

Northern Bus Garage Noise, Vibration, and Dust Monitoring Report (November 2025)

Noise, Vibration, and Dust levels were monitored as part of the reconstruction of Northern Bus Garage, 4615 14th Street, NW, Washington, DC, for the month of November 2025.

The following memorandum identifies the monitoring points and instruments, presents the data, and provides a brief analysis of the results per monthly monitoring report attached by Geo Instruments for Clark Construction. The report is organized by medium: noise, vibration, and dust. Figures and graphs are attached. The red dashed line on each of the graphs represents the monitoring thresholds, which are summarized below for each instrument.

Noise Monitoring

Five noise monitors are positioned around the perimeter of the project site. (See Figure 1) Under DC regulations, the regulatory standard is 80 dBA, measured 25 ft from the property line (20 DCMR 2802.1). Because the noise monitoring devices are placed on the property line (rather than a 25 ft offset), the monitoring threshold for site activities is adjusted to 85 dBA (assuming the noise level will dissipate). Noise levels and vibration levels were measured automatically with Micromate and Geophone Instrument.

Numerous noise level exceedances at all hours of the day and all days of the week. Mic1 recorded over 50% of its exceedances out of working hours. Additionally, Mic3 and Mic5 recorded over 40% of their exceedances out of working hours. Mic1, Mic2, Mic3, and Mic4 all had their loudest exceedances outside of working hours.

Please see Table 1 (The “Work Hours” category includes all weekend shifts and evening shifts that were worked during the month).

Vibration Monitoring

Five vibration monitors are positioned around the perimeter of the project site (See Figure 1). Vibration thresholds are based on the WMATA Design Criteria. Monitors VM-1 and VM-2 are set at a lower vibration threshold due to their proximity to the historic façade, which is more sensitive to any movement. Noise levels and vibration levels were measured automatically with Micromate and Geophone Instrument.

Table 2

Instrument Type	Monitoring Threshold
Vibration Monitor (VM-1)	0.2 in/sec
Vibration Monitor (VM-2)	0.2 in/sec
Vibration Monitor (VM-3)	2.0 in/sec
Vibration Monitor (VM-4)	2.0 in/sec
Vibration Monitor (VM-5)	2.0 in/sec

Graphs showing monitoring results are presented in Graphs 1 to 5.

Vibration exceedances for the month of November are listed below. These exceedances at VM2 all align with the removal of facade bracing along 14th Street in the vicinity of VM2.

- VM2 – Exceedance with a reading of 0.206 in/sec on November 5 at 12:41.
- VM2 – Exceedance with a reading of 0.379 in/sec on November 5 at 15:08.
- VM2 – Exceedance with a reading of 0.396 in/sec on November 5 at 15:31.
- VM2 – Exceedance with a reading of 0.312 in/sec on November 6 at 07:29.
- VM2 – Exceedance with a reading of 0.267 in/sec on November 6 at 13:29.
- VM2 – Exceedance with a reading of 0.203 in/sec on November 7 at 08:12.
- VM2 – Exceedance with a reading of 0.301 in/sec on November 7 at 10:36.
- VM2 – Exceedance with a reading of 0.241 in/sec on November 7 at 10:56.

Dust Monitoring Threshold Values and Exceedances:

Three dust monitors are positioned at the project site. (See Figure 2) EPA regulatory thresholds are based on a 24-hour monitoring period; the project has adopted thresholds to monitor site levels and provide an indication of when EPA standards might be exceeded. (See Table 3) Dust measurements were monitored using Aeroqual Dust Sentry Pro.

Table 3

Dust Monitoring Measurement	Monitoring Threshold
Particulates (PM2.5)	40 $\mu\text{g}/\text{m}^3$
Particulates (PM10)	50 $\mu\text{g}/\text{m}^3$

No operating issue with the monitoring instruments was identified.

Graphs showing monitoring results are presented in Graphs 6 to 11.

Two air quality exceedances occurred during the month of November 2025. Details of these air quality exceedances can be found below.

- DM1 – Exceedance of the PM10 limit with a reading of 72 $\mu\text{g}/\text{m}^3$ on November 17 at 11:03.
 - Weather history shows 18 MPH winds with gusts up to 28 MPH at this time.
- DM1 – Exceedance of the PM10 limit with a reading of 51 $\mu\text{g}/\text{m}^3$ on November 25 at 15:03.

Figure 1: Vibration and Noise Monitor Location Plan

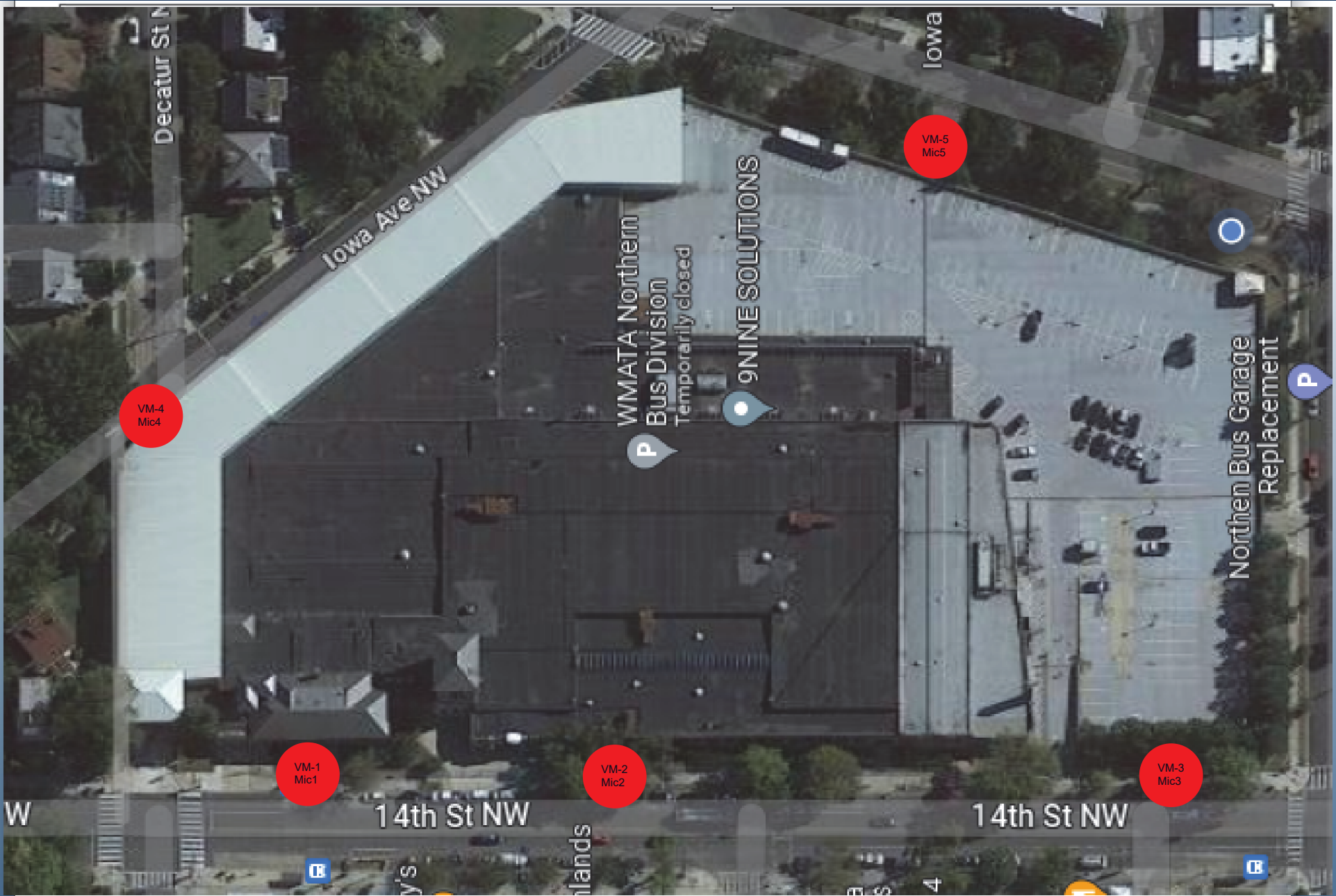


Figure 2: Dust Monitor Location Plan

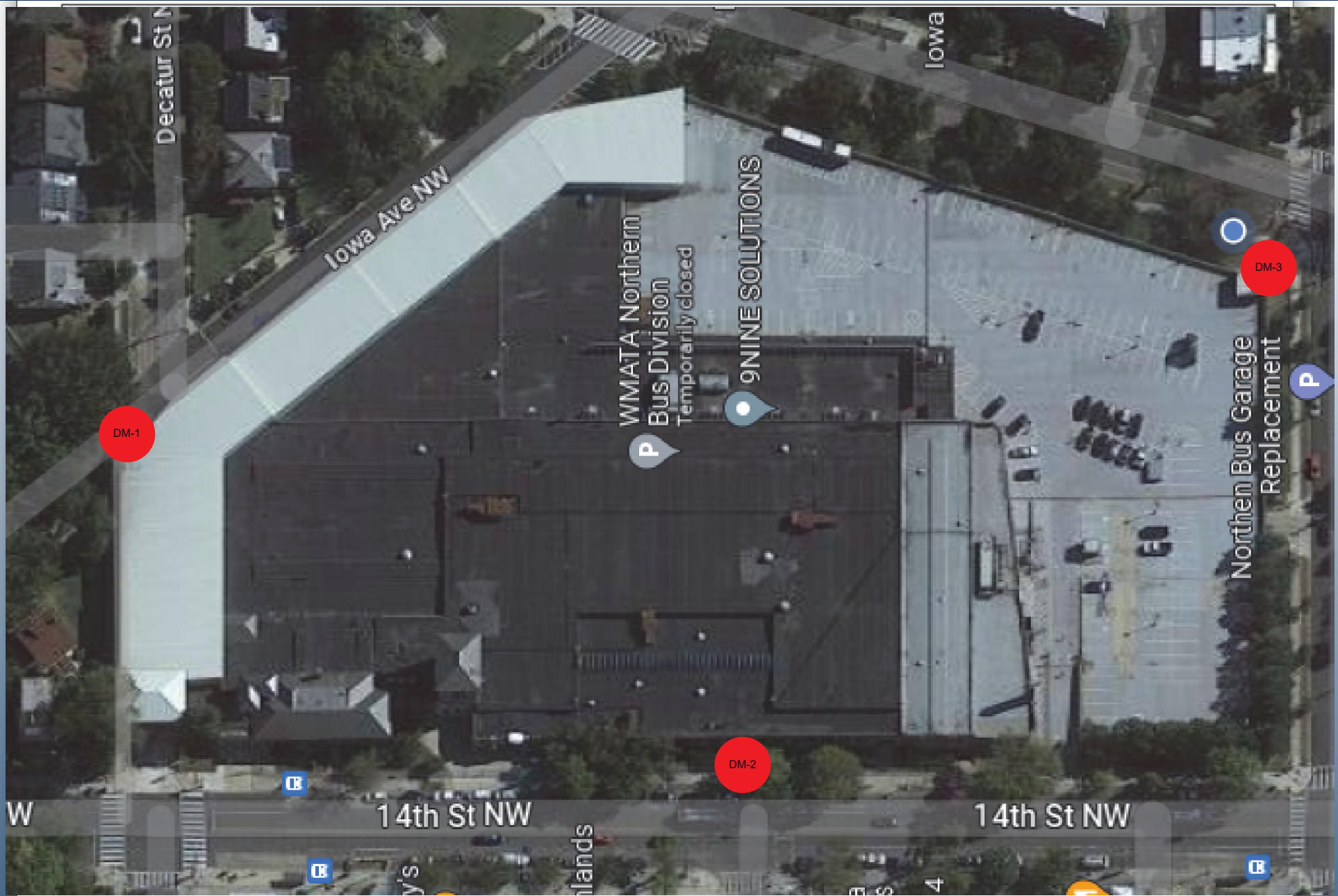


Table 1: Noise Summaries

VM1-MIC		
	Exceedance	Percentage
Work hours	484	48.11%
After hours	211	20.97%
Weekends	311	30.91%
Total	1006	100%

VM1-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	111.3	114.5	107.8
Lmin (dBA)	82.4	60.2	53.5
L10 (dBA)	91	76	74
L90 (dBA)	85	62	56
Leq (dBA)	87.5	84.7	79

VM2-MIC		
	Exceedance	Percentage
Work hours	320	65.57%
After hours	62	12.70%
Weekends	106	21.72%
Total	488	100%

VM2-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	112	112.1	112
Lmin (dBA)	85.5	54.1	49.8
L10 (dBA)	99	71	76
L90 (dBA)	90	56	53
Leq (dBA)	95.2	82.4	77.8

VM3-MIC		
	Exceedance	Percentage
Work hours	524	50.68%
After hours	199	19.25%
Weekends	311	30.08%
Total	1034	100%

VM3-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	111.1	107.7	112.7
Lmin (dBA)	74.3	62	54.5
L10 (dBA)	91	76	79
L90 (dBA)	76	66	58
Leq (dBA)	84.8	80	82.8

VM4-MIC		
	Exceedance	Percentage
Work hours	271	86.86%
After hours	20	6.41%
Weekends	21	6.73%
Total	312	100%

VM4-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	94.2	95.5	102.3
Lmin (dBA)	68.3	47.2	44.1
L10 (dBA)	95	63	77
L90 (dBA)	72	50	51
Leq (dBA)	90.1	64.9	75.4

VM5-MIC		
	Exceedance	Percentage
Work hours	134	51.34%
After hours	45	17.24%
Weekends	82	31.42%
Total	261	100%

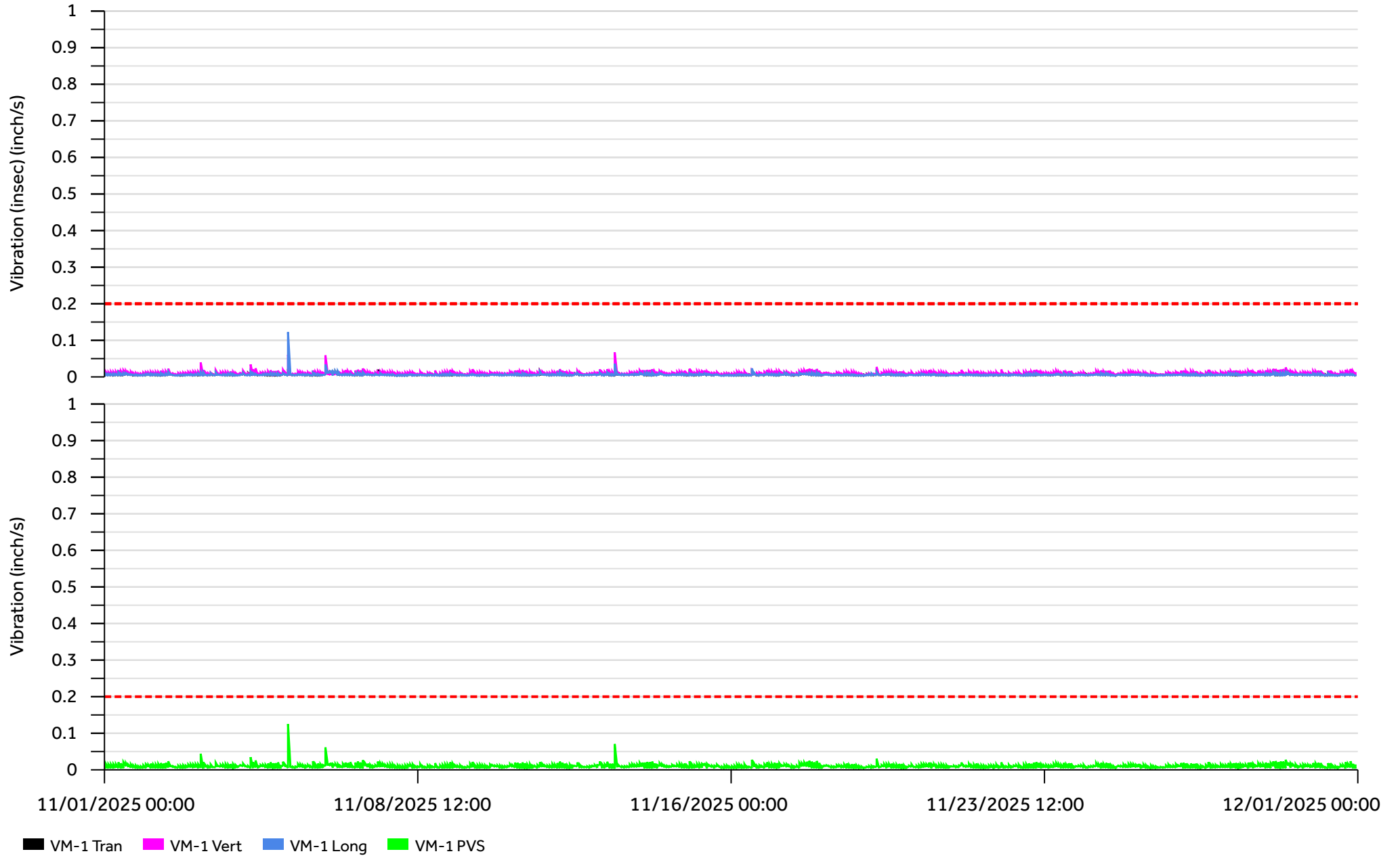
VM5-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	115.8	110.4	113.3
Lmin (dBA)	51.9	49.8	48.4
L10 (dBA)	74	72	71
L90 (dBA)	56	54	52
Leq (dBA)	86.5	79.8	84.1

Summary tables contain values for working hours, after hours, and weekend time periods:

- Lmax: Highest Maximum Noise Level recorded for the month, in dBA.
- Lmin: Highest Minimum Noise Level recorded for the month, in dBA.
- L10: Highest noise level that was exceeded 10% of the time of all recording periods this month, in dBA.
- L90: Highest noise level that was exceeded 90% of the time of all recording periods this month, in dBA.
- Leq: Highest Equivalent Continuous Sound Level, or 'average' of all recording periods this month, in dBA.

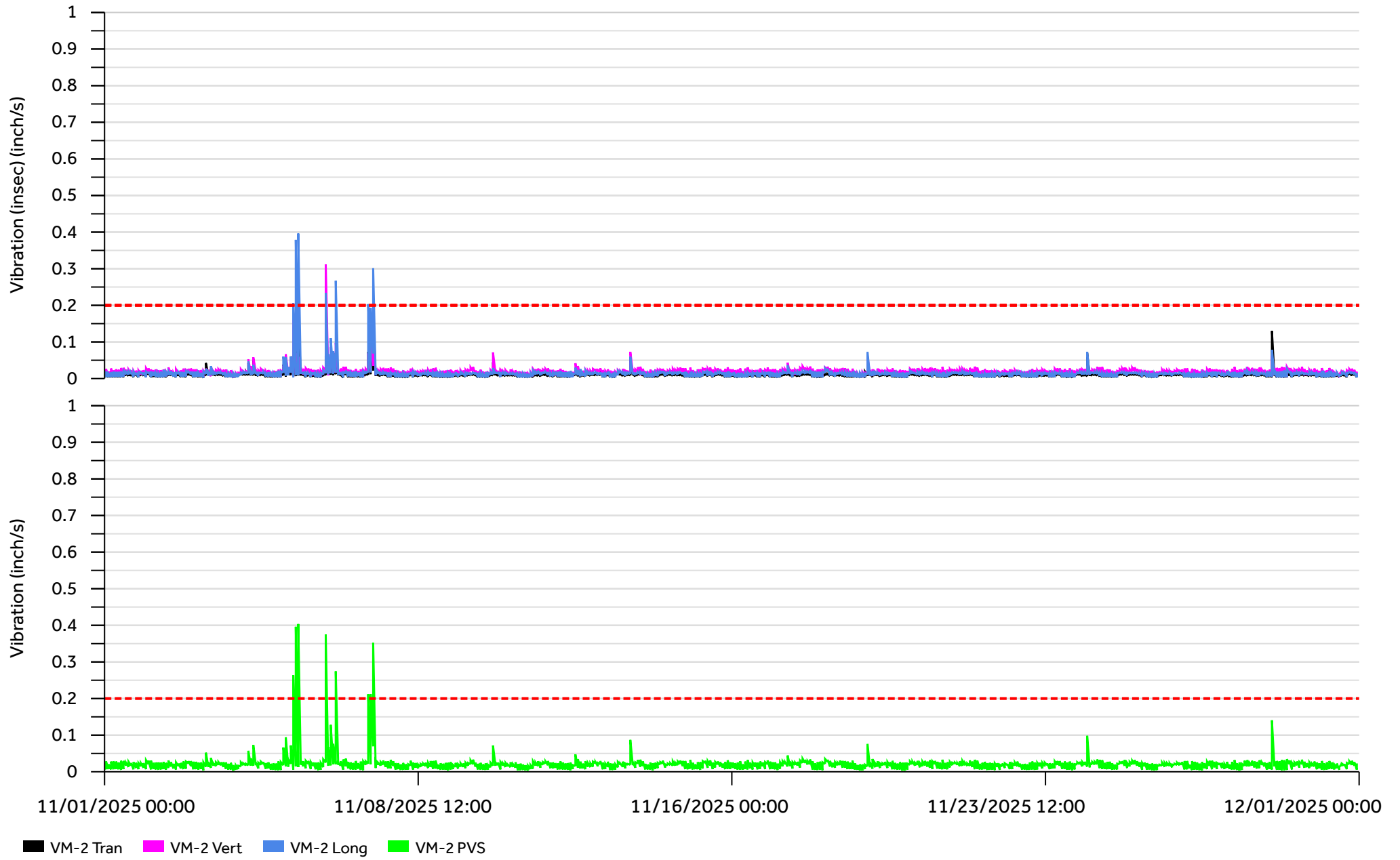
Graph 1

VM-1- Vibration Monitor



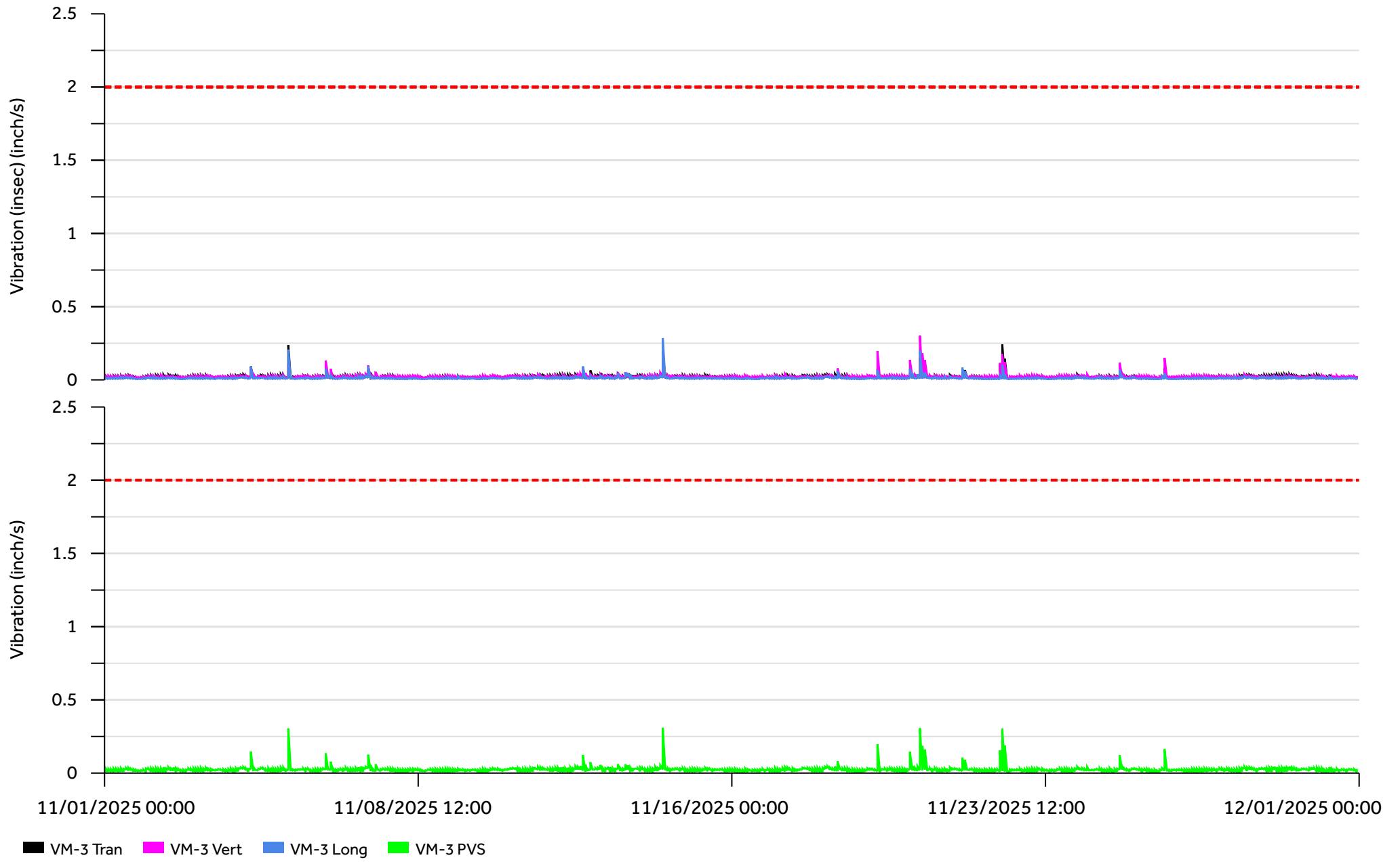
Graph 2

VM-2- Vibration Monitor



Graph 3

VM-3- Vibration Monitor



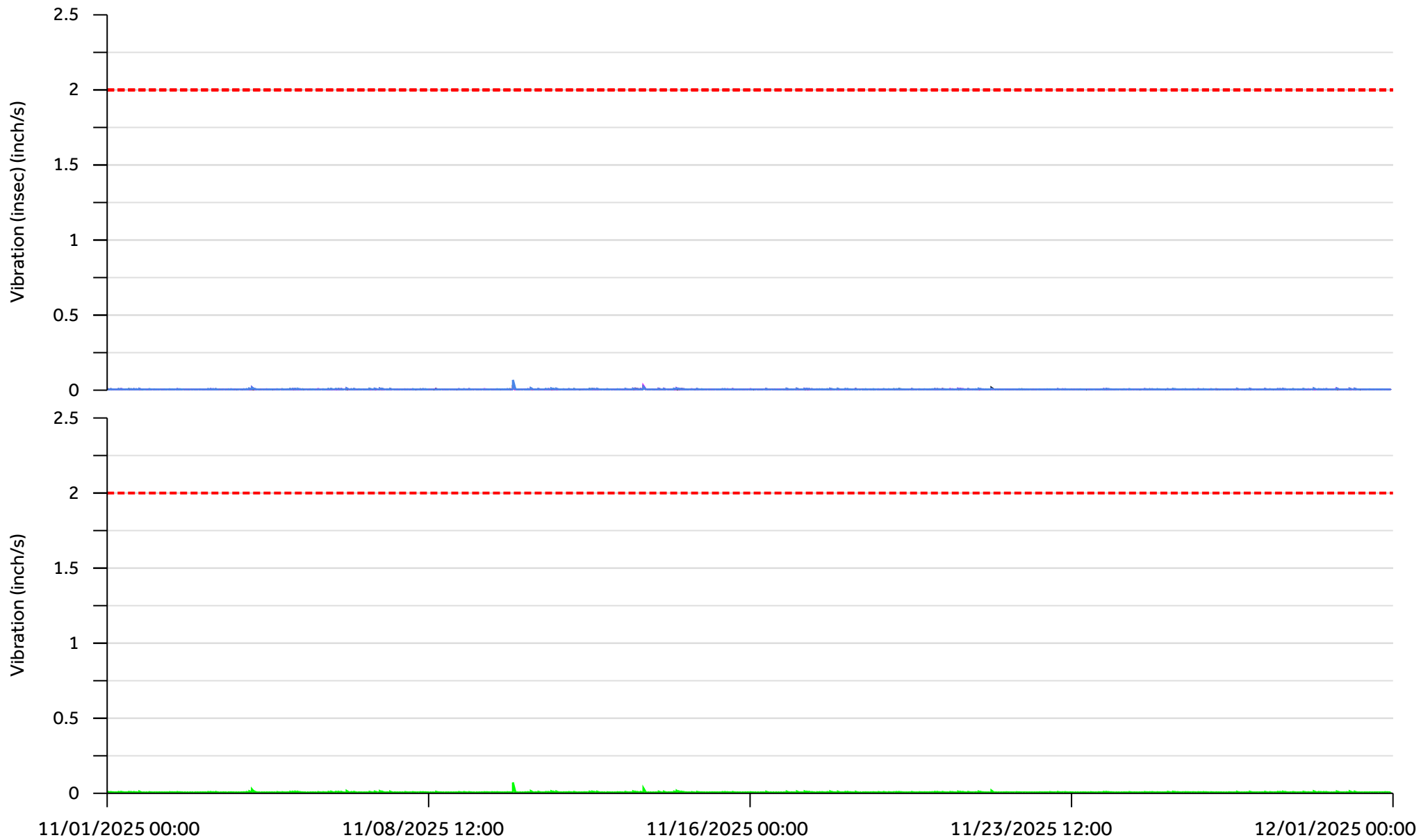
Graph 4

VM-4- Vibration Monitor



Graph 5

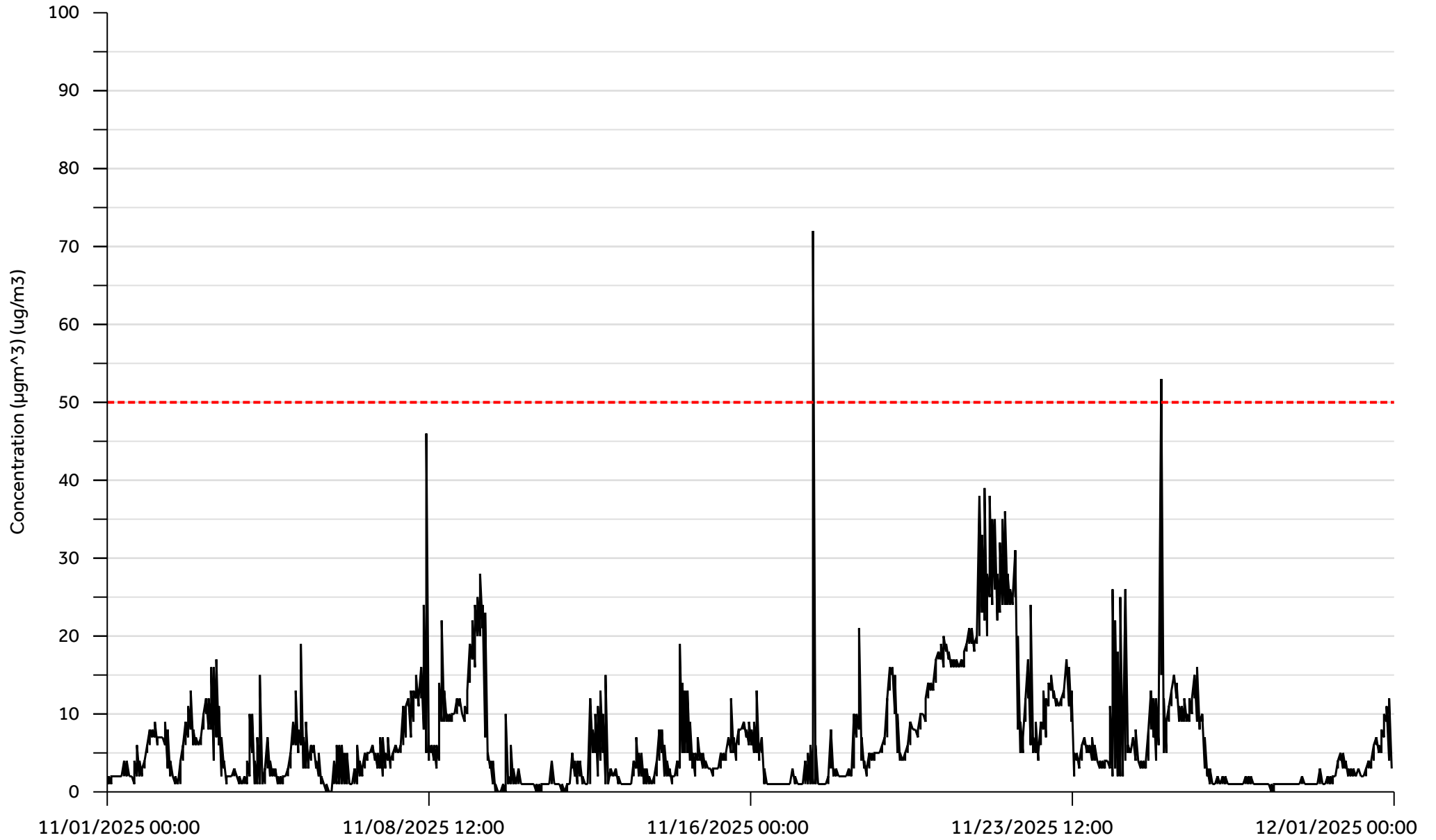
VM-5- Vibration Monitor



VM-5 Tran VM-5 Vert VM-5 Long VM-5 PVS

Graph 6

DM1 - PM10



■ DM1_PM10

Graph 7

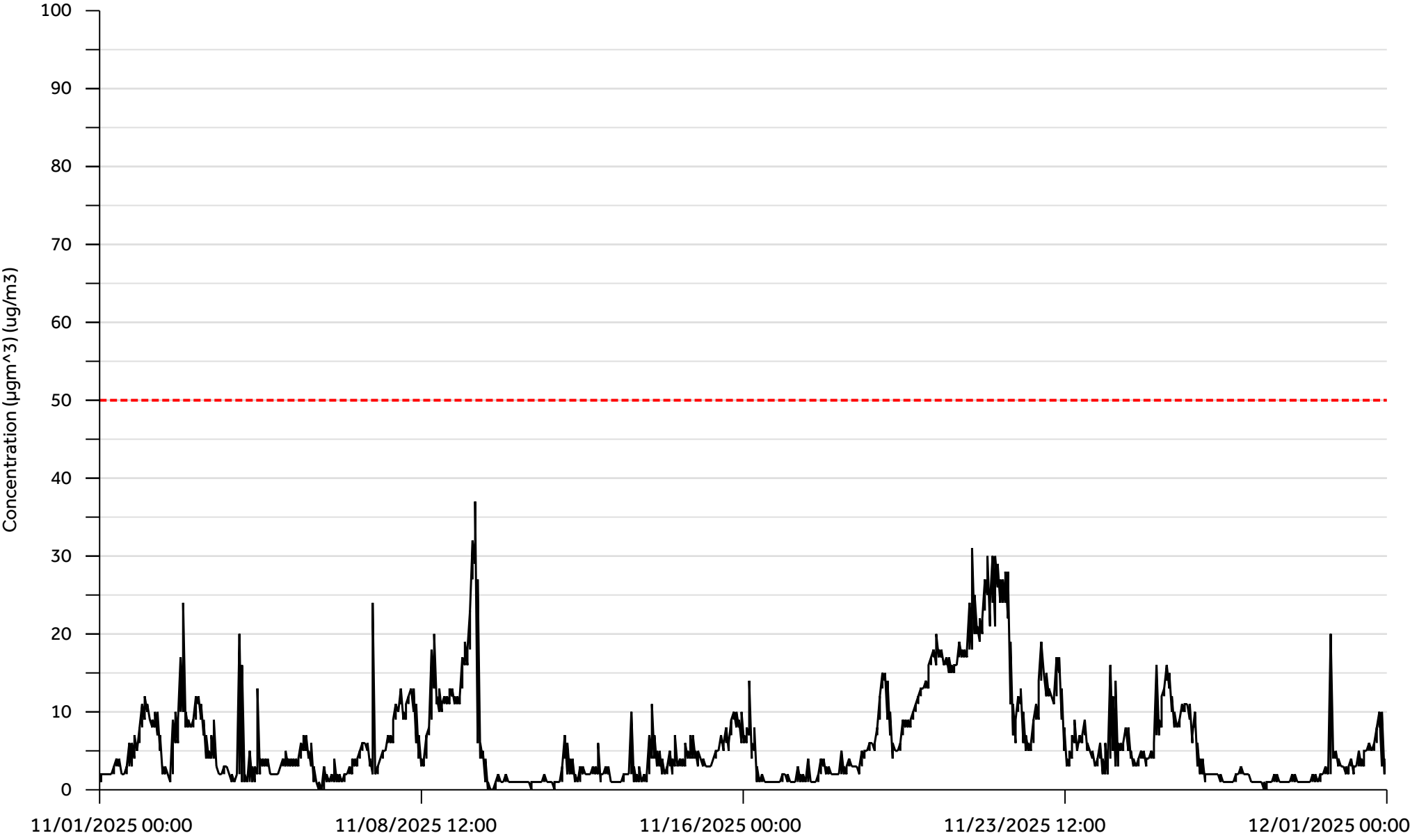
DM2-PM10



■ DM2_PM10

Graph 8

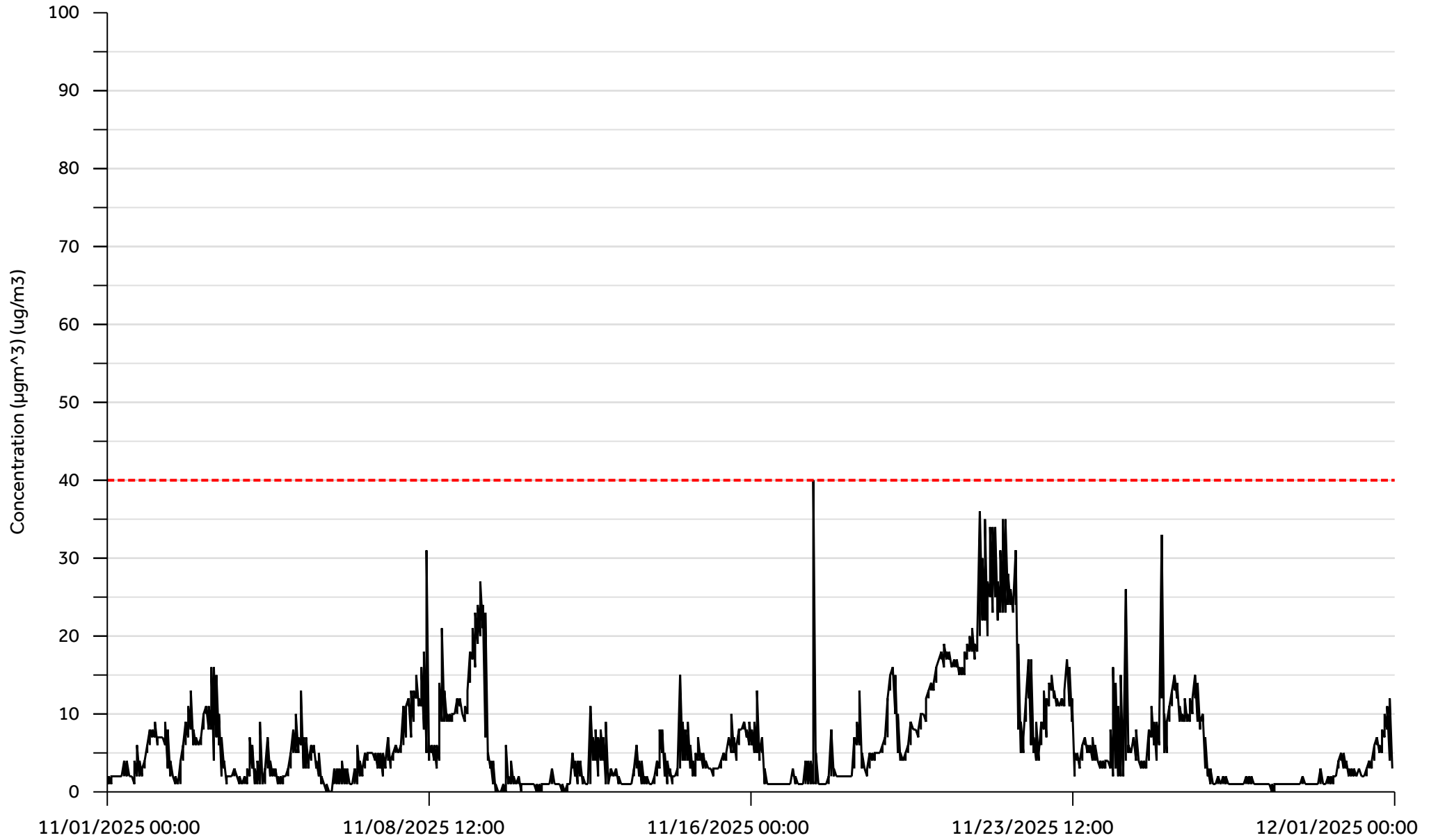
DM3-PM10



DM3_PM10

Graph 9

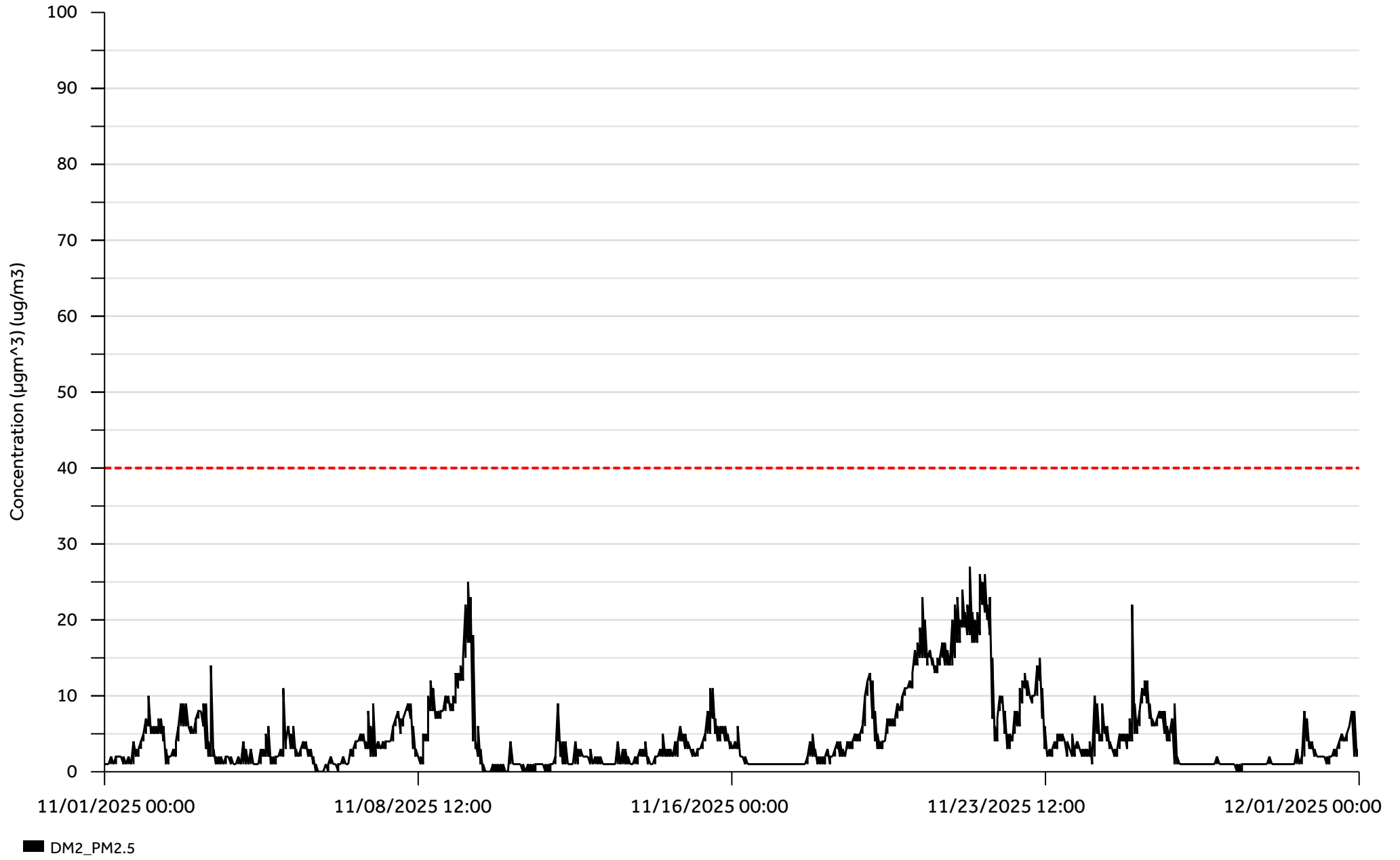
DM1-PM2.5



■ DM1_PM2.5

Graph 10

DM2-PM2.5



Graph 11

DM3-PM2.5

