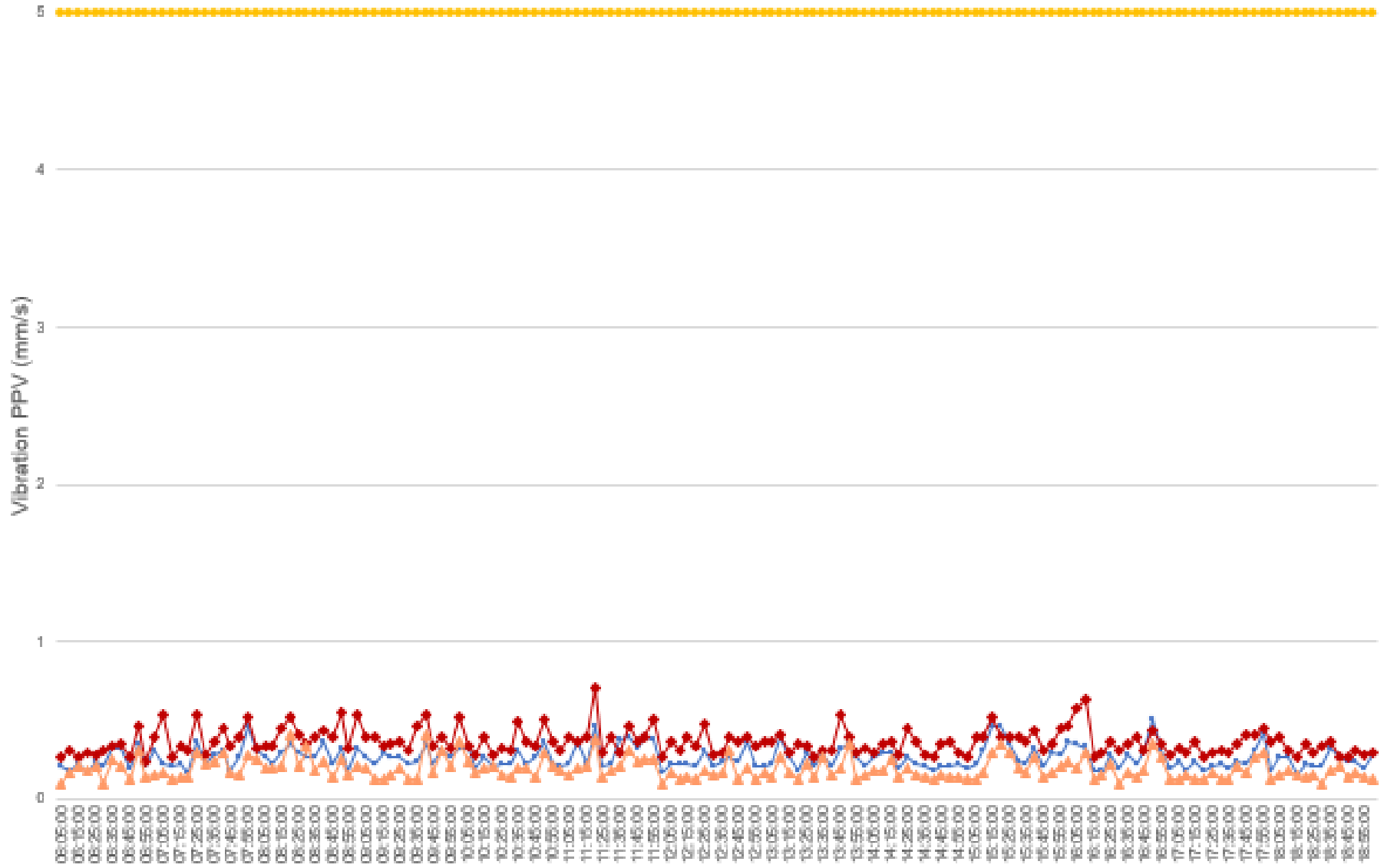




ACOUSTIC LOGIC

Vibration Monitoring: 29/03/2022

— Radial (mm/s) — Transverse (mm/s) — Vertical (mm/s) — Limit

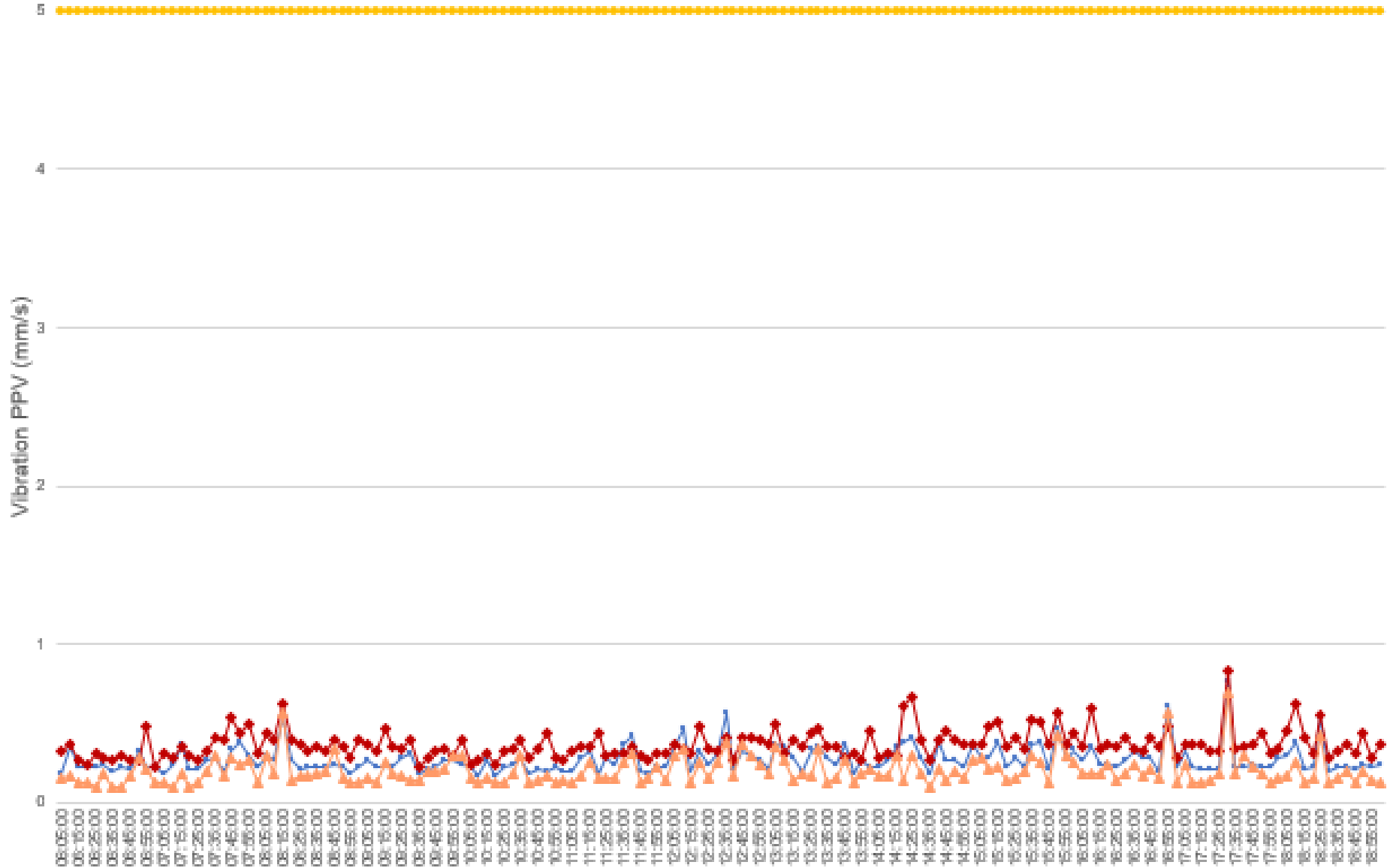




ACOUSTIC LOGIC

Vibration Monitoring: 30/03/2022

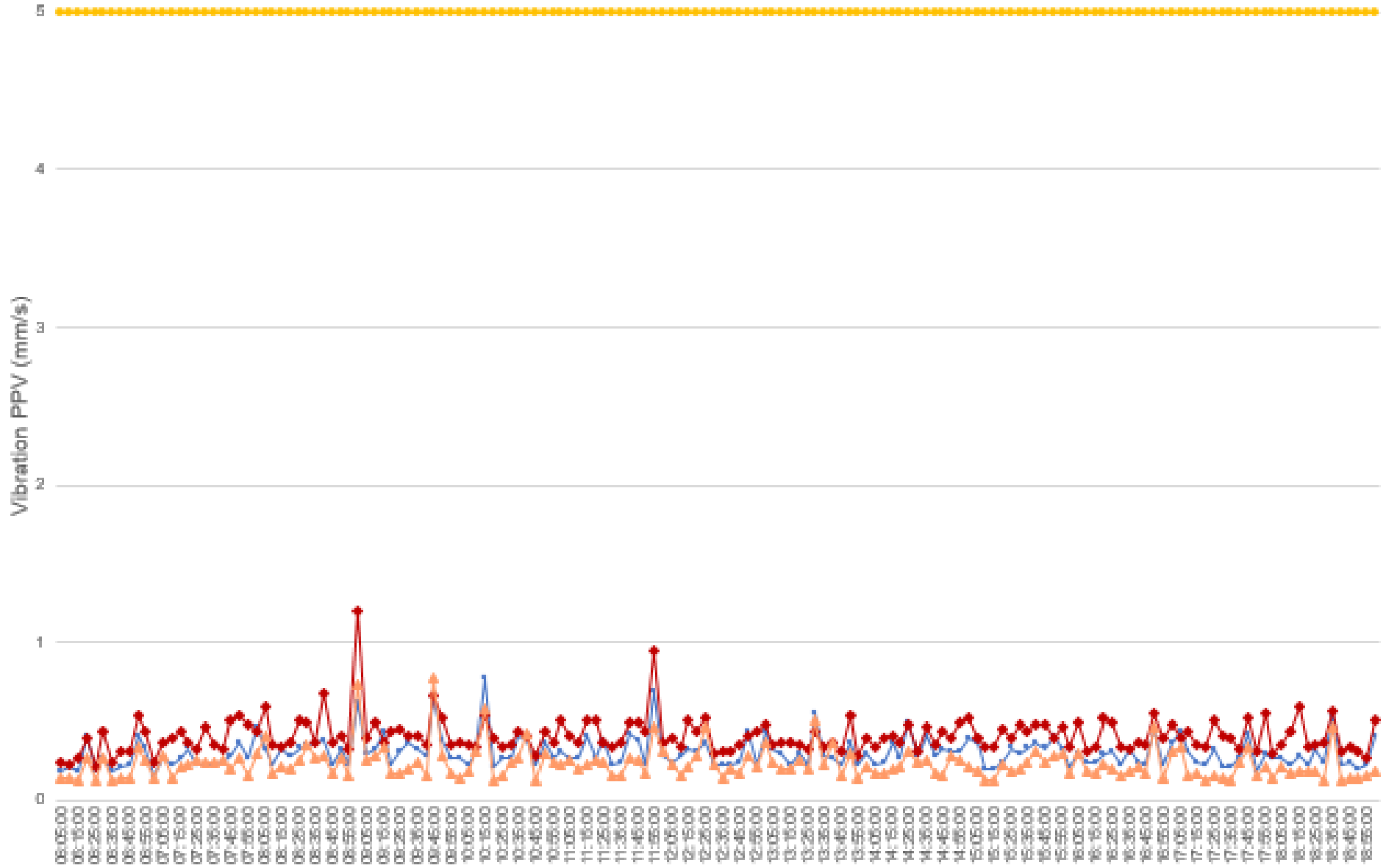
—●— Radial (mm/s) —●— Transverse (mm/s) —●— Vertical (mm/s) —●— Limit





Vibration Monitoring: 31/03/2022

—●— Radial (mm/s) —●— Transverse (mm/s) —●— Vertical (mm/s) —▲— Limit



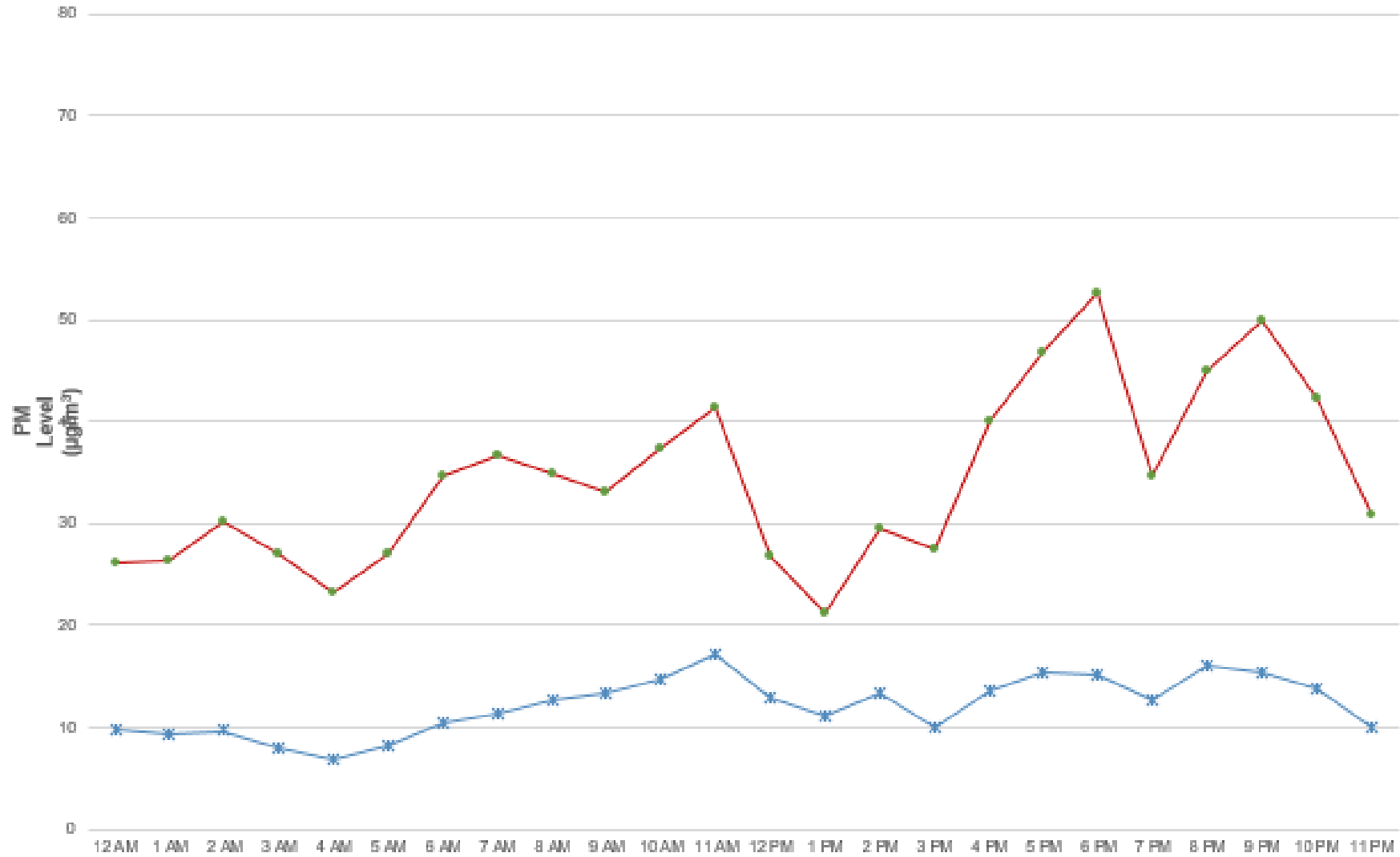
APPENDIX 3 – DUST MONITORING RESULTS



**ACOUSTIC
LOGIC**

Dust Monitoring: 10/03/2022

* Average of pm2_5mc * Average of pm10mc

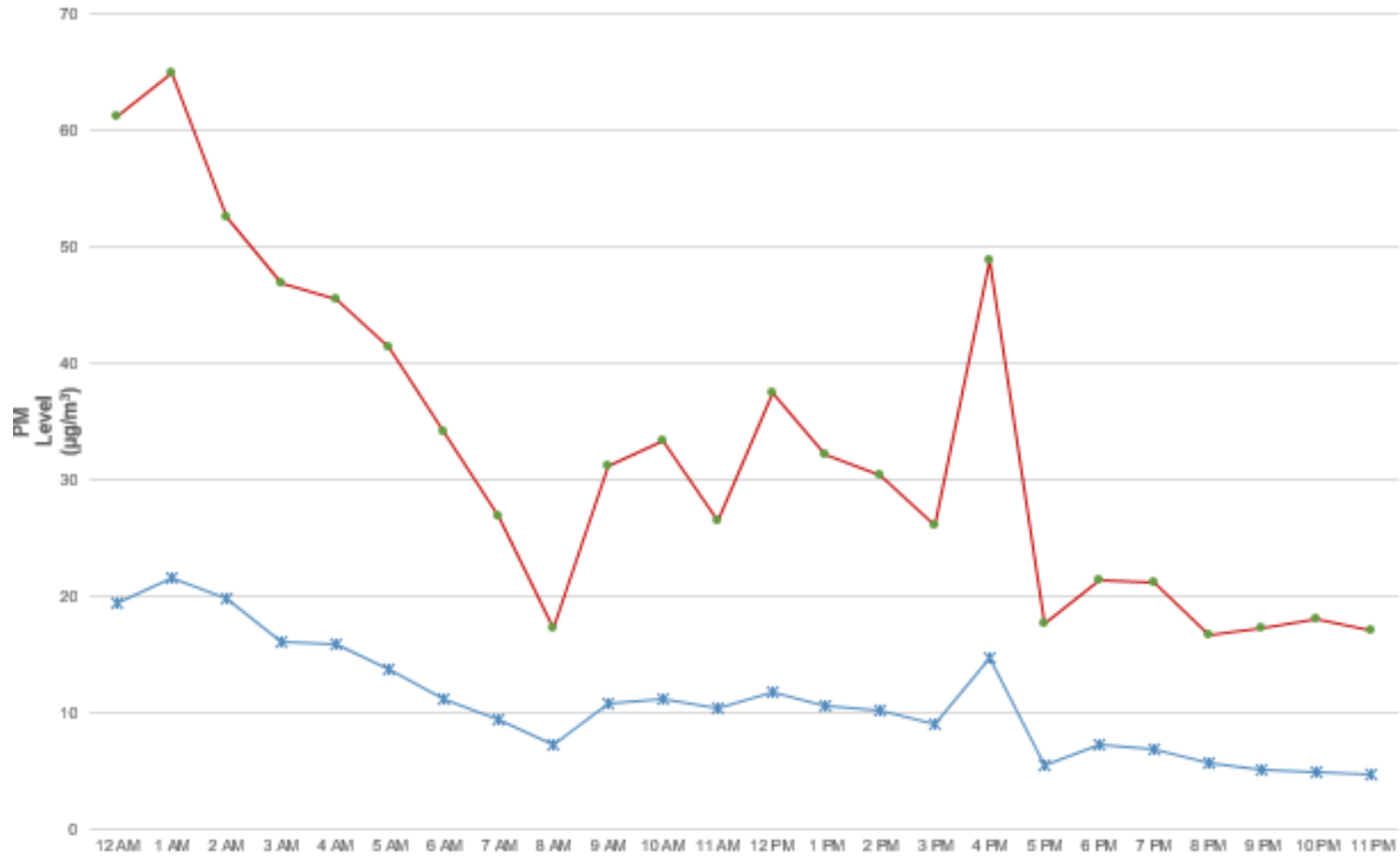




ACOUSTIC LOGIC

Dust Monitoring 11/03/2022

Average of pm2_5mc Average of pm10mc

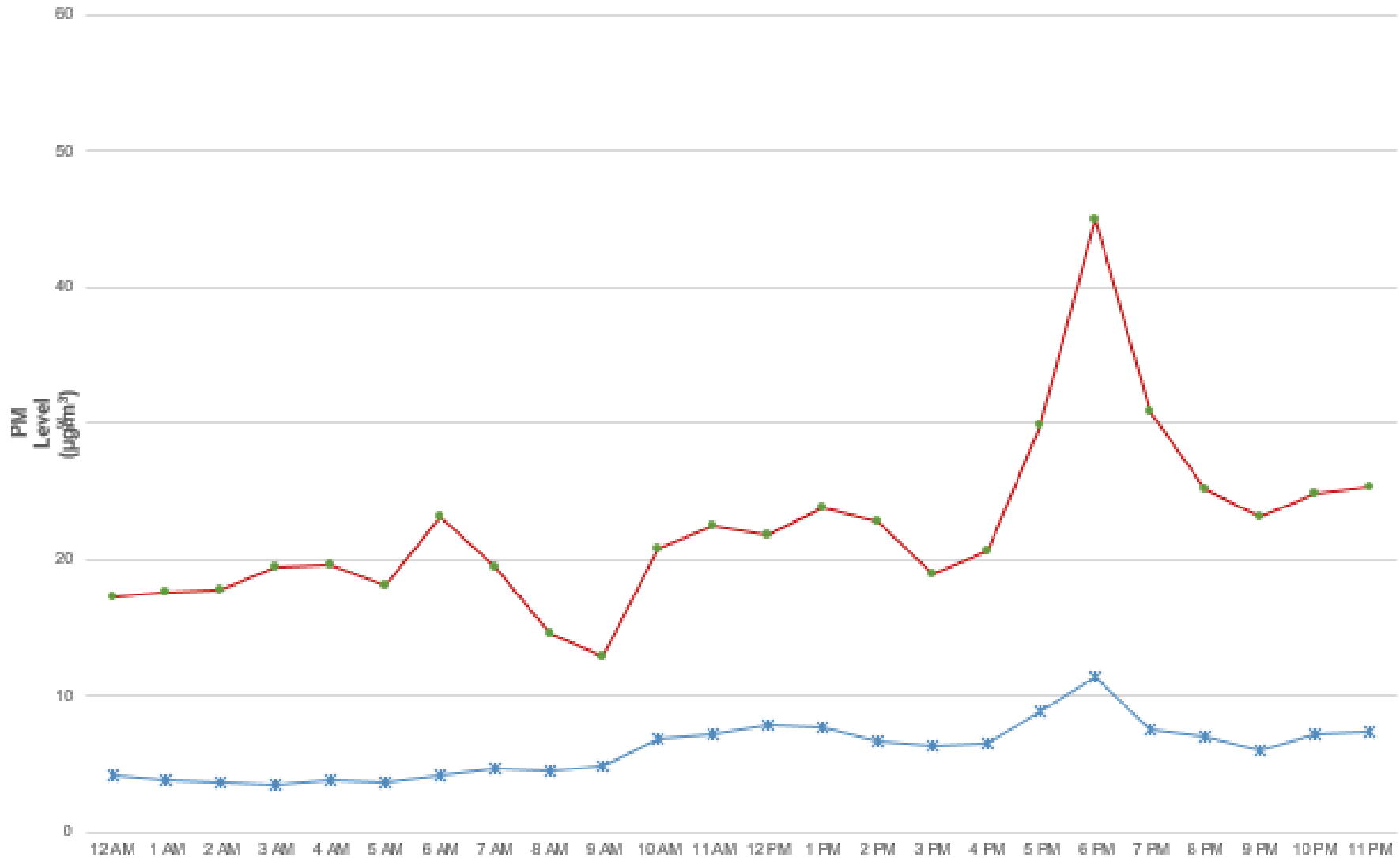




ACOUSTIC LOGIC

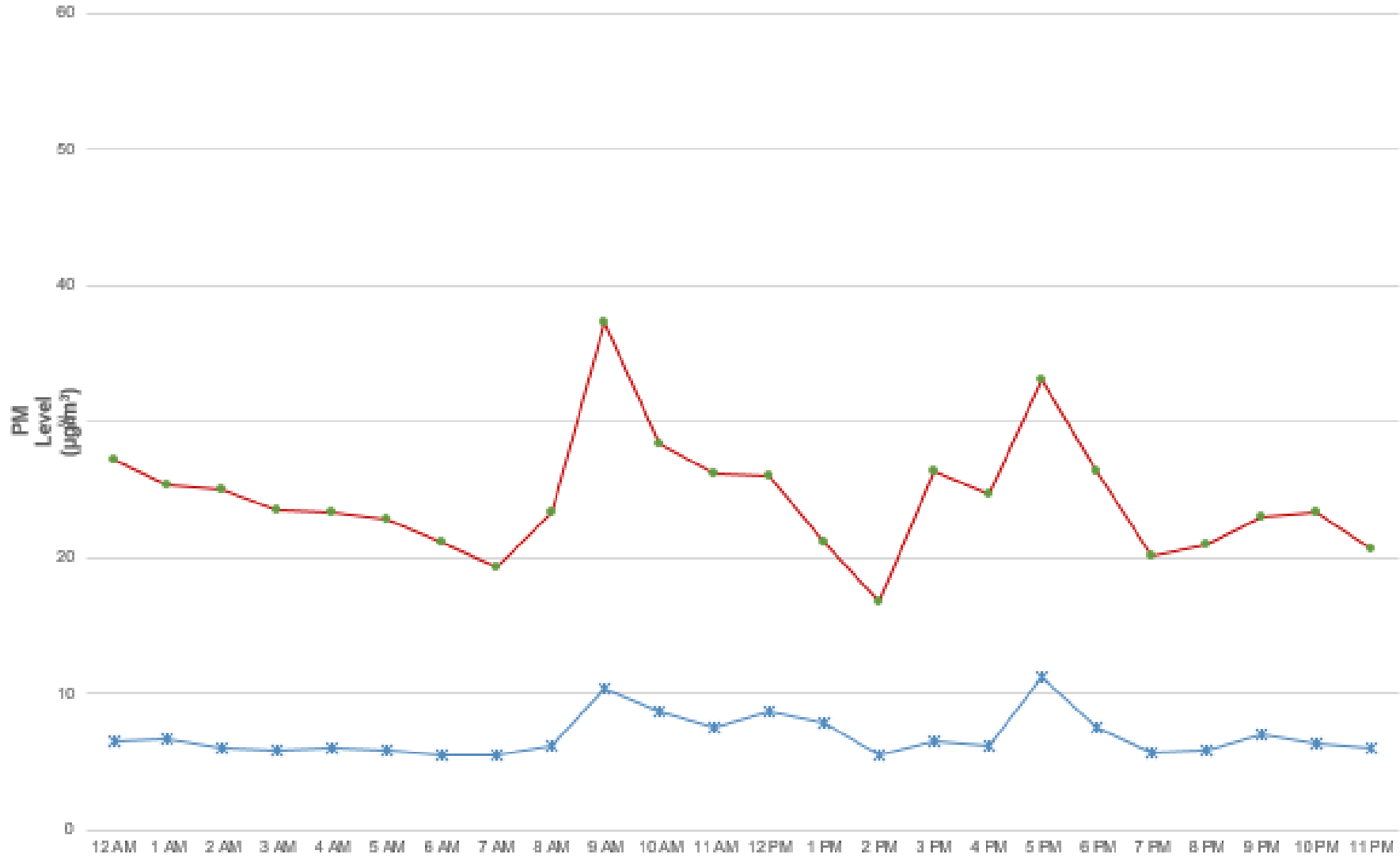
Dust Monitoring: 12/03/2022

* Average of pm2_5mc * Average of pm10mc





* Average of pm2_5mc * Average of pm10mc

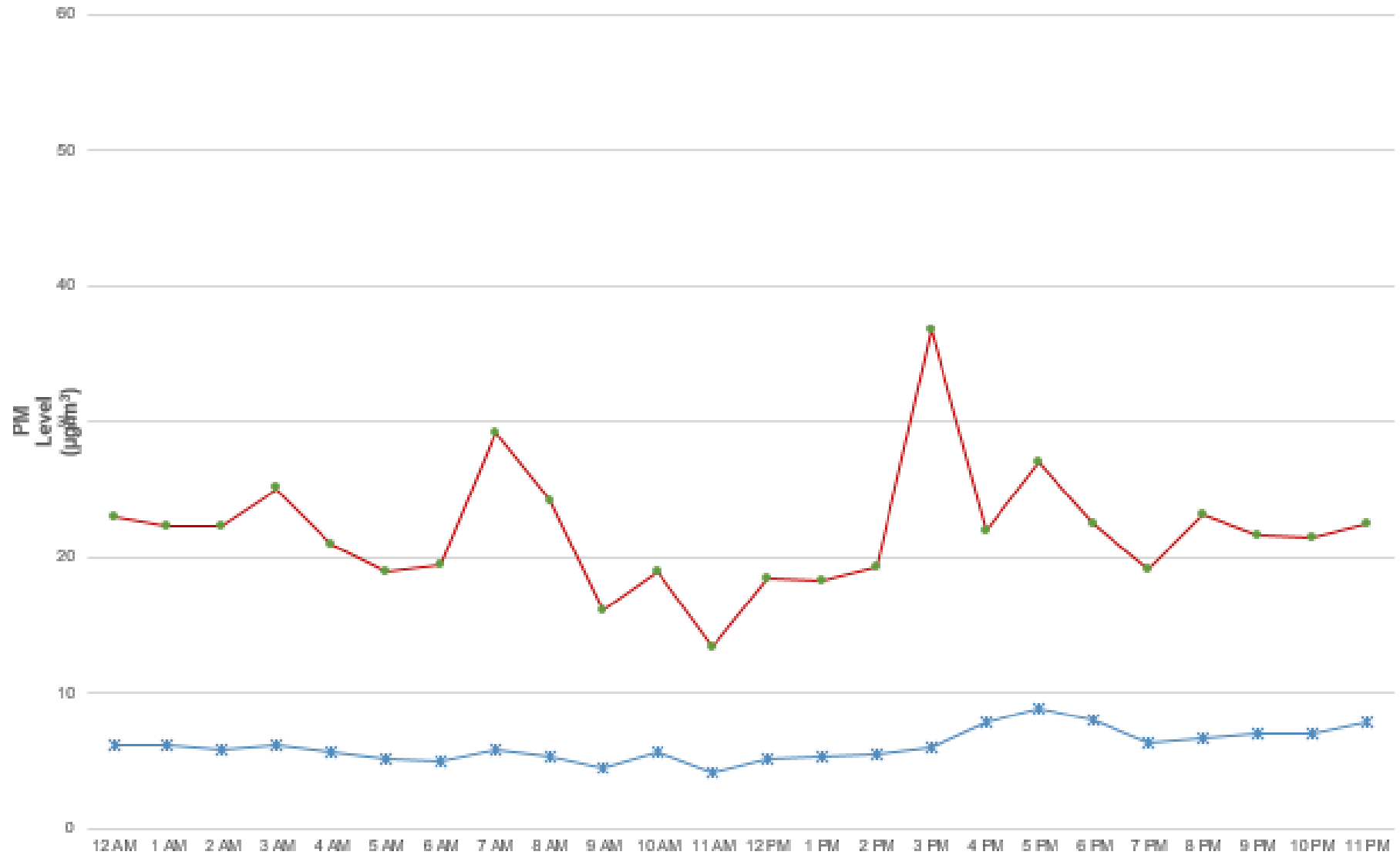




ACOUSTIC LOGIC

Dust Monitoring: 14/03/2022

* Average of pm2_5mc * Average of pm10mc

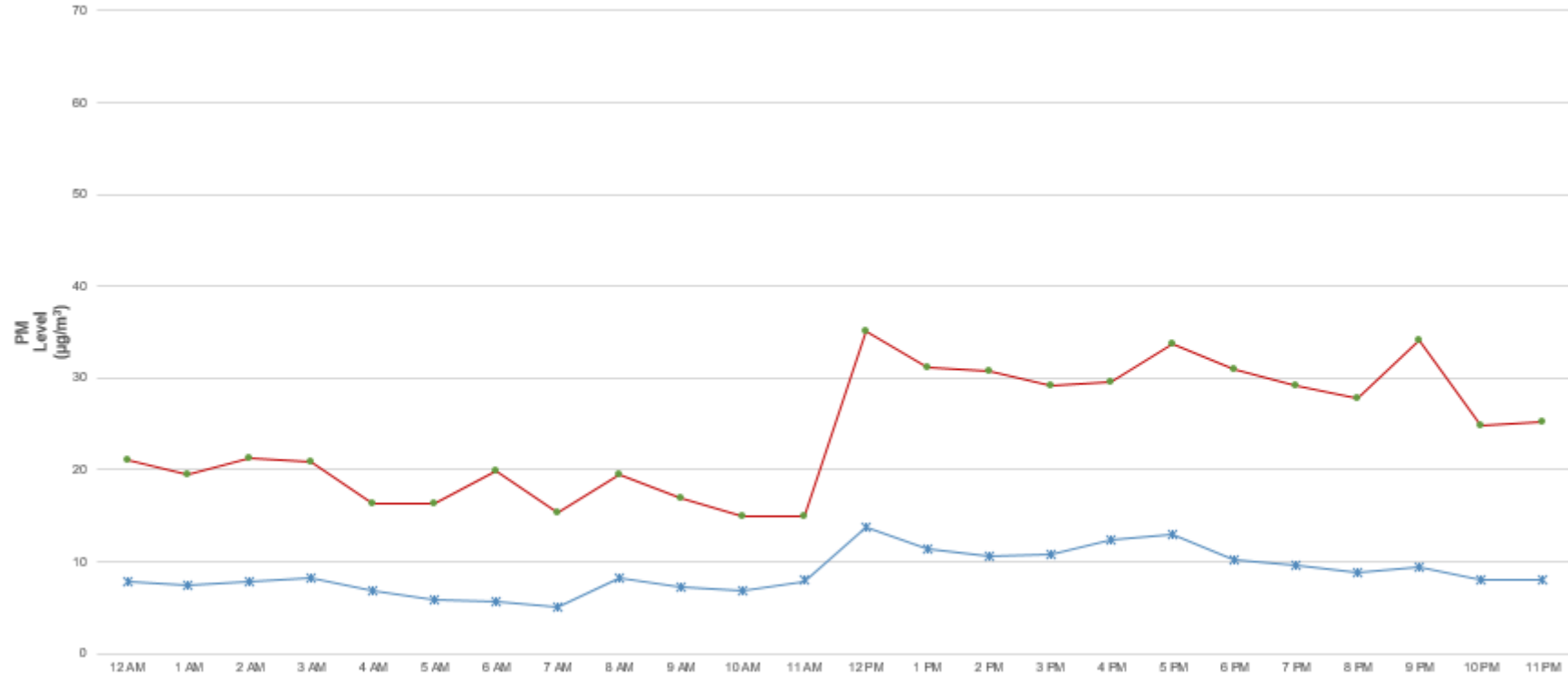




ACOUSTIC LOGIC

Dust Monitoring: 15/03/2022

Average of pm2_5mc Average of pm10mc

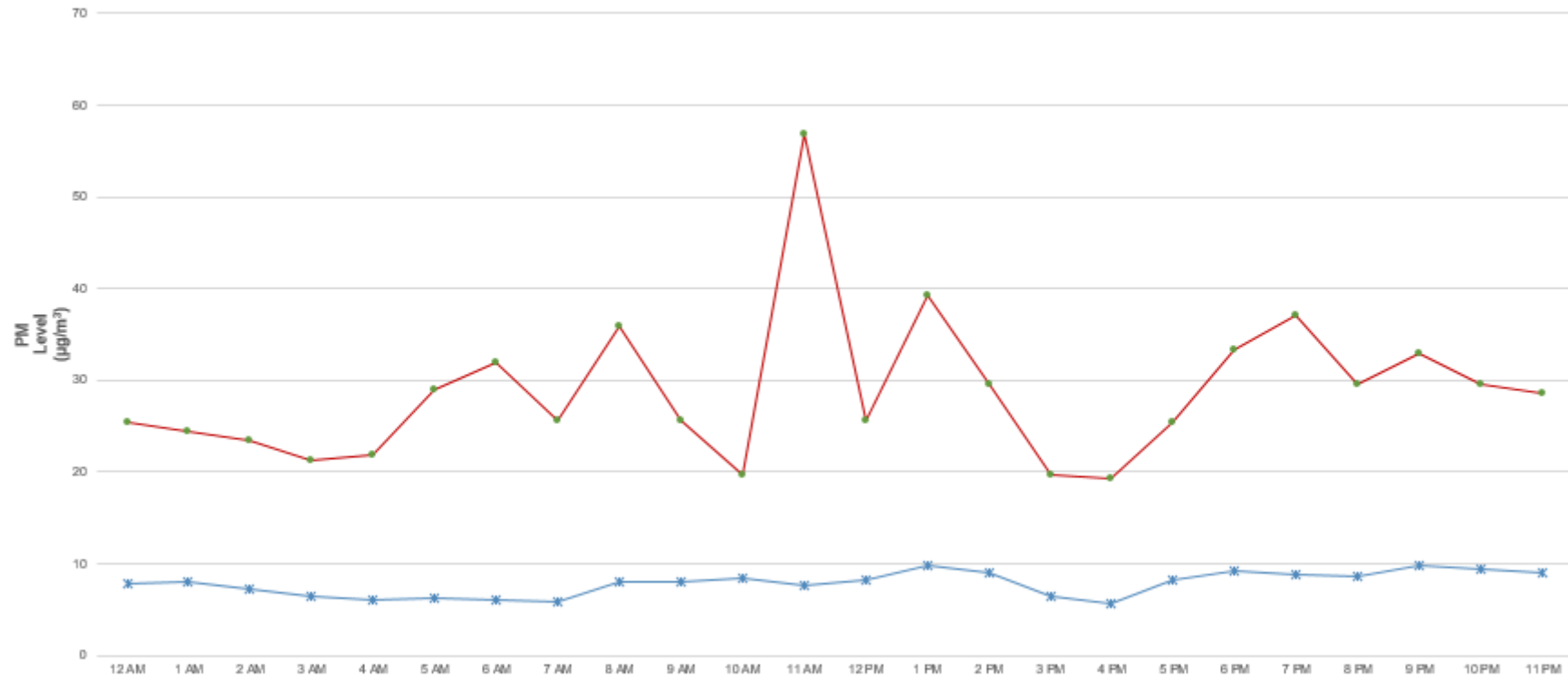




ACOUSTIC LOGIC

Dust Monitoring: 16/03/2022

Average of pm2_5mc Average of pm10mc

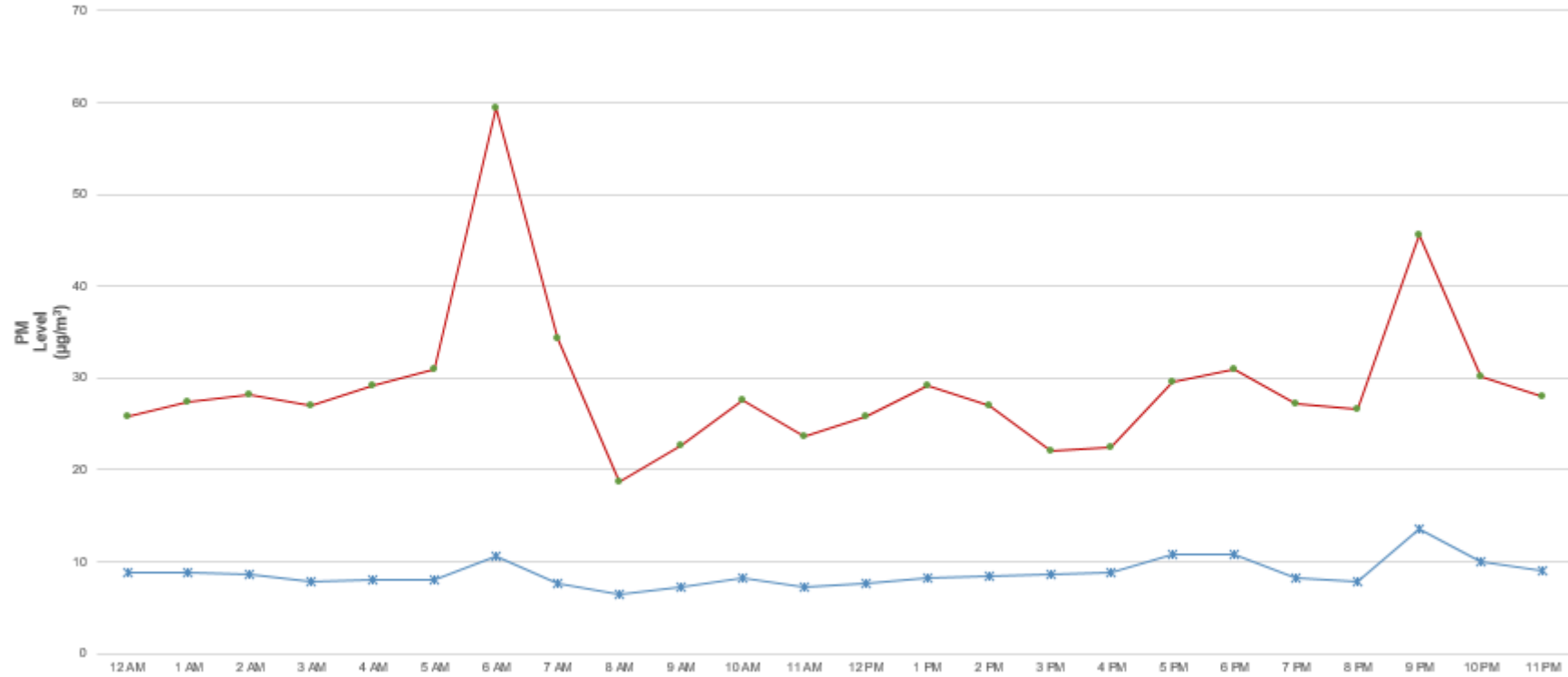




ACOUSTIC LOGIC

Dust Monitoring: 17/03/2022

Average of pm2_5mc Average of pm10mc

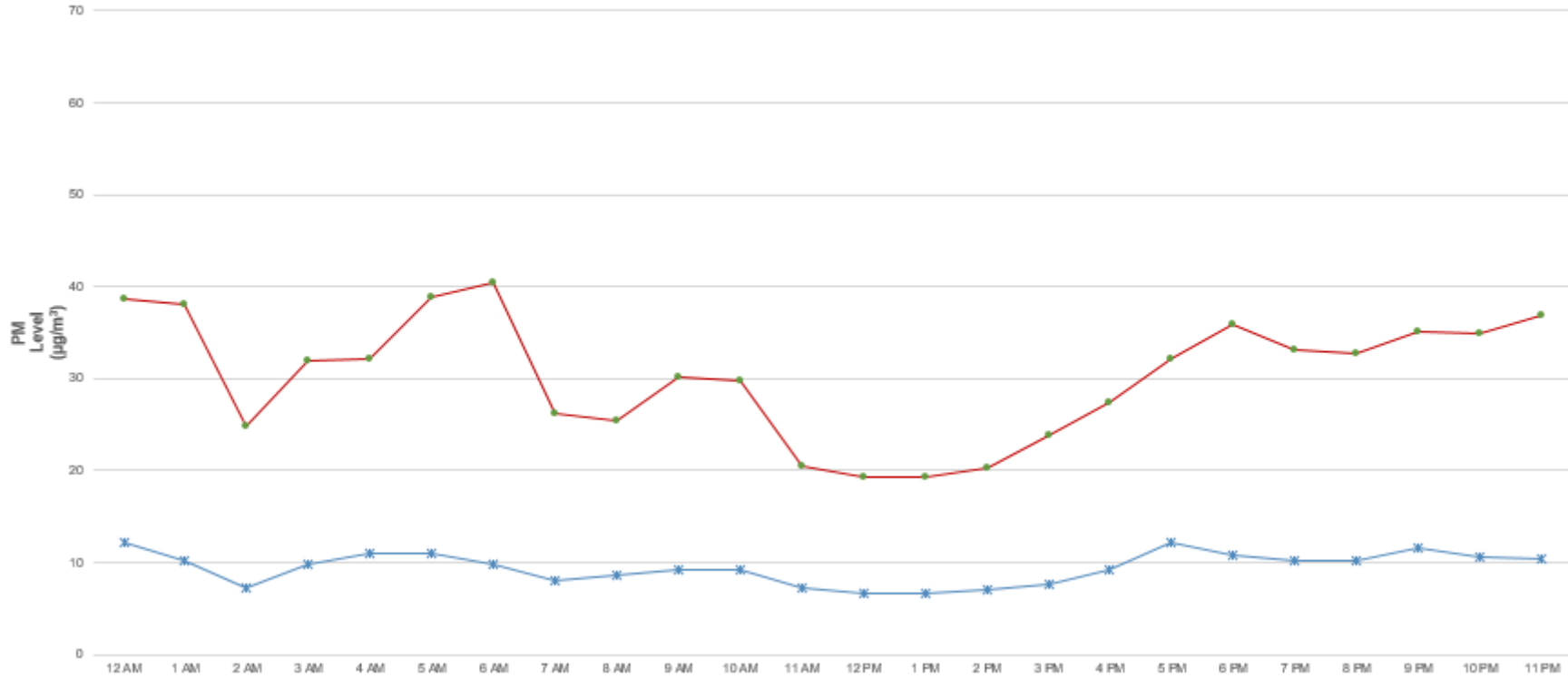




ACOUSTIC LOGIC

Dust Monitoring: 18/03/2022

Average of pm2_5mc Average of pm10mc

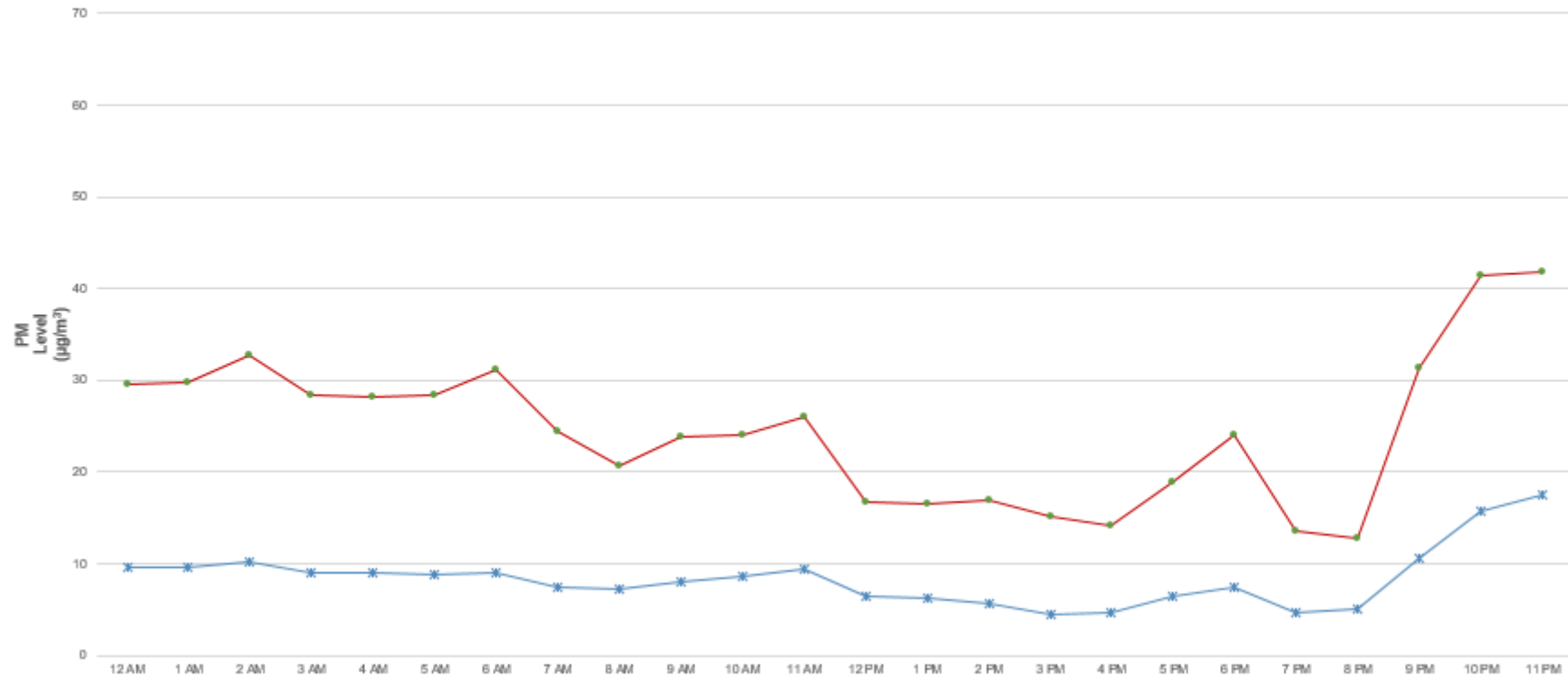




ACOUSTIC LOGIC

Dust Monitoring: 19/03/2022

Average of pm2_5mc Average of pm10mc

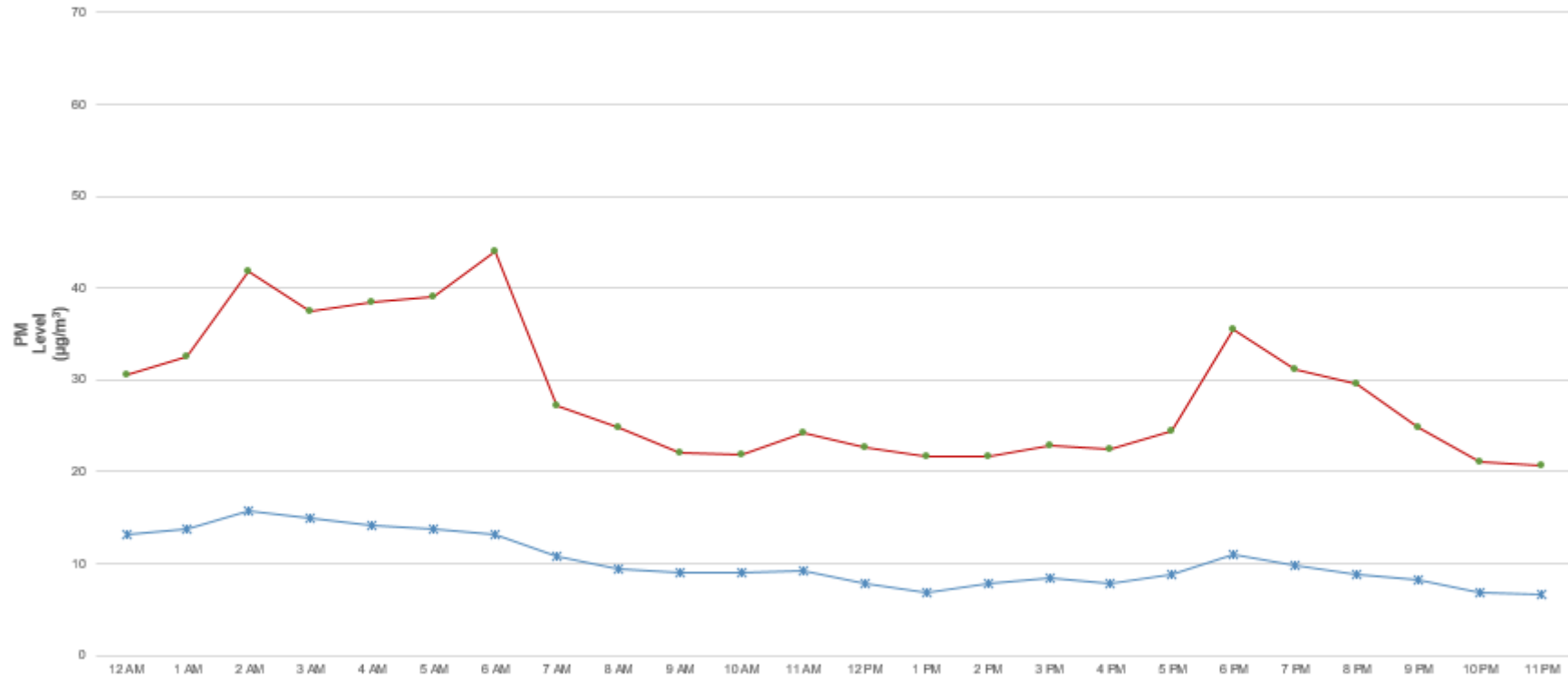




ACOUSTIC LOGIC

Dust Monitoring: 20/03/2022

Average of pm2_5mc Average of pm10mc

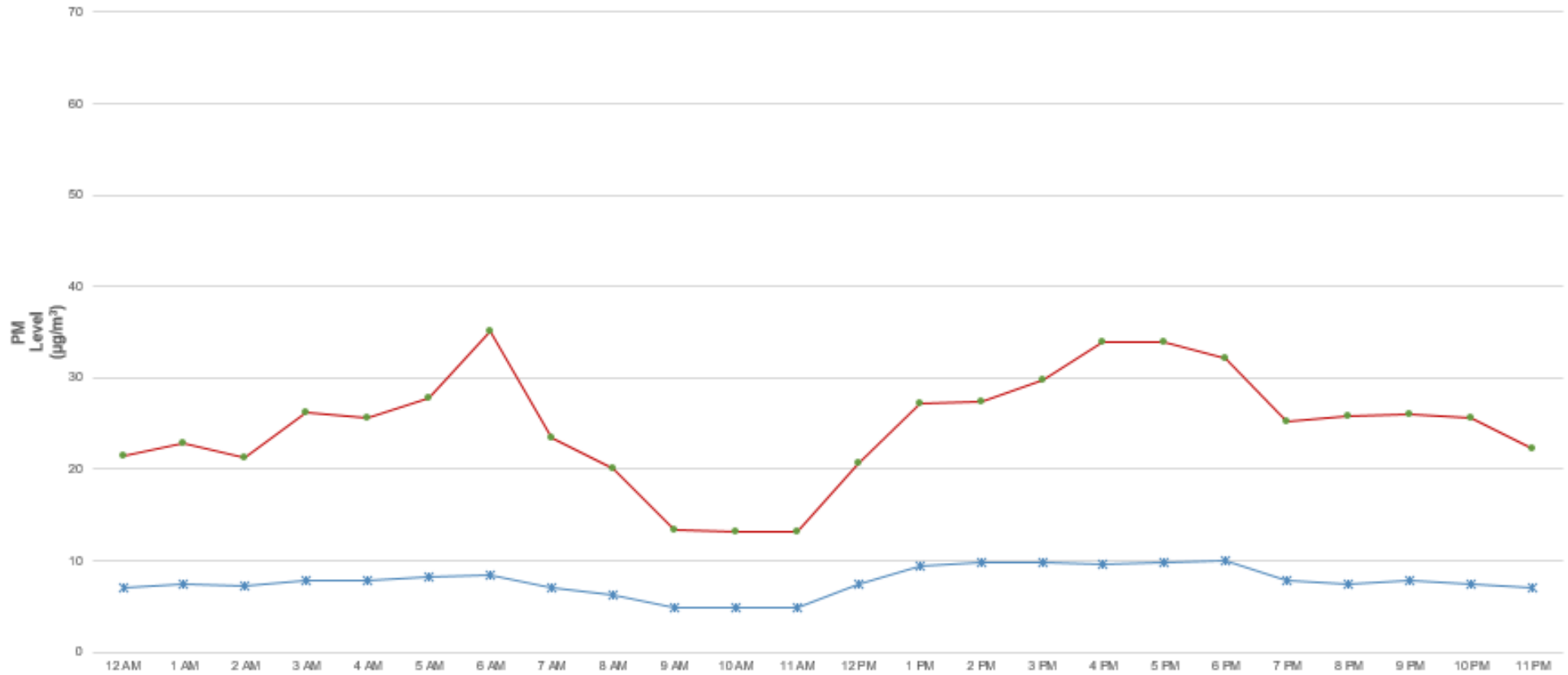




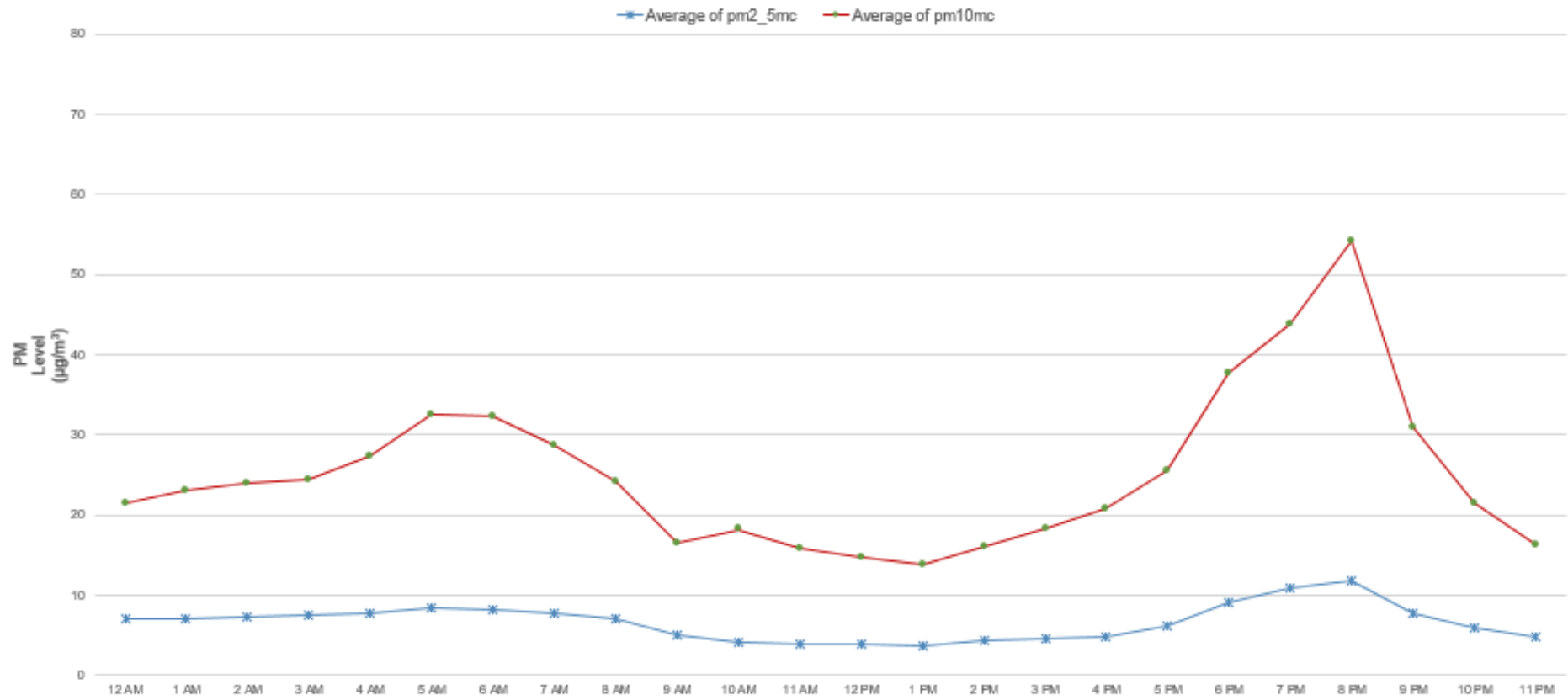
ACOUSTIC LOGIC

Dust Monitoring: 21/03/2022

Average of pm2_5mc Average of pm10mc

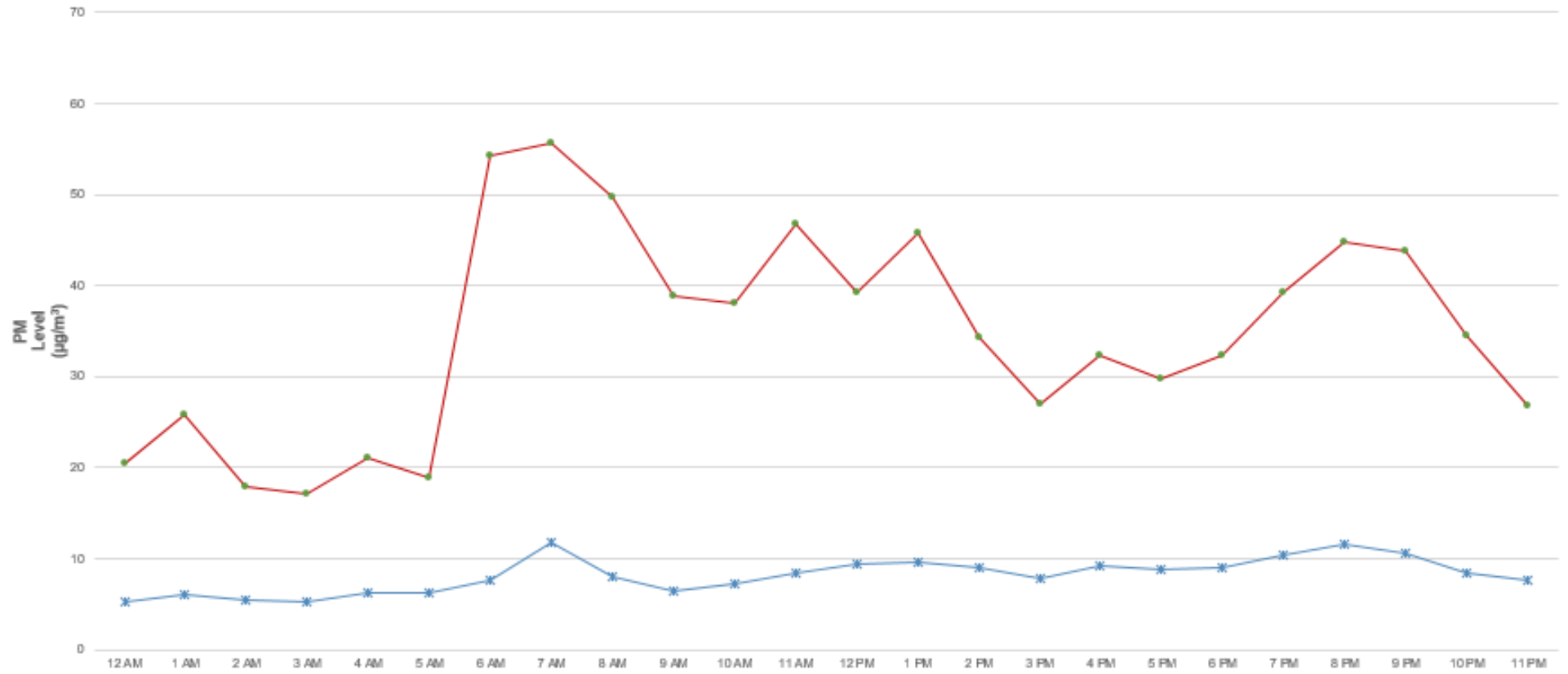


Dust Monitoring: 22/03/2022



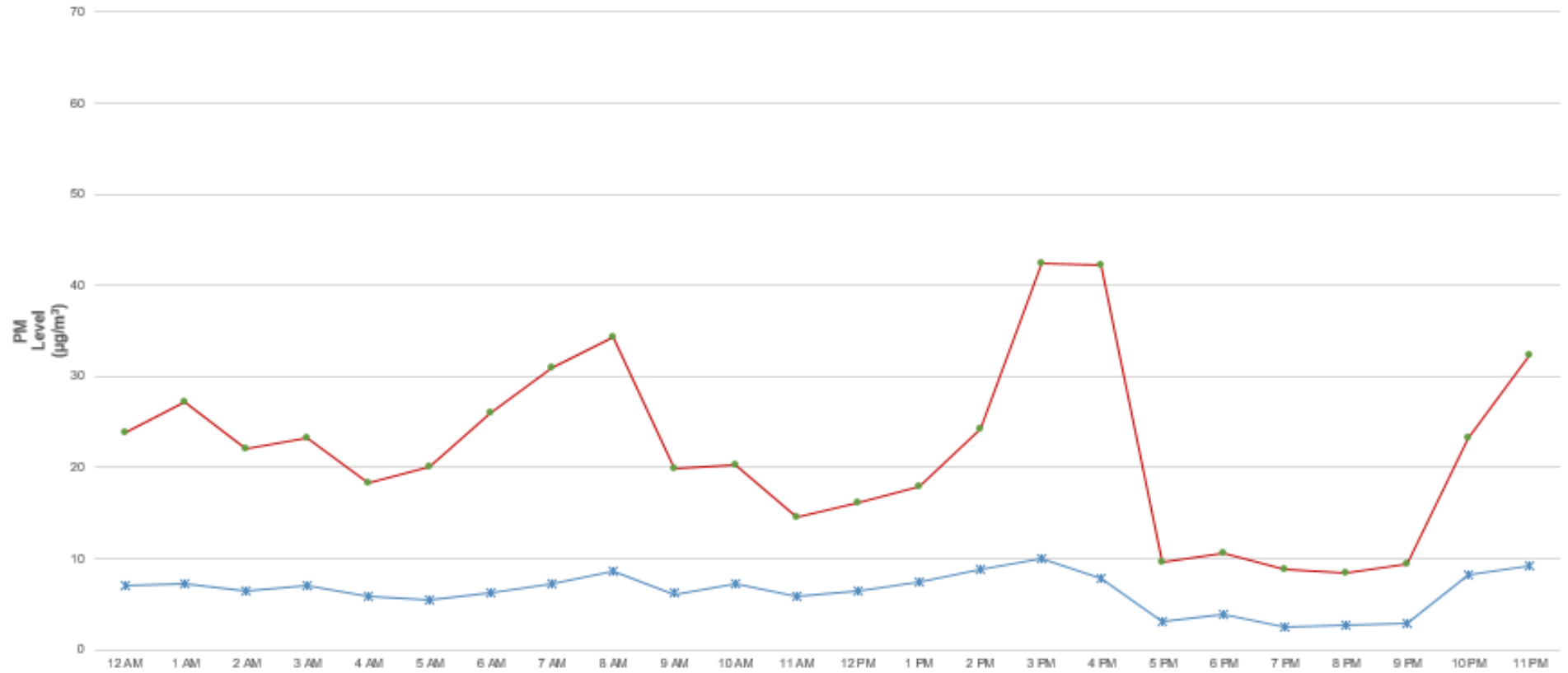
Dust Monitoring: 23/03/2022

—*— Average of pm2_5mc — Average of pm10mc



Dust Monitoring: 24/03/2022

Average of pm2_5mc Average of pm10mc

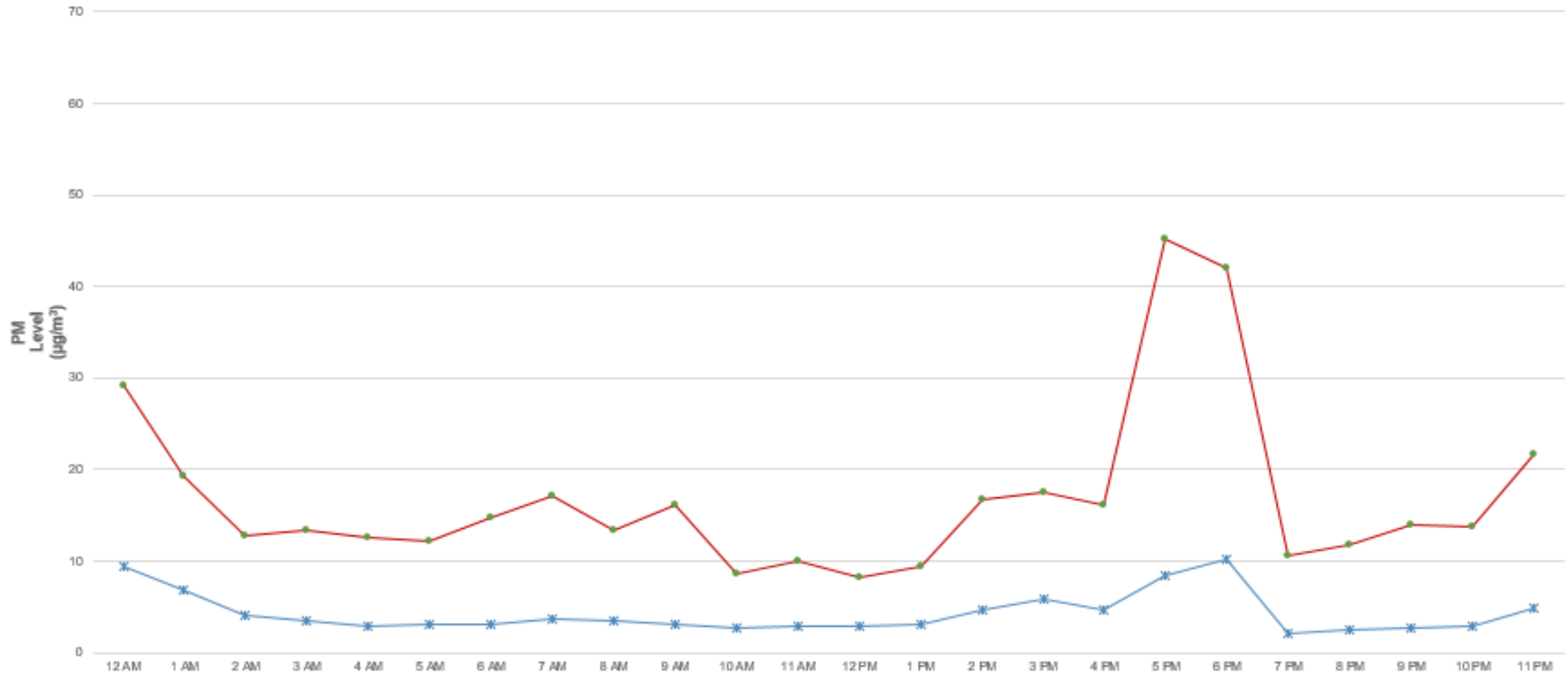




ACOUSTIC LOGIC

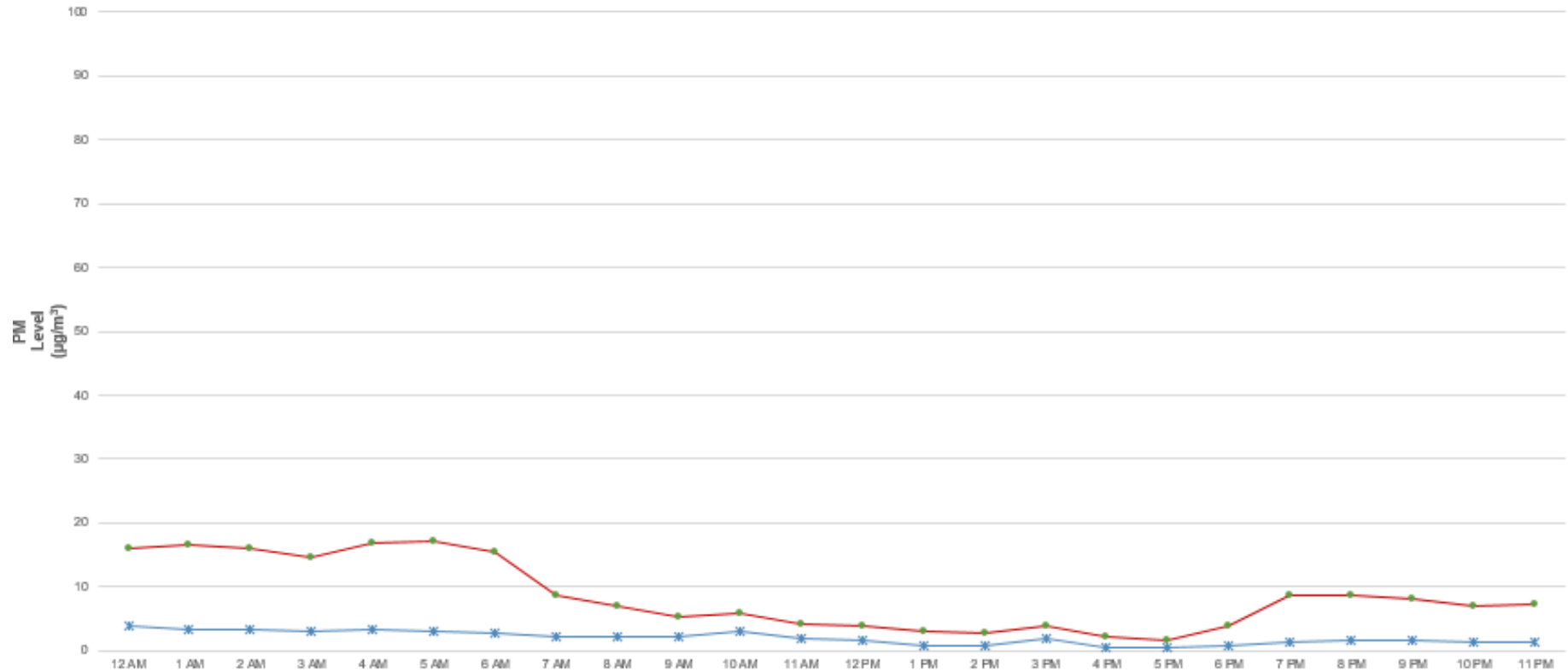
Dust Monitoring: 25/03/2022

Average of pm2_5mc Average of pm10mc



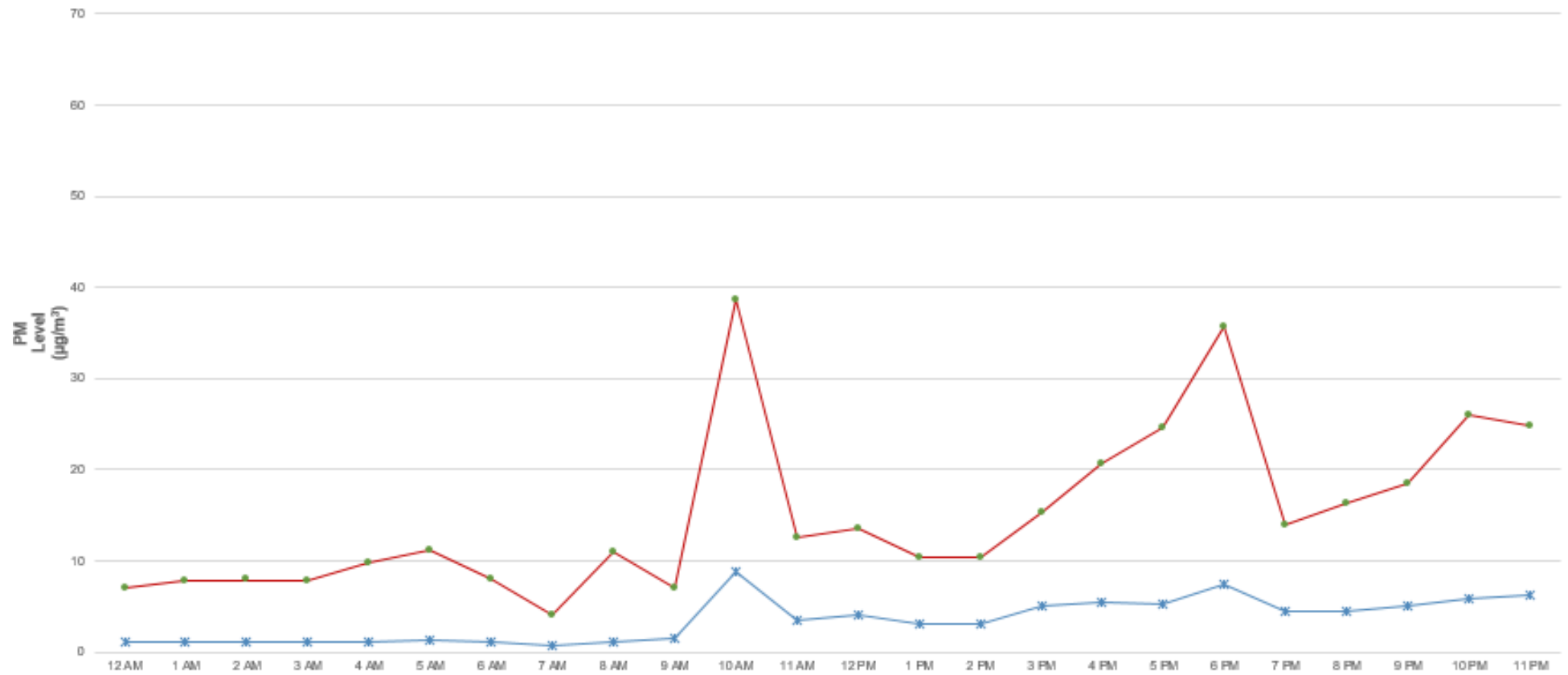
Dust Monitoring: 26/03/2022

—*— Average of pm2_5mc —*— Average of pm10mc

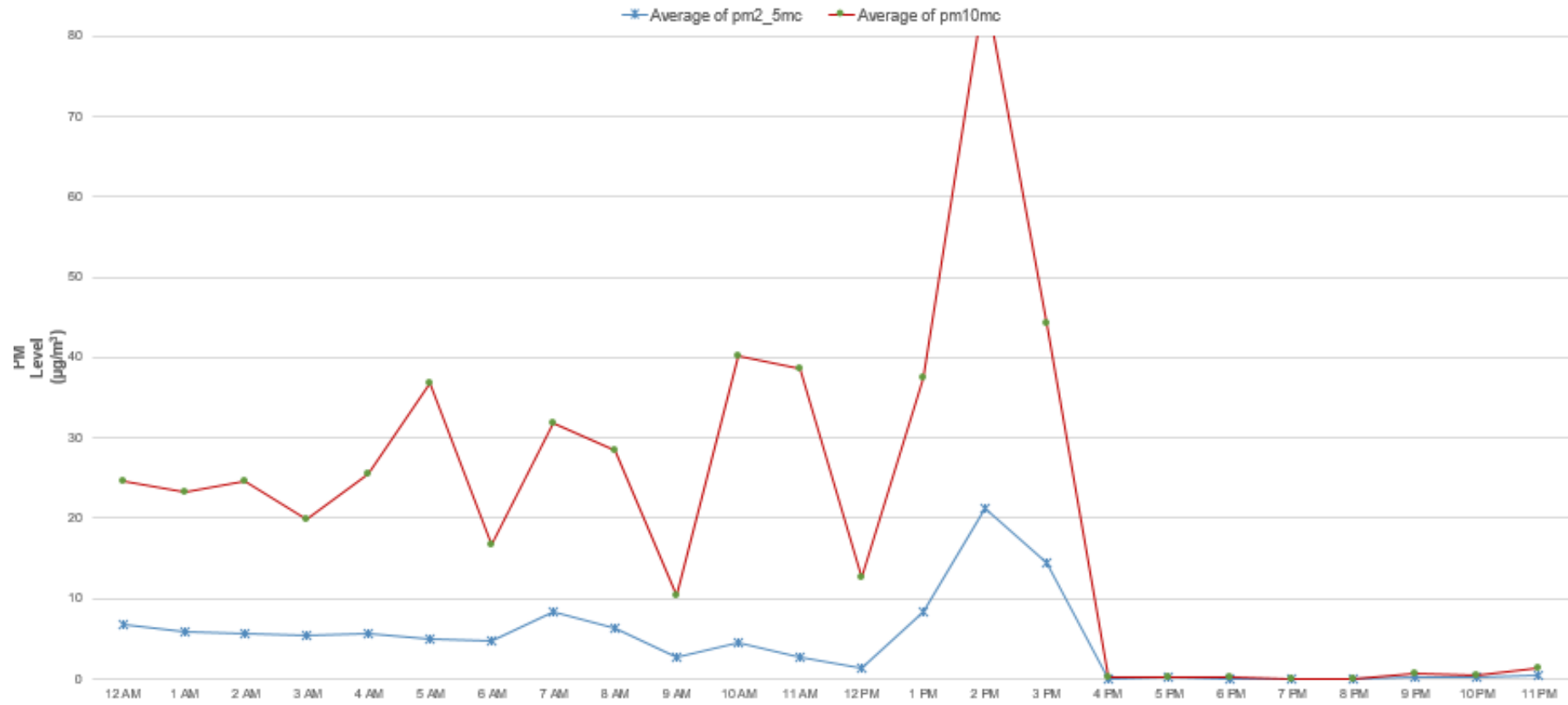


Dust Monitoring: 27/03/2022

Average of pm2_5mc Average of pm10mc

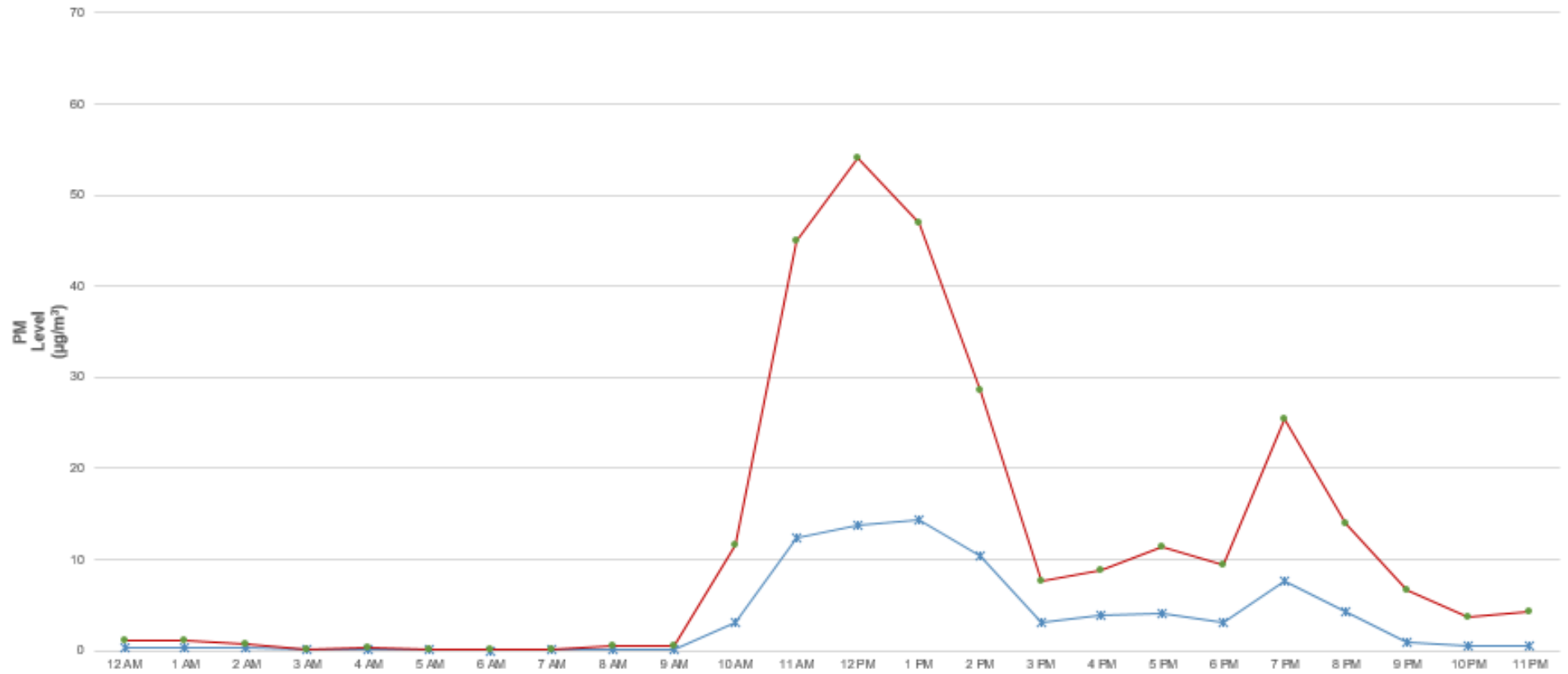


Dust Monitoring: 28/03/2022



Dust Monitoring: 29/03/2022

Average of pm2_5mc Average of pm10mc

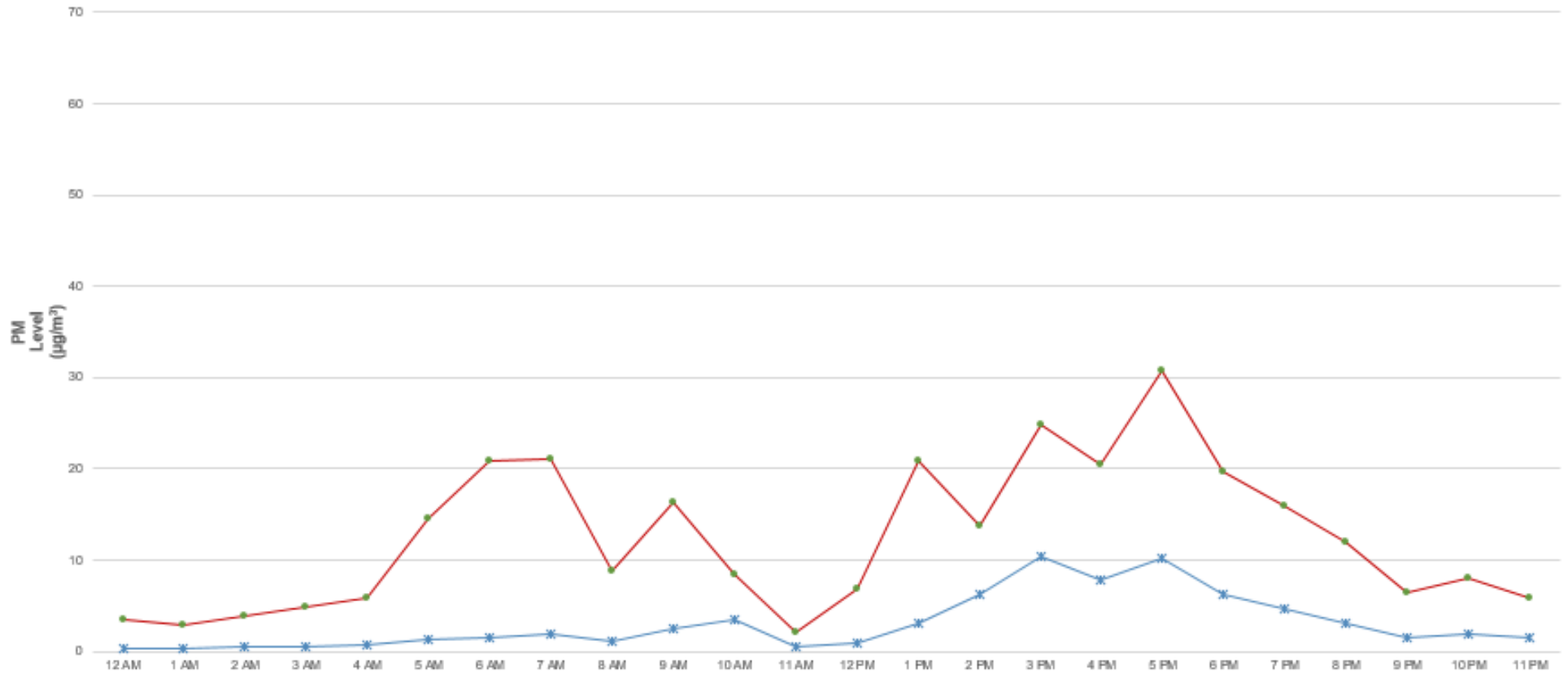




ACOUSTIC LOGIC

Dust Monitoring: 30/03/2022

Average of pm2_5mc Average of pm10mc

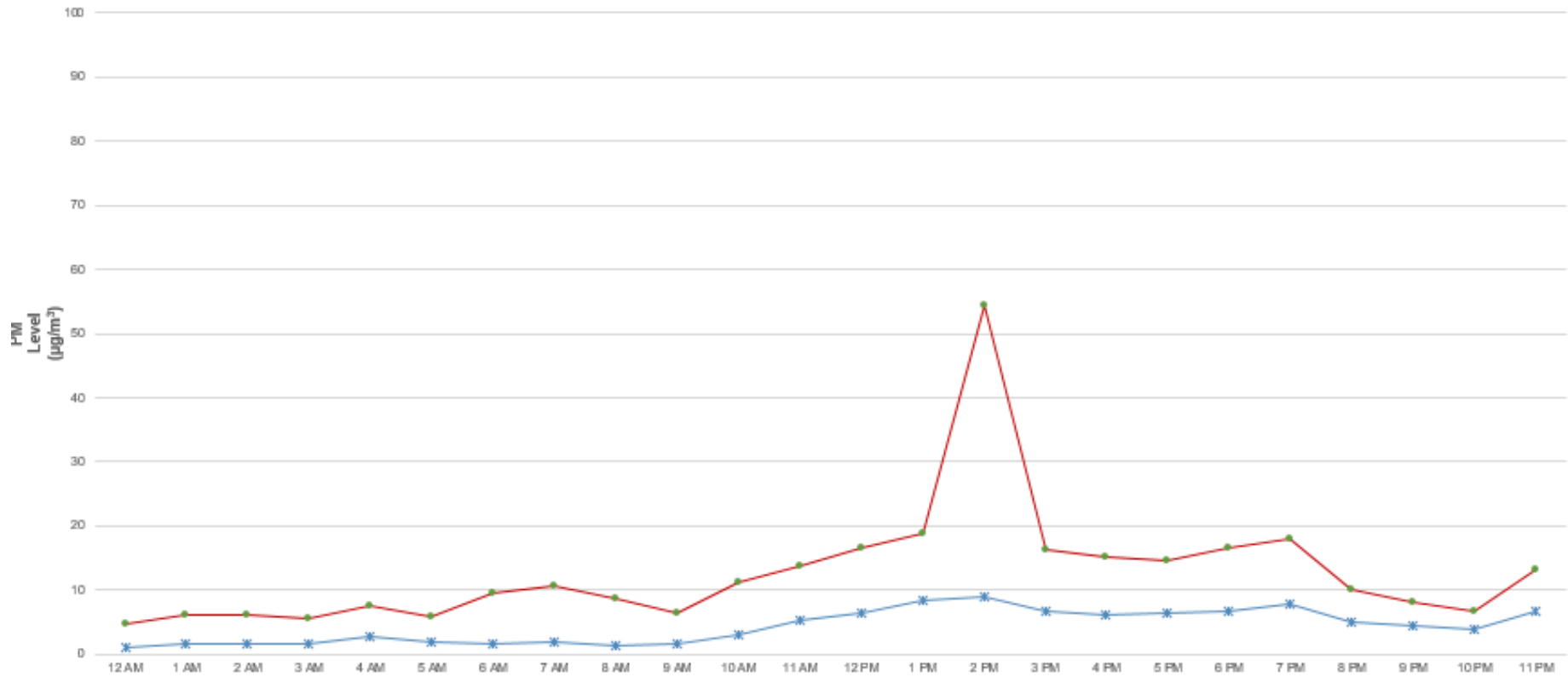




ACOUSTIC LOGIC

Dust Monitoring: 31/03/2022

—*— Average of pm2_5mc —*— Average of pm10mc



APPENDIX 4 – SITE PHOTO OF MONITORING LOCATION

