

Noise and Dust Monitoring Report

Project Ref.: 20543

Period: 01 April 2024 to 30 April 2024

Site Address:

100 Gray's Inn Road, London

For:

Erith Contractors Ltd

Erith House,

Queen Street

Erith

DA8 1RP

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Date	Document No./Revision version	Comments
11 May 2024	20239.SummaryReport202404	Noise/vibration/dust data – report generated

Introduction:

Environmental Sensors Ltd. has been appointed by Erith Contractors Ltd. to undertake noise/dust monitoring at the 100 Gray's Inn Road, London.

This monitoring report presents data for the period from 01 April 2022 to 30 April 2024 and it is marked as 20543.SummaryReport202404.

Monitoring Locations:

Noise and dust monitors have been installed on site as per site-plan attached below.



Figure 1 Indicative Site Plan (ref. Google Maps)

The locations have been marked as:

- L1: Site Courtyard
- L2: Clerkenwell Rd
- L3: Gray's Inn Rd
- L4: East side

The vibration monitors have been installed in the location as per site plan below:



Figure 2 Indicative Site Plan with vibration monitoring locations (ref. Google Maps)

Equipment:

The following equipment has been used during the survey:

- 4No. Convergence Instruments Class 1 noise data loggers
- 4No. PM10 monitors
- 3No Convergence Instruments VSEW vibration data loggers

Thresholds and Alerts:

Noise and dust alerts trigger levels have been agreed and presented below.

Noise Trigger Levels:

Location 1 and 4

	Receiver of Alert	Trigger level and integration period	
RED	Steven.Gillam@erith.com	78dB LAeq 1 hour	75dB LAeq 10 hours (Monday – Friday)
		75dB LAeq 1 hour	72dB LAeq 5 hours (Saturday)

Location 2 & Location 3

	Receiver of Alert	Trigger level and integration period	
RED	Steven.Gillam@erith.com	83dB LAeq 1 hour	82dB LAeq 10 hours (Monday – Friday)
		78dB LAeq 1 hour	75dB LAeq 5 hours (Saturday)

Dust Trigger Levels (PM10):

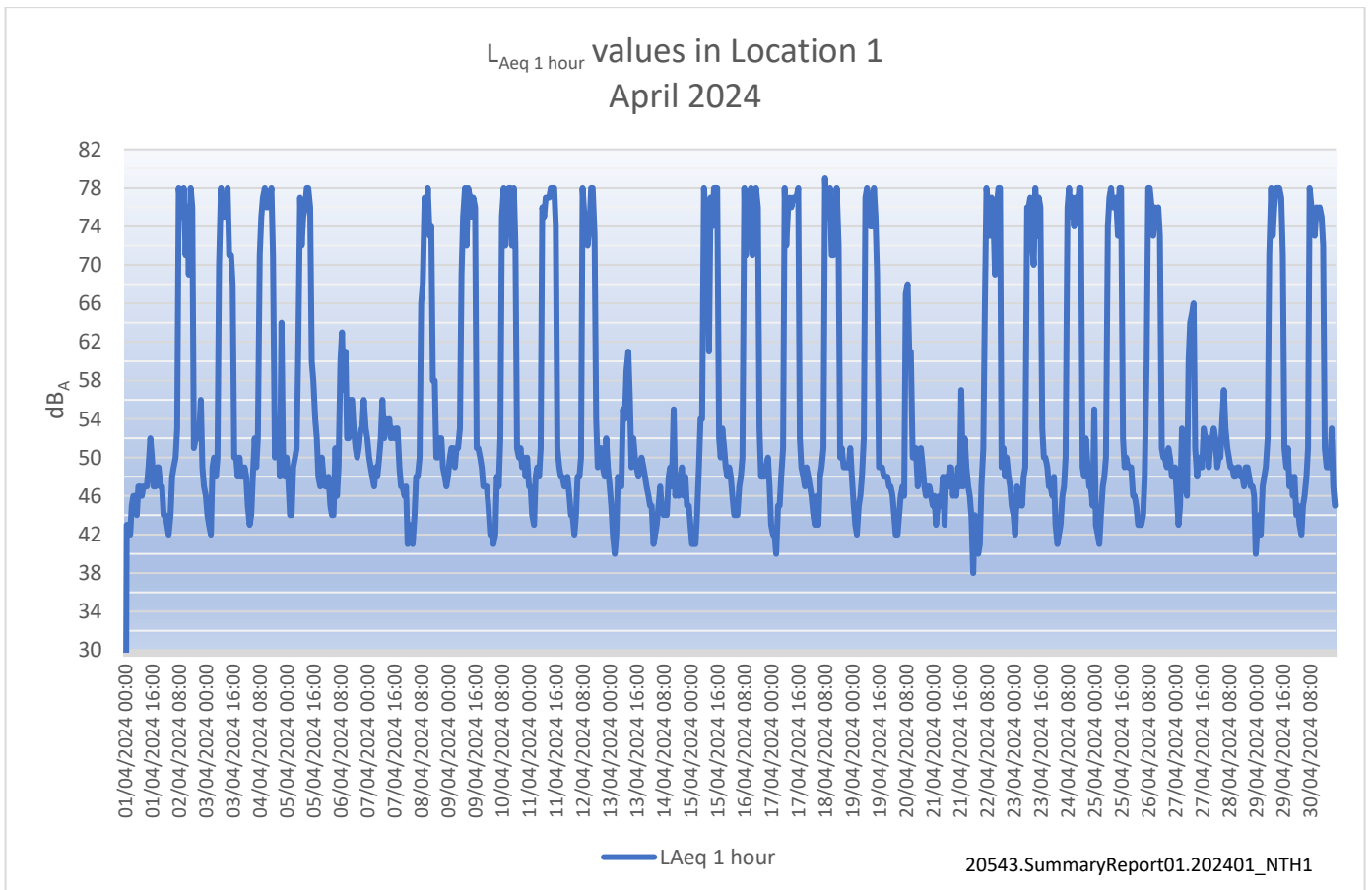
	Receiver of Alert	Trigger level and integration period
RED	Steven.Gillam@erith.com	190 ug/m3 1hour

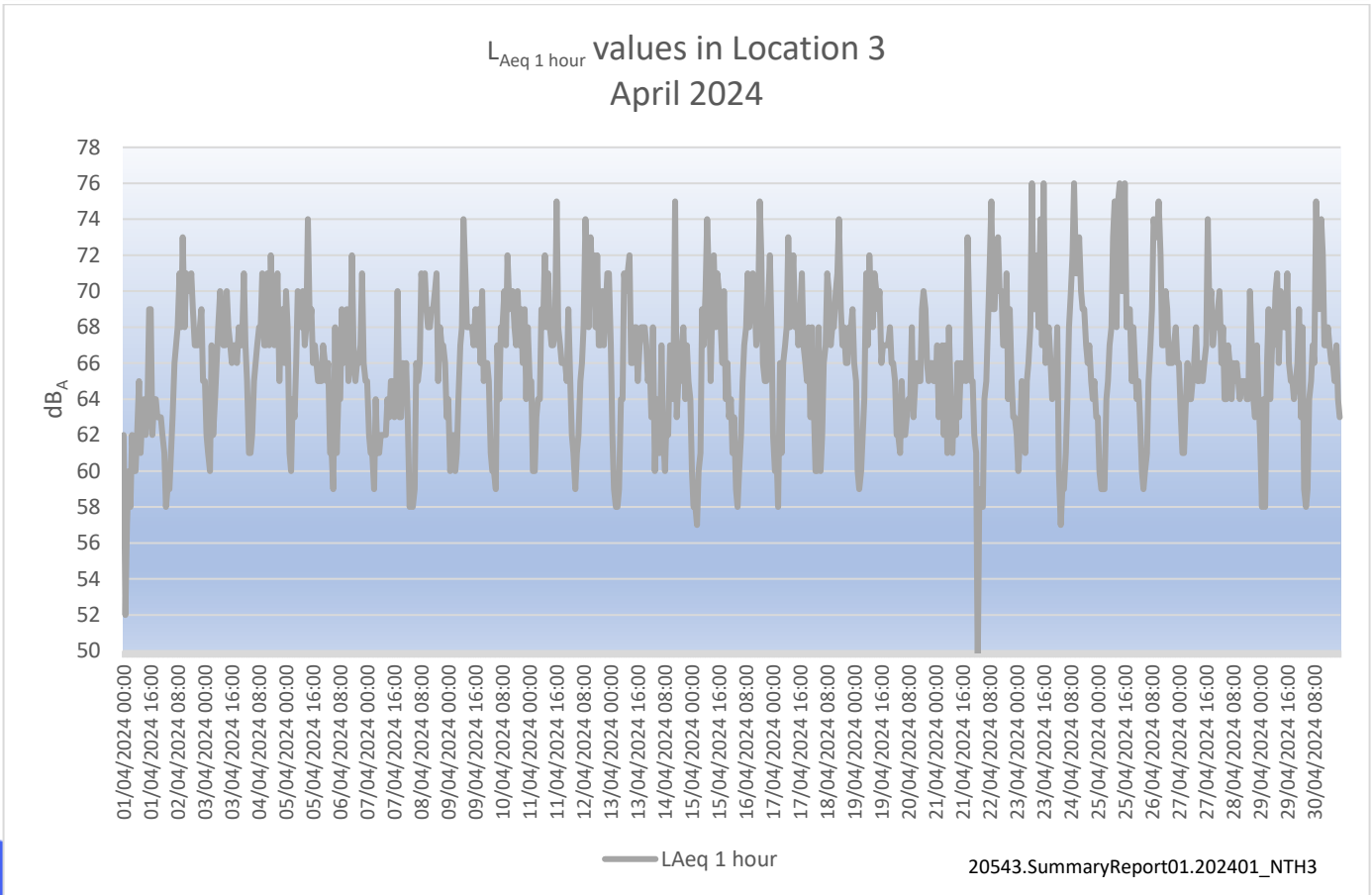
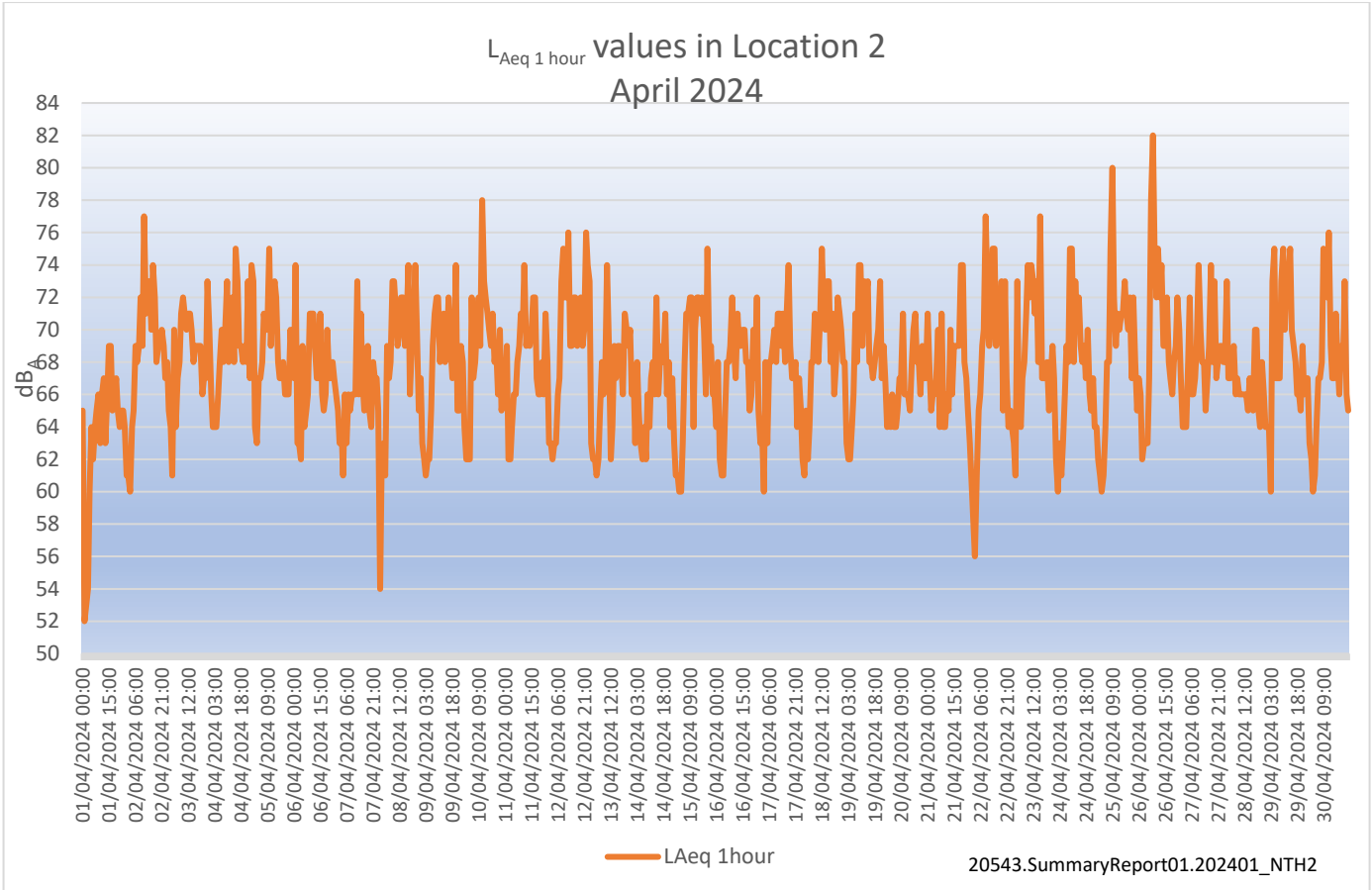
Monitoring Results:

Noise Survey

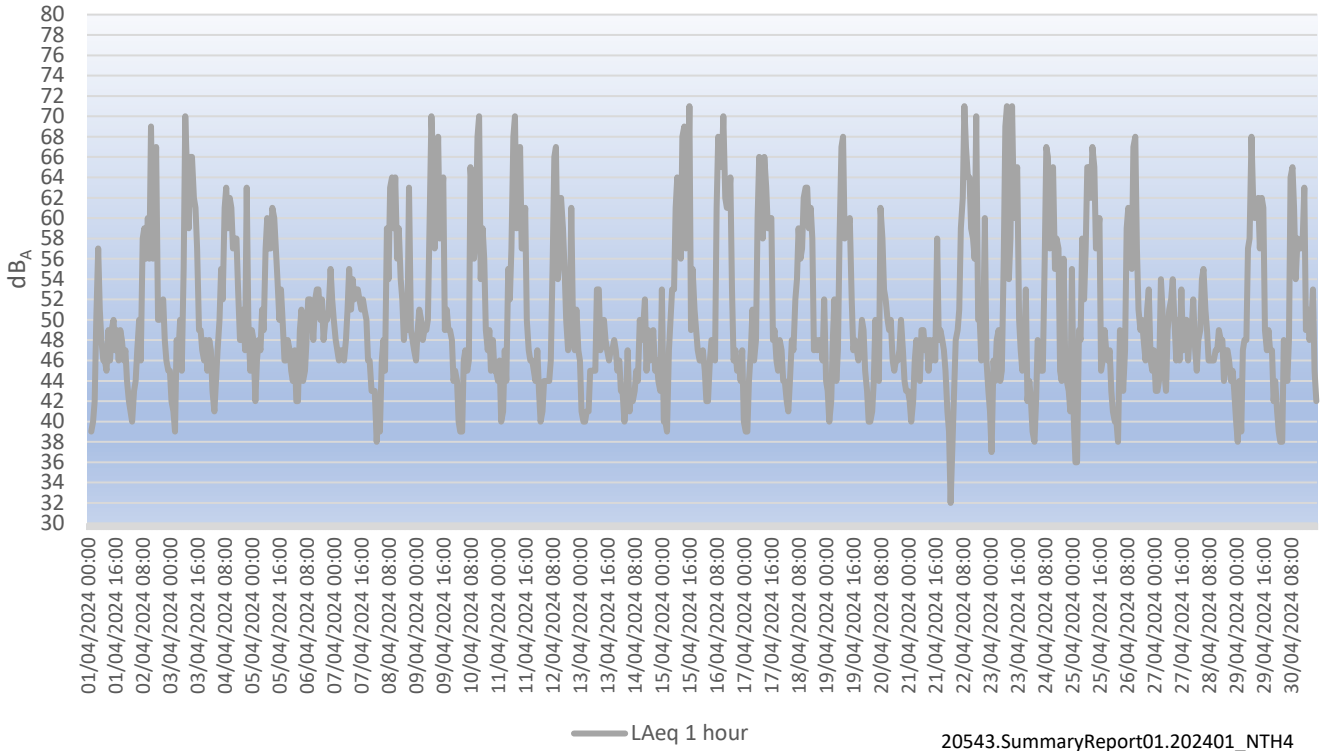
Noise monitoring results for the period between 01 April 2024 and 30 April 2024 have been present in Figures: 20543.SummaryReport202404.YYYYMM_NTHx where YYYYMM represents year and month of the monitoring period while 'x' – monitoring location.

Monitoring results have been also compared against agreed criteria of maximum daily allowed level of $L_{Aeq\ 10h\ 08:00 - 18:00}$ Monday – Friday and $L_{Aeq\ 5h\ 09:00 - 14:00}$ on Saturday. These values have been presented in graphical version below.



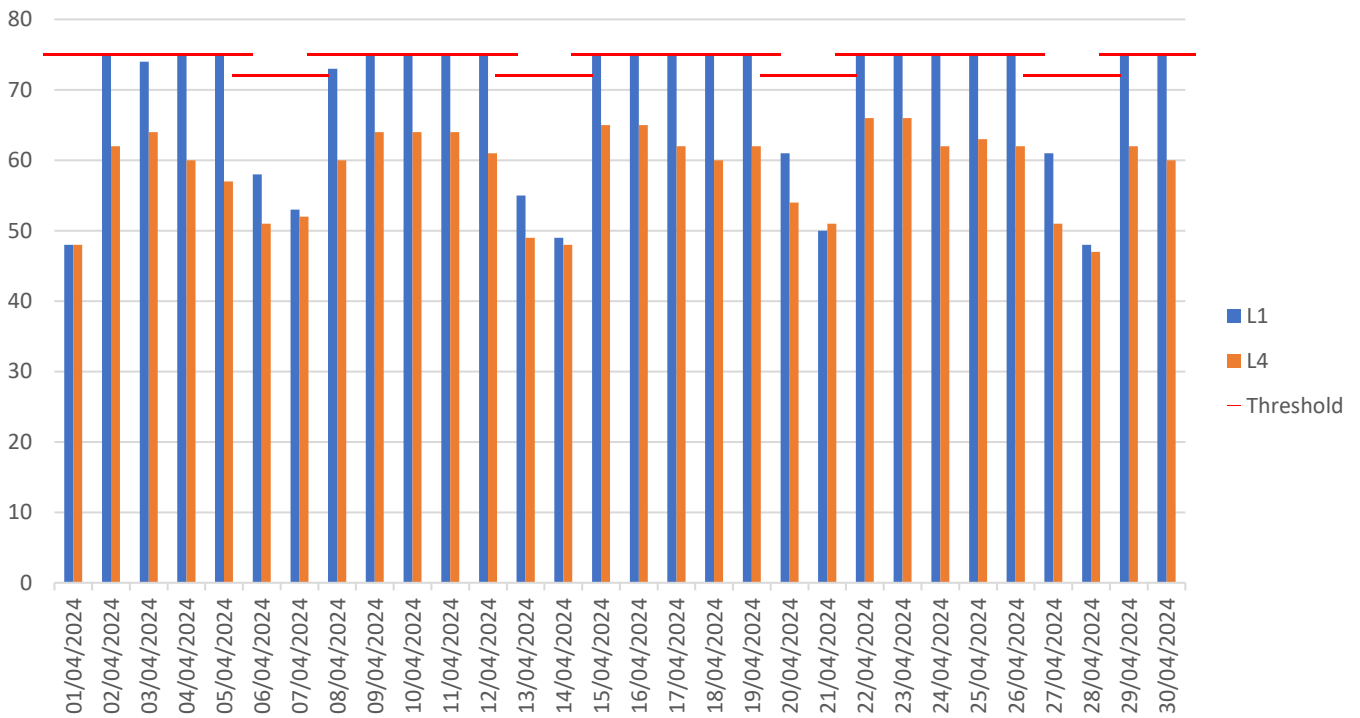


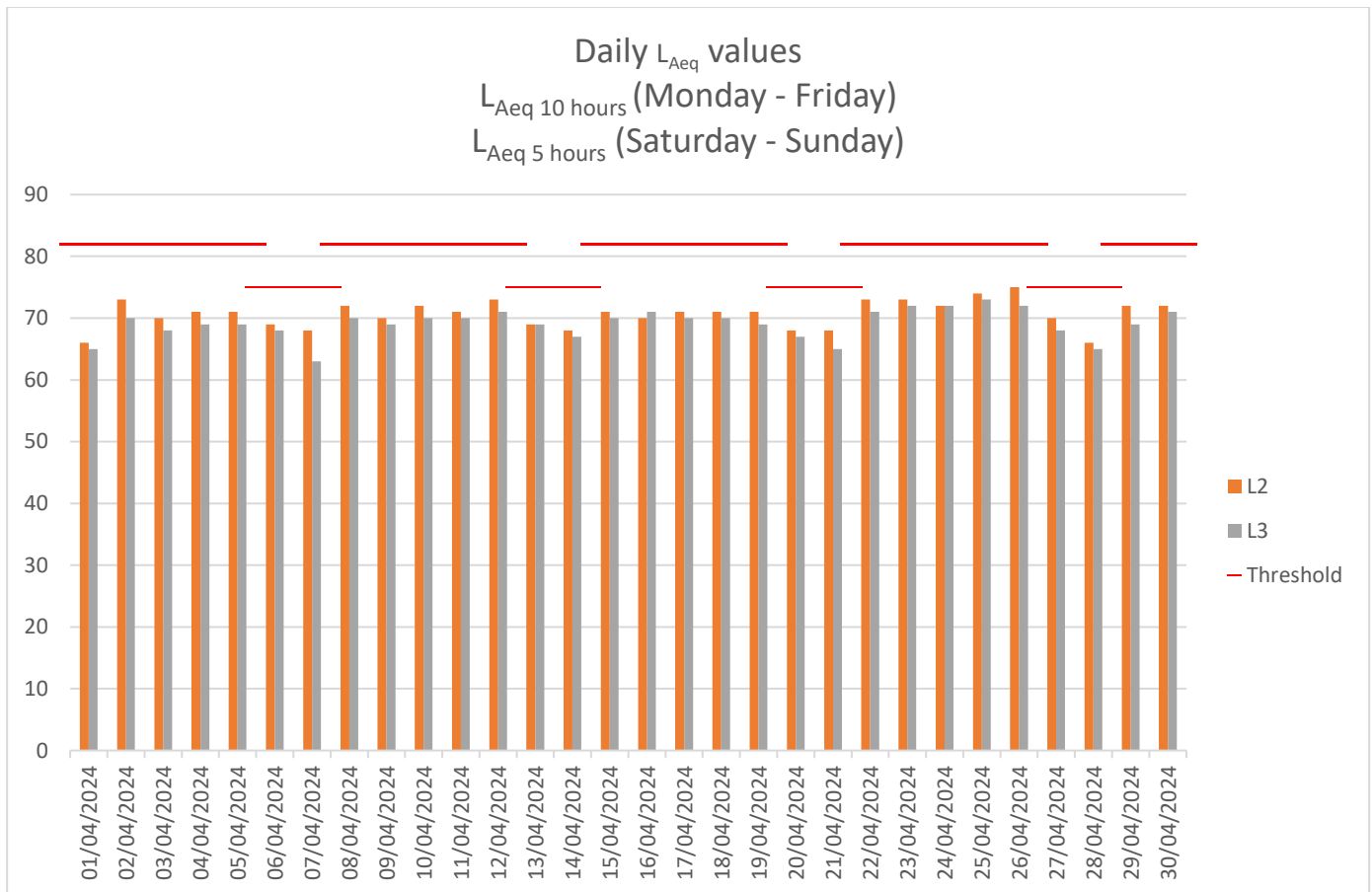
L_{Aeq} 1 hour values in Location 4
April 2024



Daily L_{Aeq} values

L_{Aeq} 10 hours (Monday - Friday)
 L_{Aeq} 5 hours (Saturday - Sunday)





It is expected that some attenuation of the construction noise will be provided due to the distance to closest sensitive receptors. The actual value will differ depending on location of noise source and the receiver. As the monitoring stations are located at the site boundary the difference between the level recorded at the monitoring station and the level at the façade of the receiver will also depend on the distance between the source and the monitoring station.

The noise levels from the point source reduce by 6dB by doubling the distance as per equation:

$$Lp_{R2} = Lp_{R1} - 20 \cdot \text{Log}_{10} \left(\frac{R2}{R1} \right)$$

The distance between monitoring station in Location 1 and closest sensitive receiver's façade is at least 10m while the distance between the source and the monitoring station is approx. 10m.

The distance in Location 2 and Location 3 is approx. 20 m. from the monitoring station and the receiver.

Table 1 presents the calculated attenuation of sound due to the distance between microphone (monitoring location) and receiver with consideration of the distance separating the sound source and the monitoring location.

Distance source to microphone	Distance in meters between monitoring location and receiver													
	5	6	7	8	9	10	12	14	16	18	20	25	30	35
	Attenuation of sound due to distance													
5m	6	6.8	7.6	8.3	8.9	9.5	10.6	11.6	12.5	13.3	14	15.6	16.9	18.1
10m	3.5	4.1	4.6	5.1	5.6	6	6.8	7.6	8.3	8.9	9.5	10.9	12	13.1
15m	2.5	2.9	3.3	3.7	4.1	4.4	5.1	5.7	6.3	6.8	7.4	8.5	9.5	10.5
20m	1.9	2.3	2.6	2.9	3.2	3.5	4.1	4.6	5.1	5.6	6	7	8	8.8
25m	1.6	1.9	2.1	2.4	2.7	2.9	3.4	3.9	4.3	4.7	5.1	6	6.8	7.6
30m	1.3	1.6	1.8	2.1	2.3	2.5	2.9	3.3	3.7	4.1	4.4	5.3	6	6.7
35m	1.2	1.4	1.6	1.8	2	2.2	2.6	2.9	3.3	3.6	3.9	4.7	5.4	6

Table 1 The relation of sound reduction to distance of the source and receiver towards monitoring position

The highlighted columns represent the specific site worst case scenario where receivers are around 10m and 20m away from the site.

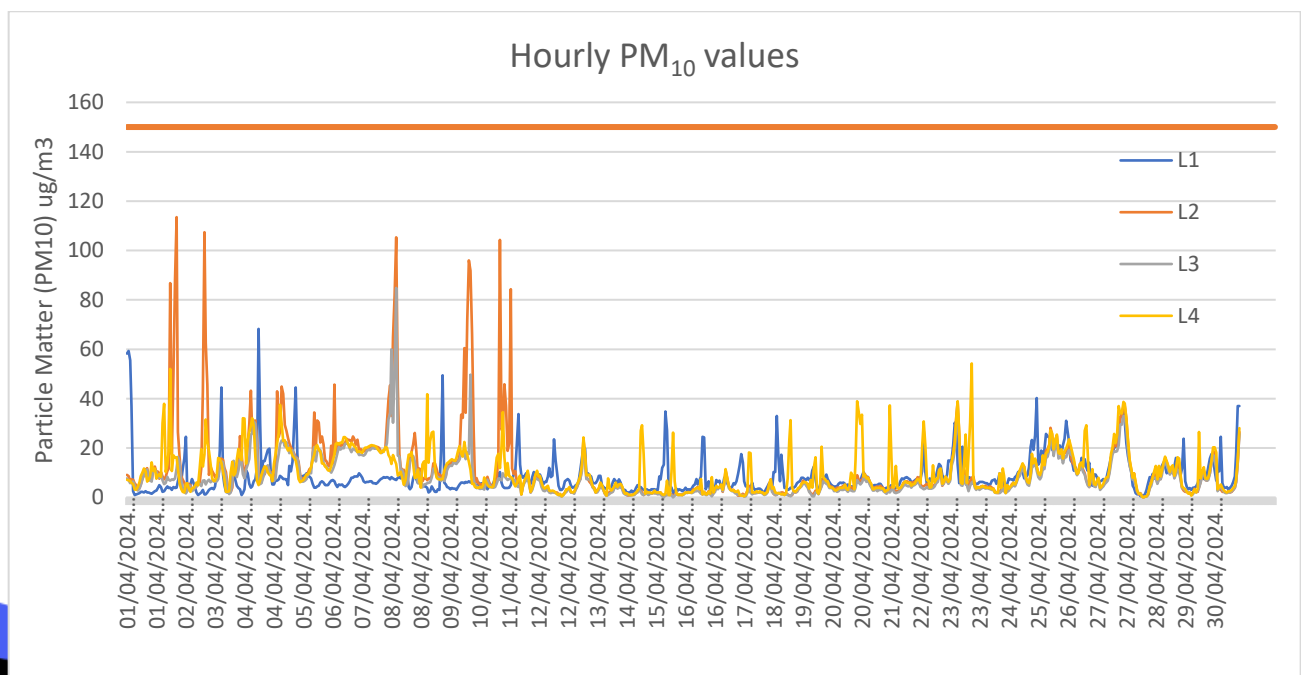
Dust Survey

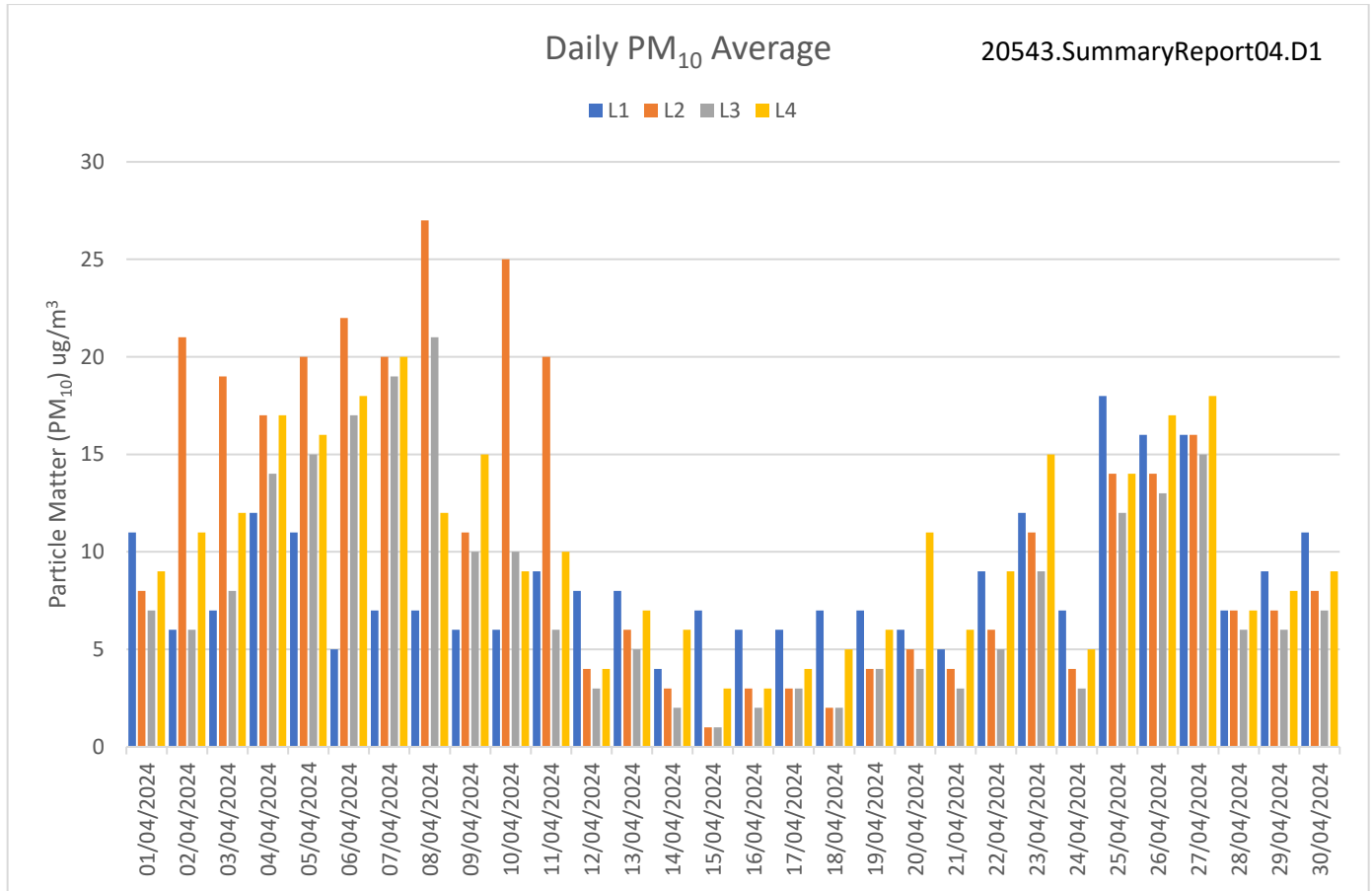
Dust monitoring summary results for the period between 01 April 2024 and 30 April 2024 have been presented in Figures:

- 20543.SummaryReport202404.D_YYYYMM_hourly with summary 1 hour averages, where MMM represents the year and MM month of the reporting data.
- 20543.SummaryReport202404.D1_Daily with summary 1 hour averages.

PM10 values were compared against the action threshold level of 190 ug/m³ 1hour average.

Additional criterion of 150 ug/m³ 15-minut average was set as a preventive pre-action trigger. No specific action is required to be undertaken on 15 min exceedances. This level has also been provided for easier comparison with other data sources.





A summary of PM10 values has been present in the table below.

Date	Max (µg/m3)				Min (µg/m3)				Average (µg/m3)				Number of Exceedance ≥ 190 µg/m3(1 Hour Mean)				Number of Exceedance ≥ 150 µg/m3(Trigger Level)				Data Capture			
	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4
01/04/2024	59	12	12	30	1	3	3	3	11	8	7	9	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
02/04/2024	25	114	16	52	1	2	2	2	6	21	6	11	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
03/04/2024	45	107	15	32	1	2	1	2	7	19	8	12	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
04/04/2024	68	43	31	32	1	6	5	5	12	17	14	17	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
05/04/2024	45	45	23	38	5	7	6	6	11	20	15	16	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
06/04/2024	7	46	22	24	4	13	10	11	5	22	17	18	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
07/04/2024	10	25	20	22	6	18	17	18	7	20	19	20	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
08/04/2024	11	105	85	20	3	5	4	4	7	27	21	12	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
09/04/2024	50	17	15	42	2	7	5	7	6	11	10	15	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
10/04/2024	8	96	50	22	3	5	3	4	6	25	10	9	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
11/04/2024	34	104	10	35	4	1	1	1	9	20	6	10	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
12/04/2024	24	9	8	11	3	1	0	1	8	4	3	4	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
13/04/2024	21	24	21	24	4	1	1	1	8	6	5	7	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
14/04/2024	8	5	5	29	2	1	1	1	4	3	2	6	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
15/04/2024	35	2	2	26	2	1	0	1	7	1	1	3	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
16/04/2024	25	4	4	8	2	1	1	1	6	3	2	3	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
17/04/2024	18	11	10	18	3	1	0	1	6	3	3	4	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
18/04/2024	33	7	5	31	2	1	1	1	7	2	2	5	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %

Date	Max (µg/m3)				Min (µg/m3)				Average (µg/m3)				Number of Exceedance ≥ 190 µg/m3(1 Hour Mean)				Number of Exceedance ≥ 150 µg/m3(Trigger Level)				Data Capture			
	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4	Location 1	Location 2	Location 3	Location 4
19/04/2024	13	8	7	21	3	1	1	2	7	4	4	6	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
20/04/2024	10	10	8	39	4	3	2	3	6	5	4	11	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
21/04/2024	8	6	5	37	4	2	2	2	5	4	3	6	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
22/04/2024	27	11	10	31	5	4	3	4	9	6	5	9	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
23/04/2024	30	39	34	54	6	3	3	4	12	11	9	15	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
24/04/2024	10	7	6	12	4	2	2	2	7	4	3	5	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
25/04/2024	40	28	24	27	8	6	5	6	18	14	12	14	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
26/04/2024	31	25	23	29	6	4	4	5	16	14	13	17	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
27/04/2024	37	37	33	39	5	4	3	4	16	16	15	18	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
28/04/2024	14	16	14	17	1	0	0	0	7	7	6	7	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
29/04/2024	24	16	13	27	3	2	1	1	9	7	6	8	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %
30/04/2024	37	27	26	28	3	2	2	2	12	8	7	9	0	0	0	0	0	0	0	0	100 %	100 %	100 %	100 %

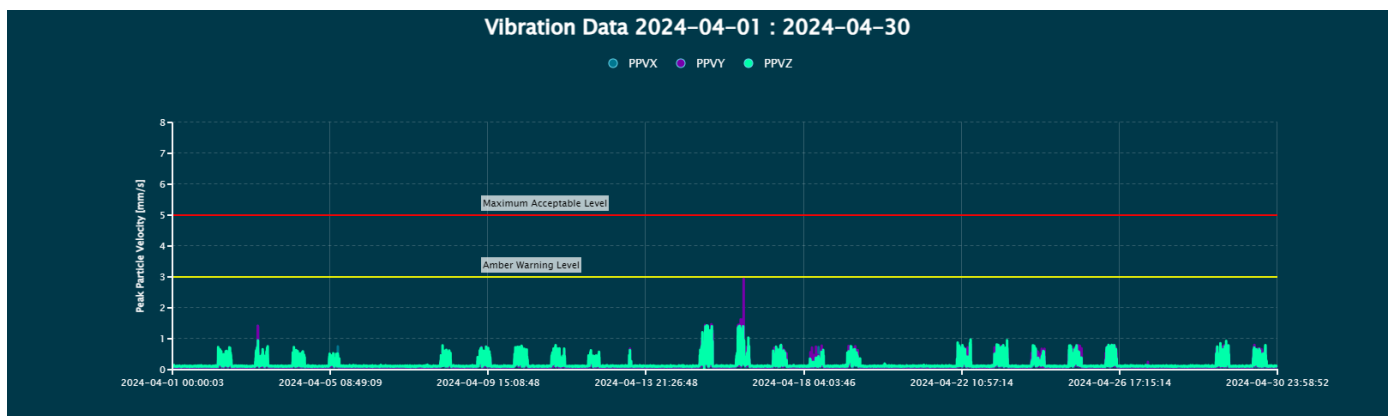
Vibration Survey

Vibration monitors have been installed in 3 locations as per site plan below.

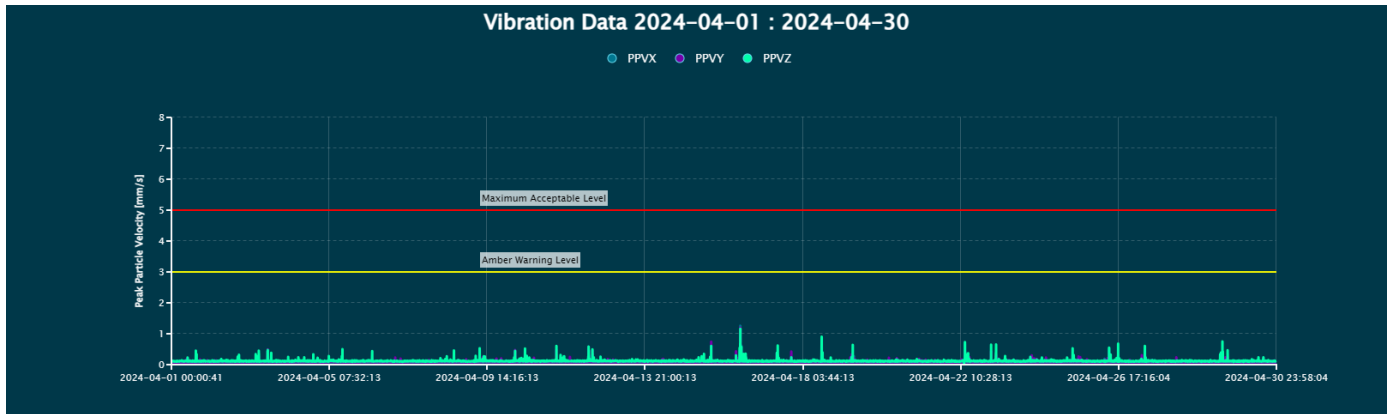


Data collected during the period were presented in the following graphs:

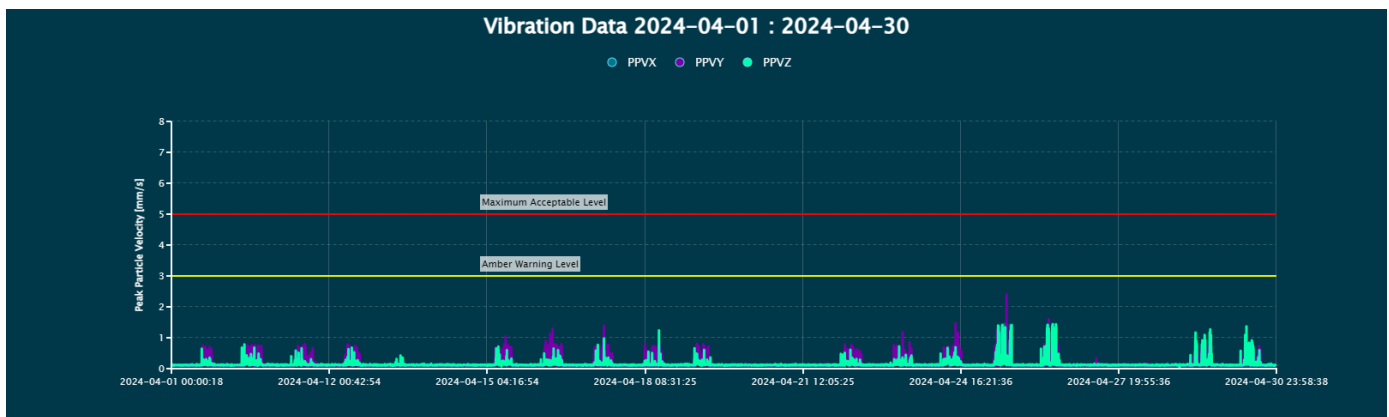
Location 1



Location 2



Location 3



List of alerts and actions undertaken.

Noise Red Trigger

No exceedances recorded of daily LAeq.

On 18/04/2024 LAeq 1hour between 08:00 and 09:00 was 79dB in Location 1, and it exceeded by 1dB.

Vibration Red Trigger

No exceedances recorded.

Dust Action Level

No exceedances recorded.

