Northern Bus Garage
Noise, Vibration, and Dust Monitoring Report (October 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 October 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, Mic2, Mic3, and Mic5 recorded over 50% of their exceedances out of working hours. Mic5 had its 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 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 October are listed below. As detailed in the report, the three exceedances at VM2 on October 14th are false events that occurred while exchanging the seismographs for the newly calibrated units. The exceedance at VM1 on October 1 was outside of working hours. Given that there is no other significant vibration activity on the days of the remaining three exceedances and no work was occurring in the immediate vicinity of the sensor at the times, it is Clark's assumption that these are due to foot traffic of workers.

- VM1 – Exceedance with a reading of 0.227 in/sec on October 1 at 18:39.
- VM1 – Exceedance with a reading of 0.405 in/sec on October 13 at 15:21
- VM2 – Exceedance with a reading of 0.307 in/sec on October 8 at 10:27.
- VM2 – Exceedance with a reading of 0.233 in/sec on October 14 at 11:31. – False Reading
- VM2 – Exceedance with a reading of 0.216 in/sec on October 14 at 11:32. – False Reading
- VM2 – Exceedance with a reading of 0.214 in/sec on October 14 at 11:36. – False Reading
- VM2 – Exceedance with a reading of 0.255 in/sec on October 28 at 14:10.

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 µg/m^3
Particulates (PM10)	50 µg/m^3

No operating issue with the monitoring instruments was identified.

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

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

- DM1 – Exceedance of the PM10 limit with a reading of 66 µg/m^3 on October 2 at 08:01.
- DM1 – Exceedance of the PM10 limit with a reading of 51 µg/m^3 on October 6 at 10:31.
- DM1 – Exceedance of the PM2.5 limit with a reading of 71 µg/m^3 on October 23 at 12:02.
- DM1 – Exceedance of the PM10 limit with a reading of 30 µg/m^3 on October 23 at 12:02.

Figure 1: Vibration and Noise Monitor Location Plan

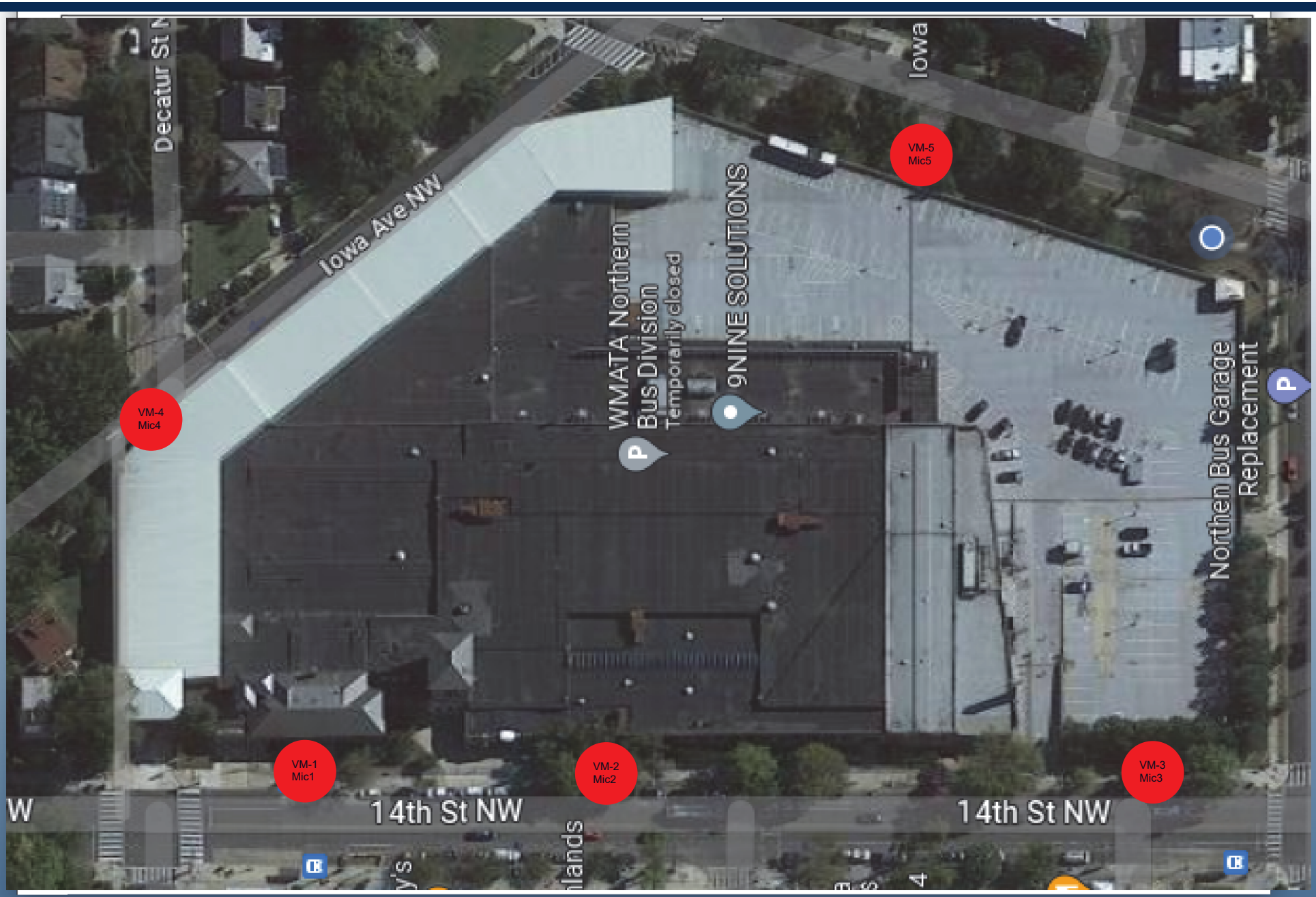


Figure 2: Dust Monitor Location Plan

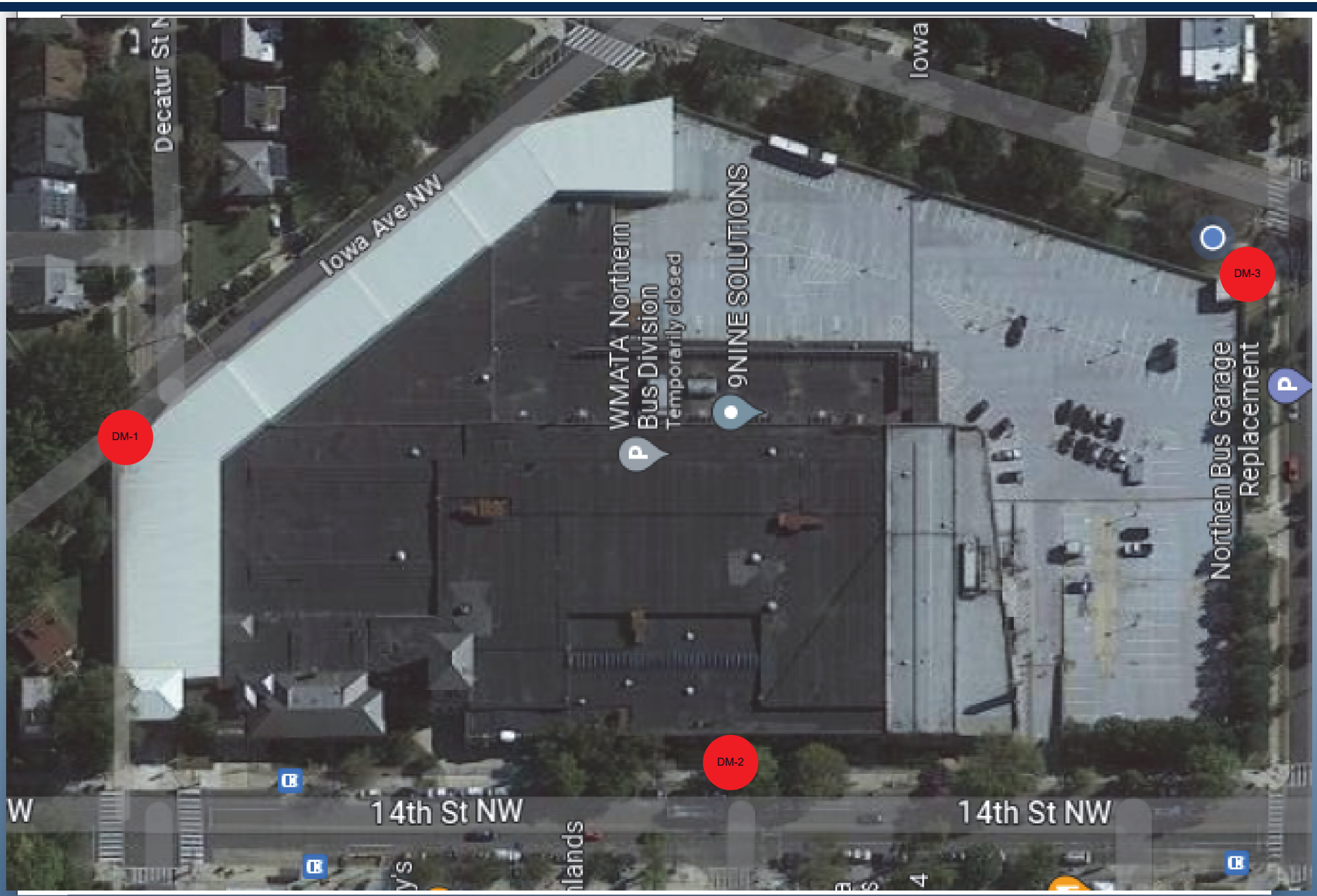


Table 1: Noise Summaries

VM1-MIC		
	Exceedance	Percentage
Work hours	505	45.29%
After hours	359	32.20%
Weekends	251	22.51%
Total	1115	100%

VM1-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	111.3	109.7	106
Lmin (dBA)	73.1	54.8	53.5
L10 (dBA)	91	75	76
L90 (dBA)	78	60	66
Leq (dBA)	89.1	79.1	76.5

VM2-MIC		
	Exceedance	Percentage
Work hours	224	49.78%
After hours	141	31.33%
Weekends	85	18.89%
Total	450	100%

VM2-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	110.3	106	110
Lmin (dBA)	75.8	60.5	50.8
L10 (dBA)	91	71	73
L90 (dBA)	80	63	54
Leq (dBA)	85.9	76.7	79.5

VM3-MIC		
	Exceedance	Percentage
Work hours	527	48.44%
After hours	319	29.32%
Weekends	242	22.24%
Total	1088	100%

VM3-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	110	107	109.8
Lmin (dBA)	73.4	64.2	51.9
L10 (dBA)	84	77	79
L90 (dBA)	77	66	61
Leq (dBA)	83.5	77.1	75.7

VM4-MIC		
	Exceedance	Percentage
Work hours	456	85.55%
After hours	56	10.51%
Weekends	21	3.94%
Total	533	100%

VM4-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	109.1	103.4	106.1
Lmin (dBA)	78.4	62.5	66.3
L10 (dBA)	97	85	83
L90 (dBA)	83	70	71
Leq (dBA)	93	80.4	82.5

VM5-MIC		
	Exceedance	Percentage
Work hours	113	46.12%
After hours	85	34.69%
Weekends	47	19.18%
Total	245	100%

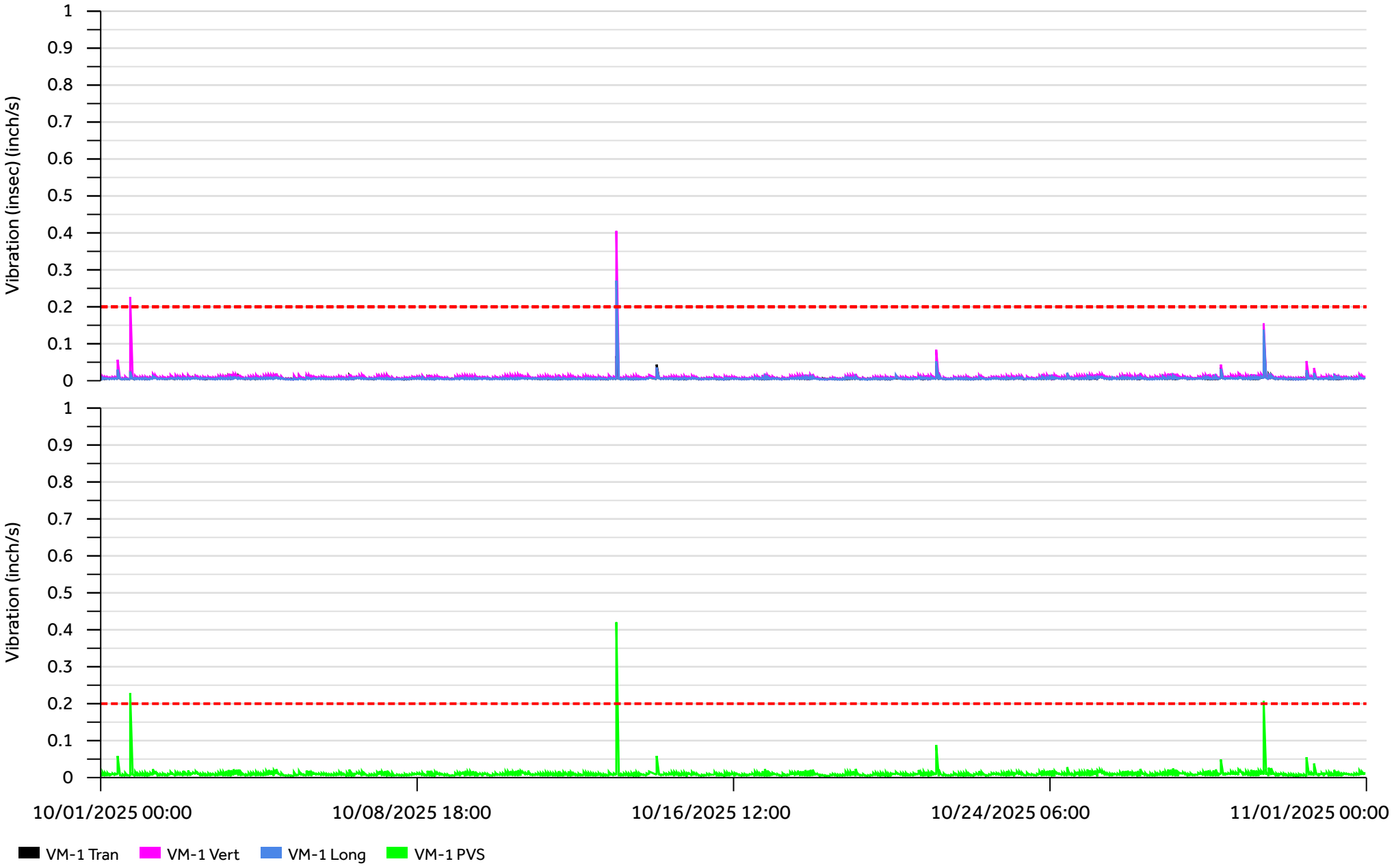
VM5-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	109.3	111.8	110
Lmin (dBA)	52.8	55.5	46
L10 (dBA)	73	70	65
L90 (dBA)	58	58	51
Leq (dBA)	77.8	82.5	79

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.

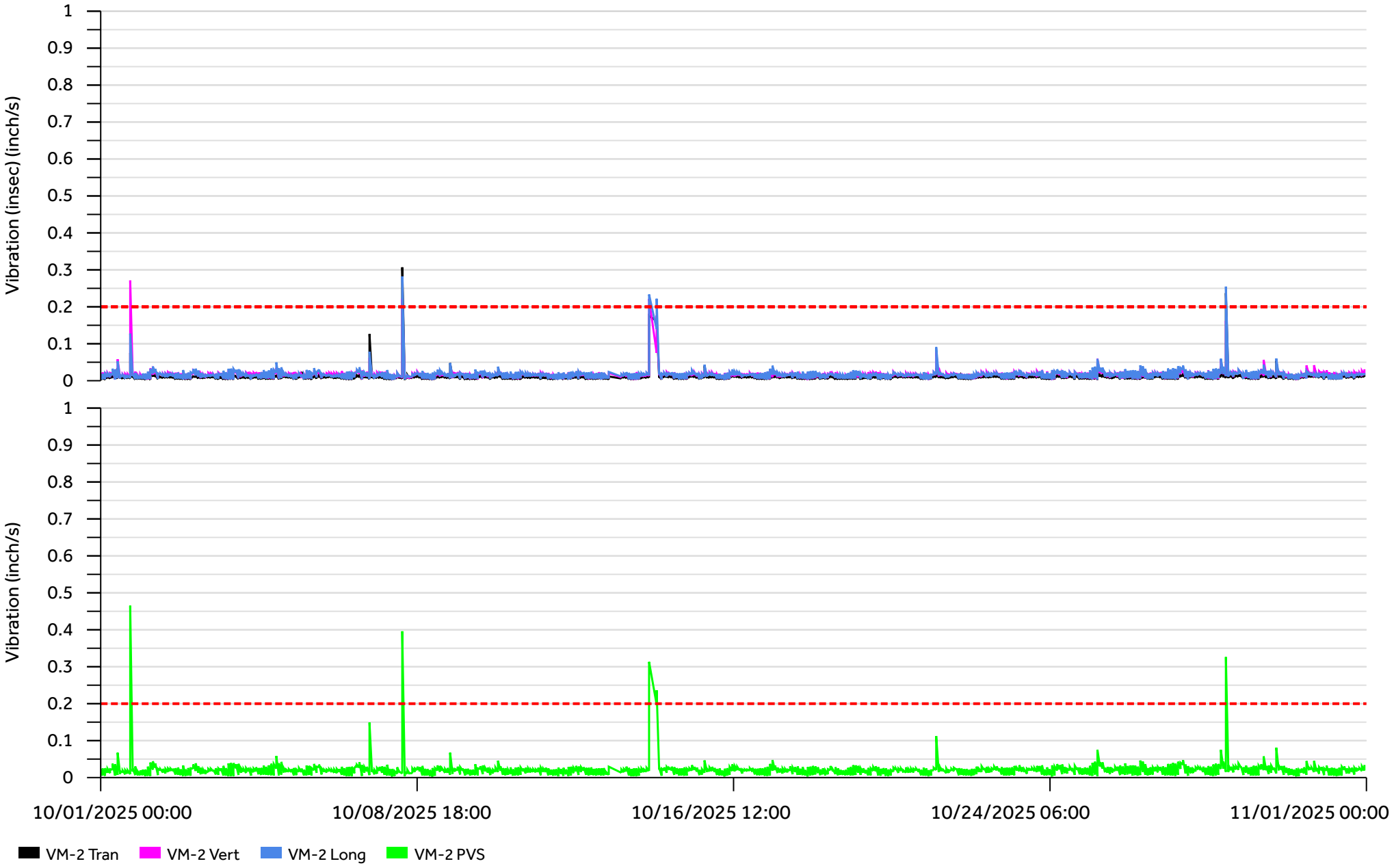
Graph 1

VM-1- Vibration Monitor



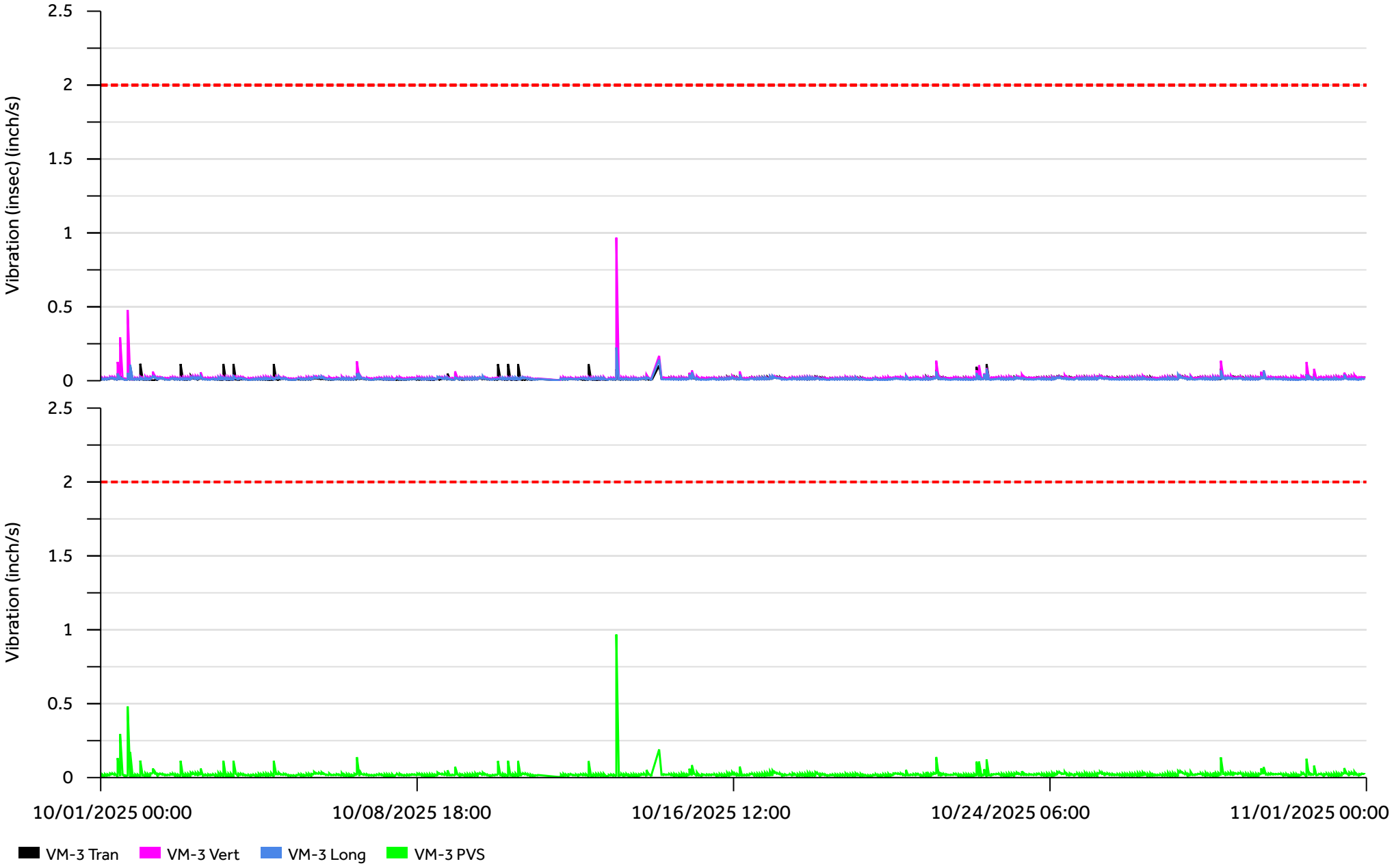
Graph 2

VM-2- Vibration Monitor



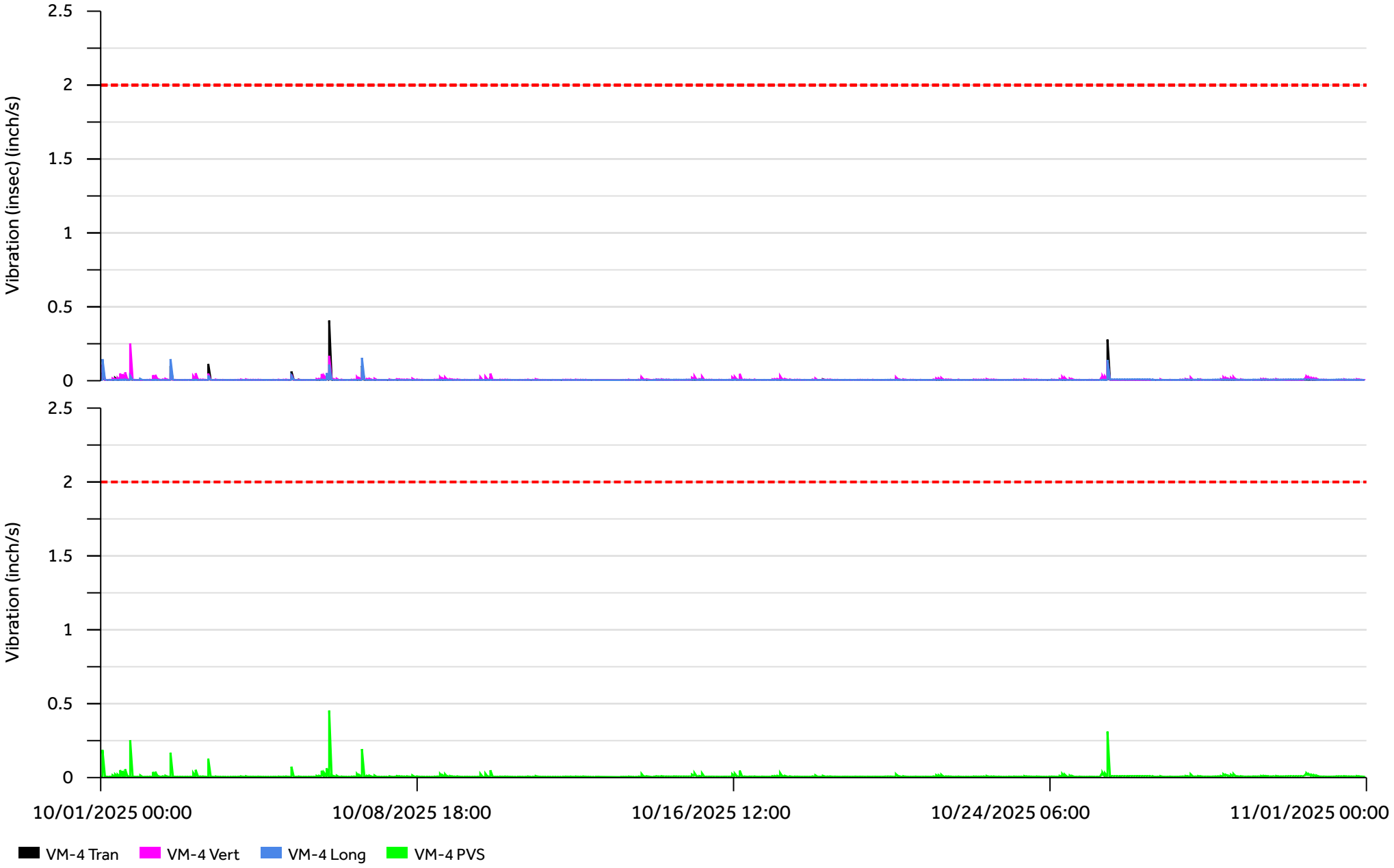
Graph 3

VM-3- Vibration Monitor



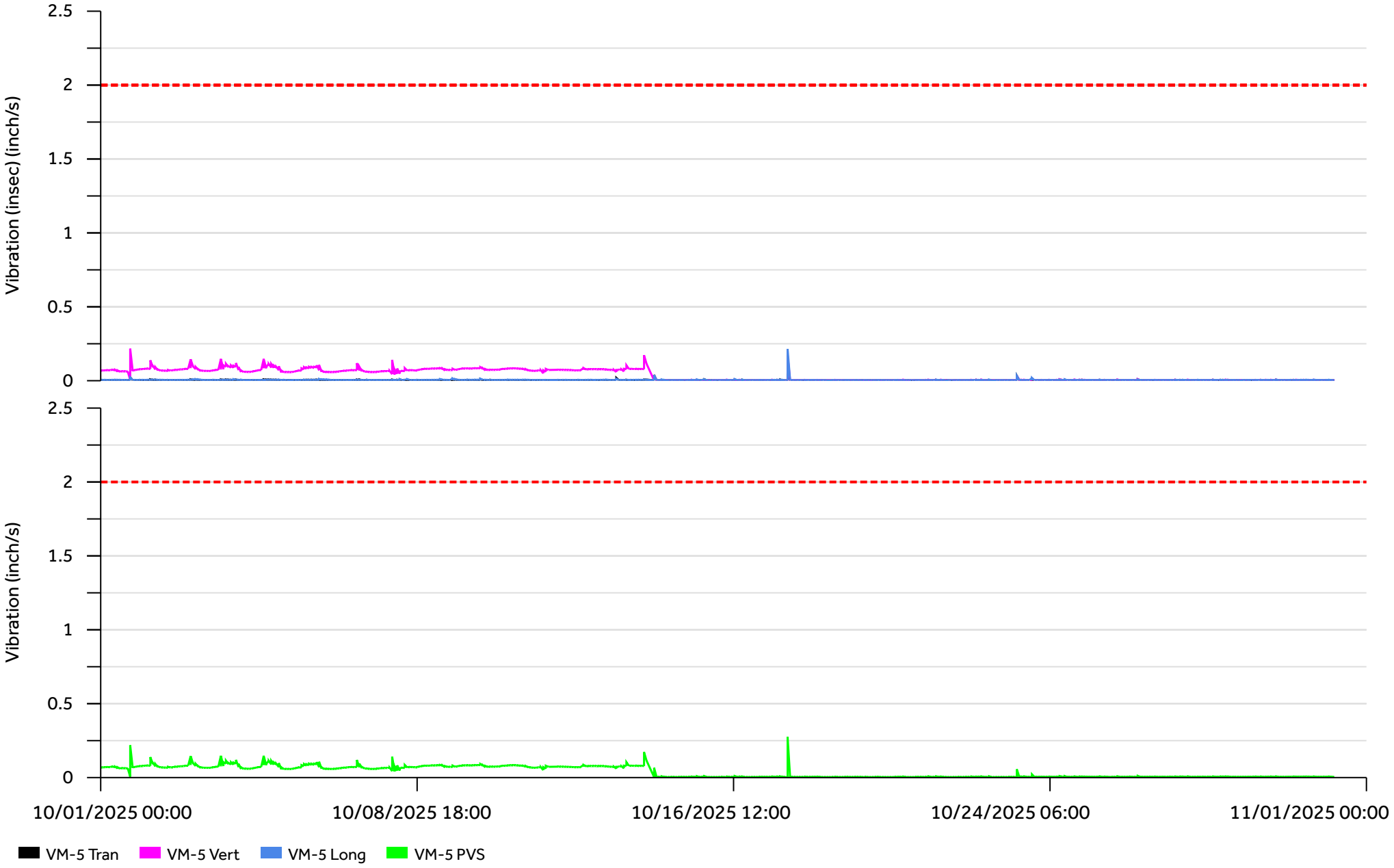
Graph 4

VM-4- Vibration Monitor



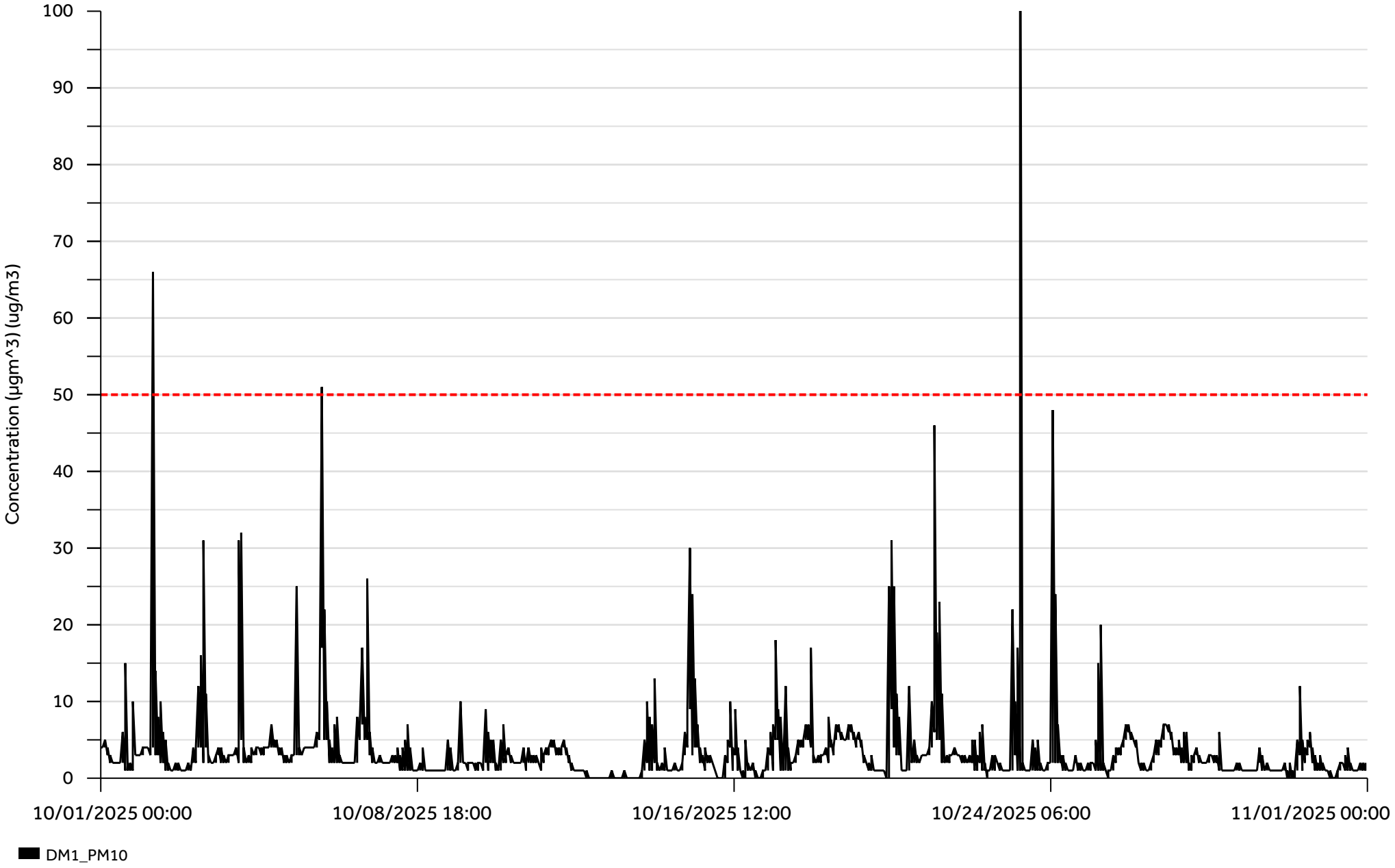
Graph 5

VM-5- Vibration Monitor



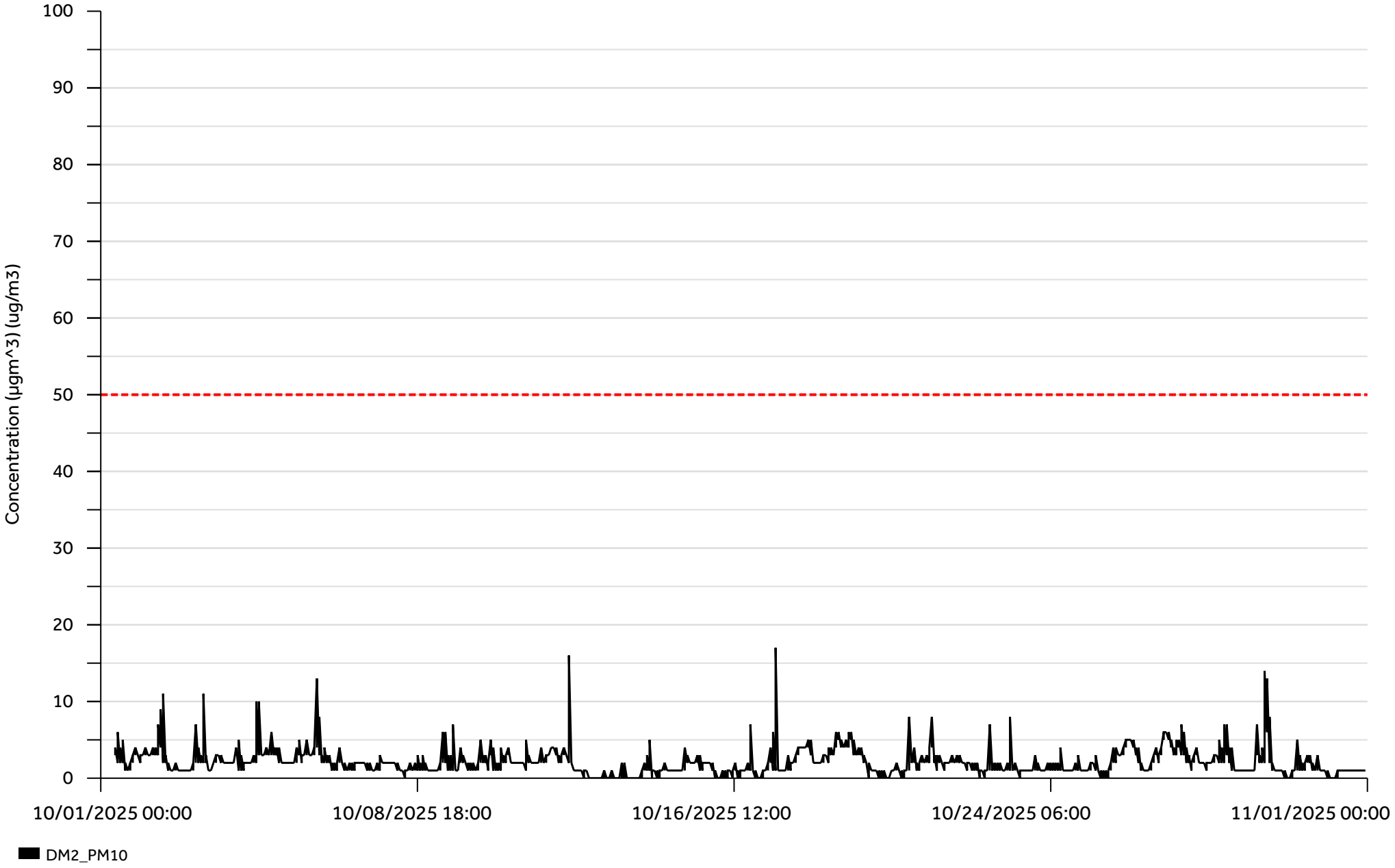
Graph 6

DM1 - PM10



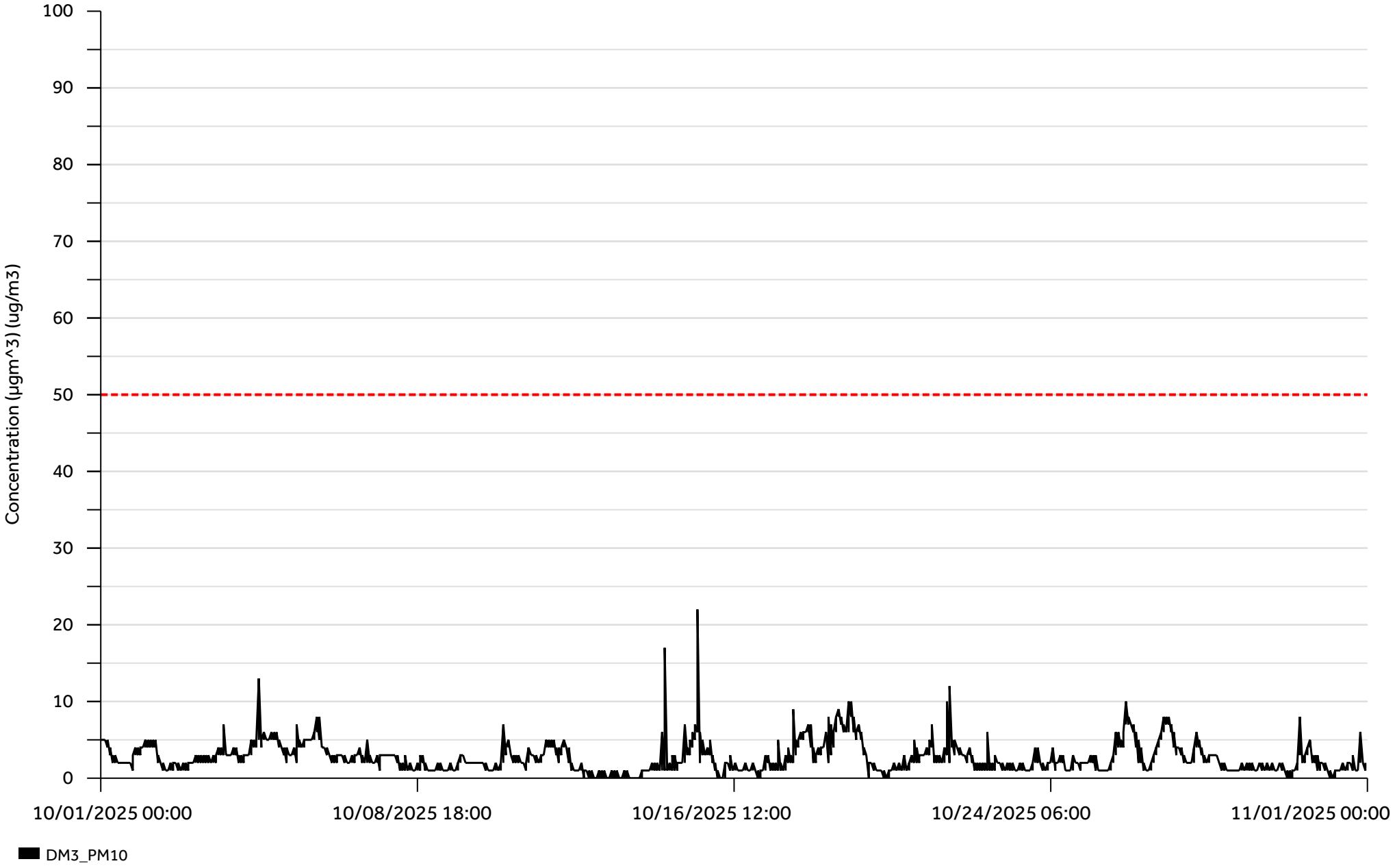
Graph 7

DM2-PM10



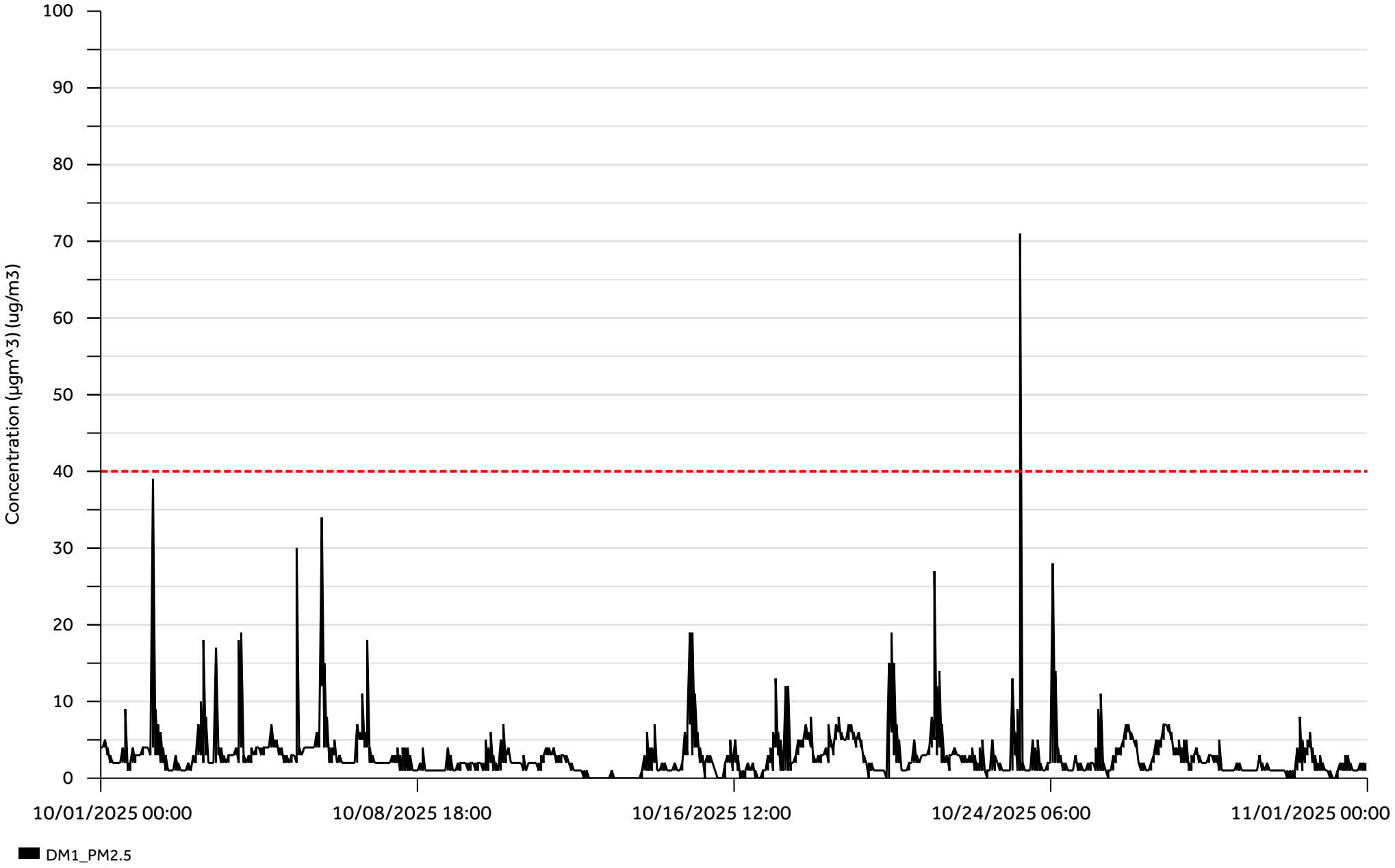
Graph 8

DM3-PM10



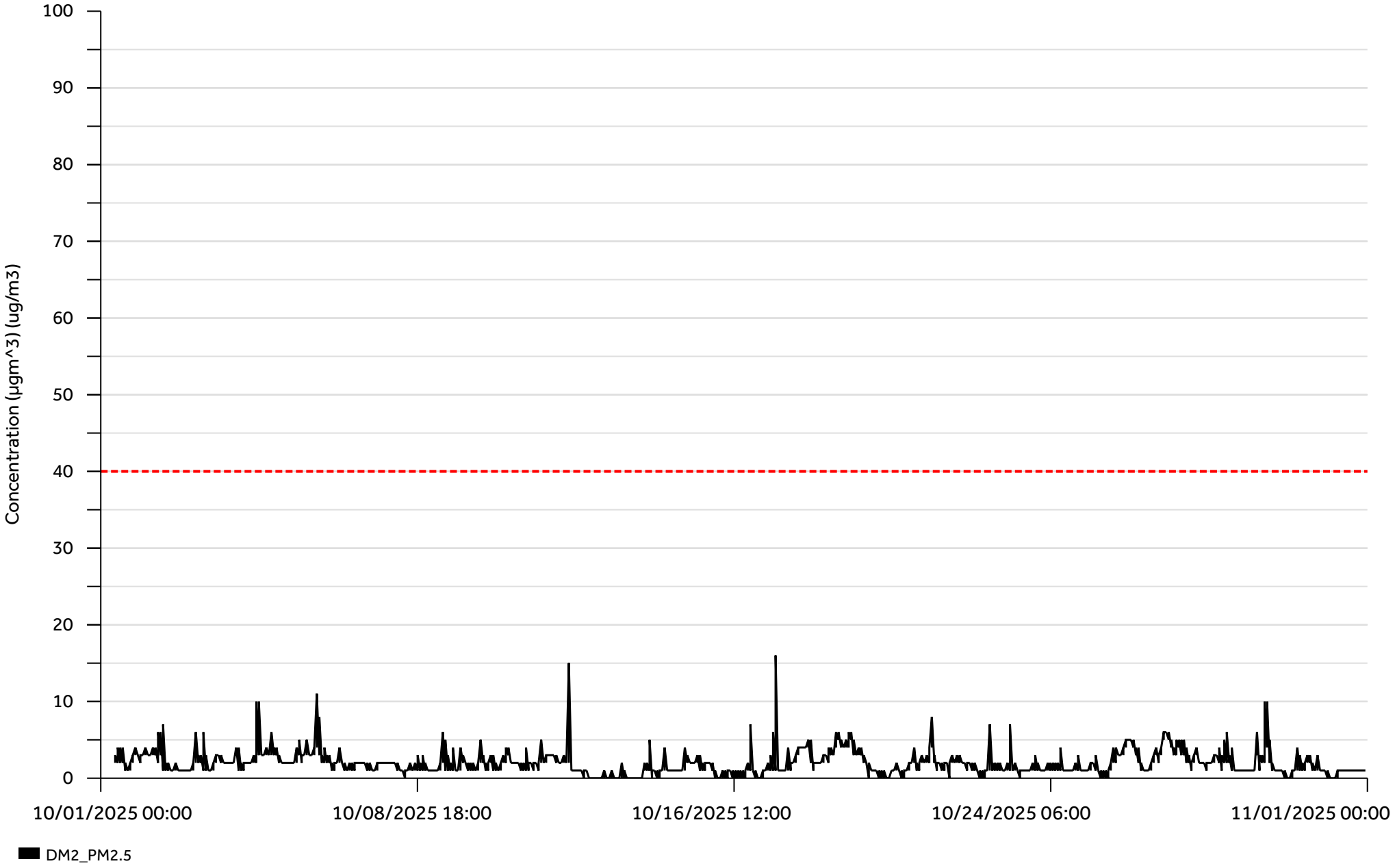
Graph 9

DM1-PM2.5



Graph 10

DM2-PM2.5



Graph 11

DM3-PM2.5