Noise and Dust Monitoring Report

Project Ref.: 20543

Period: 01 November 2023 to 30 November 2023

Site Address:

100 Grey's Inn Road, London

For:

Erith Contractors Ltd

Erith House,

Queen Street

Erith

DA8 1RP

Environmental Sensors Ltd.
262 Cavendish Rd, SW12 0BT

Contents

Date	Document No./Revision version	Comments
10 January 2024	20239.SummaryReport202311	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 Grey's Inn Road, London.
This monitoring report presents data for the period from 01 November 2023 to 30 November 2023 and it is marked as 20543.SummaryReport202311.

Monitoring Locations:

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

Figure Indicative Sipe Plan (ref. Google Maps)

The locations have been marked as:
L1: Site Courtyard
L2: Clerkenwell Rd
L3: Grey's Inn Rd

Equipment:

The following equipment has been used during the survey:

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

In Location 1 there have been installed noise and dust monitoring station, while in Location 2 and Location 3 a noise monitoring station only.

The equipment had been calibrated prior to on-site installation.

Thresholds and Alerts:

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

Noise Trigger Levels:

Location 1

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

Location 2 & Location 3

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

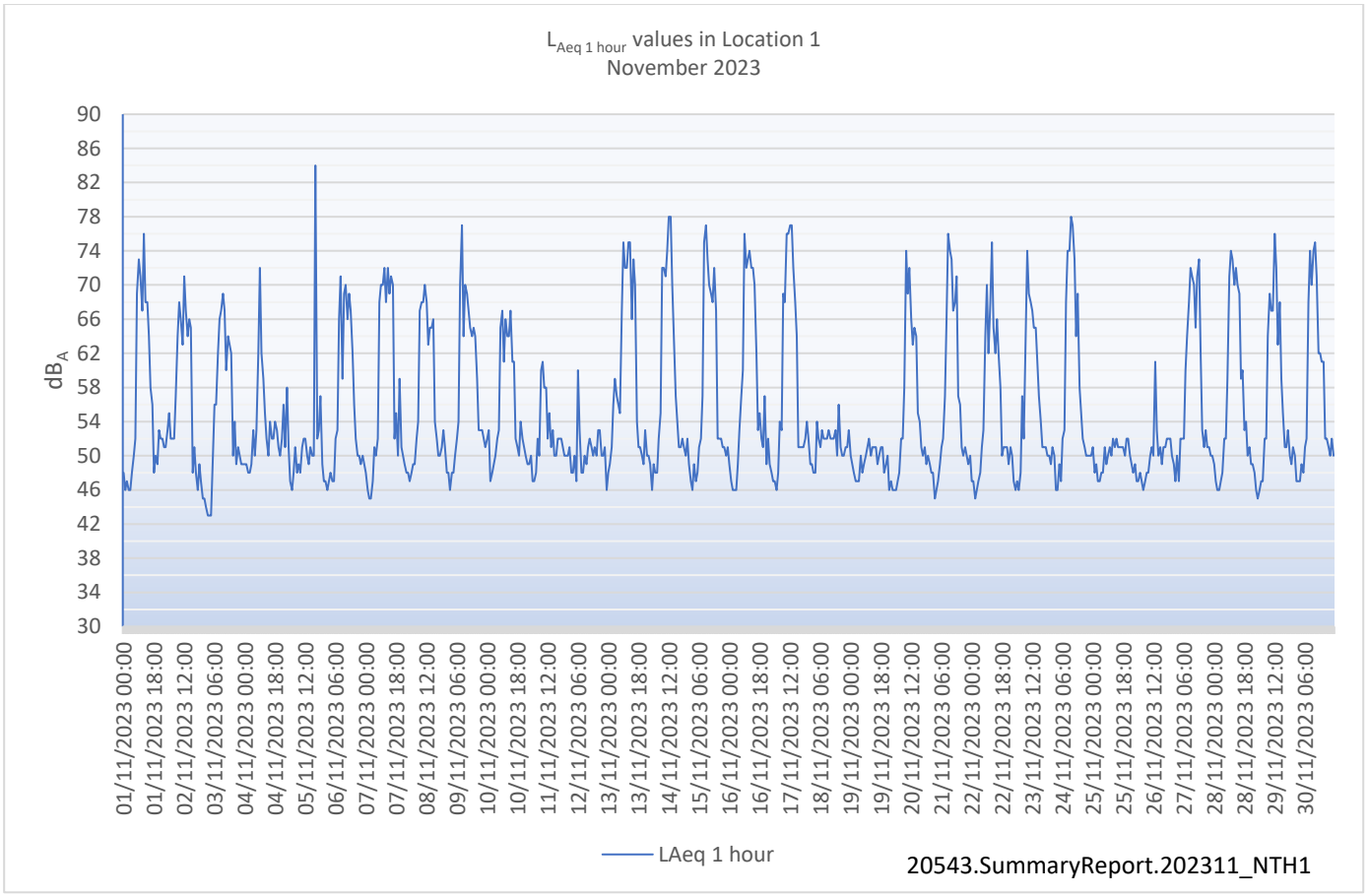
Dust Trigger Levels (PM10):

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

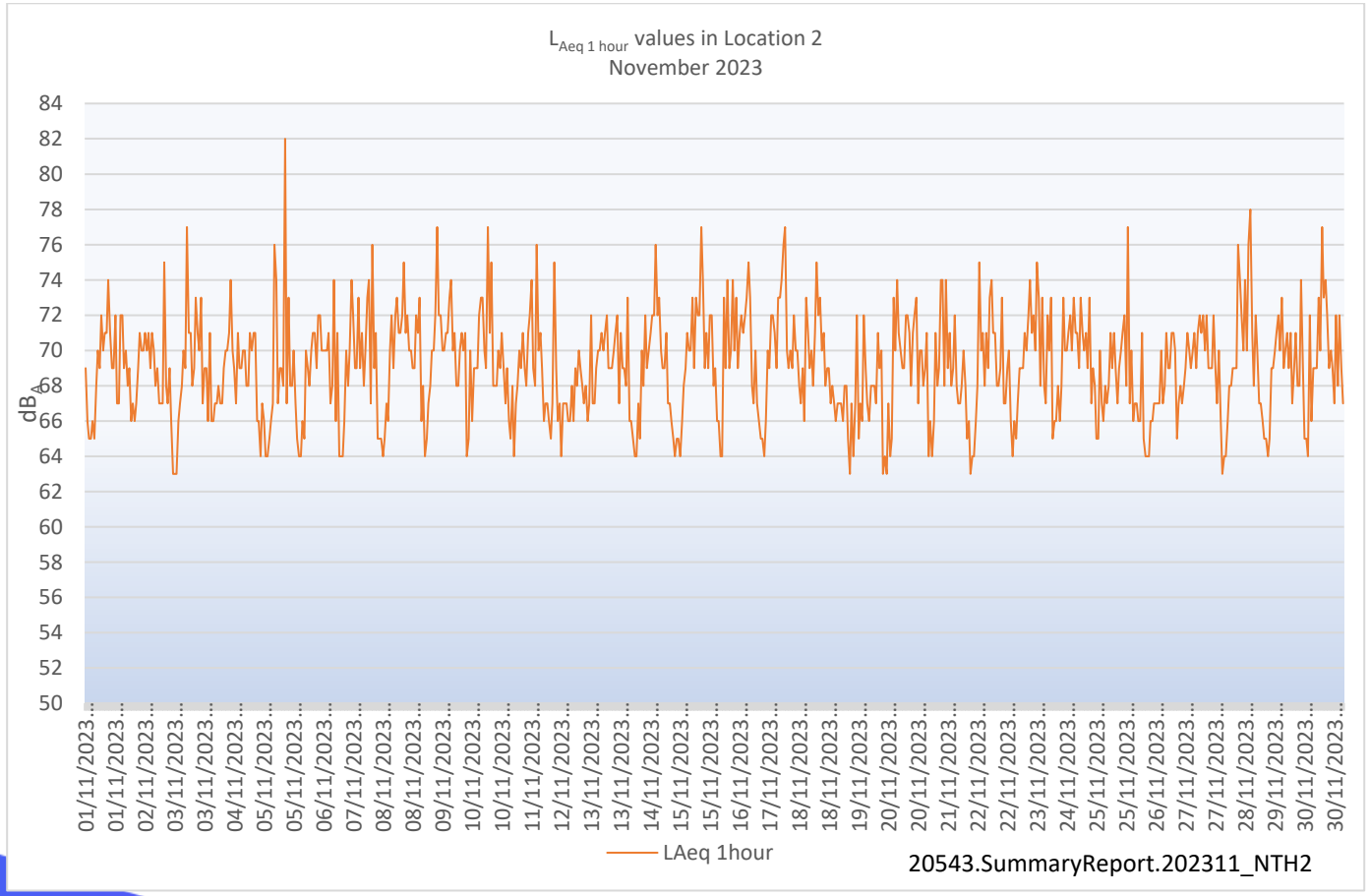
Monitoring Results:

Noise Survey

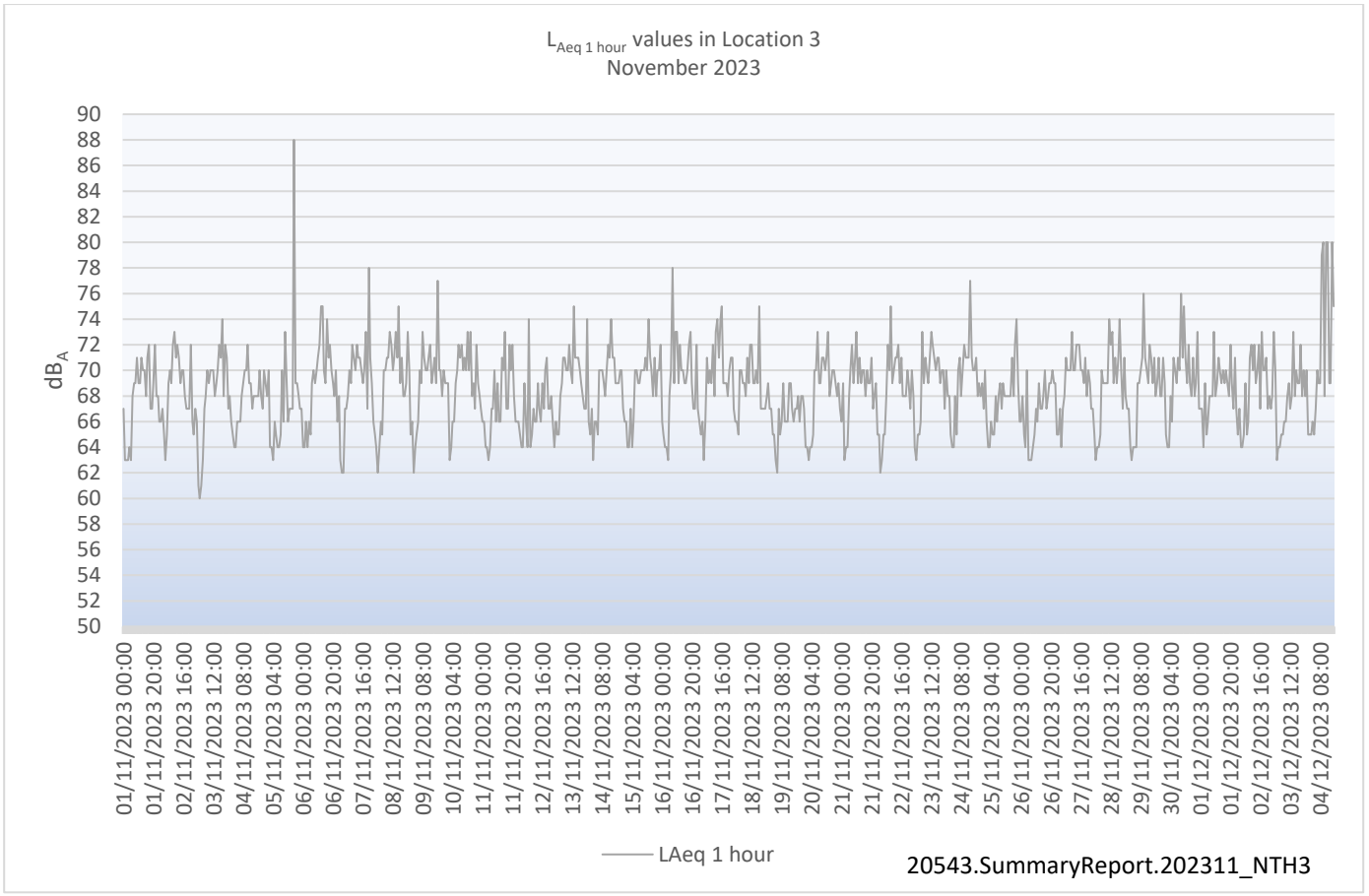
Noise monitoring results for the period between 01 November 2023 and 30 November 2023 have been present in Figures: 20543.SummaryReport.YYYYMM_NTHx where YYYYMM represents year and month of the monitoring period while 'x' – monitoring location.
Monitoring results have been also compared against agreed 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.



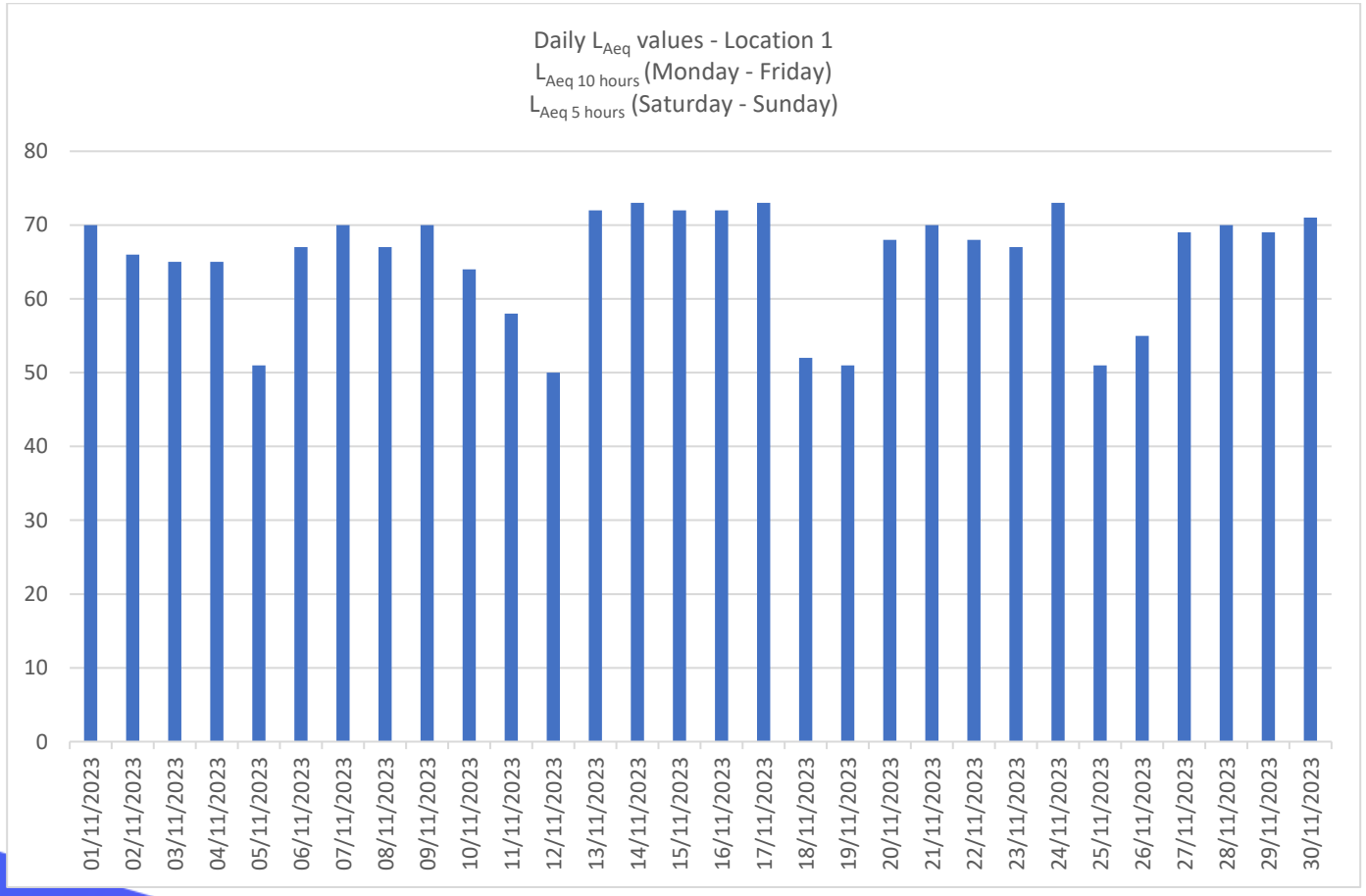
20543.SummaryReport.202311_NTH1

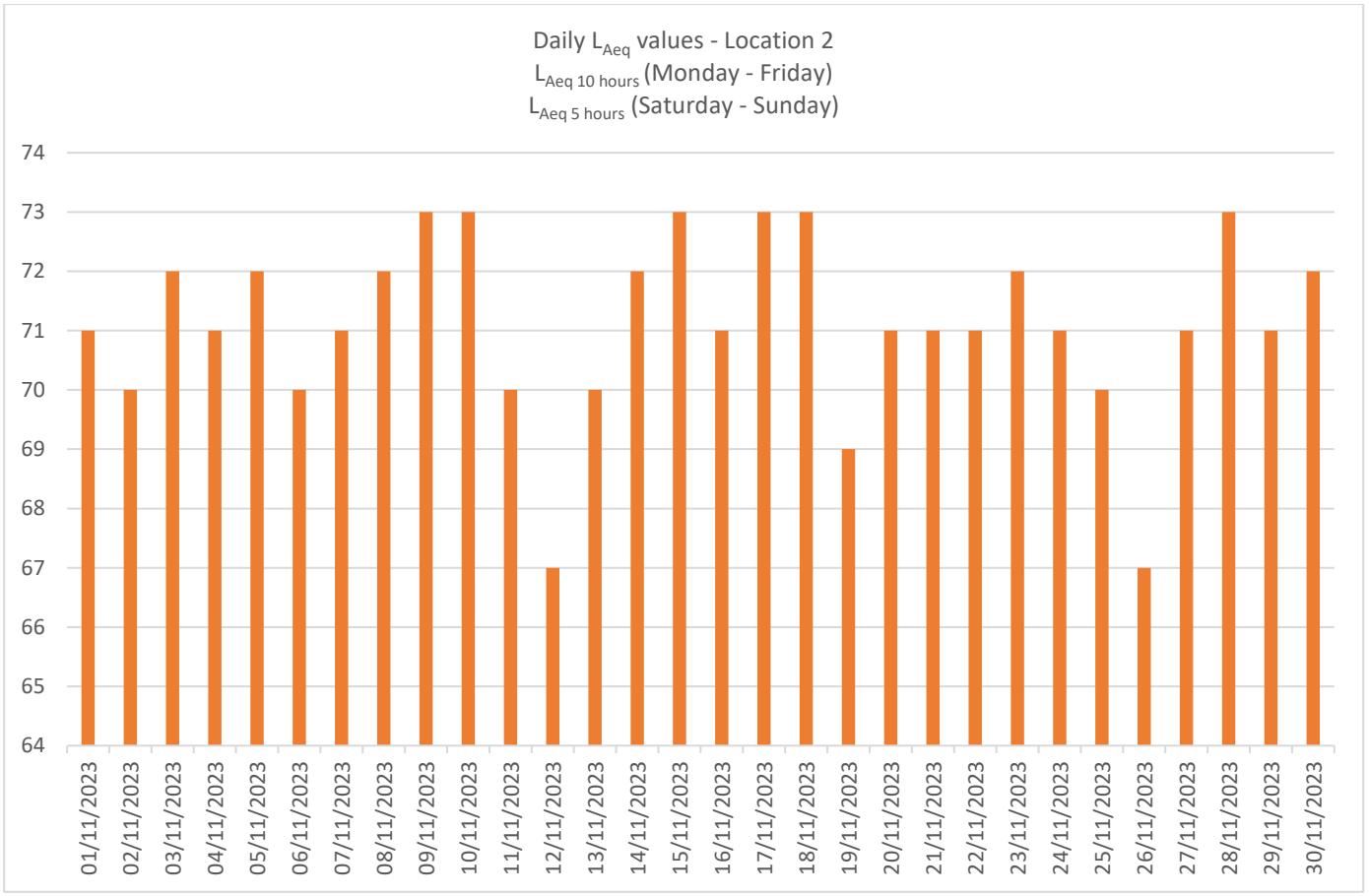


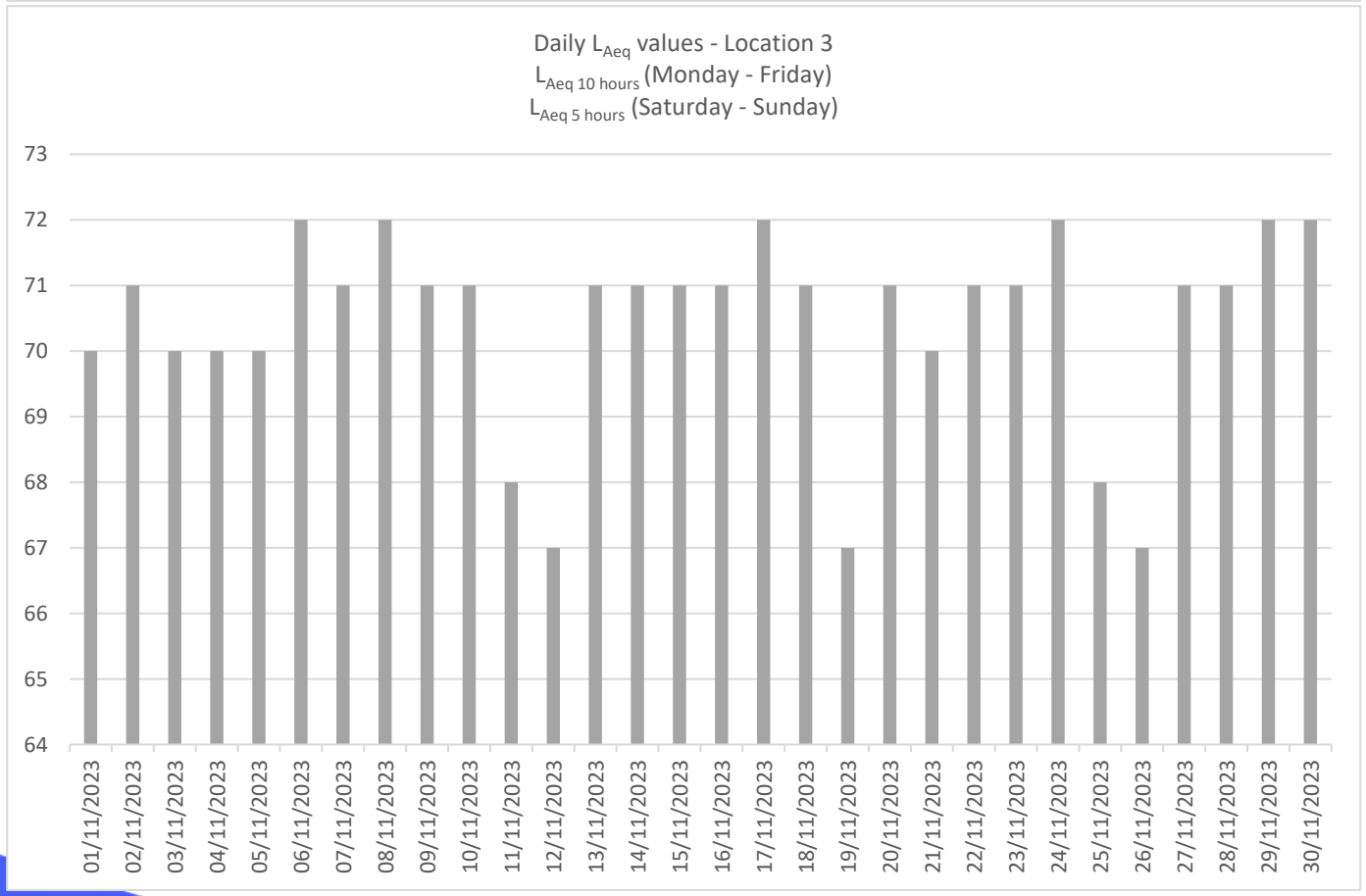
20543.SummaryReport.202311_NTH2



20543.SummaryReport.202311_NTH3




Daily L_{Aeq} values - Location 2
$L_{Aeq\ 10\ hours}$ (Monday - Friday)
$L_{Aeq\ 5\ hours}$ (Saturday - Sunday)
74
73
72
71
70
69
68
67
66
65
64
01/11/2023
02/11/2023
03/11/2023
04/11/2023
05/11/2023
06/11/2023
07/11/2023
08/11/2023
09/11/2023
10/11/2023
11/11/2023
12/11/2023
13/11/2023
14/11/2023
15/11/2023
16/11/2023
17/11/2023
18/11/2023
19/11/2023
20/11/2023
21/11/2023
22/11/2023
23/11/2023
24/11/2023
25/11/2023
26/11/2023
27/11/2023
28/11/2023
29/11/2023
30/11/2023


Daily L_{Aeq} values - Location 3
$L_{Aeq\ 10\ hours}$ (Monday - Friday)
$L_{Aeq\ 5\ hours}$ (Saturday - Sunday)
73
72
71
70
69
68
67
66
65
64
01/11/2023
02/11/2023
03/11/2023
04/11/2023
05/11/2023
06/11/2023
07/11/2023
08/11/2023
09/11/2023
10/11/2023
11/11/2023
12/11/2023
13/11/2023
14/11/2023
15/11/2023
16/11/2023
17/11/2023
18/11/2023
19/11/2023
20/11/2023
21/11/2023
22/11/2023
23/11/2023
24/11/2023
25/11/2023
26/11/2023
27/11/2023
28/11/2023
29/11/2023
30/11/2023

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:

$$Lp_{R2} = Lp_{R1} - 20 \cdot \mathrm{Log10}\left(\frac{\mathrm{R2}}{\mathrm{R1}}\right)$$

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 1presents 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.

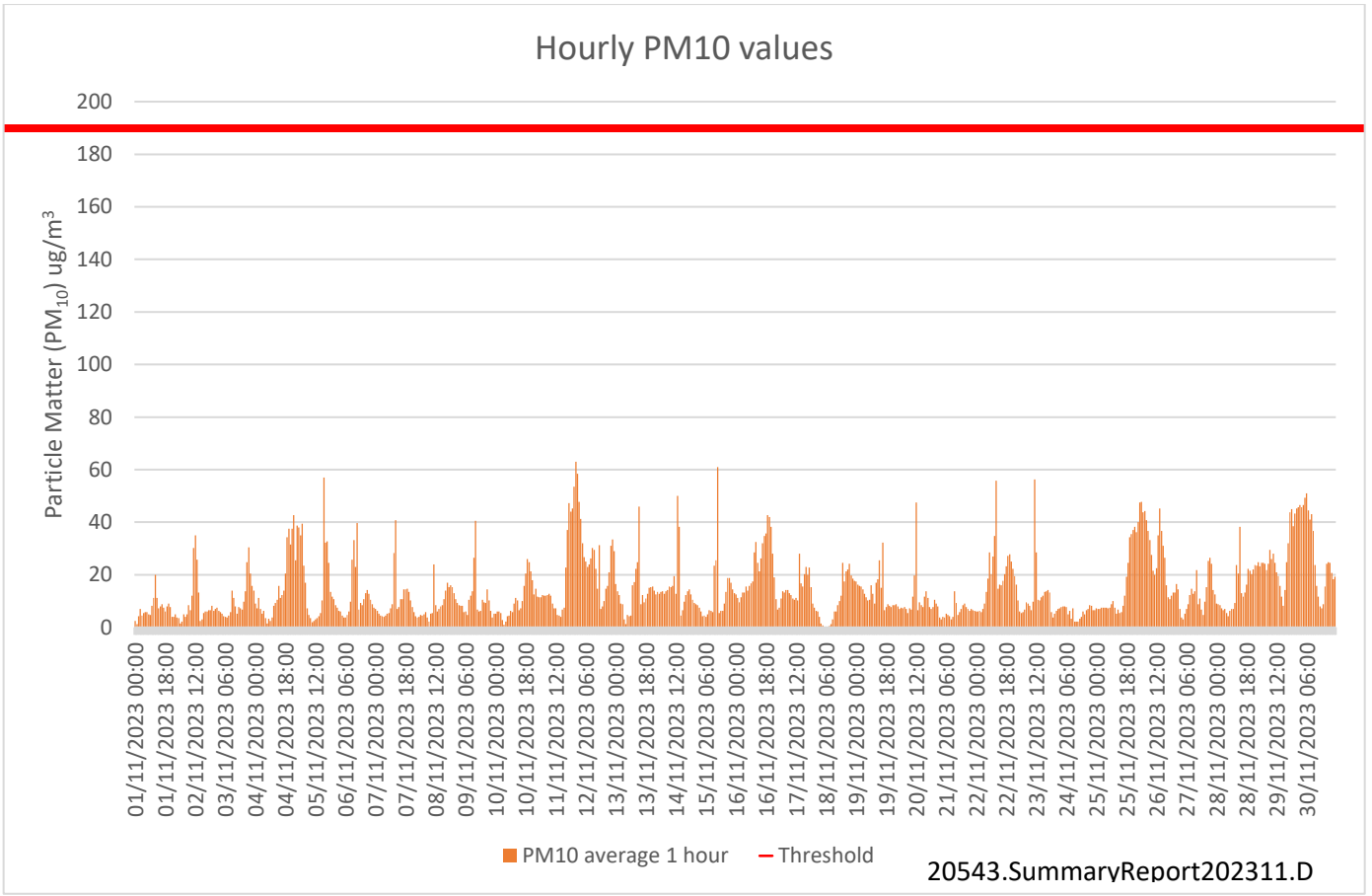
Dust Survey

Dust monitoring summary results for the period between 01 November 2023 and 30 November 2023 have been presented in Figures:

- 20543.SummaryReport202311.D_YYYYMM_hourly with summary 1 hour averages, where MMM represents the year and MM month of the reporting data.
- 20543.SummaryReport202311.D1_Daily with summary 1 hour averages.

PM10 values were compared against the action threshold level of 190 ug/m^3 1hour average.

Additional criterion of 150 ug/m^3 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.


Hourly PM10 values
Particle Matter (PM_{10}) ug/m^3
200
180
160
140
120
100
80
60
40
20
0
01/11/2023 00:00
01/11/2023 18:00
02/11/2023 12:00
03/11/2023 06:00
04/11/2023 00:00
04/11/2023 18:00
05/11/2023 12:00
06/11/2023 06:00
07/11/2023 00:00
07/11/2023 18:00
08/11/2023 12:00
09/11/2023 06:00
10/11/2023 00:00
10/11/2023 18:00
11/11/2023 12:00
12/11/2023 06:00
13/11/2023 00:00
13/11/2023 18:00
14/11/2023 12:00
15/11/2023 06:00
16/11/2023 00:00
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19/11/2023 00:00
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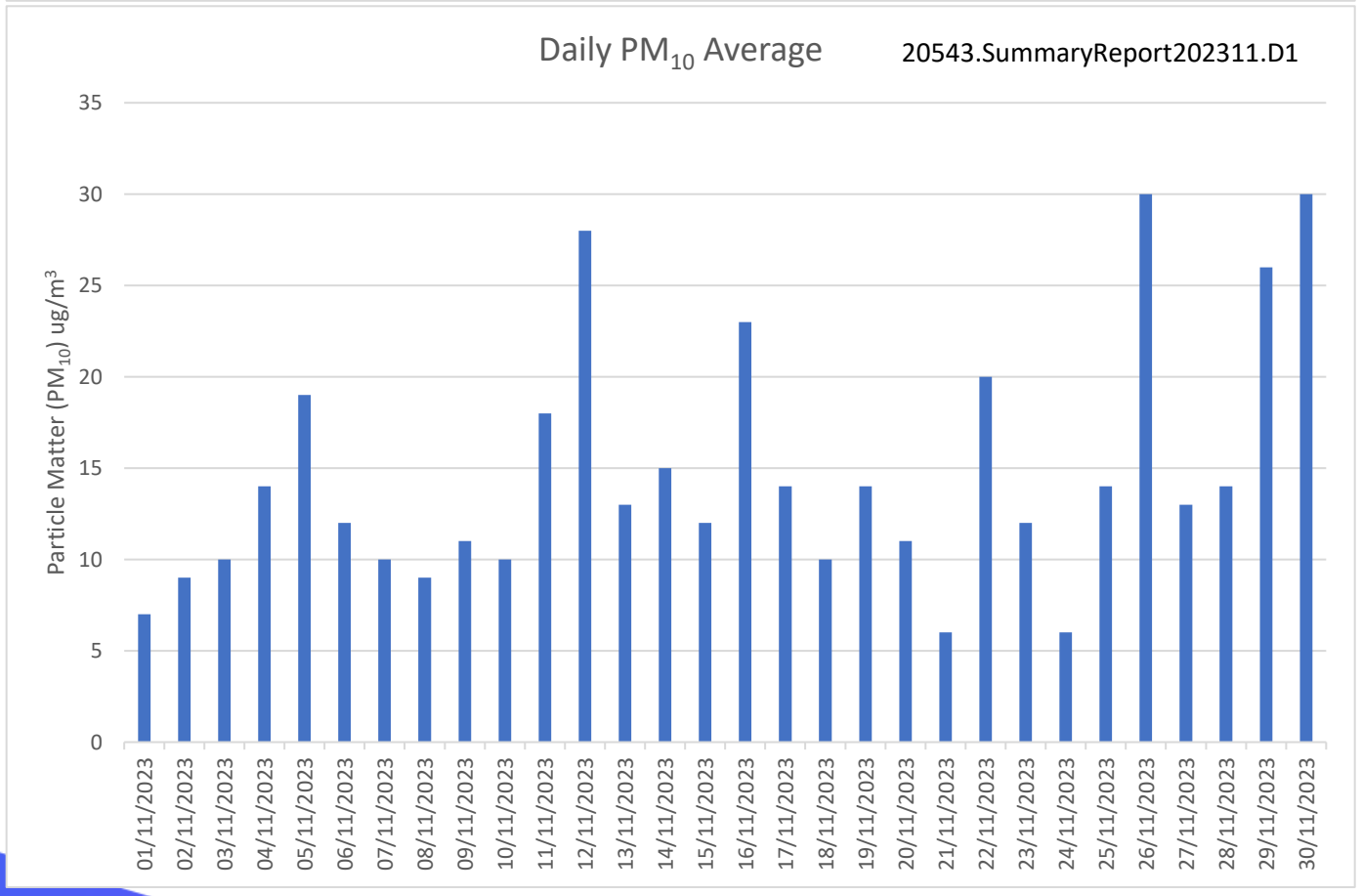
20/11/2023 12:00
21/11/2023 06:00
22/11/2023 00:00
22/11/2023 18:00
23/11/2023 12:00
24/11/2023 06:00
25/11/2023 00:00
25/11/2023 18:00
26/11/2023 12:00
27/11/2023 06:00
28/11/2023 00:00
28/11/2023 18:00
29/11/2023 12:00
30/11/2023 06:00
PM10 average 1 hour
Threshold
20543.SummaryReport202311.D


Daily PM_{10} Average
20543.SummaryReport202311.D1
Particle Matter (PM_{10}) ug/m^3
35
30
25
20
15
10
5
0
01/11/2023
02/11/2023
03/11/2023
04/11/2023
05/11/2023
06/11/2023
07/11/2023
08/11/2023
09/11/2023
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21/11/2023
22/11/2023
23/11/2023
24/11/2023
25/11/2023
26/11/2023
27/11/2023
28/11/2023
29/11/2023
30/11/2023

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

Date	Max (µg/m^3)	Min (µg/m^3)	Average (µg/m^3)	Number of Exceedance ≥ 150 µg/m^3 – 15 min (Pre - Trigger Level)	Number of Exceedance ≥ 190 µg/m^3 – 1 hour (Action Level)	Data Capture
01/11/2023	39	1	7	0	0	100 %
02/11/2023	52	1	9	0	0	100 %
03/11/2023	37	3	10	0	0	100 %
04/11/2023	45	1	14	0	0	100 %
05/11/2023	182	2	19	1	0	100 %
06/11/2023	68	3	12	0	0	100 %
07/11/2023	69	4	10	0	0	100 %
08/11/2023	54	2	9	0	0	100 %
09/11/2023	57	3	11	0	0	100 %
10/11/2023	28	1	10	0	0	100 %
11/11/2023	56	3	18	0	0	100 %
12/11/2023	66	6	28	0	0	100 %
13/11/2023	72	1	13	0	0	100 %
14/11/2023	148	4	15	0	0	100 %
15/11/2023	111	4	12	0	0	100 %
16/11/2023	52	9	23	0	0	100 %
17/11/2023	79	6	14	0	0	100 %
18/11/2023	44	0	10	0	0	100 %
19/11/2023	77	6	14	0	0	100 %
20/11/2023	89	5	11	0	0	100 %
21/11/2023	29	2	6	0	0	100 %
22/11/2023	98	5	20	0	0	100 %
23/11/2023	98	3	12	0	0	100 %
24/11/2023	21	2	6	0	0	100 %
25/11/2023	44	4	14	0	0	100 %
26/11/2023	55	10	30	0	0	100 %
27/11/2023	28	3	13	0	0	100 %
28/11/2023	63	4	14	0	0	100 %
29/11/2023	51	5	26	0	0	100 %
30/11/2023	53	6	30	0	0	100 %

List of alerts and actions undertaken.

Noise Red Trigger

No exceedances recorded.

Dust Action Level

No exceedances recorded.