Northern Bus Garage
Noise, Vibration, and Dust Monitoring Report (May 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 May 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.

Mic1 was temporarily removed on May 23, 2025. The instrumentation was at risk of being damaged due to the work of Pepco's DC Plug Contractors.

Numerous noise level exceedances at all hours of the day and all days of the week. Mic1, Mic3, and Mic5 recorded over 40% of their exceedances out 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

VM1 was temporarily removed on May 23, 2025. The instrumentation was at risk of being damaged due to the work of Pepco's DC Plug Contractors.

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

There were 51 vibration exceedances in the month of May. The exceedances at VM1 are due to Pepco's DC Plug Contractors working in the immediate vicinity of VM1 to install new power vaults. Exceedances at VM2 and VM4 on May 12th are due to weed whacking and other housekeeping that was performed around the perimeter of the site. Exceedances at VM4 on May 29th and May 30th are due to the concrete subcontractor working in immediate proximity to the Vibration Monitor and moving the fence. There was no work on site during the May 25th exceedance at VM2, meaning it is impossible for Clark to determine the cause.

- VM1 – Exceedance with a reading of 0.21 in/sec on May 19 at 14:10.
- VM1 – Exceedance with a reading of 0.38 in/sec on May 19 at 14:16.
- VM1 – Exceedance with a reading of 0.20 in/sec on May 19 at 14:53.
- VM1 – Exceedance with a reading of 0.35 in/sec on May 19 at 16:22.
- VM1 – Exceedance with a reading of 0.26 in/sec on May 19 at 14:46.

- VM1 – Exceedance with a reading of 0.28 in/sec on May 19 at 17:14.
- VM1 – Exceedance with a reading of 0.59 in/sec on May 19 at 17:20.
- VM1 – Exceedance with a reading of 0.21 in/sec on May 21 at 09:22.
- VM1 – Exceedance with a reading of 0.35 in/sec on May 21 at 09:43.
- VM1 – Exceedance with a reading of 0.22 in/sec on May 22 at 10:22.
- VM1 – Exceedance with a reading of 0.27 in/sec on May 22 at 10:51.
- VM1 – Exceedance with a reading of 0.22 in/sec on May 22 at 11:02.
- VM1 – Exceedance with a reading of 0.72 in/sec on May 22 at 13:39.
- VM1 – Exceedance with a reading of 0.22 in/sec on May 22 at 14:31.
- VM1 – Exceedance with a reading of 0.44 in/sec on May 22 at 16:13.
- VM1 – Exceedance with a reading of 0.30 in/sec on May 23 at 07:48.
- VM1 – Exceedance with a reading of 1.70 in/sec on May 23 at 08:13.
- VM1 – Exceedance with a reading of 0.38 in/sec on May 23 at 08:15.
- VM1 – Exceedance with a reading of 0.21 in/sec on May 23 at 08:18.
- VM1 – Exceedance with a reading of 0.20 in/sec on May 23 at 08:19.
- VM1 – Exceedance with a reading of 0.22 in/sec on May 23 at 08:19.
- VM1 – Exceedance with a reading of 0.49 in/sec on May 23 at 08:21.
- VM1 – Exceedance with a reading of 0.24 in/sec on May 23 at 08:23.
- VM1 – Exceedance with a reading of 0.22 in/sec on May 23 at 08:24.
- VM1 – Exceedance with a reading of 0.22 in/sec on May 23 at 08:25.
- VM1 – Exceedance with a reading of 0.46 in/sec on May 23 at 08:26.
- VM1 – Exceedance with a reading of 0.31 in/sec on May 23 at 08:27.
- VM1 – Exceedance with a reading of 0.46 in/sec on May 23 at 08:28.
- VM1 – Exceedance with a reading of 0.40 in/sec on May 23 at 08:28.
- VM1 – Exceedance with a reading of 0.36 in/sec on May 23 at 08:29.
- VM1 – Exceedance with a reading of 0.50 in/sec on May 23 at 08:30.
- VM1 – Exceedance with a reading of 0.83 in/sec on May 23 at 08:31.
- VM1 – Exceedance with a reading of 0.21 in/sec on May 23 at 08:32.
- VM1 – Exceedance with a reading of 0.21 in/sec on May 23 at 08:39.
- VM2 – Exceedance with a reading of 0.22 in/sec on May 8 at 08:31.
- VM2 – Exceedance with a reading of 0.53 in/sec on May 12 at 08:17.
- VM2 – Exceedance with a reading of 0.42 in/sec on May 25 at 06:46.
- VM4 – Exceedance with a reading of 5.28 in/sec on May 12 at 08:39.
- VM4 – Exceedance with a reading of 2.48 in/sec on May 12 at 08:43.
- VM4 – Exceedance with a reading of 4.59 in/sec on May 12 at 08:54.
- VM4 – Exceedance with a reading of 5.26 in/sec on May 12 at 08:55.
- VM4 – Exceedance with a reading of 3.87 in/sec on May 12 at 08:56.
- VM4 – Exceedance with a reading of 2.80 in/sec on May 12 at 08:59.
- VM4 – Exceedance with a reading of 10.0 in/sec on May 29 at 14:10.
- VM4 – Exceedance with a reading of 8.62 in/sec on May 29 at 14:13.
- VM4 – Exceedance with a reading of 2.49 in/sec on May 29 at 14:18.
- VM4 – Exceedance with a reading of 3.34 in/sec on May 29 at 14:21.
- VM4 – Exceedance with a reading of 2.12 in/sec on May 29 at 14:46.
- VM4 – Exceedance with a reading of 2.56 in/sec on May 29 at 14:47.
- VM4 – Exceedance with a reading of 7.91 in/sec on May 30 at 08:16.
- VM4 – Exceedance with a reading of 2.04 in/sec on May 30 at 09:35.

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.

There were four Air Quality exceedances in the month of May.

- DM2 – Exceedance of the PM2.5 limit with a reading of 43 µg/m^3 on May 5 at 09:07.
    - Weather history shows sustained winds of 13 MPH at this time.
- DM2 – Exceedance of the PM2.5 limit with a reading of 44 µg/m^3 on May 12 at 09:07.
    - Weed whacking was taking place around the perimeter of the site on this date, specifically in proximity of VM2. This activity affects air quality in the immediate vicinity.
- DM2 – Exceedance of the PM2.5 limit with a reading of 77 µg/m^3 on May 12 at 09:37.
    - Weed whacking was taking place around the perimeter of the site on this date, specifically in proximity of VM2. This activity affects air quality in the immediate vicinity.
- DM2 – Exceedance of the PM10 limit with a reading of 89 µg/m^3 on May 12 at 09:37.
    - Weed whacking was taking place around the perimeter of the site on this date, specifically in proximity of VM2. This activity affects air quality in the immediate vicinity.

Figure 1: Vibration and Noise Monitor Location Plan

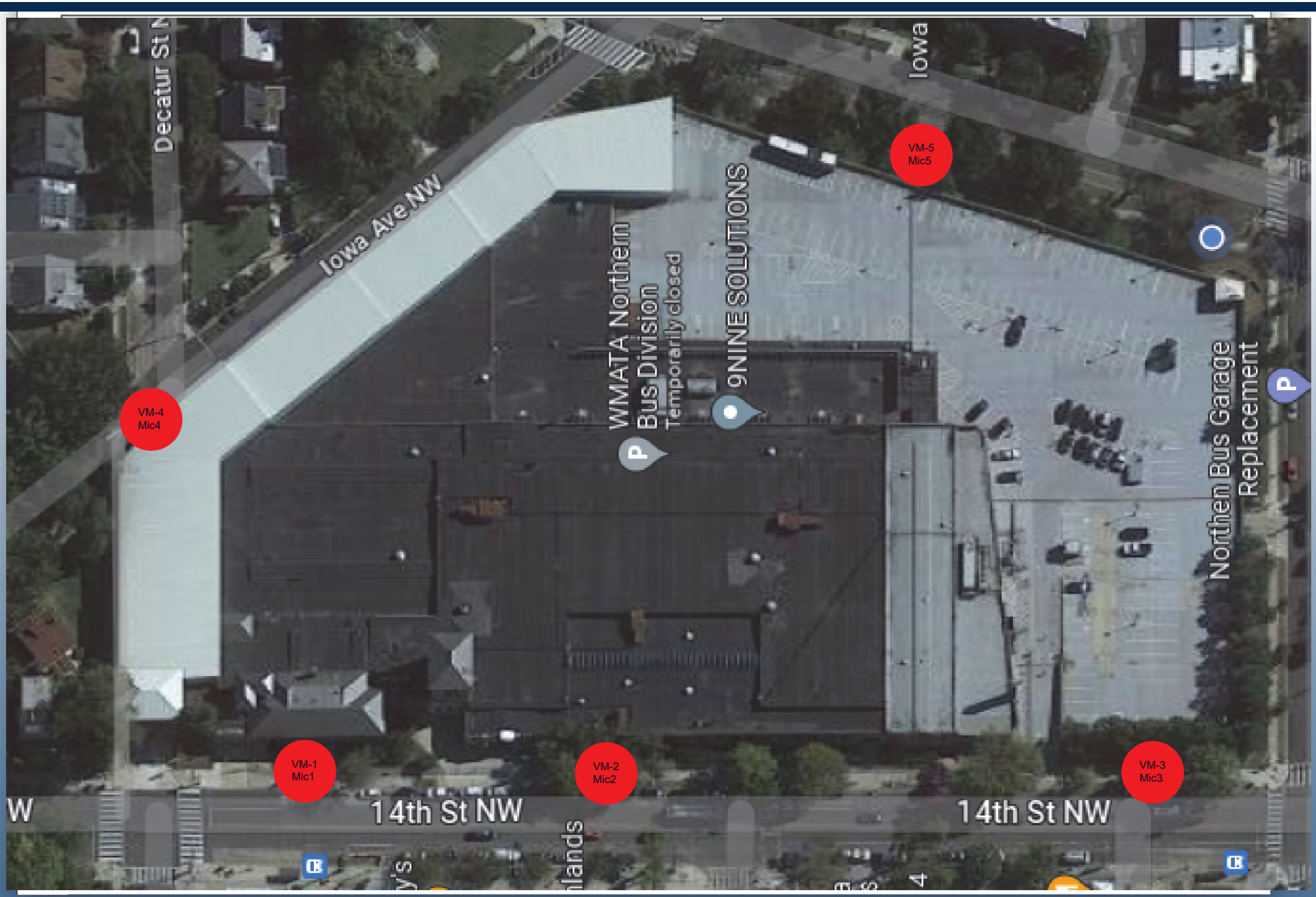


Figure 2: Dust Monitor Location Plan

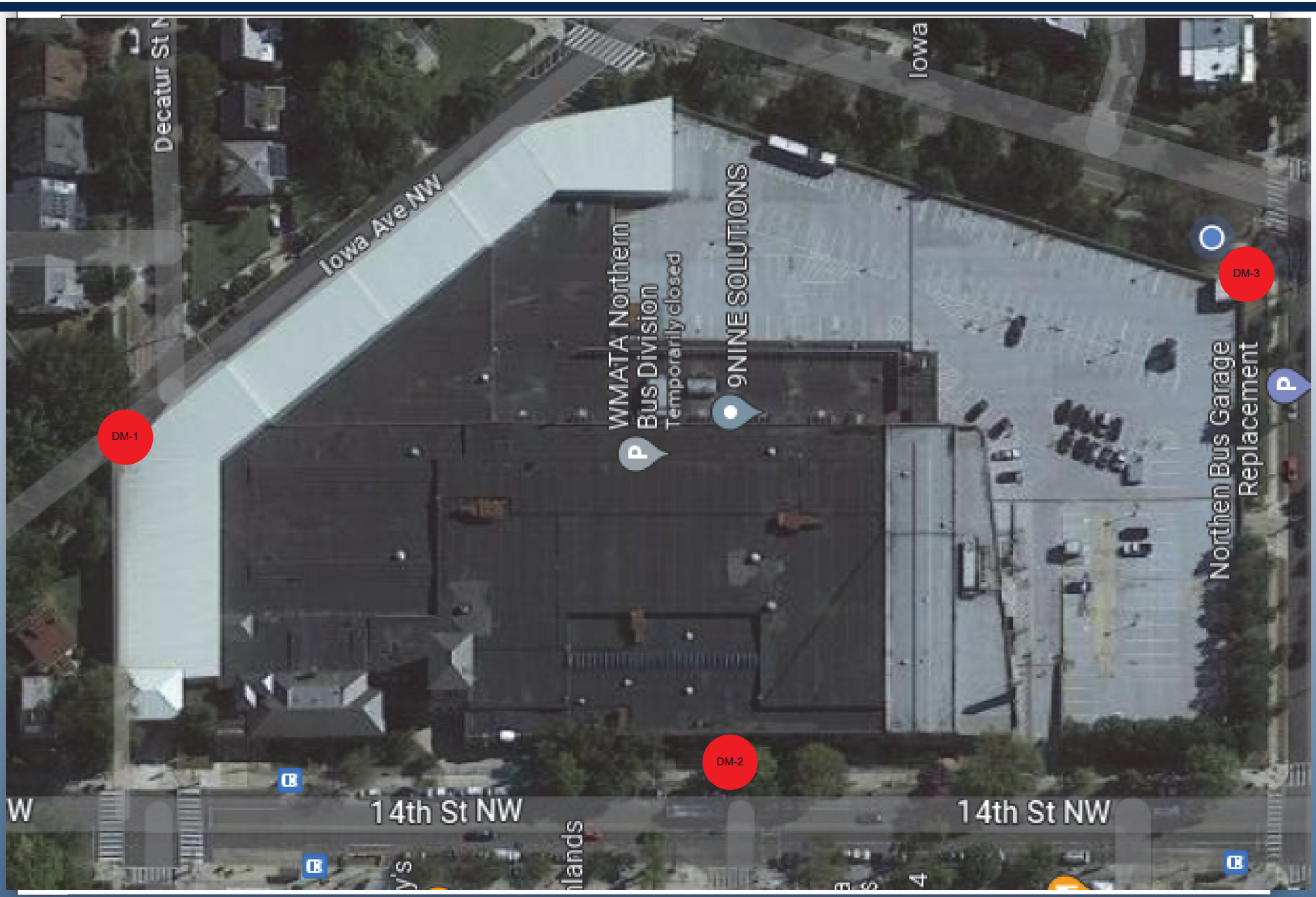


Table 1: Noise Summaries

VM1-MIC		
	Exceedance	Percentage
Work hours	510	59.30%
After hours	224	26.05%
Weekends	126	14.65%
Total	860	100%

VM1-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	117.1	110.4	110.4
Lmin (dBA)	83.7	61.2	52.5
L10 (dBA)	104	83	70
L90 (dBA)	85	65	55
Leq (dBA)	91	78.7	78.8

VM2-MIC		
	Exceedance	Percentage
Work hours	528	68.93%
After hours	130	16.97%
Weekends	108	14.10%
Total	766	100%

VM2-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	115.7	107.3	113
Lmin (dBA)	70.6	64.7	65.9
L10 (dBA)	95	75	86
L90 (dBA)	90	68	70
Leq (dBA)	93	79	83.8

VM3-MIC		
	Exceedance	Percentage
Work hours	756	55.71%
After hours	351	25.87%
Weekends	250	18.42%
Total	1357	100%

VM3-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	113.4	107	110
Lmin (dBA)	91.3	65.2	57.5
L10 (dBA)	97	74	73
L90 (dBA)	93	68	62
Leq (dBA)	94.5	71.1	82.2

VM4-MIC		
	Exceedance	Percentage
Work hours	608	92.12%
After hours	21	3.18%
Weekends	31	4.70%
Total	660	100%

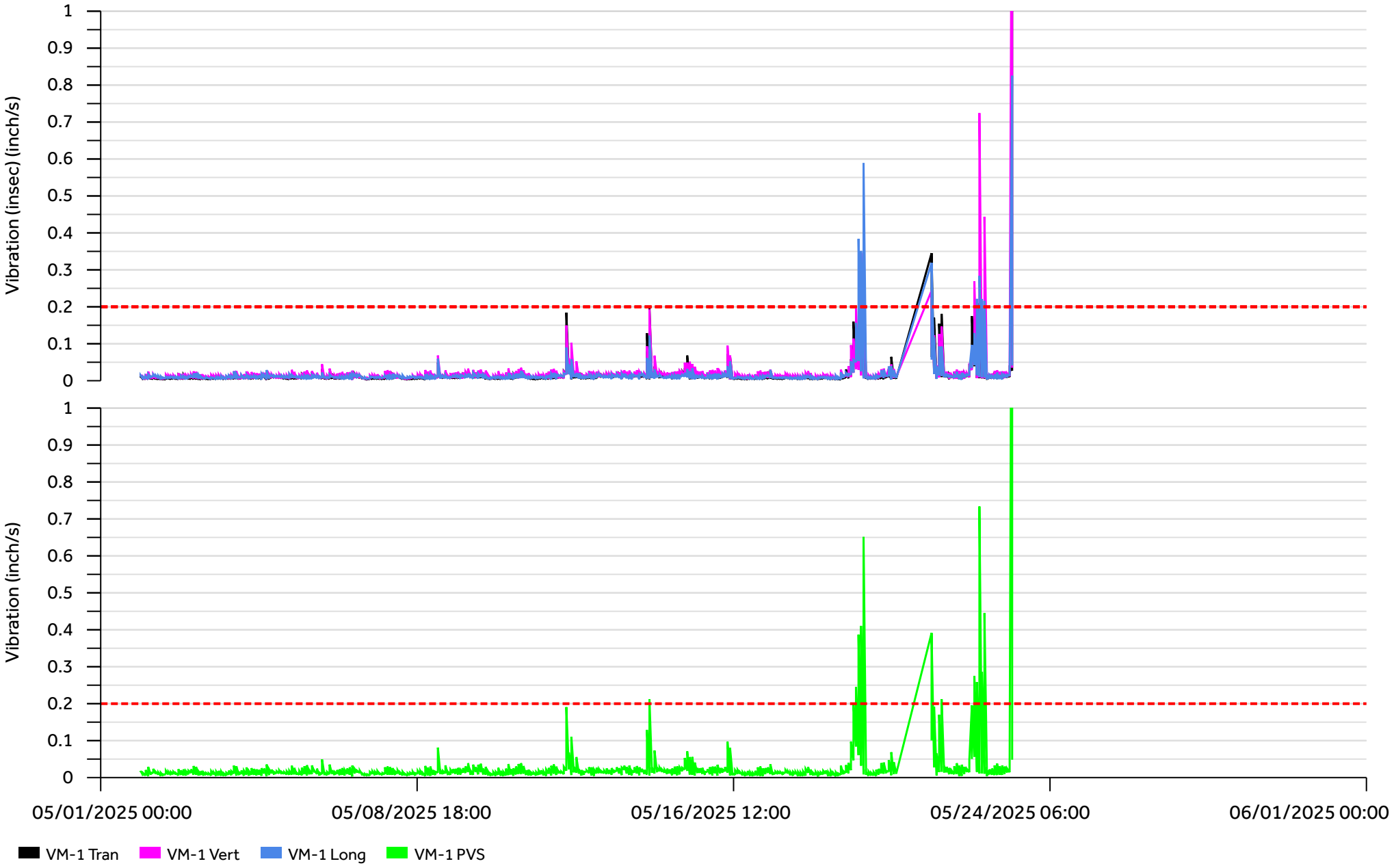
VM4-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	108.7	100.9	95.6
Lmin (dBA)	86.5	64.9	54.9
L10 (dBA)	100	72	69
L90 (dBA)	88	66	57
Leq (dBA)	95.5	71	65.7

VM5-MIC		
	Exceedance	Percentage
Work hours	119	49.79%
After hours	55	23.01%
Weekends	65	27.20%
Total	239	100%

VM5-MIC			
	Work hours	After hours	Weekends
Lmax (dBA)	110.7	105.1	107.1
Lmin (dBA)	58	45.8	46.1
L10 (dBA)	73	69	68
L90 (dBA)	62	55	50
Leq (dBA)	81	76.7	74

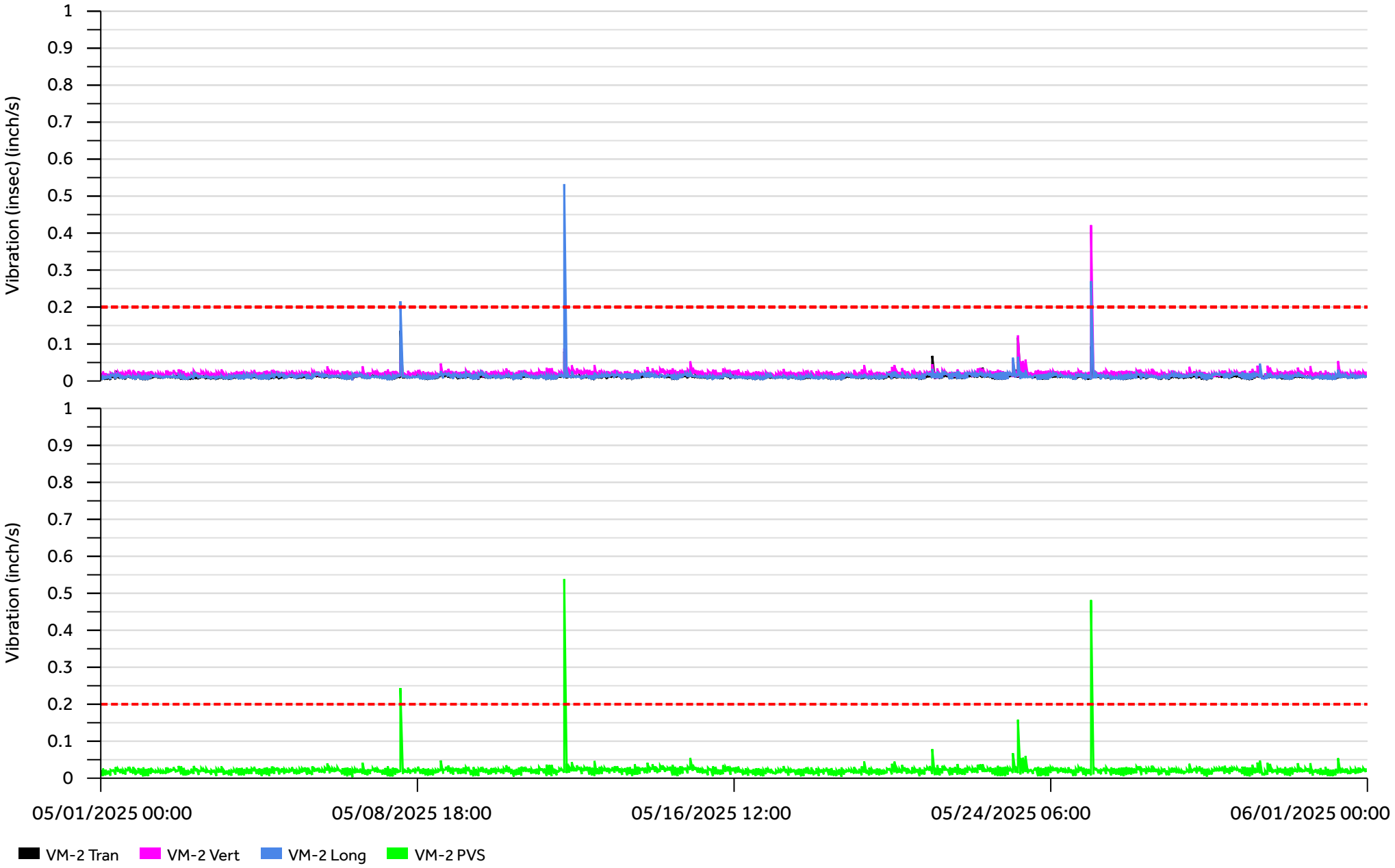
Graph 1

VM-1- Vibration Monitor



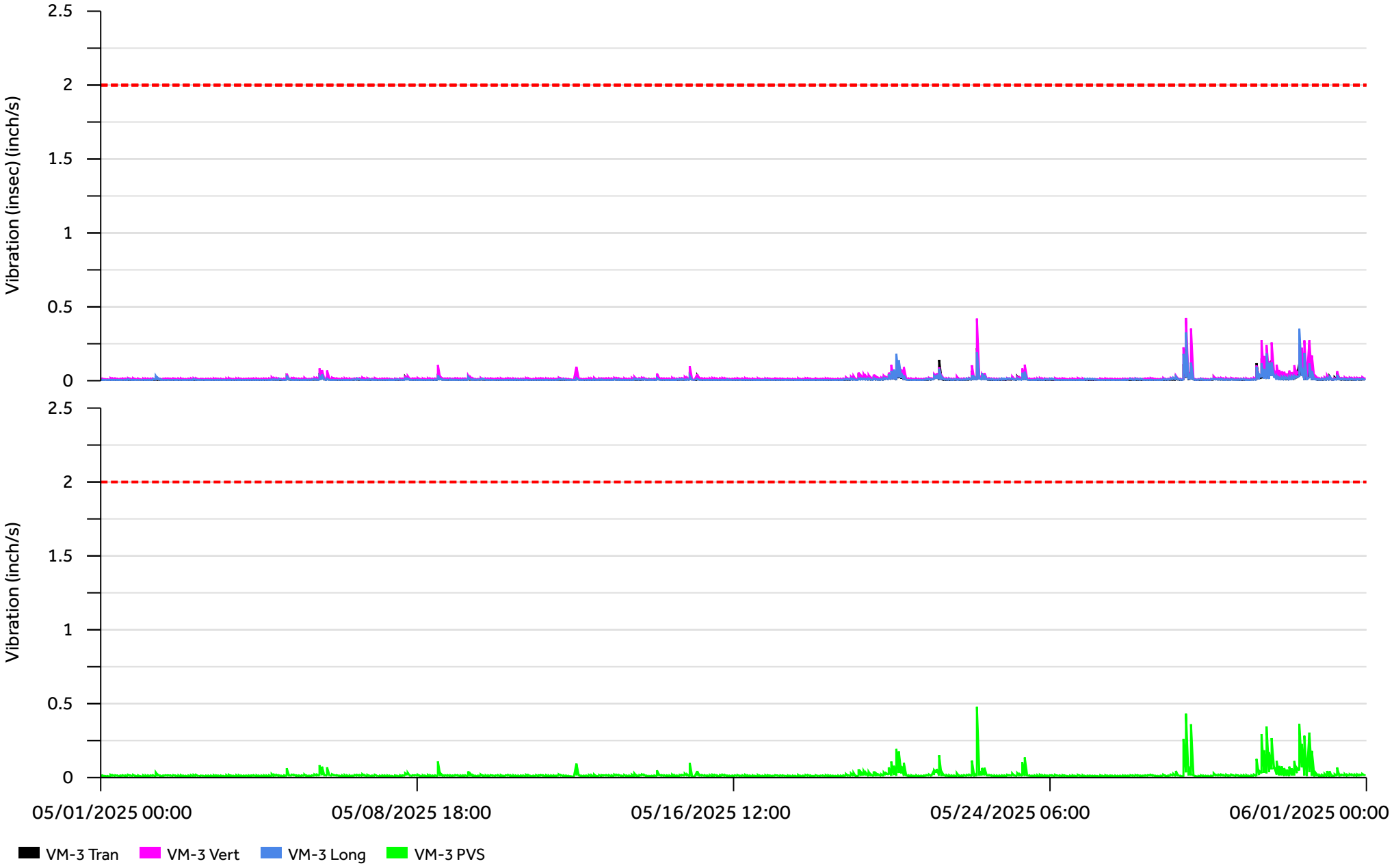
Graph 2

VM-2- Vibration Monitor



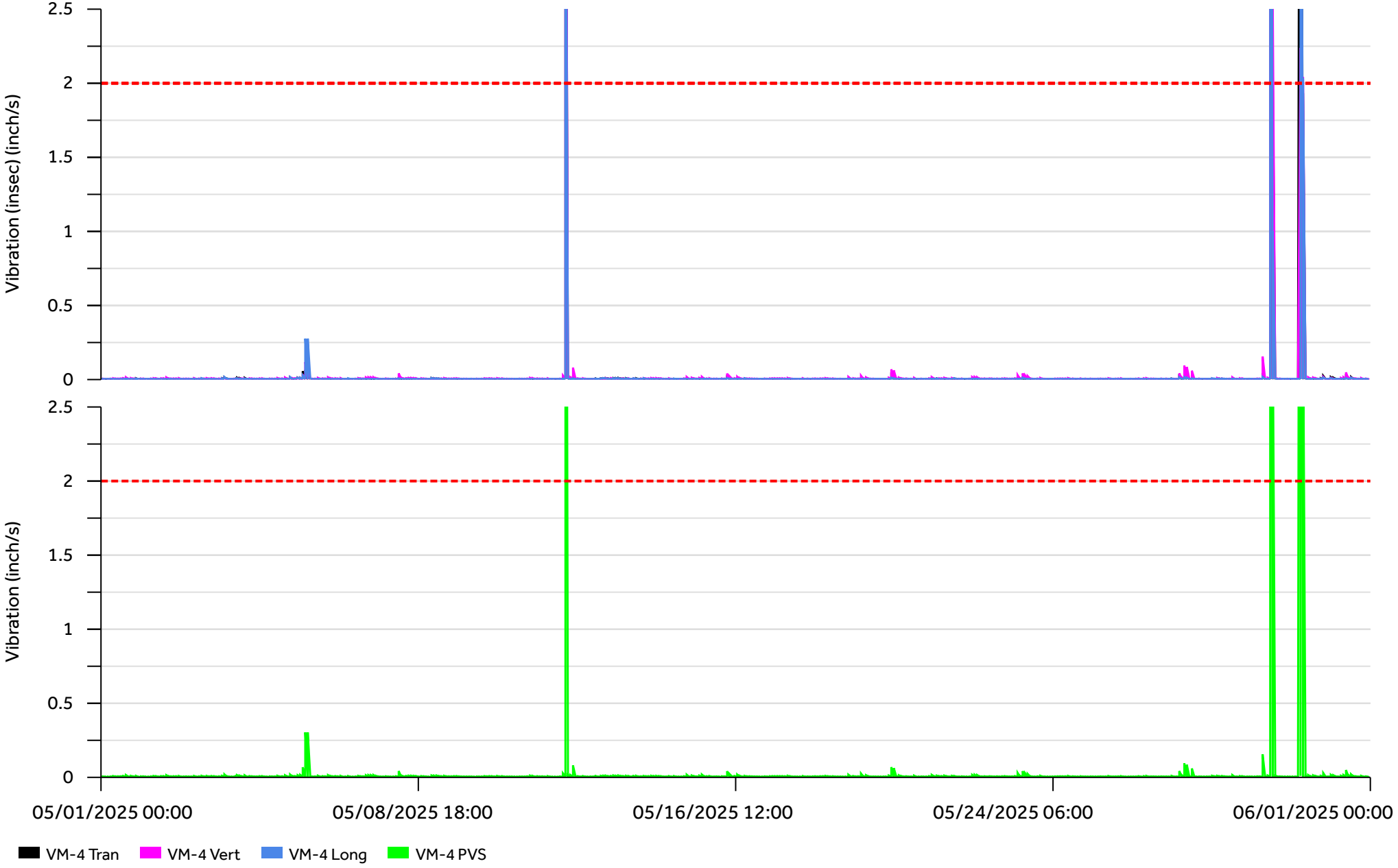
Graph 3

VM-3- Vibration Monitor



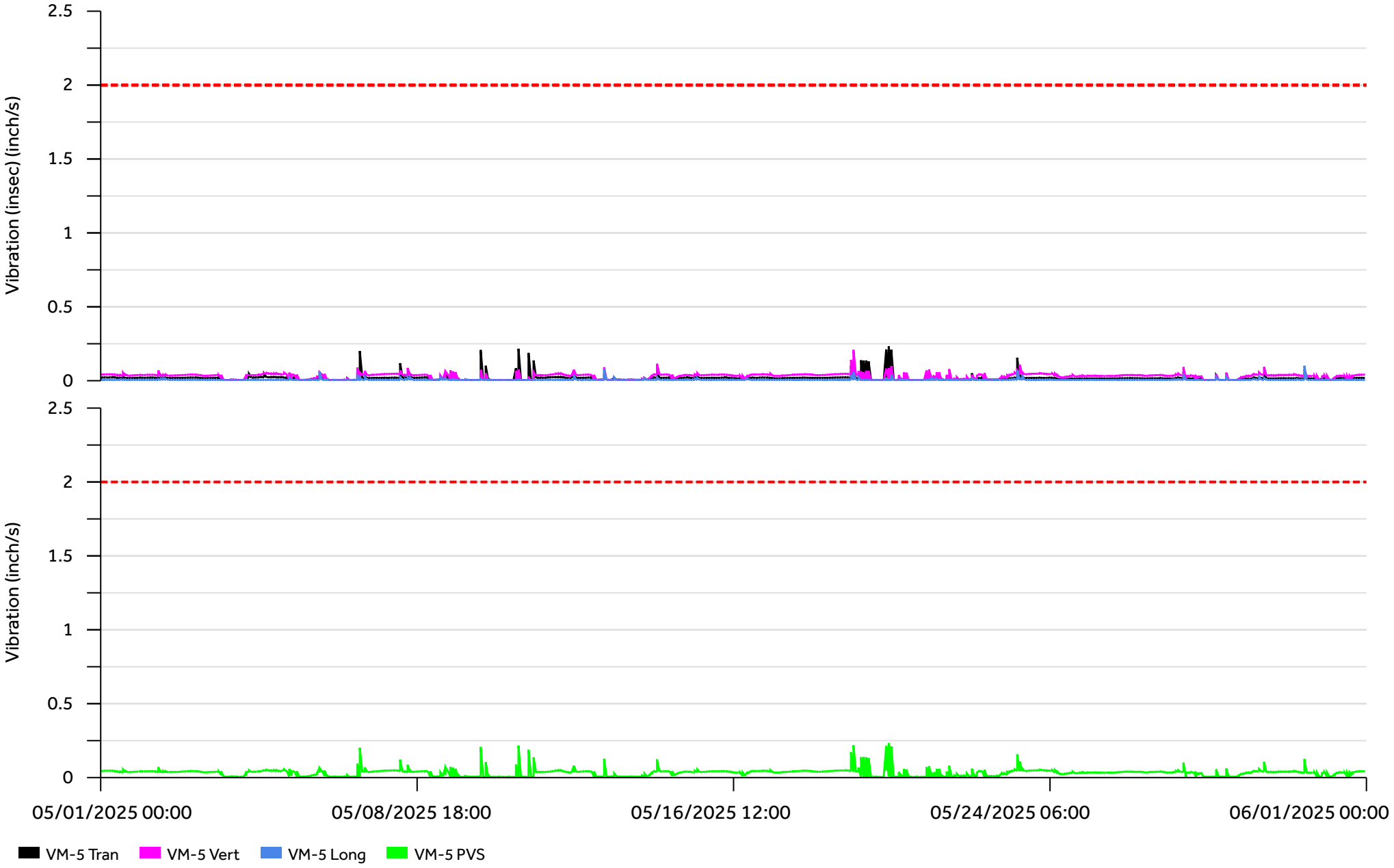
Graph 4

VM-4- Vibration Monitor



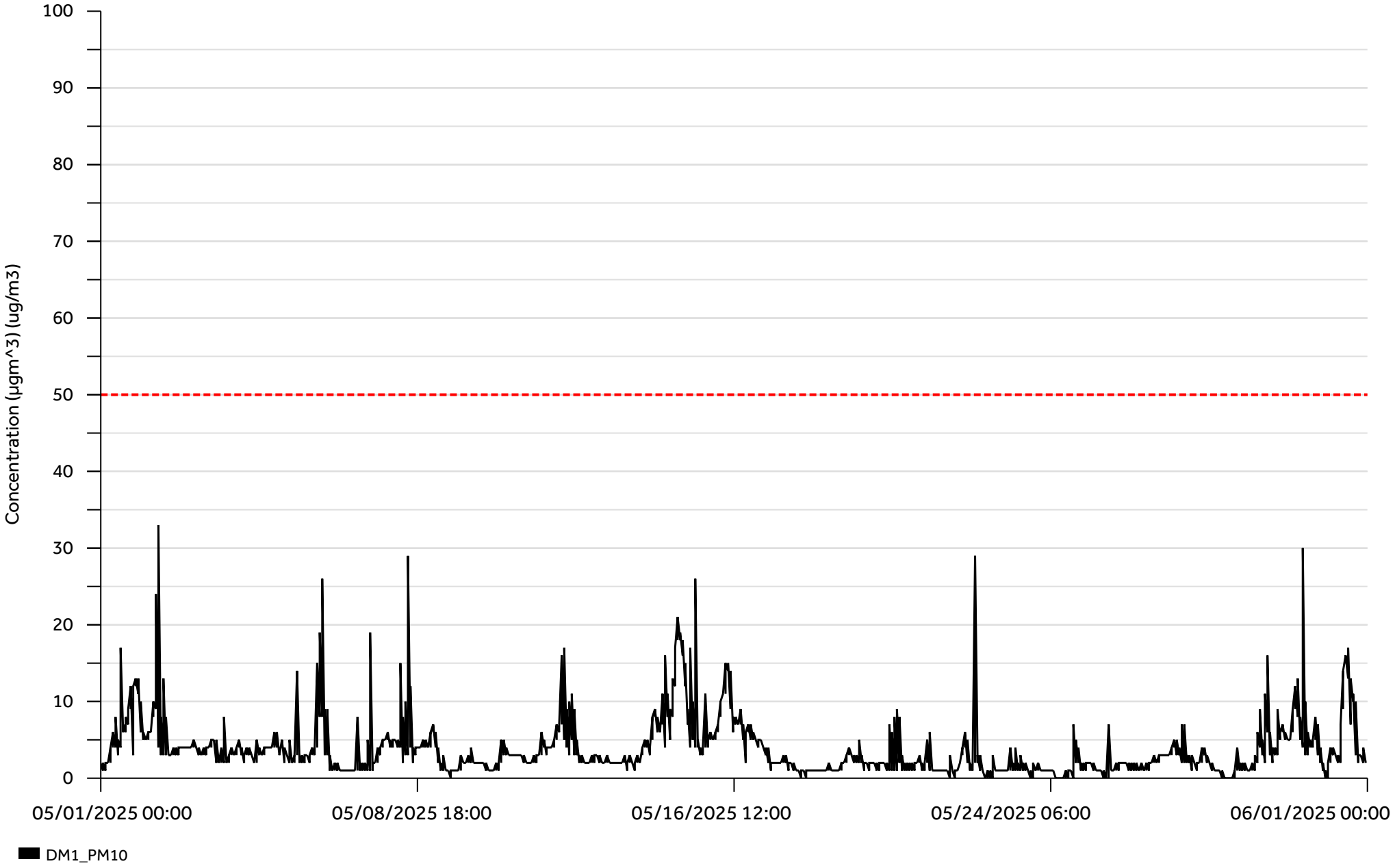
Graph 5

VM-5- Vibration Monitor



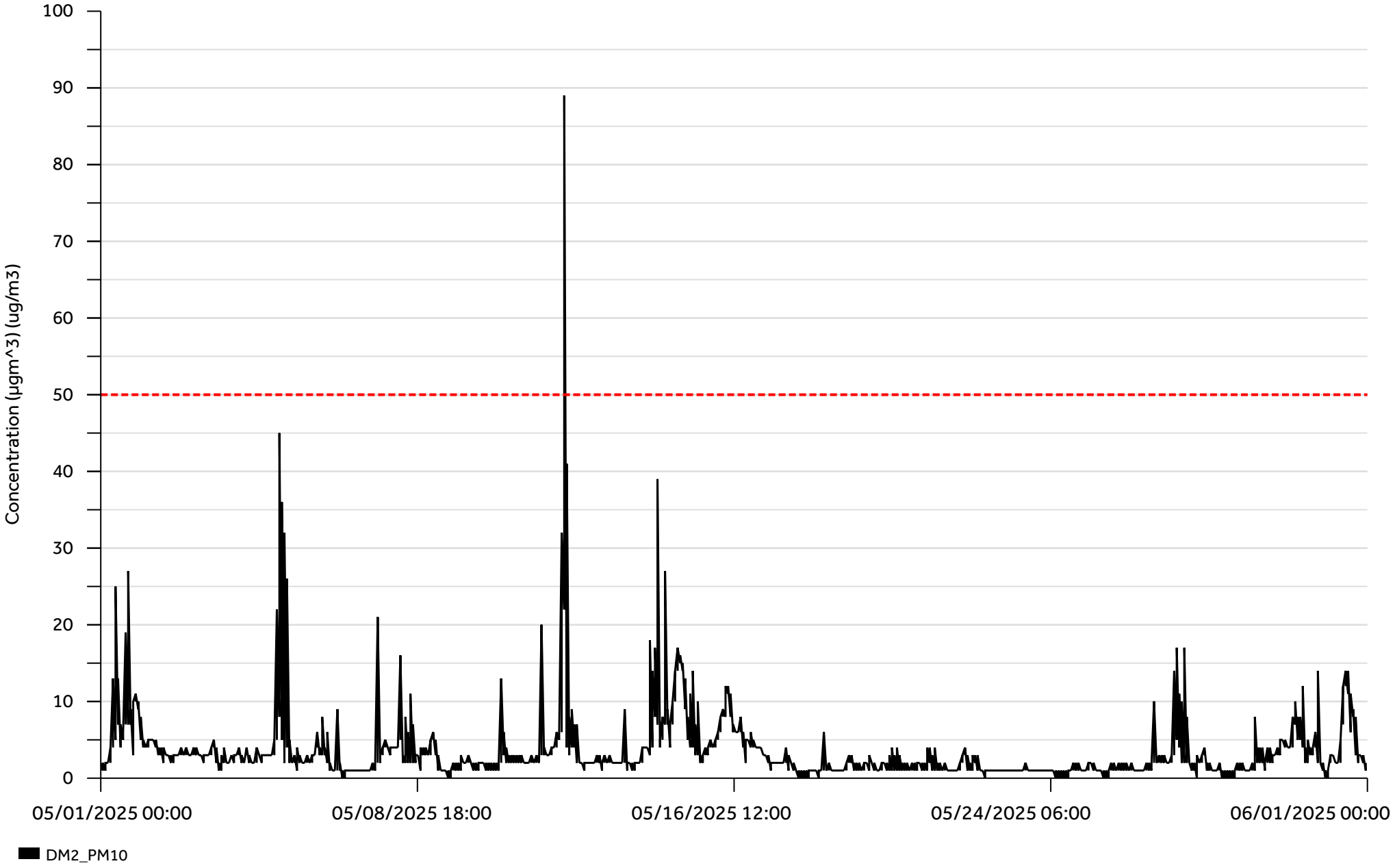
Graph 6

DM1 - PM10



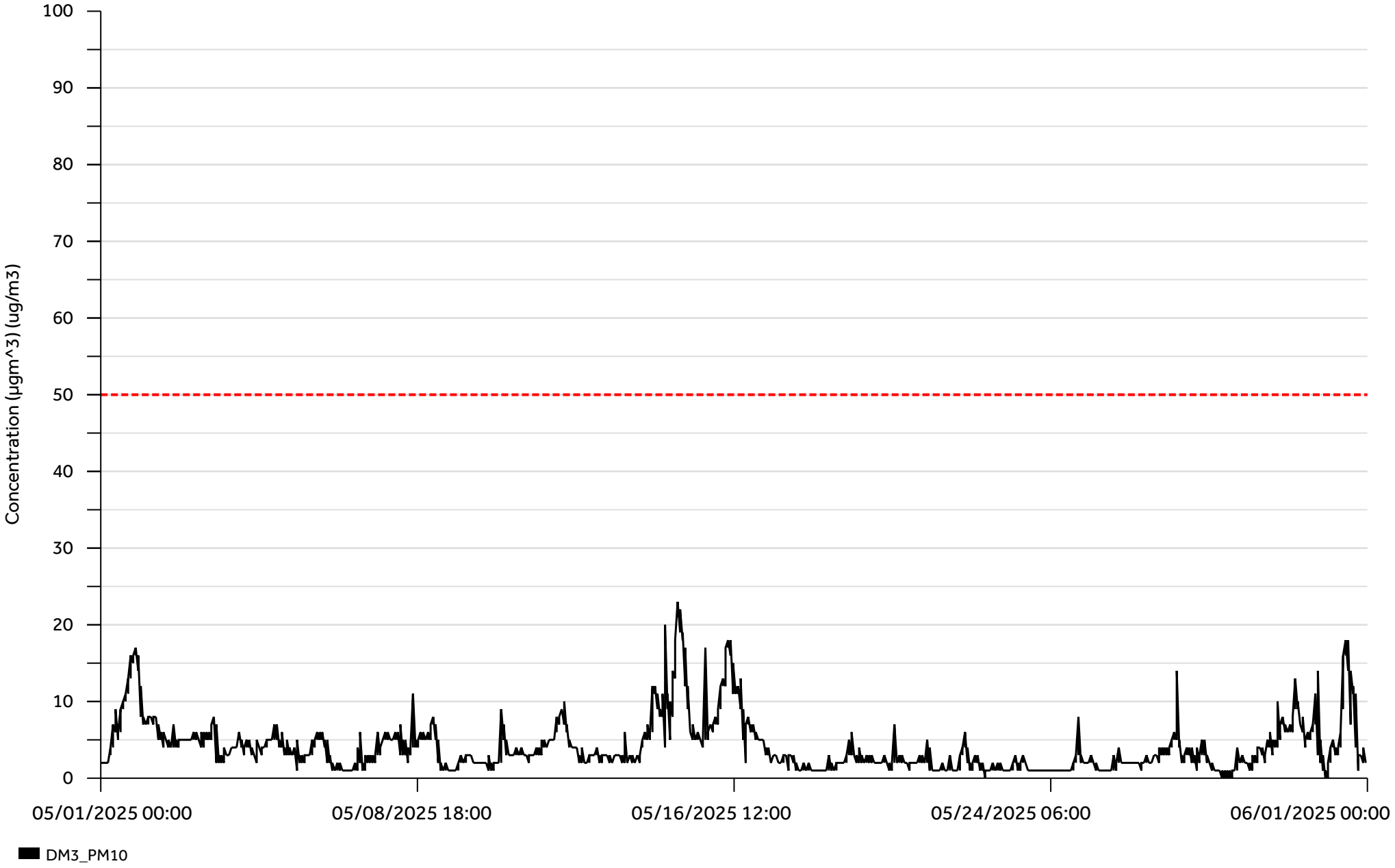
Graph 7

DM2-PM10



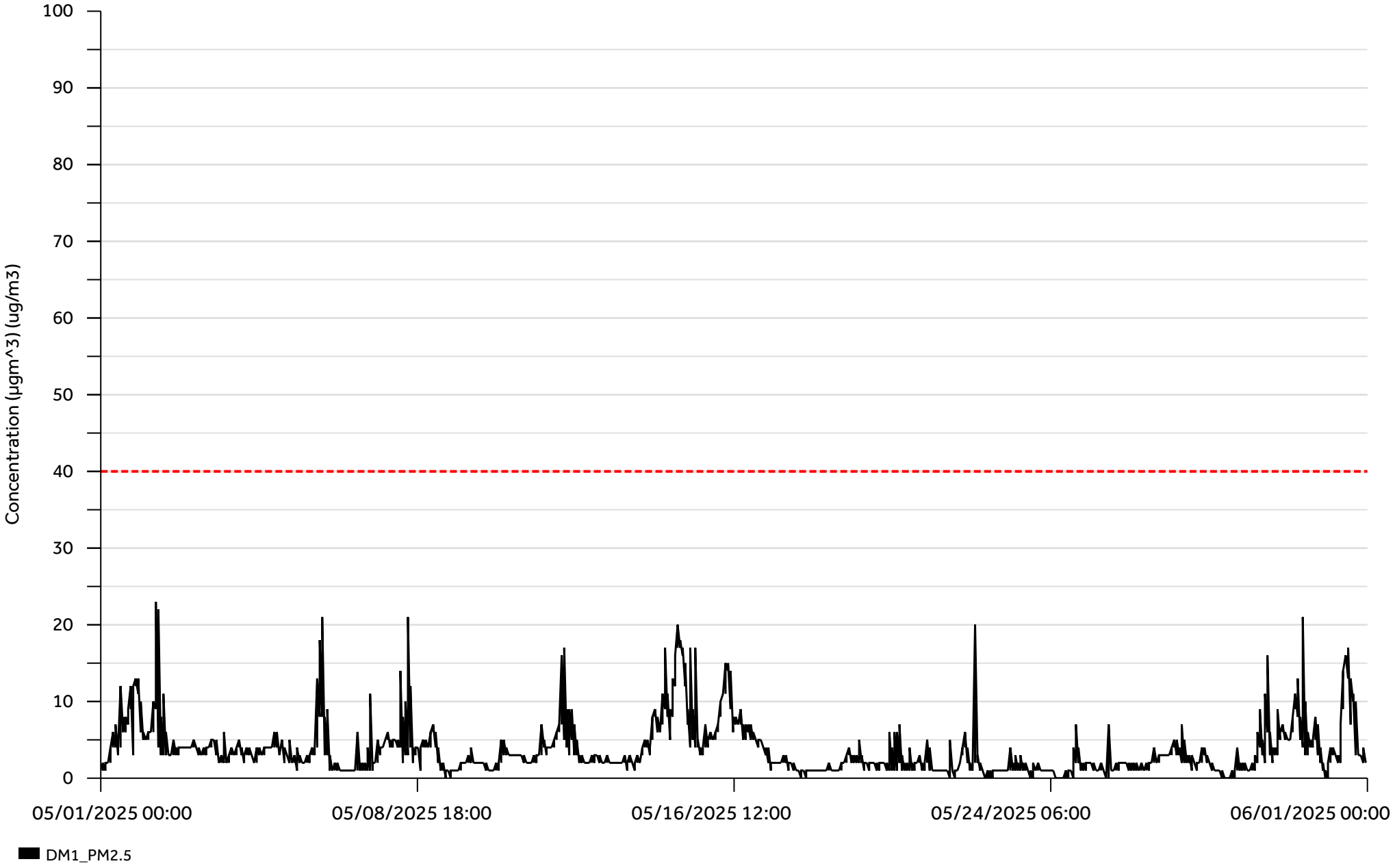
Graph 8

DM3-PM10



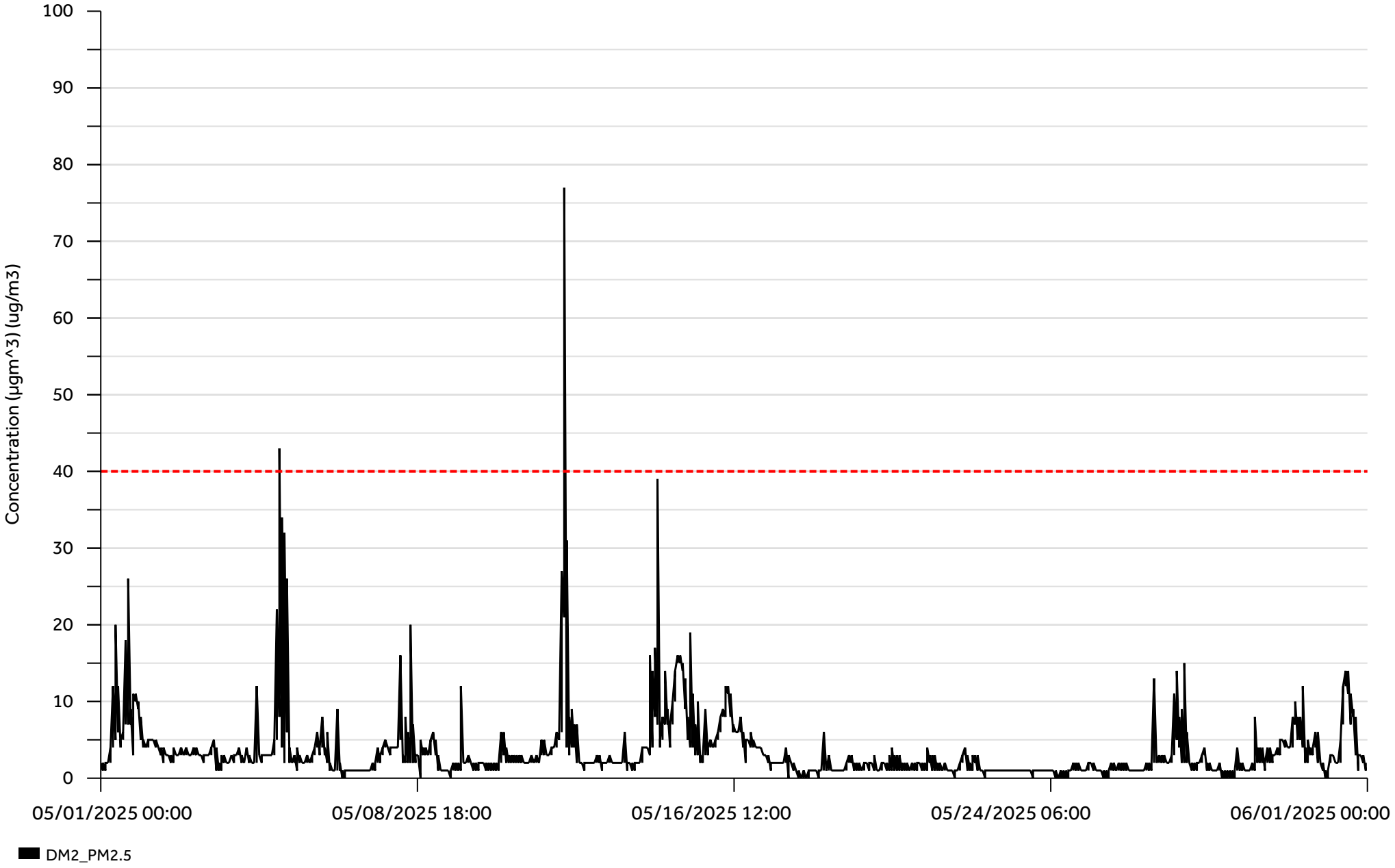
Graph 9

DM1-PM2.5



Graph 10

DM2-PM2.5



Graph 11

DM3-PM2.5