

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

**Gowanus Canal Turning Basin 4 Dredging and Capping Pilot Study  
Brooklyn, New York**

**Project number: 283126**

**Period: January 8 to 12, 2018**

**Date of Report: January 18, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



## **On-Site Activities Conducted During Week:**

### *Sevenson Environmental Services (SES)*

#### Sheet Pile Installation

- Probing to determine edge of toe of existing wooden crib bulkhead east of Station 5+70 near Whole Foods
- Installation of falsework east of Station 5+70
- Installation of 12 pairs to approximate Station 5+26
- Relocate barge to south of canal near Station 2+11
- Installation of falsework to approximate Station 1+50

#### Water Treatment and Monitoring

- No discharge of treated water during the week.

#### Turbidity Monitoring

- Turbid water not observed migrating from the 4<sup>th</sup> Street Turning Basin.

#### Vibration Monitoring (subcontractor – Vibra-Tech)

- Operated and maintained five (5) stationary vibration monitors. Two (2) stationary monitors located on the south side of the canal, one (1) stationary monitor located on the north side of the canal, two (2) stationary monitors located on the 3<sup>rd</sup> Avenue Bridge abutments. Additionally, employed two (2), at a minimum, portable vibration monitors to measure vibration levels within 15 feet of the sheet pile installation work.
- Performed daily crack gauge inspections at 386 3<sup>rd</sup> Avenue during sheet pile installation.
- Exceedances of the peak particle velocity level specified in the Contract Documents (0.40 inches per second) and acceleration level specified in the Contract Documents (0.1 g) on 01/09/18 and 01/11/18 at the remote monitor at the south side of Whole Foods but no exceedances at the temporary monitors set at a closer distance.

### *Quality Assurance and Control – Geosyntec*

- No exceedance of turbidity trigger level of a measurement over a one-hour period of the sentinel buoy 20 nephelometric turbidity units (NTUs) greater than the ambient buoy during bulkhead installation. On January 12th the sentinel buoy detected a one-time spike in turbidity of 52.0 NTU at 15:30. Waterway pilot study construction activities had ended for the day prior to this one-time spike. The one-time spike is likely associated with heavy rainfall that occurred during that turbidity reading. On January 10<sup>th</sup> the turbidity buoy dataloggers were replaced with reprogrammed dataloggers designed for improved data transfer during cold weather.
- Measurements for 1/8/18:
  - Daily average for ambient buoy – 17.2 NTU
  - Daily average for sentinel buoy – 14.4 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 1.4 NTU at 1100
- Measurements for 1/9/18:
  - Daily average for ambient buoy – 14.9 NTU
  - Daily average for sentinel buoy – 11.8 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – NA-sentinel buoy reading did not exceed ambient buoy reading.
- Measurements for 1/10/18:
  - Daily average for ambient buoy – 13.5 NTU
  - Daily average for sentinel buoy – 12.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 10.5 NTU at 1430.



- Measurements for 1/11/18:
  - Daily average for ambient buoy – 12.0 NTU
  - Daily average for sentinel buoy – 12.3 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 19.7 NTU at 0940.
- Measurements for 1/12/18:
  - Daily average for ambient buoy – 12.1 NTU
  - Daily average for sentinel buoy – 10.5 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 41.6 NTU at 1530.

*Community Air Monitoring Program – TRC CAMP*

- Operated and maintained two (2) air monitoring stations at the upland staging area and five (5) monitoring station at the 4<sup>th</sup> Street Turning Basin Area.
- No exceedances of particulate matter of 10 microns in diameter or smaller (PM<sub>10</sub>) or total volatile organic compounds (TVOC) of the action level of 150 micrograms per cubic meter or 1,000 parts per billion, respectively.
- Maximum weekly measurements of PM<sub>10</sub> in µg/m<sup>3</sup>
  - Station 1 – 47 µg/m<sup>3</sup> recorded on 01/11/18
  - Station 2 – 44 µg/m<sup>3</sup> recorded on 01/11/18
  - Station 3 – <1 µg/m<sup>3</sup> recorded throughout the week
  - Station 4 – 33 µg/m<sup>3</sup> recorded on 01/11/18
  - Station 5 – 33 µg/m<sup>3</sup> recorded on 01/09/18
  - Station 6 – 34 µg/m<sup>3</sup> recorded on 01/11/18
  - Station 7 – <1 µg/m<sup>3</sup> recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 66 ppb recorded on 01/11/18
  - Station 2 – 61 ppb recorded on 01/11/18
  - Station 3 – 146 ppb recorded on 01/11/18
  - Station 4 – 43 ppb recorded on 01/11/18
  - Station 5 – 107 ppb recorded on 01/11/18
  - Station 6 – 64 ppb recorded on 01/11/18
  - Station 7 – 134 ppb recorded on 01/11/18
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit.
- 24-hour sample collected at ST-3 on 01/09 through 01/10 and at ST-5 on 01/08 through 01/09. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 24-hour sample collected at ST-1 on 12/14 through 12/15, ST-3 on 12/18 through 12/19 and ST-7 (collocated) on 12/19 through 12/20 presented in weekly CAMP report.



*Noise and Vibration Monitoring – Wilson Ihrig*

- Operated and maintained three (3) noise monitors: NM-1 (north side of canal on Whole Foods promenade), NM-2 (south side of canal on southeast corner of 386 3rd Avenue), and NM-3 (southeast corner of Whole Foods at 3rd Avenue Bridge).
- Exceedances of the hourly Leq noise limit of 80 dBA during sheet pile installation measured at NM-2 and NM-3. Mitigating measures being evaluated and implemented.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 77.3 dBA during 0700-0800 on 01/09/18
  - Southern monitor (NM-2) – 88.4 dBA during 1000-1100 on 01/11/18
  - 3<sup>rd</sup> Avenue Bridge monitor (NM-3) – 90.8 dBA during 1100-1200 on 01/09/18
- No exceedances of the commercial and industrial structures vibration criterion of 2.0 inches per second peak particle velocity.
- Greatest peak particle velocity measurements
  - Northern monitor (VM-1) – 0.027 in/sec event between 0800 and 0900 on 01/11/18
  - Southern monitor (VM-2) – 0.293 in/sec event between 0700 and 0800 on 01/11/18

*Cultural Natural Resource Monitoring – Archeology and Historic Resource Services (AHRS)*

- No inspections conducted during week and expected prior to commencing Phase 1 dredging.

**Two-Week Look Ahead:**

Sevenson:

- Continue installation of steel sheet pile bulkhead supports.
- Perform vibration, benchmark, and optical monitoring of bulkheads and surrounding structures.

Geosyntec – Perform construction quality assurance responsibilities.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise and vibration monitoring,

AHRS – No activities planned.

**Project Milestones:** Key project milestones either established or completed this period include the following:

- None during this period.

Attachments:

1. Geosyntec In-Canal Water Quality Monitoring Weekly Data Summary
2. TRC Weekly CAMP Report
3. Wilson Ihrig Weekly Noise and Vibration Monitoring Report
4. AHRS Weekly Report (no activities during current week)
5. Water Treatment System Monitoring Analytical Laboratory Data (no activities during current week)
6. Cumulative Dredged Material Chart (no activities during current week)



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 001	<b>Date</b> 01-08-2018
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**Description**  
First pair of sheet piles installed, prior to driving.



<b>Photo No.</b> 002	<b>Date</b> 01-08-2018
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**Description**  
Probing with "H" beam to locate submerged crib wall.



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<b>Photo No.</b> 003	<b>Date</b> 01-09-2018
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**Description**  
Threading sheet piles into the interlocks prior to driving.



<b>Photo No.</b> 004	<b>Date</b> 01-09-2018
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**Description**  
Quick release shackles being lifted off of the sheet piles after they have been released and prior to driving.



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<b>Photo No.</b> 005	<b>Date</b> 01-11-2018
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**Description**  
Vibration monitoring during probing activities.



<b>Photo No.</b> 006	<b>Date</b> 01-11-2018
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**Description**  
Hydraulic hammer arrives at the site, prior to unloading.



<b>Client Name:</b> Gowanus ERT	<b>Site Location:</b> TB-4 Pilot Study	<b>Project No.:</b> 283126.0000.0001
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<b>Photo No.</b> 007	<b>Date</b> 01-11-2018
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**Description**  
Hydraulic hammer in position, ready to drive sheet pile.



<b>Photo No.</b> 008	<b>Date</b> 01-12-2018
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**Description**  
Noise dosimeter in use to measure sounds while driving sheet piles.



**GEOSYNTEC IN-CANAL WATER QUALITY MONITORING WEEKLY DATA SUMMARY**



*Prepared for*

**Gowanus Canal  
Remedial Design  
Group**

# **GOWANUS CANAL SUPERFUND SITE DREDGING AND CAPPING PILOT STUDY Water Quality Monitoring Weekly Data Summary**

Week of January 8<sup>th</sup>, 2018

## **Report Contents**

- Scope of Monitoring
- Turbidity Buoy Data
- Handheld Measurements
- Summary of Visual Observations
  - Report of Exceedances

*Prepared by*

**Geosyntec**  **Beech and Bonaparte**   
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engineers | scientists | innovators

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Ewing, NJ 08628  
Project Number HPH106A (52)

## 1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of January 8<sup>th</sup>, 2018. Two turbidity buoys were deployed to monitor turbidity during the pilot study. One turbidity buoy was deployed just outside of the 4<sup>th</sup> Street Turning Basin and is referred to as the sentinel buoy. A second turbidity buoy was deployed further upstream in RTA1 in order to monitor background turbidity unaffected by on-water construction activities. This turbidity buoy is referred to as the ambient buoy. A map indicating the approximate locations of the turbidity buoys is provided in Figure 1. Each turbidity buoy was equipped with a YSI 600 OMS water quality meter with optical turbidity sensor. The buoys were programmed such that readings were collected every 15 minutes. After each measurement, the turbidity data were transmitted to a FTP site via telemetry. This report provides the turbidity data collected every 15 minutes from both the ambient and sentinel buoys during each day between 7 AM and 5 PM during the week of January 8<sup>th</sup>. Average and maximum turbidity are also presented. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4. The data provided in this summary report have not yet been validated and should be considered preliminary.



## 2. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 5 PM from January 8<sup>th</sup> to January 12<sup>th</sup>, 2018. Background data prior to the start of the dredging and capping pilot study is provided in Appendix A. No exceedances to the rolling average threshold criteria were observed during the reporting period. On January 12<sup>th</sup> the sentinel buoy detected a one-time spike in turbidity of 52.0 NTU at 15:30. Waterway pilot study construction activities had ended for the day prior to this one-time spike. The one-time spike is likely associated with heavy rainfall that occurred during that turbidity reading. On January 10<sup>th</sup> the turbidity buoy dataloggers were replaced with reprogrammed dataloggers designed for improved data transfer during cold weather. This switch in dataloggers caused a temporary increase in measurement frequency from every 15 minutes to every 10 minutes. The frequency was adjusted to every 15 minutes on January 11<sup>th</sup>.

### 2.1 Monday, January 8<sup>th</sup>, 2018

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel >Ambient (Y/N)
1/8/2018 7:00	14.4	12.7	N	1/8/2018 12:15	19.7	12.7	N
1/8/2018 7:15	15.8	12.4	N	1/8/2018 12:30	18.2	11.9	N
1/8/2018 7:30	14.4	14.1	N	1/8/2018 12:45	18.1	15.4	N
1/8/2018 7:45	16.8	14.2	N	1/8/2018 13:00	16.1	14.3	N
1/8/2018 8:00	17.5	15.1	N	1/8/2018 13:15	15.0	14.6	N
1/8/2018 8:15	22.4	15.0	N	1/8/2018 13:30	17.1	13.6	N
1/8/2018 8:30	22.9	16.1	N	1/8/2018 13:45	16.1	14.1	N
1/8/2018 8:45	24.8	19.6	N	1/8/2018 14:00	16.1	13.8	N
1/8/2018 9:00	22.1	16.4	N	1/8/2018 14:15	18.1	14.2	N
1/8/2018 9:15	21.6	15.5	N	1/8/2018 14:30	16.6	15.4	N
1/8/2018 9:30	20.6	14.7	N	1/8/2018 14:45	17.3	13.8	N
1/8/2018 9:45	20.0	16.4	N	1/8/2018 15:00	15.6	15.2	N
1/8/2018 10:00	19.8	16.5	N	1/8/2018 15:15	15.4	14.3	N
1/8/2018 10:15	17.6	16.7	N	1/8/2018 15:30	16.1	14.4	N
1/8/2018 10:30	17.1	16.0	N	1/8/2018 15:45	15.2	12.9	N
1/8/2018 10:45	15.7	16.1	Y	1/8/2018 16:00	15.6	12.7	N
1/8/2018 11:00	15.9	17.3	Y	1/8/2018 16:15	13.7	12.1	N
1/8/2018 11:15	15.9	14.5	N	1/8/2018 16:30	12.9	12.1	N
1/8/2018 11:30	16.0	13.8	N	1/8/2018 16:45	14.7	11.3	N
1/8/2018 11:45	15.9	13.0	N	1/8/2018 17:00	15.0	11.7	N
1/8/2018 12:00	16.2	12.2	N				

Average	17.2	14.4	N
Maximum	24.8	19.6	N

**Notes:**

No exceedances to rolling average threshold criteria during reporting period

Values highlighted in green are greater than 20 NTU above the ambient buoy reading

en Values highlighted in blue are greater than 40 NTU above the ambient buoy reading









### 3. HANDHELD MEASUREMENTS

No handheld measurements were collected for this reporting period.

### 4. SUMMARY OF VISUAL OBSERVATIONS

Visual observations are consistent with background conditions of the turning basin.

### 5. REPORT OF EXCEEDANCES

No exceedances of the water quality monitoring threshold criteria were met during the reporting period. Refer to the Water Quality Monitoring Plan for In-waterway Construction Activities (Geosyntec 2017) for further information regarding the Trigger and Action Criteria. Threshold criteria are summarized as follows:

- **Trigger criterion** – Any of the following:
  - The rolling average of the sentinel buoy turbidity measurements over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 20 NTU excluding any eliminated outlier measurements; or
  - Either an oil sheen or a turbidity plume is visually observed outside of engineering controls and in-waterway construction activities cannot be immediately excluded as the source.
- **Action criterion** – Any of the following:
  - The rolling average of the sentinel buoy turbidity measurements over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 40 NTU excluding any eliminated outlier measurements; or
  - Either an oil sheen or a turbidity plume is visually observed outside of engineering controls and in-waterway construction activities are readily identified as the source.

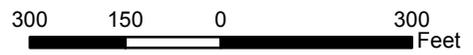
# **FIGURES**



X:\03\_GIS\mxd\Canal\_Wide\_Turbidity\_Buoy\_Locations.mxd; acarnes; 10/19/2017

**Legend**

-  Ambient Buoy
-  Sentinel Buoy
-  RTA Boundary



**Turbidity Buoy Locations**

Gowanus Canal, Brooklyn, NY

**Gowanus Canal Remedial Design Group** **Geosyntec** consultants **Beech and Bonaparte** engineering p.c. an affiliate of Geosyntec Consultants

**Figure**

**1**

Ewing, NJ

October 2017

**APPENDIX A**  
**PRE-DREDGE TURBIDITY BUOY DATA**

Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)	Time (Local)	Ambient Turbidity (NTU)	Sentinel Turbidity (NTU)	Sentinel> Ambient (Y/N)
10/3/2017 15:00	7.4	2.7	N	10/4/2017 4:30	4.8	7.1	Y	10/4/2017 18:00	6.9	2.7	N
10/3/2017 15:15	6.6	2.4	N	10/4/2017 4:45	5	6.3	Y	10/4/2017 18:15	7.2	2.7	N
10/3/2017 15:30	6.4	2.7	N	10/4/2017 5:00	4.7	6	Y	10/4/2017 18:30	7.8	3.4	N
10/3/2017 15:45	6.9	2	N	10/4/2017 5:15	5.1	6.4	Y	10/4/2017 18:45	8.2	4.4	N
10/3/2017 16:00	6.3	2.1	N	10/4/2017 5:30	5	7.3	Y	10/4/2017 19:00	7.5	3.1	N
10/3/2017 16:15	6.5	2.4	N	10/4/2017 5:45	5.4	7.8	Y	10/4/2017 19:15	8.7	3.6	N
10/3/2017 16:30	7.1	2.9	N	10/4/2017 6:00	5.5	8.3	Y	10/4/2017 19:30	8.7	4.5	N
10/3/2017 16:45	6.1	2.8	N	10/4/2017 6:15	5.2	9	Y	10/4/2017 19:45	9.4	4.1	N
10/3/2017 17:00	7	2.8	N	10/4/2017 6:30	5.8	7.2	Y	10/4/2017 20:00	8.4	4	N
10/3/2017 17:15	7	4.4	N	10/4/2017 6:45	5.4	8.8	Y	10/4/2017 20:15	8.2	4	N
10/3/2017 17:30	7	4.7	N	10/4/2017 7:00	5.5	8	Y	10/4/2017 20:30	9	3.6	N
10/3/2017 17:45	6.3	4	N	10/4/2017 7:15	5.6	7.5	Y	10/4/2017 20:45	8.4	3.5	N
10/3/2017 18:00	6.5	6.9	Y	10/4/2017 7:30	6.9	7.2	Y	10/4/2017 21:00	9.5	4.7	N
10/3/2017 18:15	7.8	6.7	Y	10/4/2017 7:45	6.8	6.1	N	10/4/2017 21:15	10.2	3.9	N
10/3/2017 18:30	7.9	6.5	N	10/4/2017 8:00	6.7	7.4	Y	10/4/2017 21:30	9.5	3.5	N
10/3/2017 18:45	8.5	5.9	N	10/4/2017 8:15	7.3	6.1	N	10/4/2017 21:45	8.9	3.6	N
10/3/2017 19:00	7.9	6	N	10/4/2017 8:30	7.2	4.6	N	10/4/2017 22:00	8.6	2.9	N
10/3/2017 19:15	7.4	6.3	N	10/4/2017 8:45	6.6	9	Y	10/4/2017 22:15	8.7	3.6	N
10/3/2017 19:30	7.4	4.3	N	10/4/2017 9:00	9.2	14.1	Y	10/4/2017 22:30	8.4	6.3	N
10/3/2017 19:45	8.3	4.6	N	10/4/2017 9:15	7.9	4.8	N	10/4/2017 22:45	7.3	3.3	N
10/3/2017 20:00	8.9	5.2	N	10/4/2017 9:30	9.3	4.6	N	10/4/2017 23:00	7.4	3.8	N
10/3/2017 20:15	8.6	4.5	N	10/4/2017 9:45	7.6	5.1	N	10/4/2017 23:15	7.1	4.5	N
10/3/2017 20:30	8	4.9	N	10/4/2017 10:00	8.1	3.9	N	10/4/2017 23:30	7	3.8	N
10/3/2017 20:45	10.6	4.3	N	10/4/2017 10:15	7.8	3.1	N	10/4/2017 23:45	8.3	5.3	N
10/3/2017 21:00	11.1	4.6	N	10/4/2017 10:30	7.3	4.5	N	10/5/2017 0:00	7.7	6.2	N
10/3/2017 21:15	9.8	4.7	N	10/4/2017 10:45	7.5	3.9	N	10/5/2017 0:15	7.8	5.1	N
10/3/2017 21:30	8.8	4.6	N	10/4/2017 11:00	7.6	9	Y	10/5/2017 0:30	7.2	5.7	N
10/3/2017 21:45	9	4.7	N	10/4/2017 11:15	6.5	16.7	Y	10/5/2017 0:45	7	5.4	N
10/3/2017 22:00	8.3	4.8	N	10/4/2017 11:30	7.4	6	N	10/5/2017 1:00	7.5	4.9	N
10/3/2017 22:15	7.3	6.1	N	10/4/2017 11:45	6.8	5.3	N	10/5/2017 1:15	7	8.2	Y
10/3/2017 22:30	7	4.7	N	10/4/2017 12:00	7.7	5.1	N	10/5/2017 1:30	8.1	4.9	N
10/3/2017 22:45	6.6	5.3	N	10/4/2017 12:15	6.6	6.1	N	10/5/2017 1:45	9.1	6.5	N
10/3/2017 23:00	7.1	6.1	N	10/4/2017 12:30	7.6	4	N	10/5/2017 2:00	9.2	5.2	N
10/3/2017 23:15	6.5	6	N	10/4/2017 12:45	7.7	3.9	N	10/5/2017 2:15	8.5	3.7	N
10/3/2017 23:30	6.6	6.9	Y	10/4/2017 13:00	8.3	4.8	N	10/5/2017 2:30	10.2	5.2	N
10/3/2017 23:45	7.2	5.2	N	10/4/2017 13:15	8.5	3.9	N	10/5/2017 2:45	10.1	4.2	N
10/4/2017 0:00	6.8	6.3	N	10/4/2017 13:30	9.2	5.5	N	10/5/2017 3:00	10.3	4.9	N
10/4/2017 0:15	7.2	5.6	N	10/4/2017 13:45	9.4	4.5	N	10/5/2017 3:15	9	6.3	N
10/4/2017 0:30	7.4	6.4	N	10/4/2017 14:00	11.1	3.1	N	10/5/2017 3:30	9.2	4.5	N
10/4/2017 0:45	7.1	5	N	10/4/2017 14:15	10	2.5	N	10/5/2017 3:45	8.4	4.1	N
10/4/2017 1:00	7.1	4.3	N	10/4/2017 14:30	9.8	2	N	10/5/2017 4:00	7.4	4.4	N
10/4/2017 1:15	8.3	4.6	N	10/4/2017 14:45	9.7	2.1	N	10/5/2017 4:15	7.3	4.4	N
10/4/2017 1:30	9	5.1	N	10/4/2017 15:00	9.3	2.4	N	10/5/2017 4:30	6.4	4.6	N
10/4/2017 1:45	7.9	4.5	N	10/4/2017 15:15	8.5	2.1	N	10/5/2017 4:45	6.2	5.1	N
10/4/2017 2:00	9.1	4	N	10/4/2017 15:30	8.5	1.8	N	10/5/2017 5:00	5.3	5.2	N
10/4/2017 2:15	7	5.3	N	10/4/2017 15:45	7.2	1.8	N	10/5/2017 5:15	5.3	5.3	N
10/4/2017 2:30	7.2	5.5	N	10/4/2017 16:00	7.3	1.6	N	10/5/2017 5:30	4.8	5	Y
10/4/2017 2:45	6.6	4.8	N	10/4/2017 16:15	6.4	1.8	N	10/5/2017 5:45	5.7	5	N
10/4/2017 3:00	6.6	5.7	N	10/4/2017 16:30	7	1.6	N	10/5/2017 6:00	5.6	4.8	N
10/4/2017 3:15	6.2	5.1	N	10/4/2017 16:45	7.5	2.6	N	10/5/2017 6:15	5.4	4.9	N
10/4/2017 3:30	5.9	4.7	N	10/4/2017 17:00	6.4	2.7	N	10/5/2017 6:30	6.1	5.7	N
10/4/2017 3:45	5.5	5.9	N	10/4/2017 17:15	6.5	2	N	10/5/2017 6:45	5.9	6.4	Y
10/4/2017 4:00	4.9	6.4	Y	10/4/2017 17:30	6.7	2.3	N	10/5/2017 7:00	6.1	7.8	Y
10/4/2017 4:15	5.1	7	Y	10/4/2017 17:45	6.6	2.1	N				
Average	7.5	6.0	N								
Maximum	11.1	16.7	Y								

**TRC WEEKLY COMMUNITY AIR MONITORING PROJECT REPORT**





**Gowanus Canal TB-4 Dredging and Pilot Study  
Brooklyn, New York  
Weekly Report  
(TRC Project No.274286-0000-00000)**

**Community Air Monitoring Project  
14<sup>th</sup> Weekly Monitoring Period  
Summary Report:  
January 8<sup>th</sup> through January 12<sup>th</sup>**

**Report Contents**

- Executive Summary
- Daily Data Summary Report – PM<sub>10</sub>/TVOC
  - Daily Meteorological Summary Report
    - Periodic Monitoring Results
- Volatile Organic Compounds (USEPA Method TO-15)

# **Gowanus Canal TB-4 Dredging and Pilot Study Brooklyn, New York**

## **Executive Summary – Week 14 Monitoring Period January 8<sup>th</sup> through January 12<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 14 monitoring period from January 8<sup>th</sup> through January 12<sup>th</sup>, 2018. The start and stop times associated with each daily monitoring period are listed on the respective daily reports.

TRC continued to operate two (2) air monitoring stations on the Citizen Property or Staging Area, and five (5) air monitoring stations in the 4<sup>th</sup> St Turning Basin Area using the equipment specified previously in the *Gowanus Canal TB-4 Dredging and Pilot Study Executive Summary – Background Monitoring Period Report*. During the Week 14 monitoring period there were no PM<sub>10</sub> or TVOC exceedances of the action level of 150ug/m<sup>3</sup> or 1,000 ppb respectively as defined in the *Community Air Monitoring Plan for the Gowanus Canal TB-4 Dredging and Pilot Study Project Brooklyn, NY, August 2018*.

Figure 1 depicts Total Volatile Organics (TVOC) daily averages and maximums. Figure 2 depicts particulate monitoring (PM<sub>10</sub>) daily averages and maximums for Week 14.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 14 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 14 monitoring period of January 8<sup>th</sup>, through January 12<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 3 and 5. The ST-3 sample was collected on January 9<sup>th</sup>, through January 10<sup>th</sup>, 2018. Co-located samples (ST-5A and ST-5B) were collected at Station 5 on January 8<sup>th</sup>, through January 9<sup>th</sup>, 2018. All samples were collected over a 24-hour period. Samples were shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Table 2 presents the analytical results for 24-hour samples collected at Stations 2 and 5 during Week 11. ST-1 was collected on December 14<sup>th</sup>, through December 15<sup>th</sup>, 2017. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28<sup>th</sup> and 31<sup>st</sup>, 2018.

Table 3 presents the analytical results for 24-hour samples collected at Stations 3 and 7 during Week 12. ST-3 was collected on December 18<sup>th</sup>, through December 19<sup>th</sup>, 2017. Co-located samples (ST-7A and ST-7B) were collected at Station 7 on December 19<sup>th</sup>, through December 20<sup>th</sup>, 2017. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28<sup>th</sup> and 31<sup>st</sup>, 2018.

Site activities which were conducted at the Citizen Property on January 8<sup>th</sup> through January 12<sup>th</sup>, 2018 included the following:

- Material and equipment deliveries on Citizen Property
- General vehicular traffic site-wide throughout the monitoring period
- Maintenance of the barges and equipment
- Construction of dredge water treatment plant enclosure

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal on January 8<sup>th</sup> through January 12<sup>th</sup>, 2018 included the following:

- Probing to determine edge of toe of existing wooden crib bulkhead east of Station 5+70 near Whole Foods
- Installation of false work (i.e., vertical and horizontal alignment guide) in preparation for Sheet Piling east of Station 5+70
- Installation of 12 pairs of Sheet Piling north side of canal near Whole Foods (up to Station 5+26)
- Relocate barge to south of canal near Station 2+11
- Installation of false work (i.e., vertical and horizontal alignment guide) in preparation for Sheet Piling west of Station 2+11

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

### Daily Station Report – TVOC/PM<sub>10</sub>

(TRC Project No.274286-0000-00000)

01/08/2018 06:30 AM - 01/08/2018 23:45 PM

#### Station 1

TVOC			PM <sub>10</sub>		
Max.	10	ppb	Max.	31	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	13	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 2

TVOC			PM <sub>10</sub>		
Max.	25	ppb	Max.	29	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	13	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 3

TVOC			PM <sub>10</sub>		
Max.	50	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	16	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 4

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	19	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 5

TVOC			PM <sub>10</sub>		
Max.	89	ppb	Max.	31	ug/m <sup>3</sup>
Avg.	20	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 6

TVOC			PM <sub>10</sub>		
Max.	5	ppb	Max.	20	ug/m <sup>3</sup>
Avg.	5	ppb	Avg.	13	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 7

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

### Daily Station Report – TVOC/PM<sub>10</sub>

(TRC Project No.274286-0000-00000)

01/09/2018 00:00 AM - 01/09/2018 23:45 PM

#### Station 1

TVOC			PM <sub>10</sub>		
Max.	8	ppb	Max.	26	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	16	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 2

TVOC			PM <sub>10</sub>		
Max.	9	ppb	Max.	25	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	16	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 3

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	6	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 4

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 5

TVOC			PM <sub>10</sub>		
Max.	44	ppb	Max.	33	ug/m <sup>3</sup>
Avg.	7	ppb	Avg.	8	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 6

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	21	ug/m <sup>3</sup>
Avg.	28	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 7

TVOC			PM <sub>10</sub>		
Max.	36	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	17	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

Daily Station Report – TVOC/PM<sub>10</sub>

(TRC Project No.274286-0000-00000)

01/10/2018 00:00 AM - 01/10/2018 23:45 PM

### Station 1

TVOC			PM <sub>10</sub>		
Max.	10	ppb	Max.	17	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 2

TVOC			PM <sub>10</sub>		
Max.	13	ppb	Max.	18	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 3

TVOC			PM <sub>10</sub>		
Max.	54	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	24	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 4

TVOC			PM <sub>10</sub>		
Max.	1	ppb	Max.	16	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	11	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 5

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	15	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 6

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	17	ug/m <sup>3</sup>
Avg.	43	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

### Station 7

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

### Daily Station Report – TVOC/PM<sub>10</sub>

(TRC Project No.274286-0000-00000)

01/11/2018 00:00 AM - 01/11/2018 23:45 PM

#### Station 1

TVOC			PM <sub>10</sub>		
Max.	66	ppb	Max.	47	ug/m <sup>3</sup>
Avg.	21	ppb	Avg.	20	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 2

TVOC			PM <sub>10</sub>		
Max.	61	ppb	Max.	44	ug/m <sup>3</sup>
Avg.	12	ppb	Avg.	21	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 3

TVOC			PM <sub>10</sub>		
Max.	146	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	41	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 4

TVOC			PM <sub>10</sub>		
Max.	43	ppb	Max.	33	ug/m <sup>3</sup>
Avg.	10	ppb	Avg.	18	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 5

TVOC			PM <sub>10</sub>		
Max.	107	ppb	Max.	31	ug/m <sup>3</sup>
Avg.	22	ppb	Avg.	9	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 6

TVOC			PM <sub>10</sub>		
Max.	64	ppb	Max.	34	ug/m <sup>3</sup>
Avg.	26	ppb	Avg.	11	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 7

TVOC			PM <sub>10</sub>		
Max.	134	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	33	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

# Gowanus Canal TB-4 Dredging and Capping Pilot Study

## Brooklyn, New York

### Daily Station Report – TVOC/PM<sub>10</sub>

(TRC Project No.274286-0000-00000)

01/12/2018 00:00 AM - 01/12/2018 15:00 PM

#### Station 1

TVOC			PM <sub>10</sub>		
Max.	33	ppb	Max.	19	ug/m <sup>3</sup>
Avg.	10	ppb	Avg.	11	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 2

TVOC			PM <sub>10</sub>		
Max.	18	ppb	Max.	20	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	12	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 3

TVOC			PM <sub>10</sub>		
Max.	56	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	5	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 4

TVOC			PM <sub>10</sub>		
Max.	41	ppb	Max.	12	ug/m <sup>3</sup>
Avg.	3	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 5

TVOC			PM <sub>10</sub>		
Max.	23	ppb	Max.	24	ug/m <sup>3</sup>
Avg.	13	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 6

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	20	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	10	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

#### Station 7

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

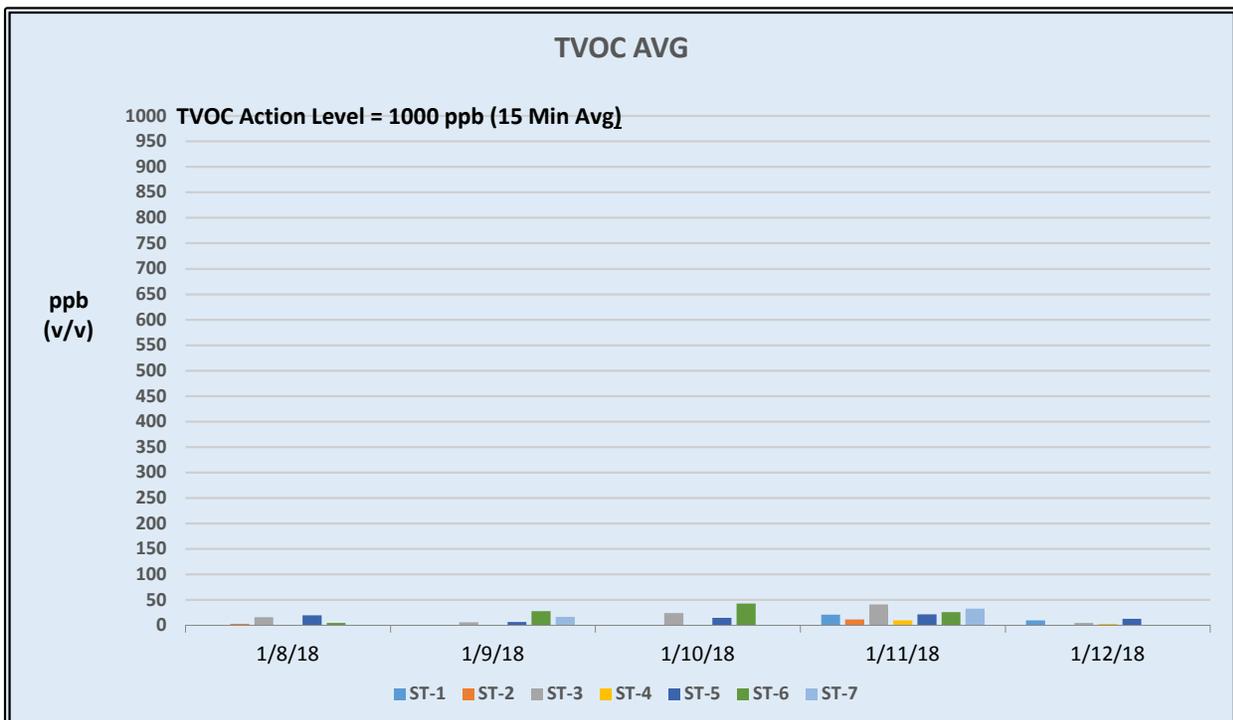
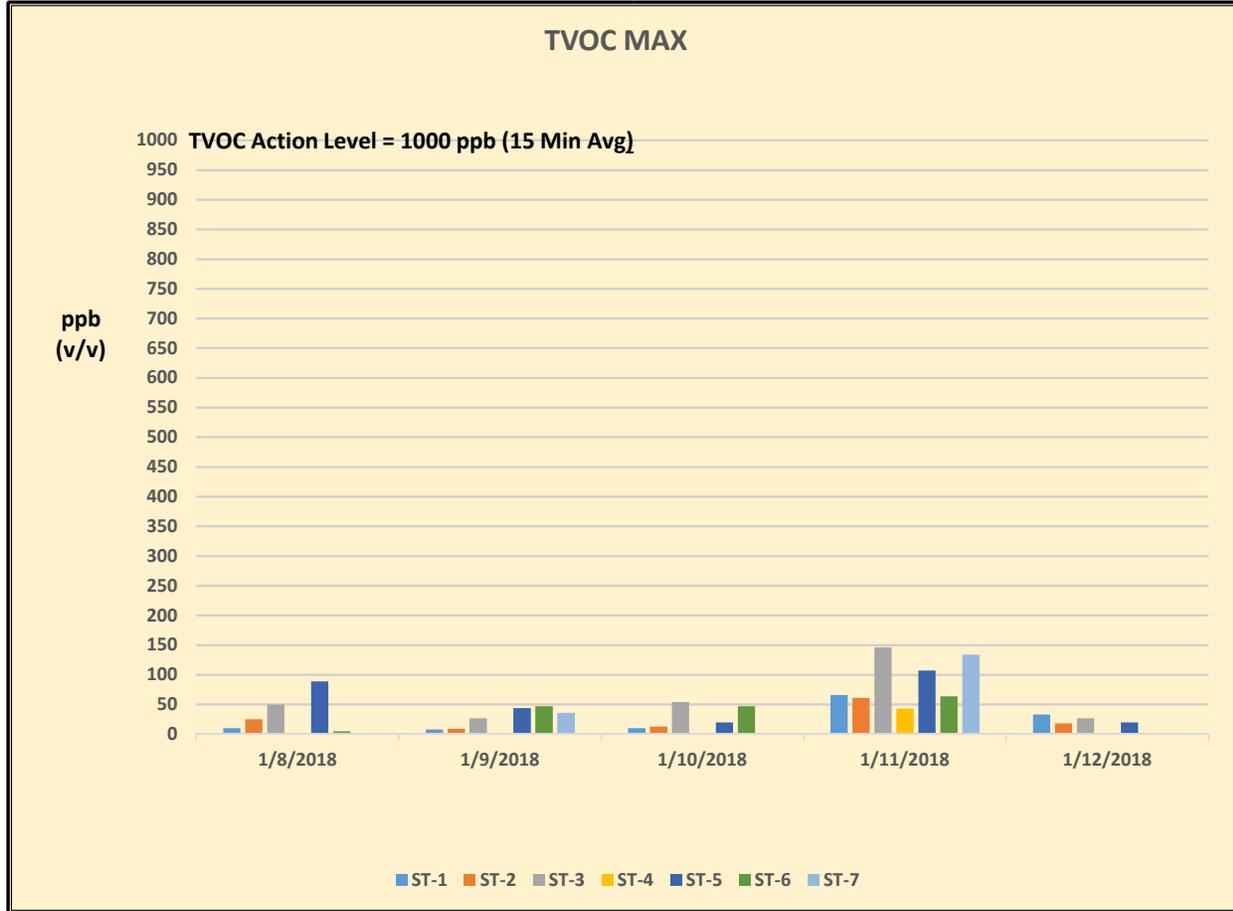
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

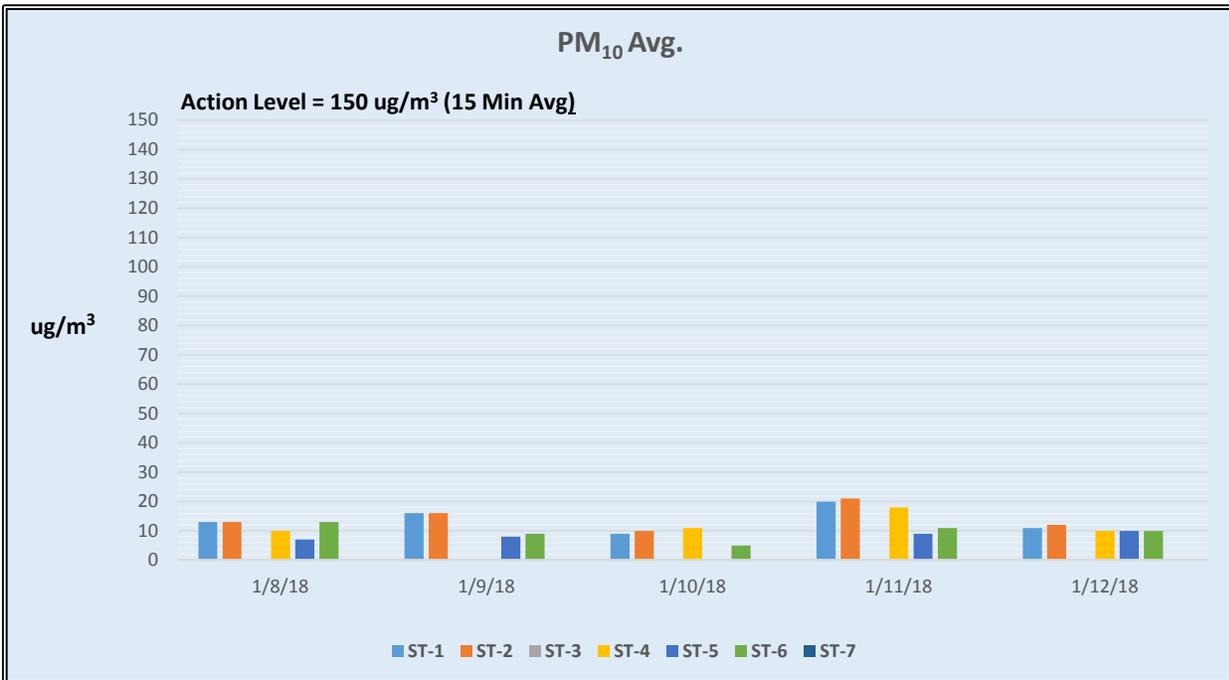
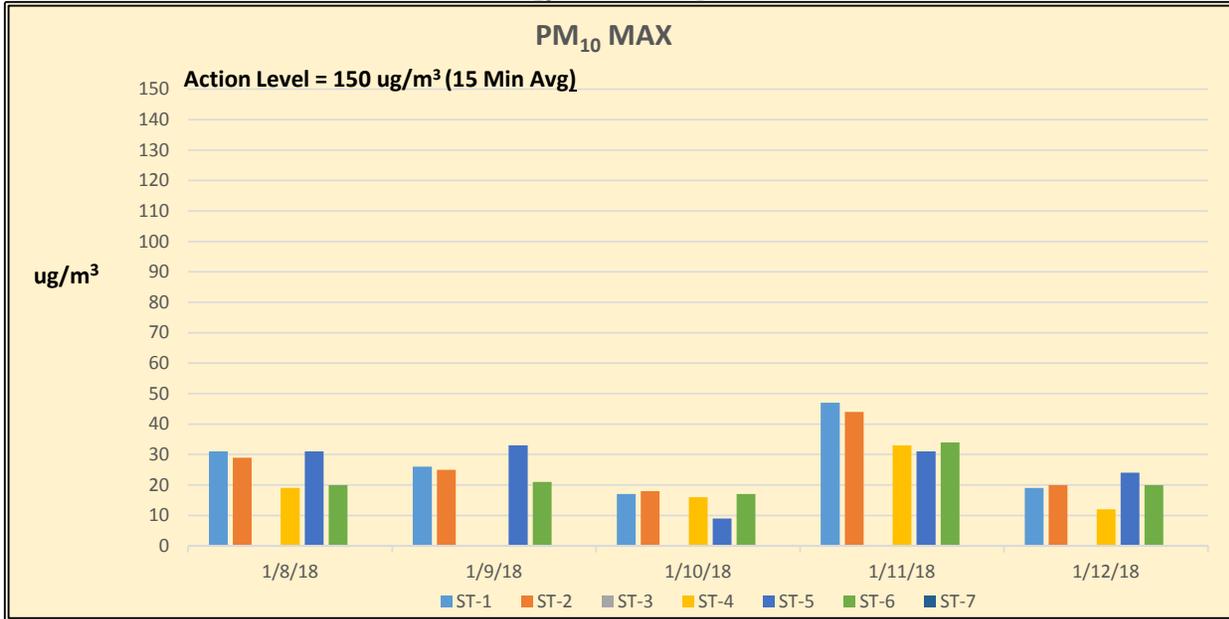
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 14**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 14**



**Table 1**

**Week 14**

**Summary of Additional Periodic (Daily) Monitoring Data**

January 8 <sup>th</sup> 2018				
Station Id	Time	Formaldehyde (CHO)	Hydrogen Sulfide (H <sub>2</sub> S)	Ammonia (NH <sub>3</sub> )
ST-1	8:00	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	8:05	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	8:15	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-4	8:20	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-5	8:25	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-6	8:45	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	15:00	<50	<3	<1.0

January 9 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO)	Hydrogen Sulfide (H <sub>2</sub> S)	Ammonia (NH <sub>3</sub> )
ST-1	7:00	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-2	7:05	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-3	7:15	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-4	7:20	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-5	7:25	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-6	7:45	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-7	8:00	<50	<3	<1.0
	14:45	<50	<3	<1.0

**Table 1****Week 14****Summary of Additional Periodic (Daily) Monitoring Data**

January 10 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO)	Hydrogen Sulfide (H <sub>2</sub> S)	Ammonia (NH <sub>3</sub> )
ST-1	7:30	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	8:00	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-4	8:10	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-5	8:15	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-6	8:30	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-7	8:45	<50	<3	<1.0
	14:55	<50	<3	<1.0

January 11 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO)	Hydrogen Sulfide (H <sub>2</sub> S)	Ammonia (NH <sub>3</sub> )
ST-1	9:00	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-5	9:25	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-6	9:45	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-7	9:55	<50	<3	<1.0
	15:00	<50	<3	<1.0

**Table 1**

**Week 14**

**Summary of Additional Periodic (Daily) Monitoring Data**

January 12 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	8:15	<50	<3	<1.0
	12:15	<50	<3	<1.0
ST-2	8:20	<50	<3	<1.0
	12:20	<50	<3	<1.0
ST-3	8:45	<50	<3	<1.0
	12:45	<50	<3	<1.0
ST-4	8:50	<50	<3	<1.0
	12:50	<50	<3	<1.0
ST-5	8:55	<50	<3	<1.0
	12:55	<50	<3	<1.0
ST-6	9:15	<50	<3	<1.0
	13:10	<50	<3	<1.0
ST-7	9:30	<50	<3	<1.0
	13:25	<50	<3	<1.0

\*(ppb) Indicates results reported in parts per billion

\* (ppm) Indicates results reported in parts per million

**Table 2:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 11 VOCs Results: December 14th through 15th**

Sample ID	ST-1-VOC-121417		
Laboratory ID	17L1057-01		
Date Sampled	12/14/17 07:30 - 12/15/17 07:30		
Location	Station 1		
	ppbV	ug/m3	
<b>VOCs - TO-15</b>			
<b>Acetone</b>	<b>1.5</b>	<b>3.5</b>	
<b>Benzene</b>	<b>0.17</b>	<b>0.54</b>	
<b>Benzyl chloride</b>	<0.035	<0.18	J-
<b>Bromodichloromethane</b>	<0.035	<0.24	
<b>Bromoform</b>	<0.035	<0.36	
<b>Bromomethane</b>	<0.035	<0.14	
<b>1,3-Butadiene</b>	<0.035	<0.078	
<b>2-Butanone (MEK)</b>	<1.4	<4.1	
<b>Carbon Disulfide</b>	<0.35	<1.1	
<b>Carbon Tetrachloride</b>	<b>0.068</b>	<b>0.43</b>	
<b>Chlorobenzene</b>	<0.035	<0.16	
<b>Chloroethane</b>	<0.070	<0.093	
<b>Chloroform</b>	<0.035	<0.17	
<b>Chloromethane</b>	<b>0.57</b>	<b>1.2</b>	
<b>Cyclohexane</b>	<0.035	<0.12	
<b>Dibromochloromethane</b>	<0.035	<0.30	
<b>1,2-Dibromoethane (EDB)</b>	<0.035	<0.27	
<b>1,2-Dichlorobenzene</b>	<0.035	<0.21	
<b>1,3-Dichlorobenzene</b>	<0.035	<0.21	
<b>1,4-Dichlorobenzene</b>	<0.035	<0.21	
<b>Dichlorodifluoromethane (Freon 12)</b>	<b>0.5</b>	<b>2.5</b>	
<b>1,1-Dichloroethane</b>	<0.035	<0.14	
<b>1,2-Dichloroethane</b>	<0.035	<0.14	
<b>1,1-Dichloroethylene</b>	<0.035	<0.14	
<b>cis-1,2-Dichloroethylene</b>	<0.035	<0.14	
<b>trans-1,2-Dichloroethylene</b>	<0.035	<0.14	
<b>1,2-Dichloropropane</b>	<0.035	<0.16	
<b>cis-1,3-Dichloropropene</b>	<0.035	<0.16	
<b>trans-1,3-Dichloropropene</b>	<0.035	<0.16	
<b>1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)</b>	<0.035	<0.25	
<b>1,4-Dioxane</b>	<0.35	<1.3	
<b>Ethanol</b>	<b>2.8</b>	<b>5.2</b>	
<b>Ethyl Acetate</b>	<0.35	<1.3	
<b>Ethylbenzene</b>	<0.035	<0.15	
<b>4-Ethyltoluene</b>	<0.035	<0.17	
<b>Heptane</b>	<0.035	<0.14	
<b>Hexachlorobutadiene</b>	<0.035	<0.37	
<b>Hexane</b>	<1.4	<4.9	
<b>2-Hexanone (MBK)</b>	<0.070	<0.29	
<b>Isopropanol</b>	<1.4	<3.4	
<b>Methyl tert-Butyl Ether (MTBE)</b>	<0.035	<0.13	
<b>Methylene Chloride</b>	<0.35	<1.2	
<b>4-Methyl-2-pentanone (MIBK)</b>	<0.070	<0.29	
<b>Naphthalene</b>	<0.035	<0.18	
<b>Propene</b>	<1.4	<2.4	
<b>Styrene</b>	<0.035	<0.15	J-
<b>1,1,2,2-Tetrachloroethane</b>	<0.035	<0.24	
<b>Tetrachloroethylene</b>	<0.035	<0.24	
<b>Tetrahydrofuran</b>	<0.14	<0.10	
<b>Toluene</b>	<b>0.17</b>	<b>0.64</b>	
<b>1,2,4-Trichlorobenzene</b>	<0.035	<0.26	
<b>1,1,1-Trichloroethane</b>	<0.035	<0.19	
<b>1,1,2-Trichloroethane</b>	<0.035	<0.19	
<b>Trichloroethylene</b>	<0.035	<0.19	
<b>Trichlorofluoromethane (Freon 11)</b>	<b>0.23</b>	<b>1.3</b>	
<b>1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)</b>	<0.14	<1.1	
<b>1,2,4-Trimethylbenzene</b>	<0.035	<0.17	
<b>1,3,5-Trimethylbenzene</b>	<0.035	<0.17	
<b>Vinyl Acetate</b>	<0.70	<2.5	J-
<b>Vinyl Chloride</b>	<0.035	<0.090	
<b>m&amp;p-Xylene</b>	<0.070	<0.30	
<b>o-Xylene</b>	<0.035	<0.15	

Notes:

Values in **bold** indicate detected concentrations

J-: The results for benzyl chloride, styrene, and vinyl acetate are estimated and may be biased low.

Results for the following compounds may be influenced by laboratory derived contamination:

acetone, ethanol, methylene chloride and isopropanol

Canister was at atmospheric pressure when received by the laboratory.

**Table 3:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 12 VOCs Results: December 18th through 19th and December 19th through 20th (Co-located)**

Sample ID	ST-3-VOC-121817		ST-7A-VOC-121917		ST-7B-VOC-121917		Relative Percent Difference
Laboratory ID	17L1056-01		17L1056-02		17L1056-03		
Date Sampled	12/18/17 14:00 - 12/19/17 14:00		12/19/17 09:00 - 12/20/17 09:00		12/19/17 09:00 - 12/20/17 09:00		
Location	Station 3		Station 7		Station 7 Duplicate		Station 7 Pair
	ppbV	ug/m3	ppbV	ug/m3	ppbV	ug/m3	
<b>VOCs - TO-15</b>							
Acetone	<b>6.1</b>	<b>14</b>	<b>3.9</b>	<b>9.3</b>	<b>3.7</b>	<b>8.8</b>	<b>5.5%</b>
Benzene	<b>0.28</b>	<b>0.88</b>	<b>0.2</b>	<b>0.63</b>	<b>0.18</b>	<b>0.58</b>	<b>8.3%</b>
Benzyl chloride	<0.035	<0.18 J-	<0.035	<0.18 J-	<0.035	<0.18 J-	NC
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24	<0.035	<0.24	NC
Bromoform	<0.035	<0.36	<0.035	<0.36	<0.035	<0.36	NC
Bromomethane	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,3-Butadiene	<0.035	<0.078	<0.035	<0.078	<0.035	<0.078	NC
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1	<1.4	<4.1	NC
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1	<0.35	<1.1	NC
Carbon Tetrachloride	<b>0.068</b>	<b>0.43</b>	<b>0.072</b>	<b>0.45</b>	<b>0.074</b>	<b>0.46</b>	<b>2.2%</b>
Chlorobenzene	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
Chloroethane	<0.070	<0.093	<0.070	<0.093	<0.070	<0.093	NC
Chloroform	<0.035	<0.17	<0.035	<0.17	<0.035	<0.17	NC
Chloromethane	<b>0.61</b>	<b>1.3</b>	<b>0.53</b>	<b>1.1</b>	<b>0.54</b>	<b>1.1</b>	<b>0.0%</b>
Cyclohexane	<b>0.16</b>	<b>0.54</b>	<b>0.11</b>	<b>0.36</b>	<b>0.11</b>	<b>0.37</b>	<b>2.7%</b>
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30	<0.035	<0.30	NC
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27	<0.035	<0.27	NC
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21	<0.035	<0.21	NC
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21	<0.035	<0.21	NC
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21	<0.035	<0.21	NC
Dichlorodifluoromethane (Freon 12)	<b>0.5</b>	<b>2.5</b>	<b>0.48</b>	<b>2.4</b>	<b>0.51</b>	<b>2.5</b>	<b>4.1%</b>
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
trans-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14	<0.035	<0.14	NC
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
cis-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
trans-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16	<0.035	<0.16	NC
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25	<0.035	<0.25	NC
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3	<0.35	<1.3	NC
Ethanol	<b>3.9</b>	<b>7.3</b>	<b>6.9</b>	<b>13</b>	<b>6.1</b>	<b>12</b>	<b>8.0%</b>
Ethyl Acetate	<0.35	<1.3	<b>0.89</b>	<b>3.2</b>	<0.35	<1.3	NC
Ethylbenzene	<b>0.091</b>	<b>0.4</b>	<b>0.067</b>	<b>0.29</b>	<b>0.069</b>	<b>0.3</b>	<b>3.4%</b>
4-Ethyltoluene	<b>0.044</b>	<b>0.22</b>	<0.035	<0.17	<0.035	<0.17	NC
Heptane	<b>0.19</b>	<b>0.77</b>	<b>0.14</b>	<b>0.59</b>	<b>0.12</b>	<b>0.5</b>	<b>16.5%</b>
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37	<0.035	<0.37	NC
Hexane	<1.4	<4.9	<1.4	<4.9	<1.4	<4.9	NC
2-Hexanone (MBK)	<0.070	<0.29	<0.070	<0.29	<0.070	<0.29	NC
Isopropanol	<1.4	<3.4	<1.4	<3.4	<1.4	<3.4	NC
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13	<0.035	<0.13	NC
Methylene Chloride	<0.35	<1.2	<0.35	<1.2	<0.35	<1.2	NC
4-Methyl-2-pentanone (MIBK)	<0.070	<0.29	<0.070	<0.29	<0.070	<0.29	NC
Naphthalene	<0.035	<0.18	<0.035	<0.18	<0.035	<0.18	NC
Propene	<1.4	<2.4	<1.4	<2.4	<1.4	<2.4	NC
Styrene	<0.035	<0.15 J-	<0.035	<0.15 J-	<0.035	<0.15 J-	NC
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24	<0.035	<0.24	NC
Tetrachloroethylene	<b>0.081</b>	<b>0.55</b>	<b>0.043</b>	<b>0.29</b>	<b>0.045</b>	<b>0.3</b>	<b>3.4%</b>
Tetrahydrofuran	<0.14	<0.10	<0.14	<0.10	<0.14	<0.10	NC
Toluene	<b>0.84</b>	<b>3.2</b>	<b>0.6</b>	<b>2.3</b>	<b>0.57</b>	<b>2.2</b>	<b>4.4%</b>
1,2,4-Trichlorobenzene	<0.035	<0.26	<0.035	<0.26	<0.035	<0.26	NC
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19	<0.035	<0.19	NC
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19	<0.035	<0.19	NC
Trichloroethylene	<0.035	<0.19	<0.035	<0.19	<0.035	<0.19	NC
Trichlorofluoromethane (Freon 11)	<b>0.23</b>	<b>1.3</b>	<b>0.23</b>	<b>1.3</b>	<b>0.24</b>	<b>1.3</b>	<b>0.0%</b>
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1	<0.14	<1.1	NC
1,2,4-Trimethylbenzene	<b>0.074</b>	<b>0.36</b>	<b>0.058</b>	<b>0.29</b>	<b>0.055</b>	<b>0.27</b>	<b>7.1%</b>
1,3,5-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17	<0.035	<0.17	NC
Vinyl Acetate	<0.70	<2.5 J-	<0.70	<2.5 J-	<0.70	<2.5 J-	NC
Vinyl Chloride	<0.035	<0.090	<0.035	<0.090	<0.035	<0.090	NC
m&p-Xylene	<b>0.32</b>	<b>1.4</b>	<b>0.2</b>	<b>0.85</b>	<b>0.2</b>	<b>0.85</b>	<b>0.0%</b>
o-Xylene	<b>0.12</b>	<b>0.52</b>	<b>0.076</b>	<b>0.33</b>	<b>0.076</b>	<b>0.33</b>	<b>0.0%</b>

Notes:

Values in **bold** indicate detected concentrations

J-: The results for benzyl chloride, styrene, and vinyl acetate are estimated and may be biased low.

Results for the following compounds may be influenced by laboratory derived contamination:

acetone, ethanol, methylene chloride and isopropanol

Canisters were at atmospheric pressure when received by the laboratory.

Relative Percent Difference (RPD) calculated using the following equation:

$$RPD = |X1 - X2| / [(X1 + X2) / 2]$$

where: X1 = original sample, X2 = duplicate sample

NC: RPD not calculable due to a non-detect result in one or both co-located sample



# Gowanus Canal TB-4 Dredging and Capping Pilot Study Brooklyn, New York

## Meteorological Summary

### January 8<sup>th</sup> through January 12<sup>th</sup>, 2018

January 8 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SSW	1.36	26.7

January 9 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
W	2.22	35.6

January 10 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SE	2.65	35.1

January 11 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
SE	1.52	43.9

January 12 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	4.07	53.2

\*All meteorological data represents an average for the time period of 06:30 to 23:45 for Monday.

\*All meteorological data represents averages for the time period of 00:00 to 23:45 for Tuesday.

\*All meteorological data represents an average for the time period of 00:00 to 15:00 for Friday.

**WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT**





WI #15-081

**MEMORANDUM**

January 16, 2018

To: William Lee/ de maximis, inc.  
Kirsten Meyers / TRC

From: Silas Bensing, Ani Toncheva / Wilson Ihrig

Subject: Gowanus Canal 4th Street Turning Basin Dredging and Capping Pilot Study, Weekly Noise and Vibration Monitoring Report, 8 January – 12 January, 2018

**Noise Monitoring Locations**

Figure 1 shows the noise monitoring locations. NM-1 is installed at a light pole on the north side of TB4 and is approximately 25 feet from the north edge of the canal. NM-2 is installed at the existing guard rail on the south side of TB4, approximately 4 feet from the south edge of the canal. NM-3 is installed at a light pole on the north side of TB4 near 3rd Avenue, approximately 50 feet from the north edge of the canal. Photos 1, 2, and 3 show the recent field conditions at the monitors.

**Vibration Monitoring Locations**

Figure 1 shows the vibration monitoring locations. Vibration monitor VM-1 is installed at the parking lot curb on the north side of TB4, approximately 45 feet from the north edge of the canal. Vibration monitor VM-2 is installed near the corner of an existing building on the south side of TB4, approximately 24 feet from the south edge of the canal. Photos 4 and 5 show the recent field conditions at the monitors.

**Noise Monitoring Results**

Figures 2 through 16 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan<sup>1</sup>. Commercial and Industrial land uses are assigned an hourly Leq noise limit of 80 dBA for Daytime and Evening time periods. The average baseline noise measured in the project area in 2015 are also shown for reference<sup>2</sup>. Vibration level data for North Monitor VM-3 from 07:00

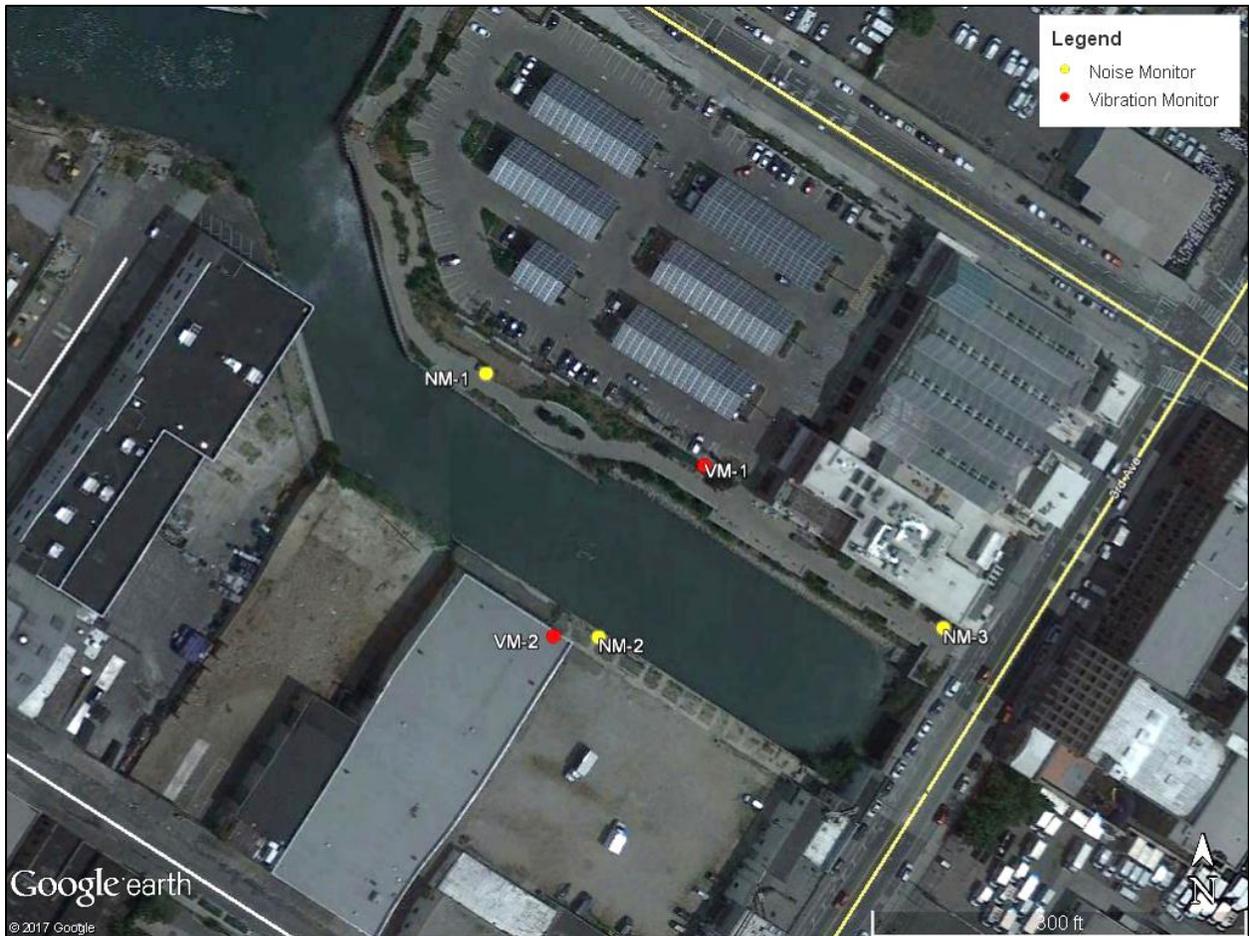
<sup>1</sup> Wilson Ihrig. *Gowanus Canal 4<sup>th</sup> Street Turning Basin Dredging and Capping Pilot Study Noise and Vibration Monitoring Plan*. California: prepared for Gowanus Canal Remedial Design Group, DRAFT May 2017

<sup>2</sup> Wilson Ihrig. *Gowanus Canal Remedial Design Project RTA-1 Noise and Vibration Baseline Report*. California: prepared for Geosyntec Consultants Inc., October 2015.

Wednesday, 10 January to 8:00 Thursday, 11 January are incomplete due to intermittent equipment issues.

### Vibration Monitoring Results

Figures 17 through 26 present the maximum peak particle velocity (PPV) vibration events compared with the thresholds discussed in the vibration monitoring plan<sup>3</sup>. Commercial and Industrial structures are assigned a PPV vibration criterion of 2.0 inches/second



**Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study**

<sup>3</sup> Wilson Ihrig. *Gowanus Canal 4<sup>th</sup> Street Turning Basin Dredging and Capping Pilot Study Noise and Vibration Monitoring Plan*. California: prepared for Gowanus Canal Remedial Design Group, DRAFT May 2017



**Photo 1: Noise Monitoring Location NM-1**  
**(26 September 2017)**



**Photo 2: Noise Monitoring Location NM-2**  
**(25 September 2017)**



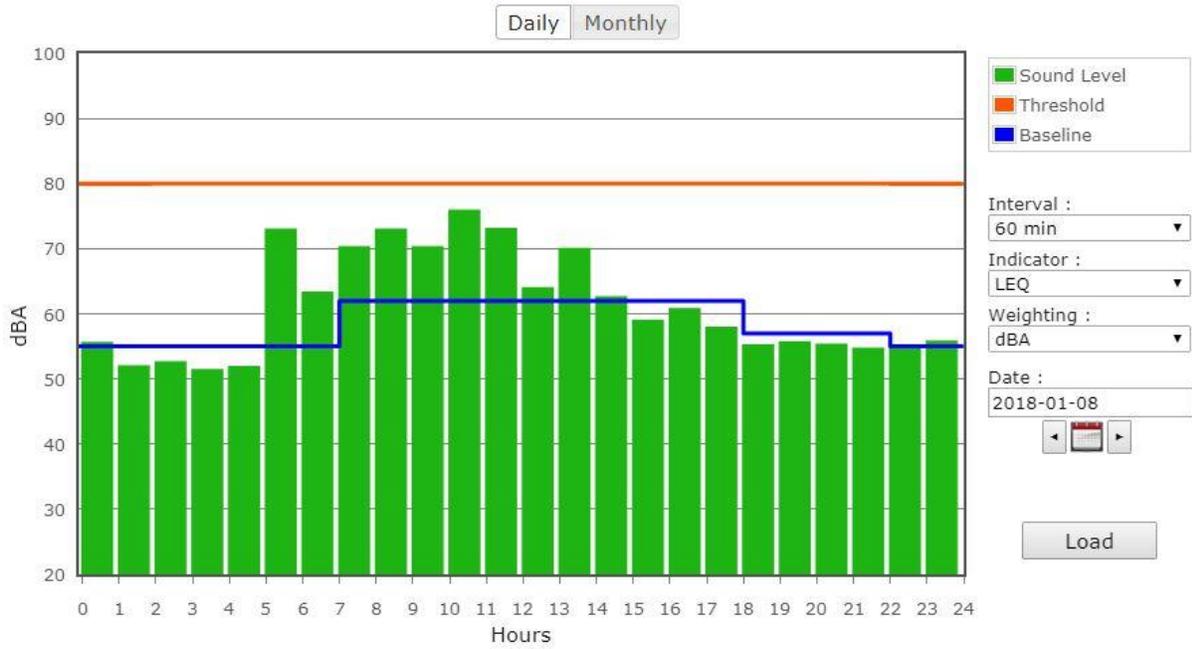
**Photo 3: Noise Monitoring Location NM-3**  
**(29 October 2017)**



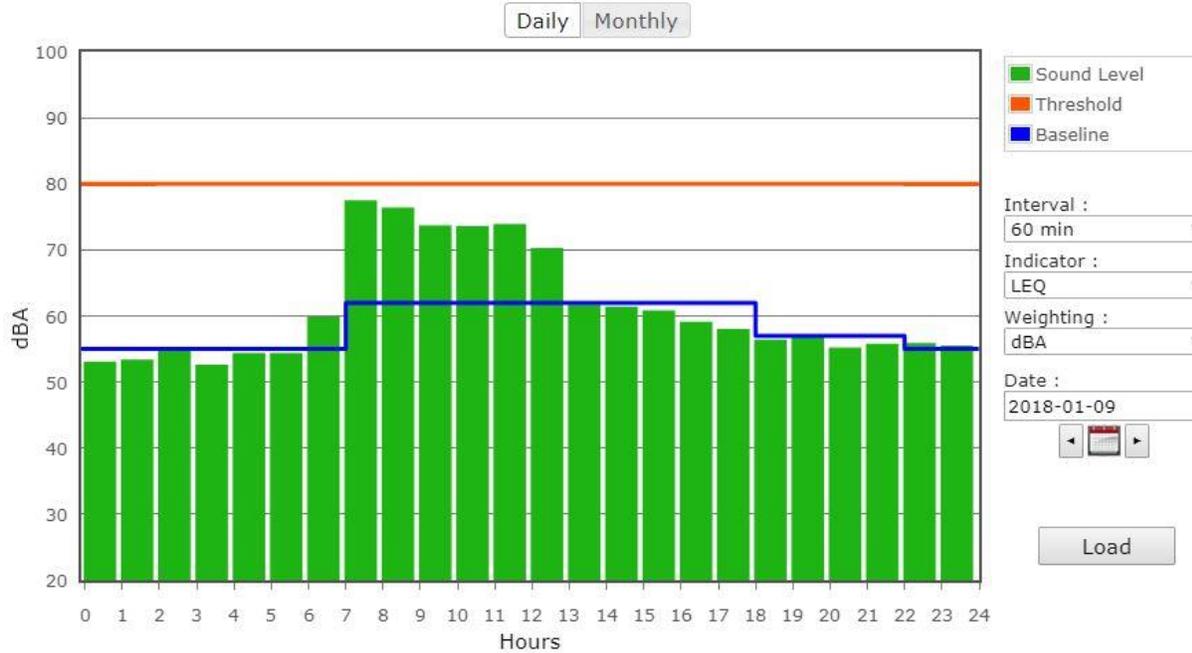
**Photo 4: Vibration Monitoring Location VM-1**  
**(12 October 2017)**



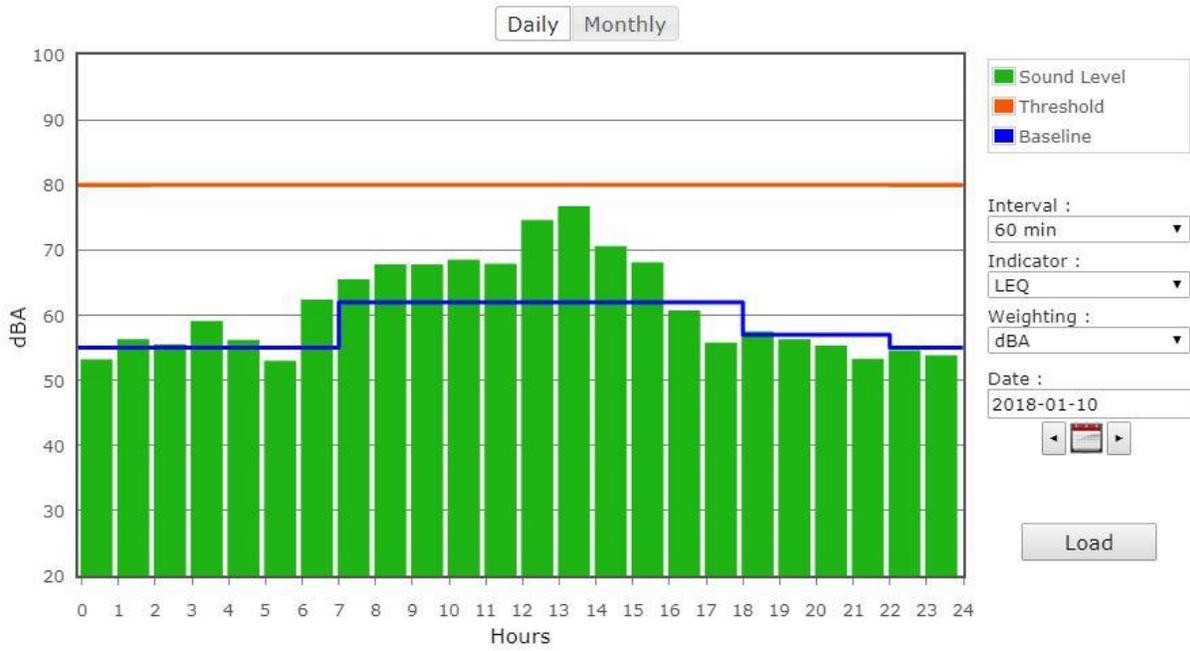
**Photo 5: Vibration Monitoring Location VM-2**  
**(12 October 2017)**



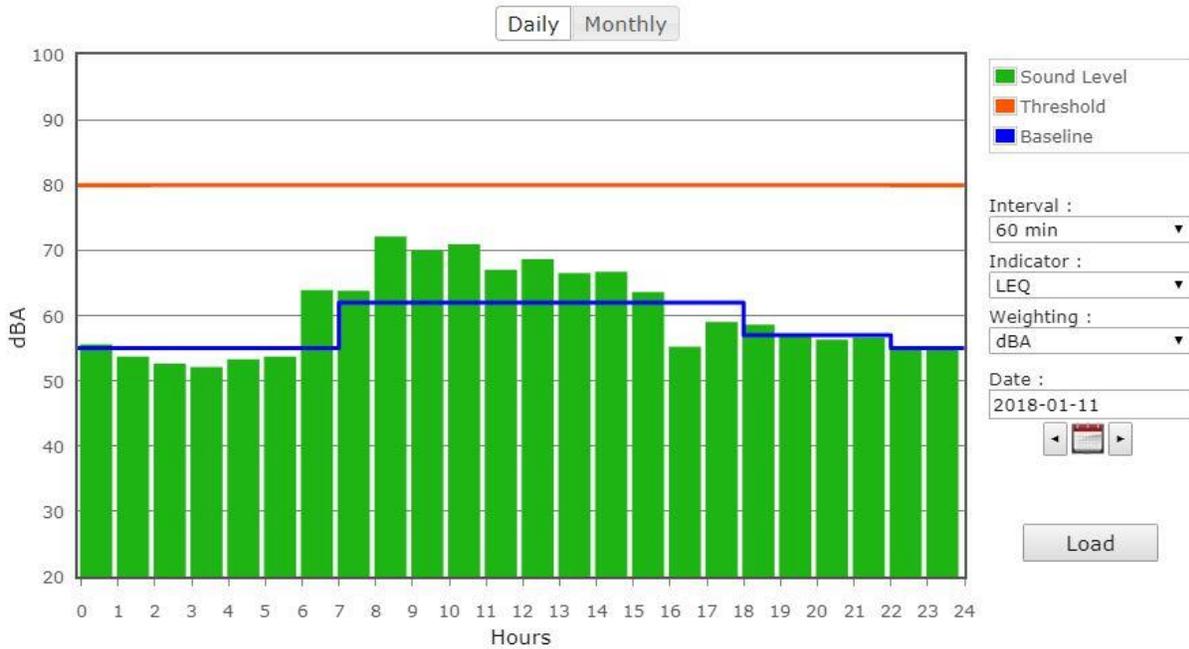
**Figure 2: North Monitor NM-1 on Monday**



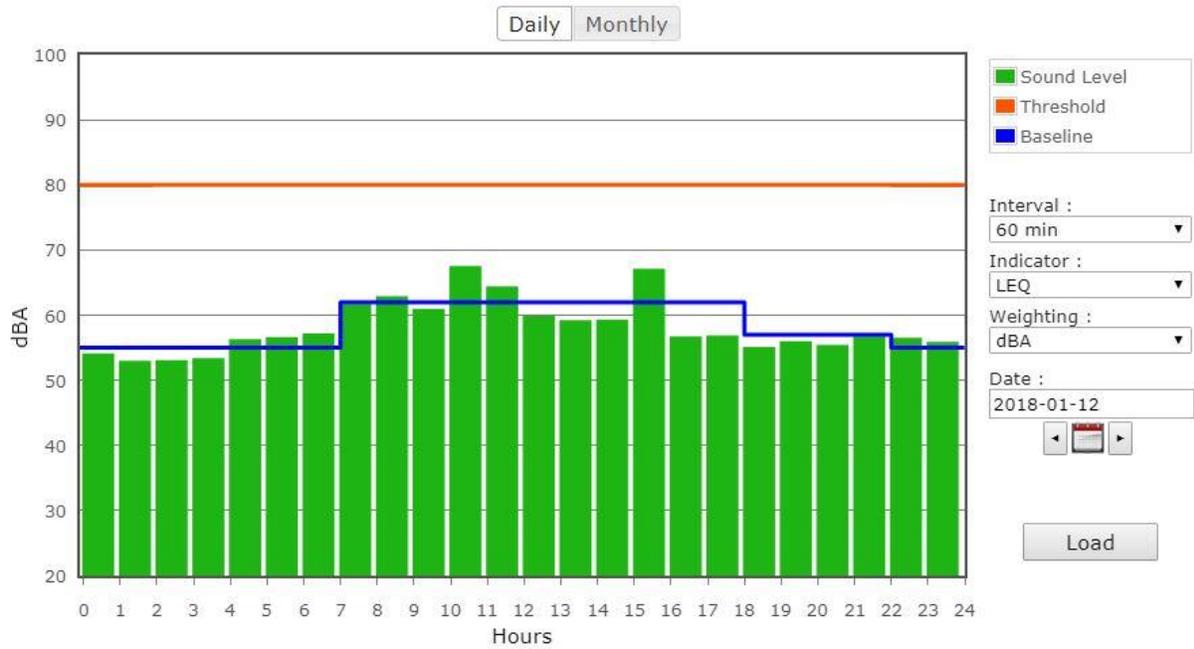
**Figure 3: North Monitor NM-1 on Tuesday**



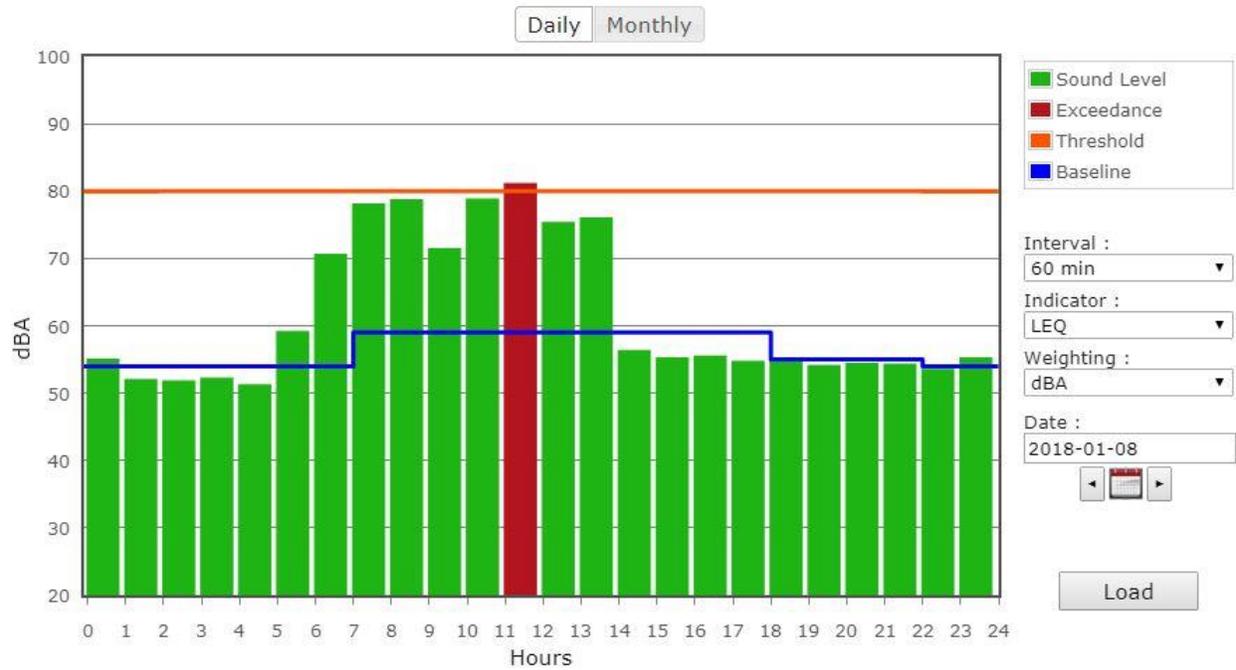
**Figure 4: North Monitor NM-1 on Wednesday**



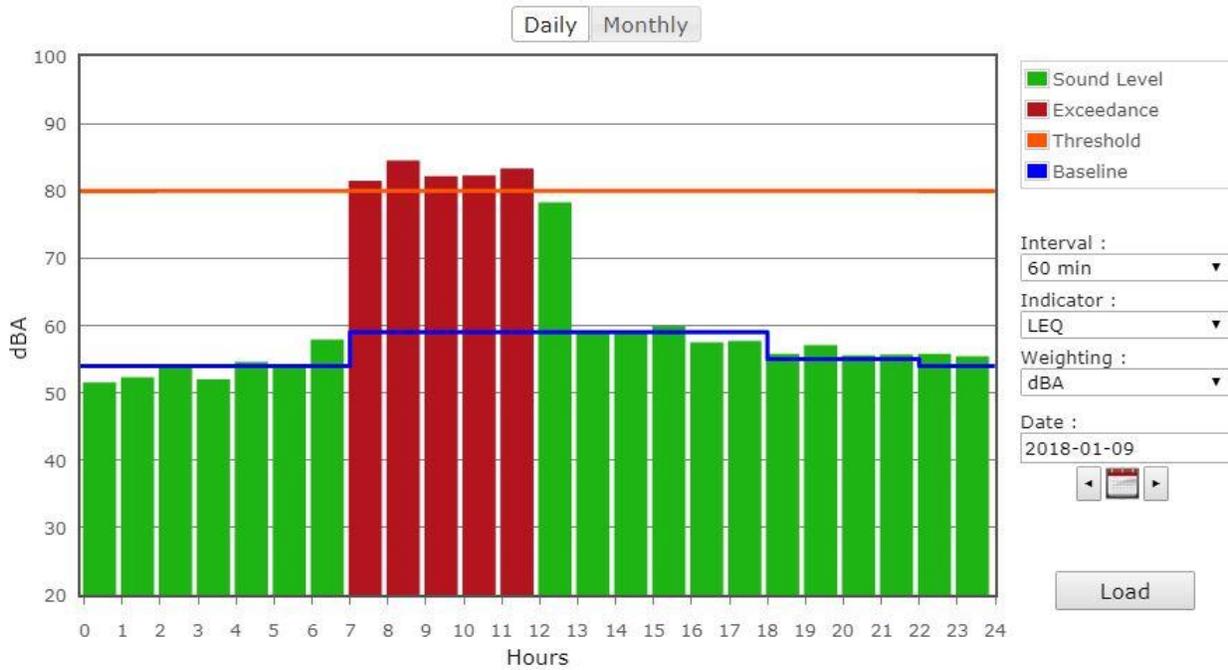
**Figure 5: North Monitor NM-1 on Thursday**



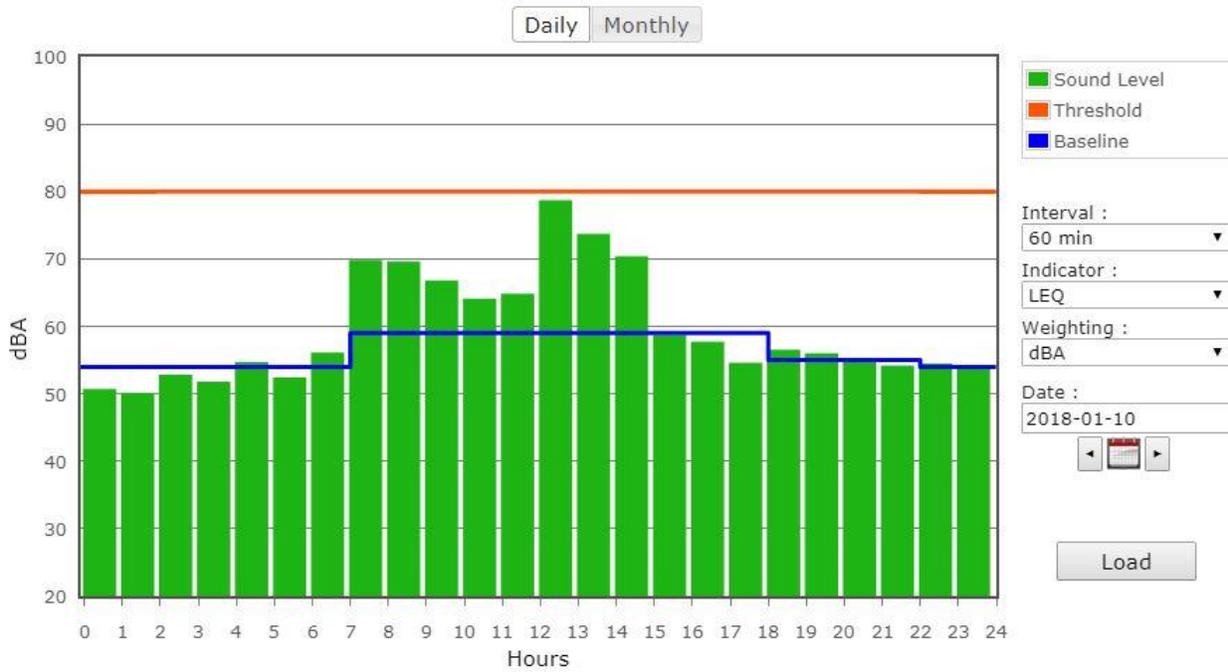
**Figure 6: North Monitor NM-1 on Friday**



**Figure 7: South Monitor NM-2 on Monday**



**Figure 8: South Monitor NM-2 on Tuesday**



**Figure 9: South Monitor NM-2 on Wednesday**

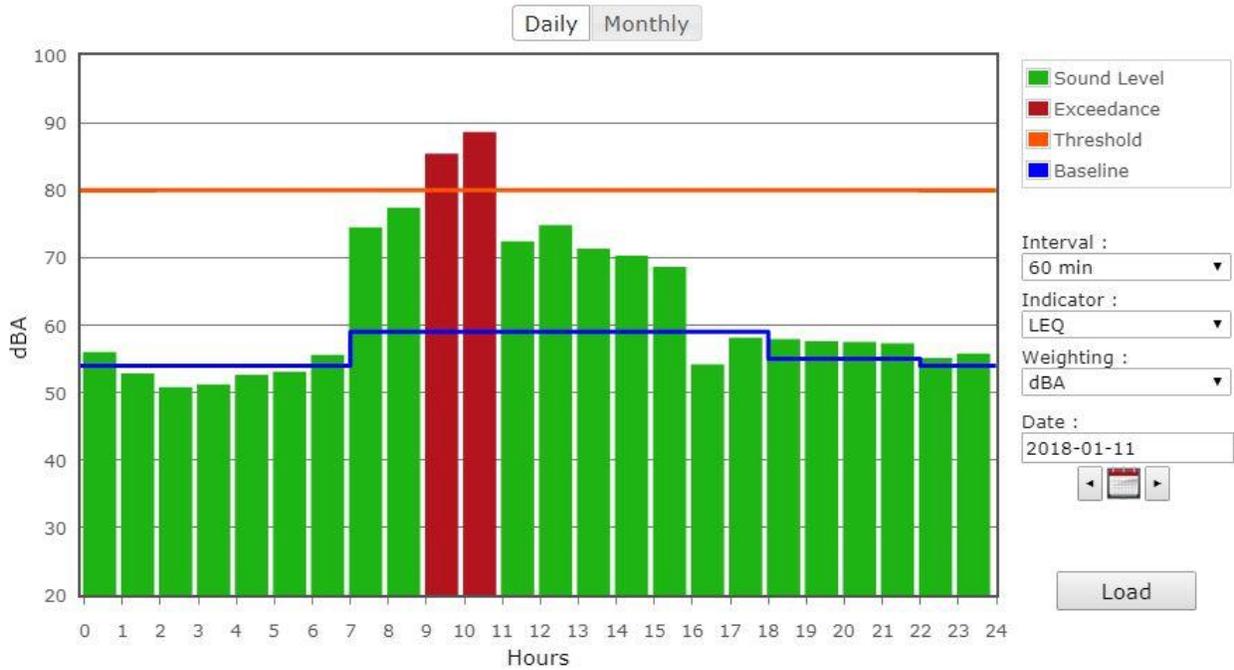


Figure 10: South Monitor NM-2 on Thursday

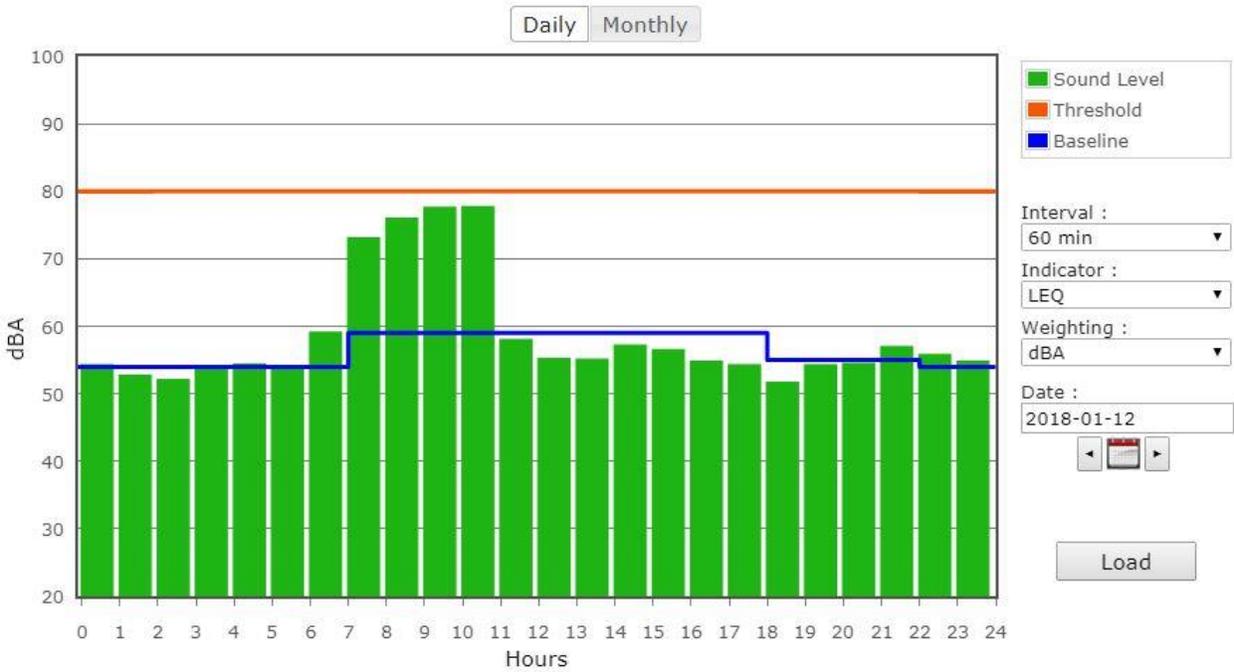
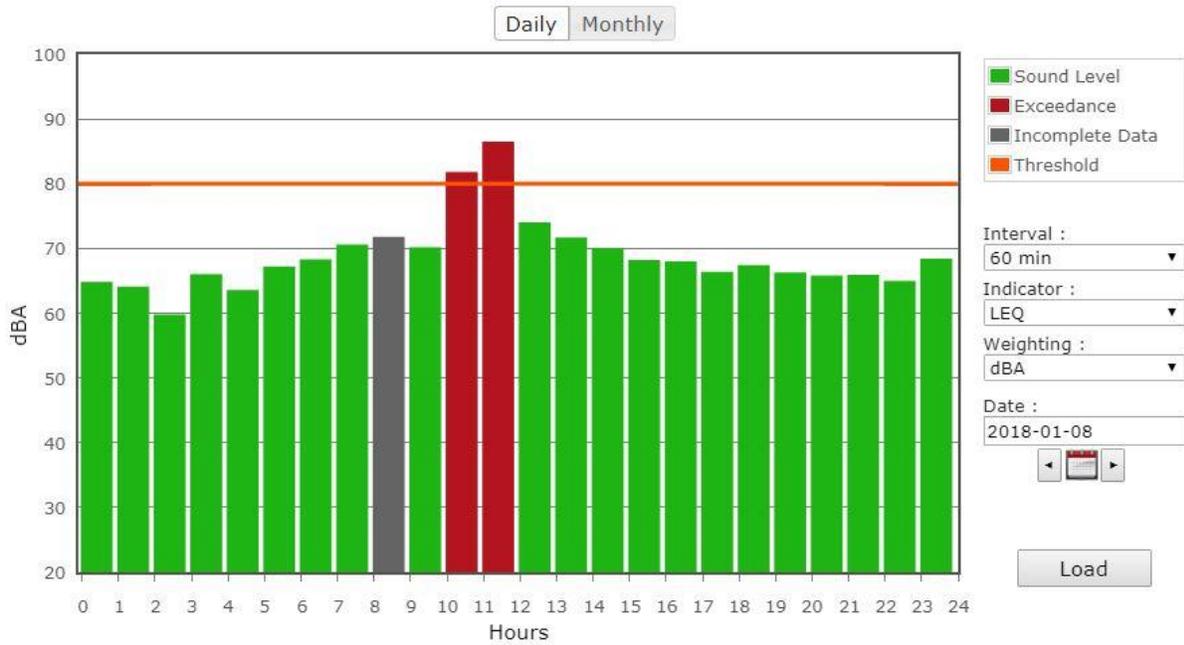
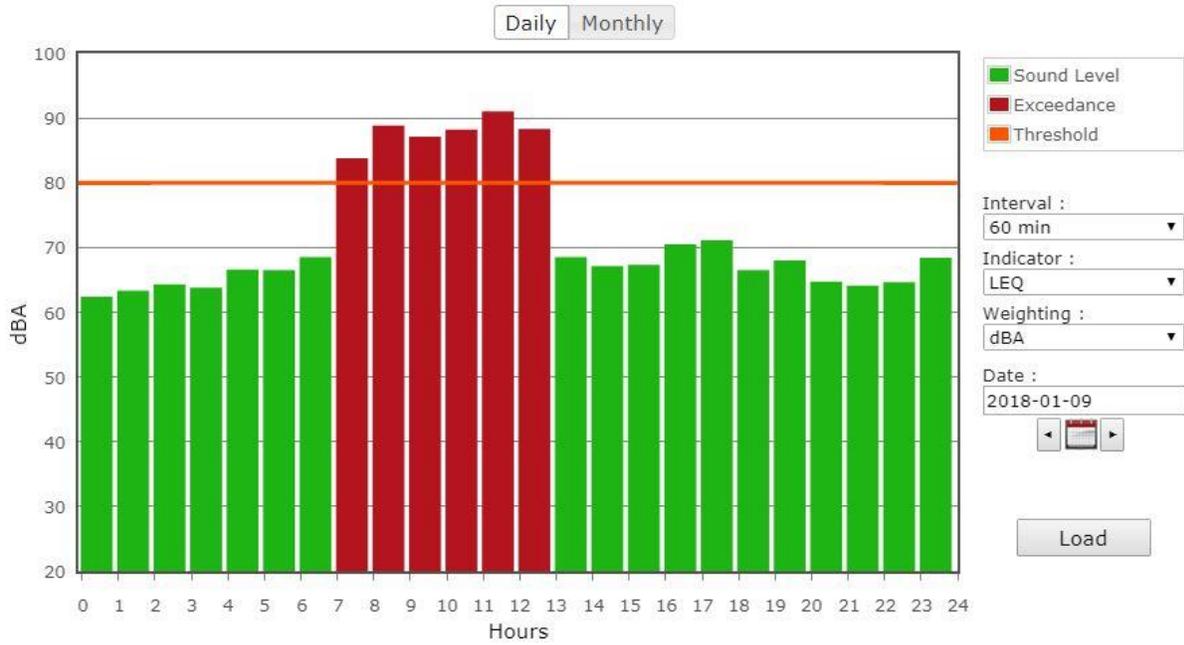


Figure 11: South Monitor NM-2 on Friday



**Figure 12: Northeast Monitor NM-3 on Monday**



**Figure 13: Northeast Monitor NM-3 on Tuesday**

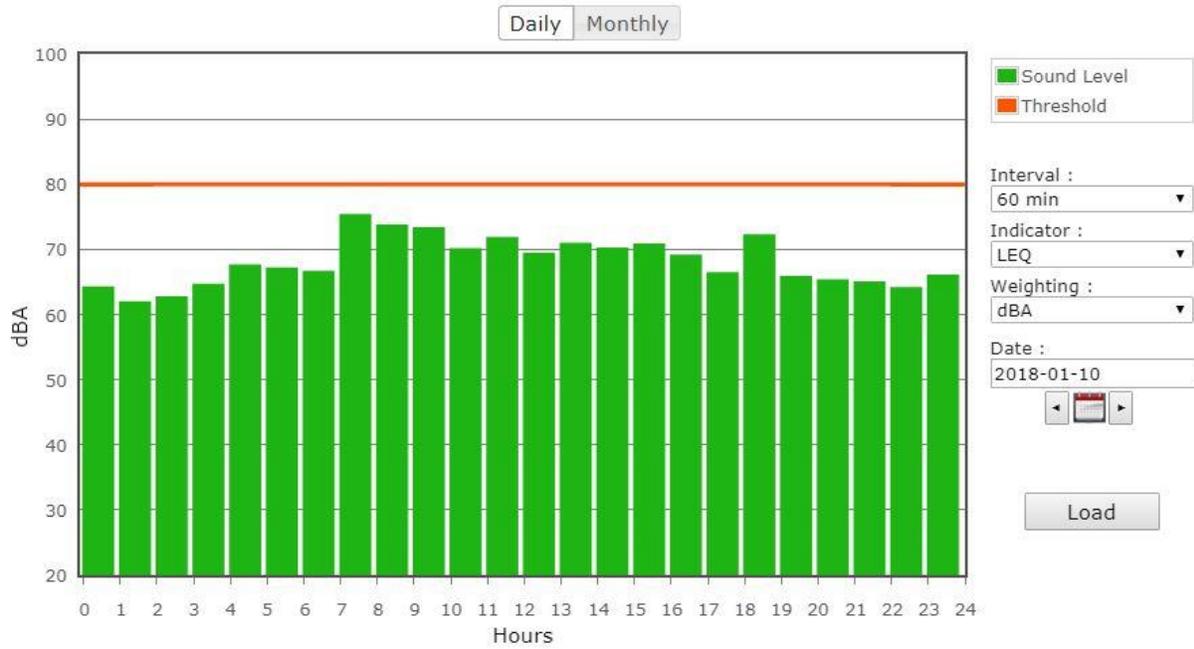


Figure 14: Northeast Monitor NM-3 on Wednesday

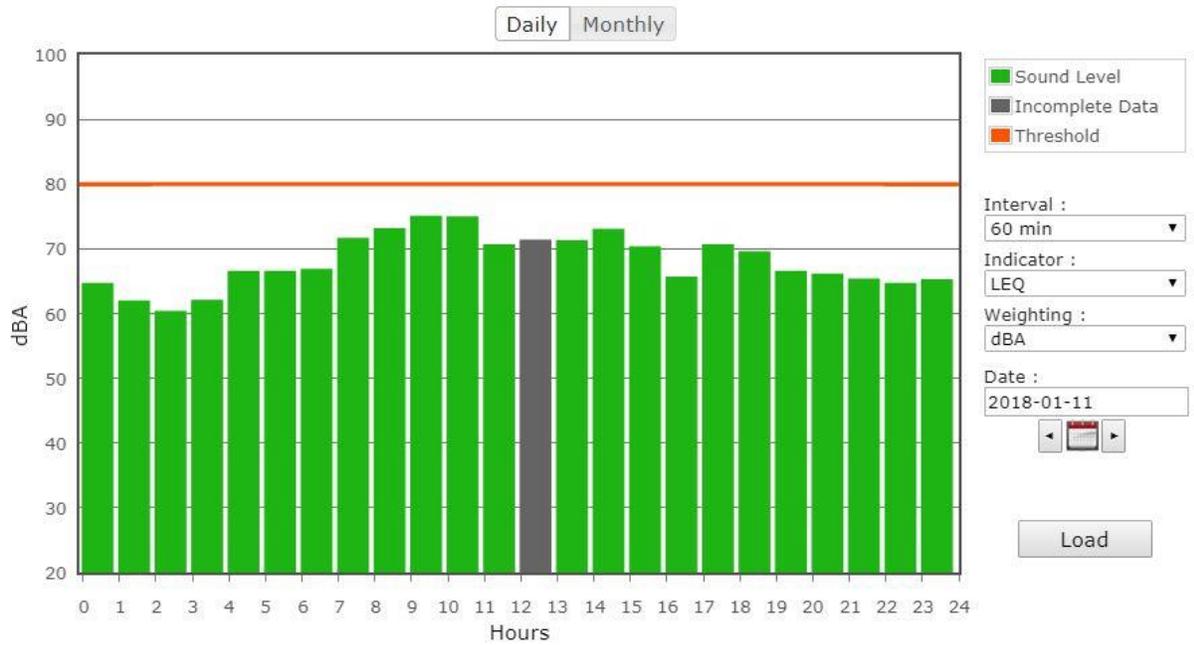


Figure 15: Northeast Monitor NM-3 on Thursday

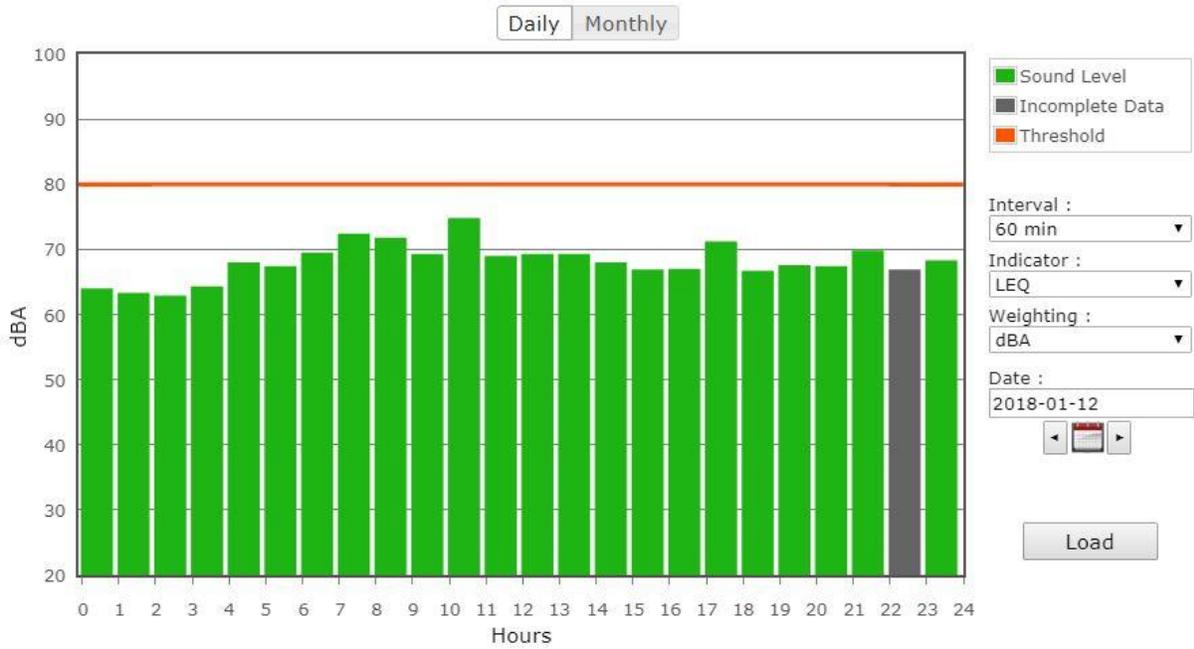


Figure 16: Northeast Monitor NM-3 on Friday

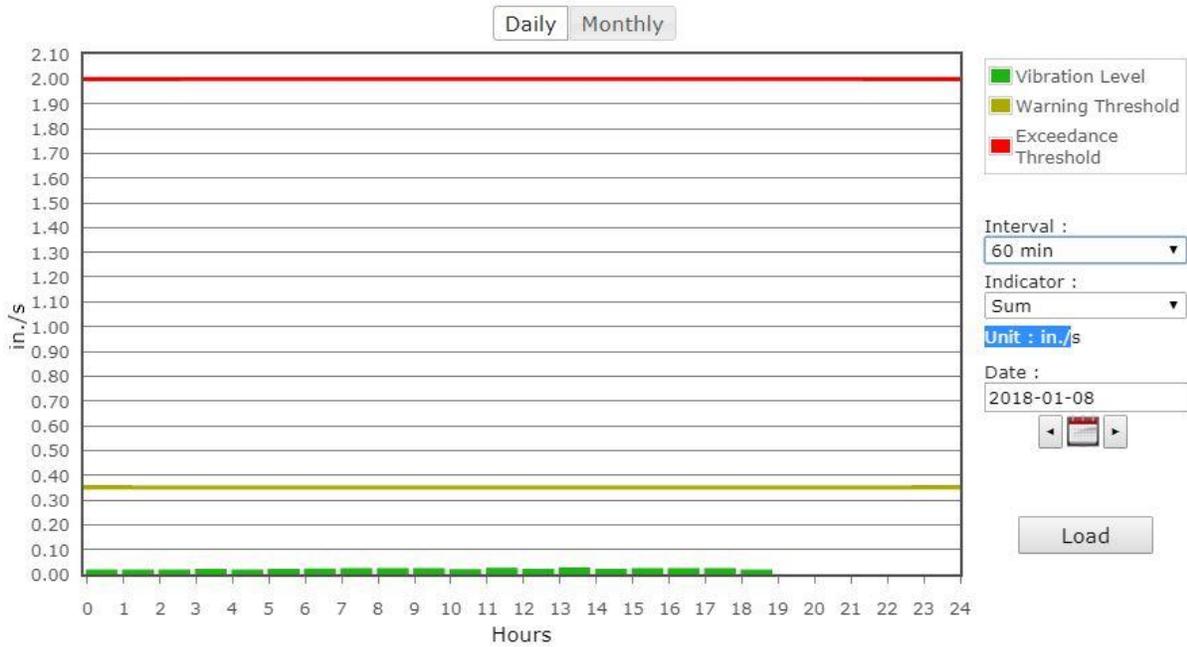
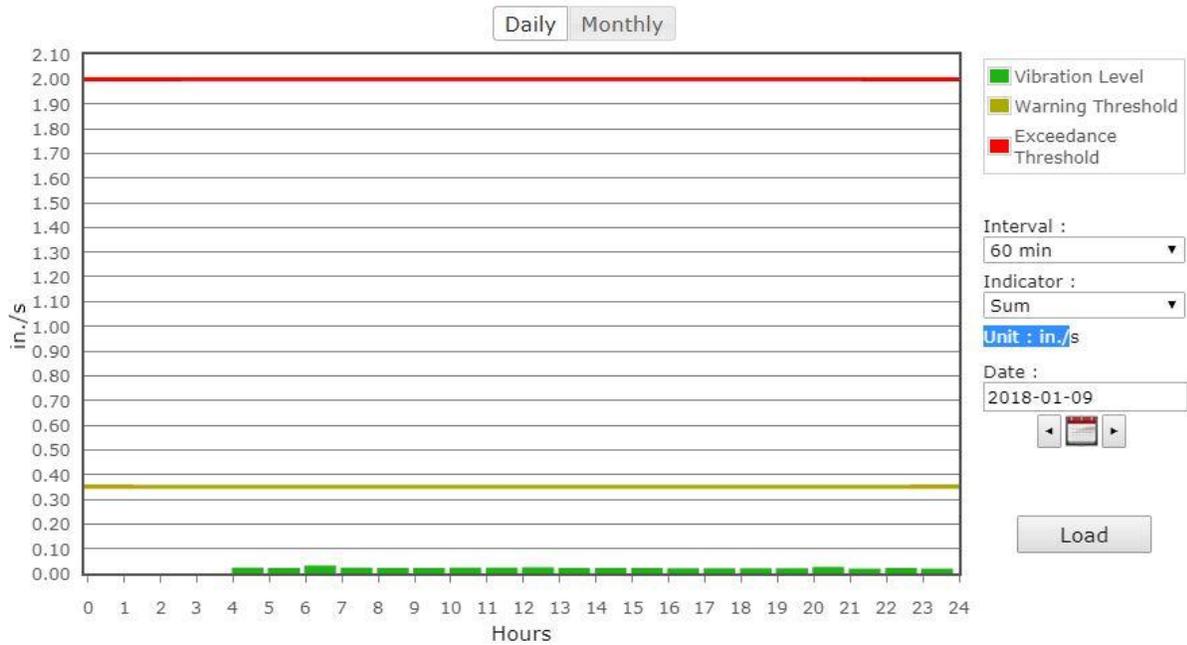
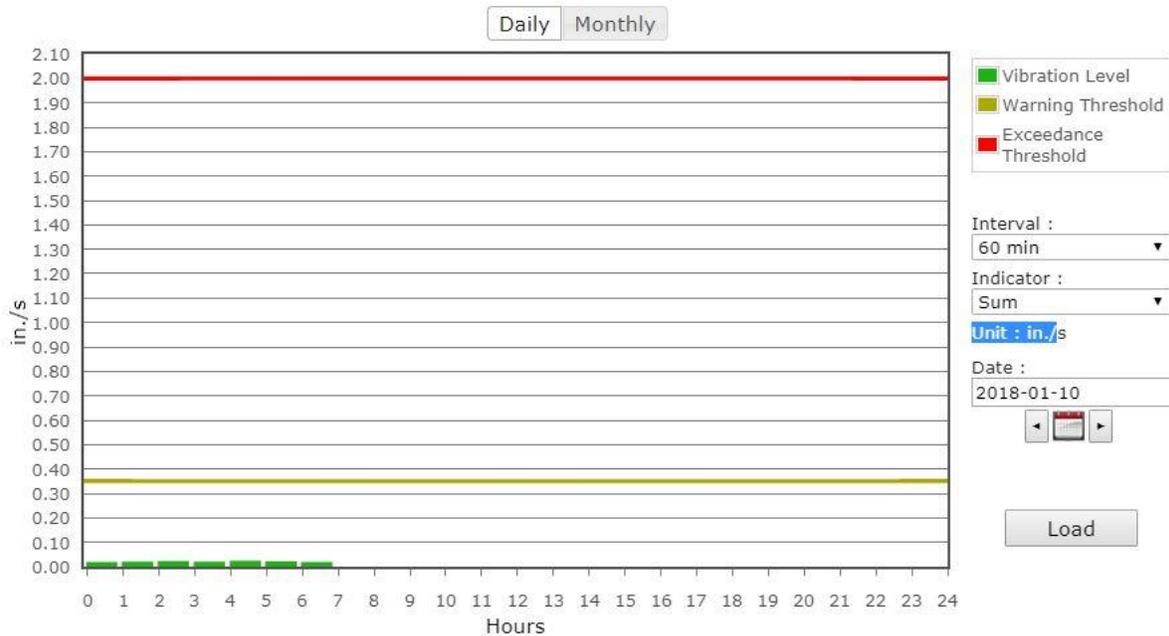


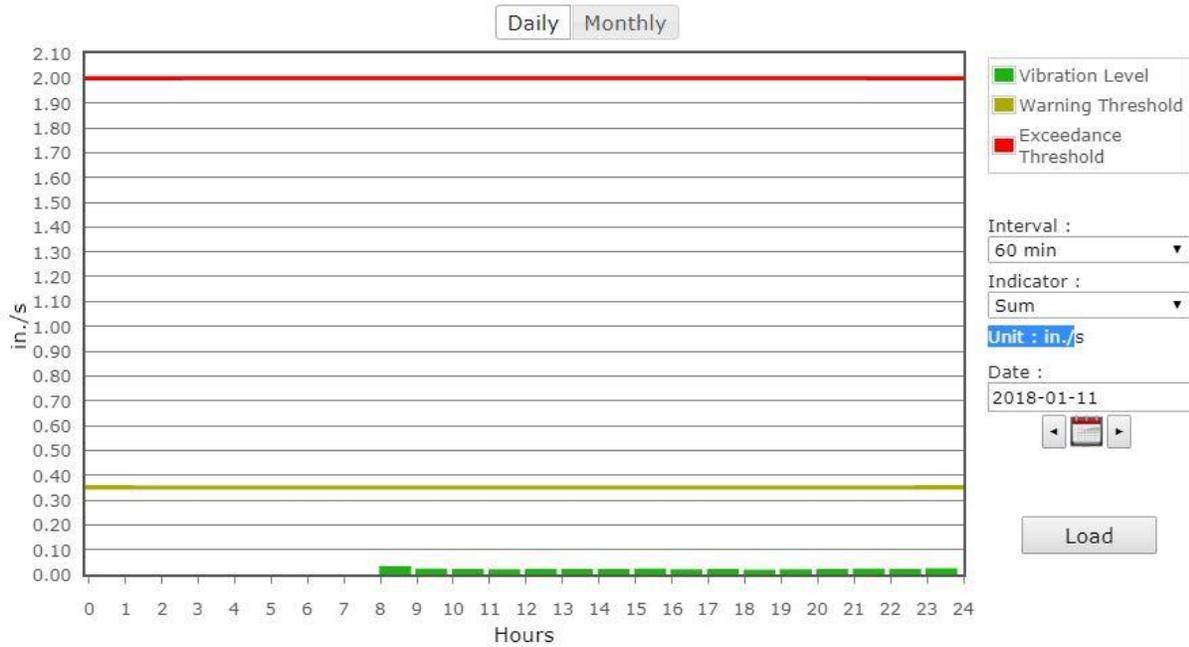
Figure 17: North Vibration Monitor VM-1 on Monday



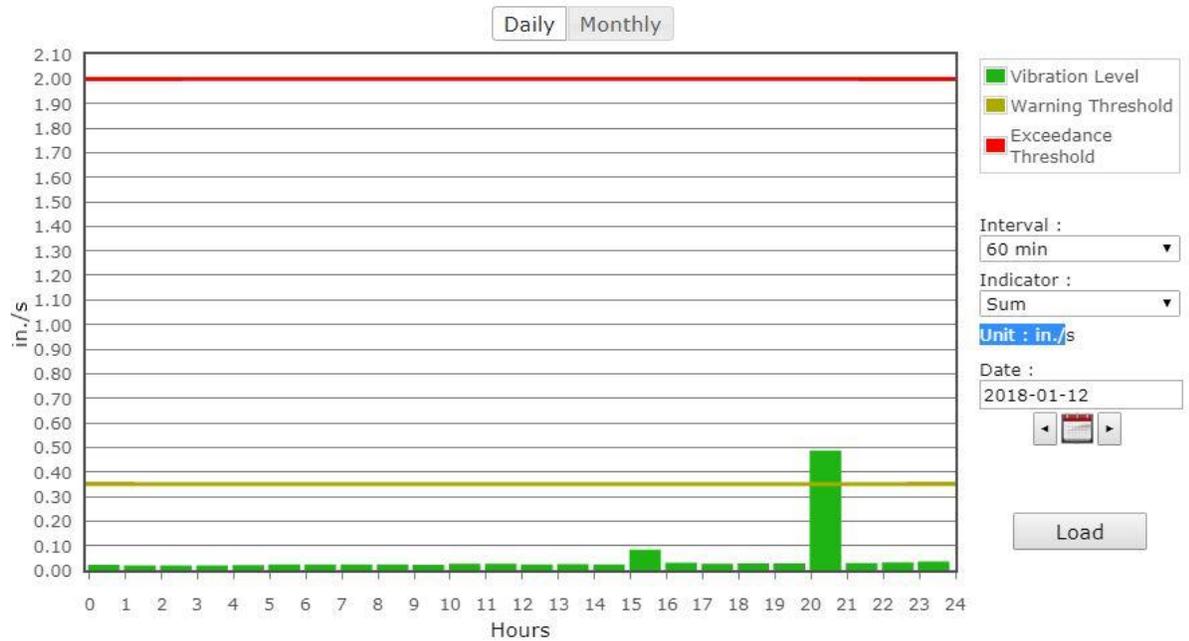
**Figure 18: North Vibration Monitor VM-1 on Tuesday**



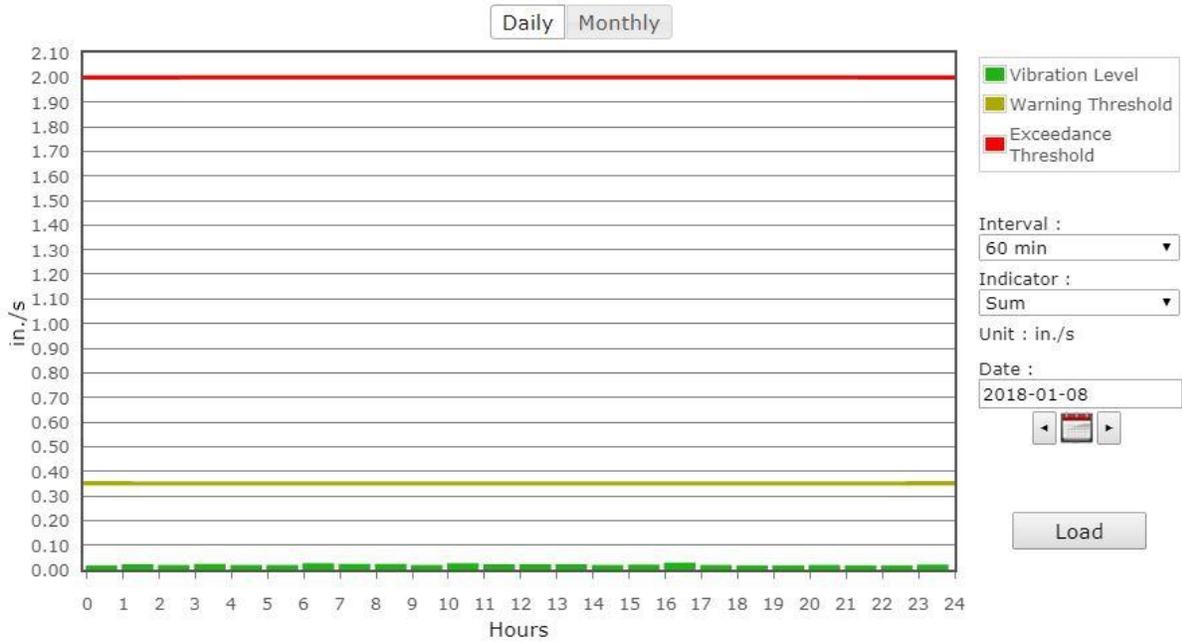
**Figure 19: North Vibration Monitor VM-1 on Wednesday**



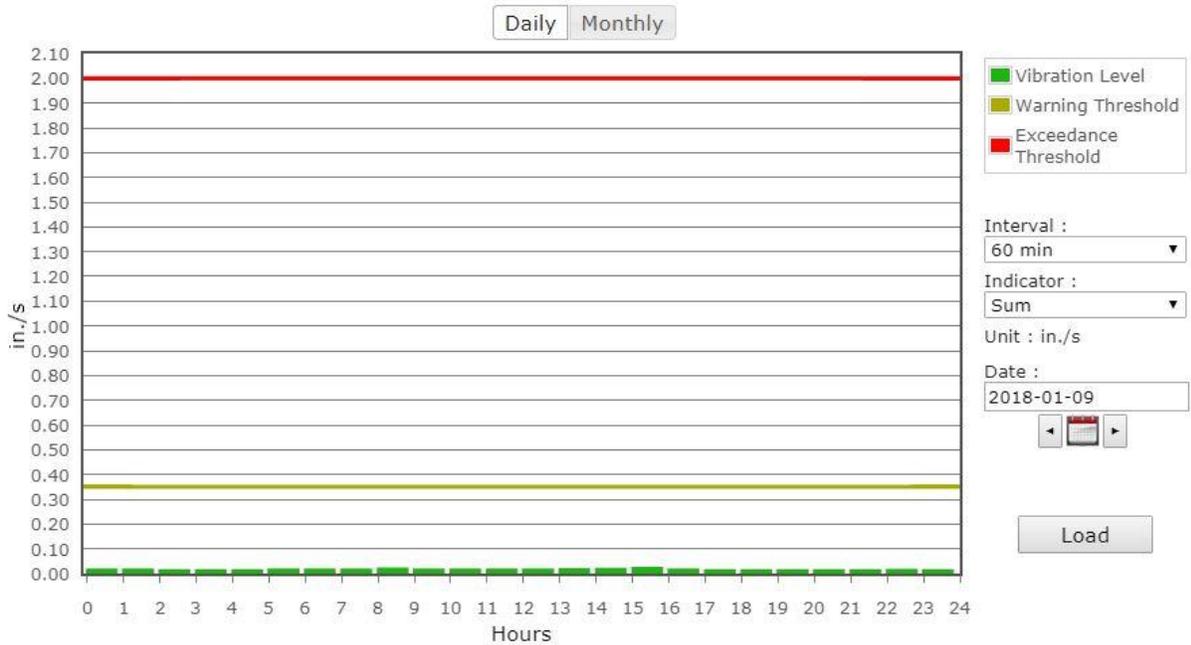
**Figure 20: North Vibration Monitor VM-1 on Thursday**



**Figure 21: North Vibration Monitor VM-1 on Friday**



**Figure 22: South Vibration Monitor VM-2 on Monday**



**Figure 23: South Vibration Monitor VM-2 on Tuesday**

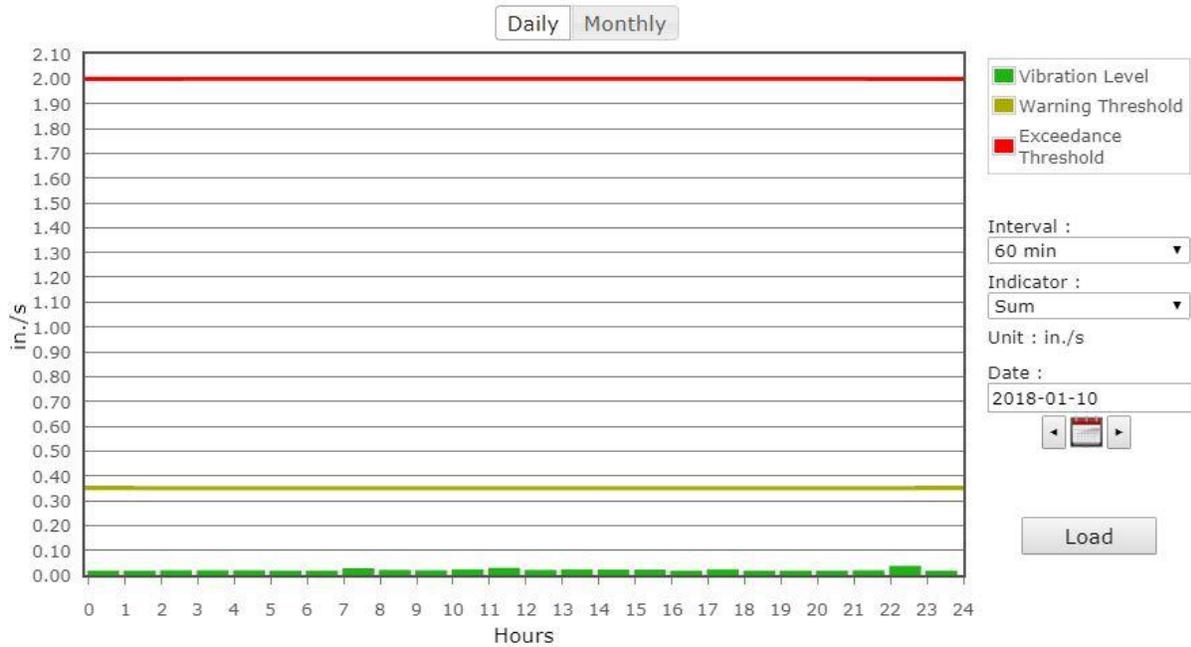


Figure 24: South Vibration Monitor VM-2 on Wednesday

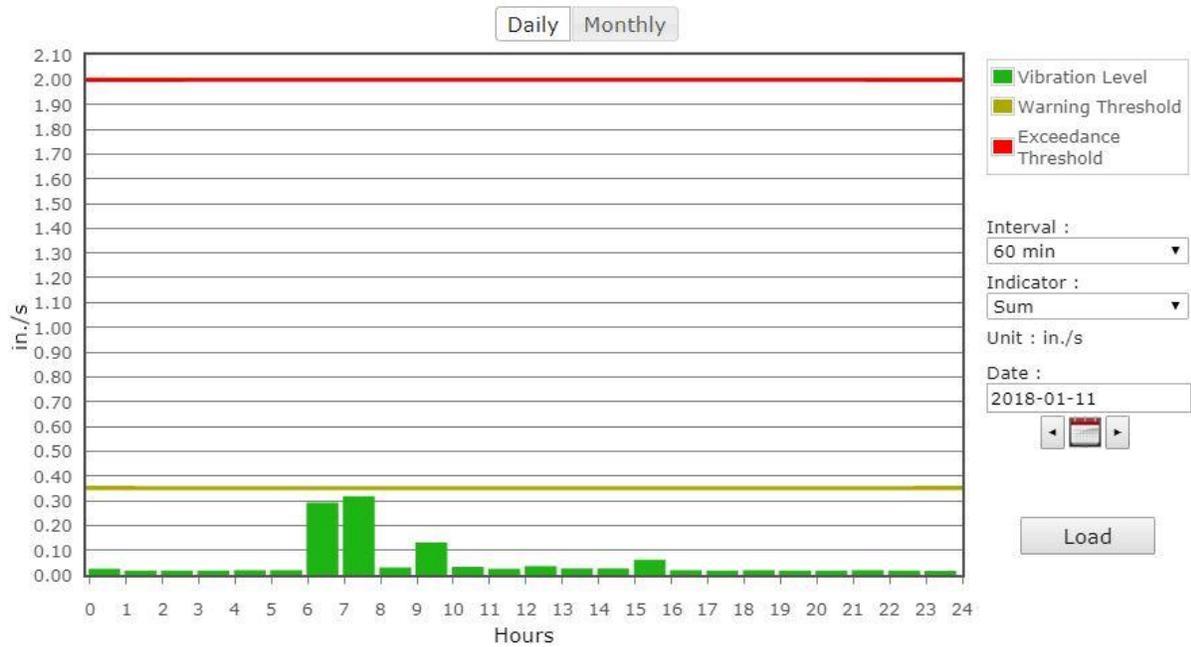
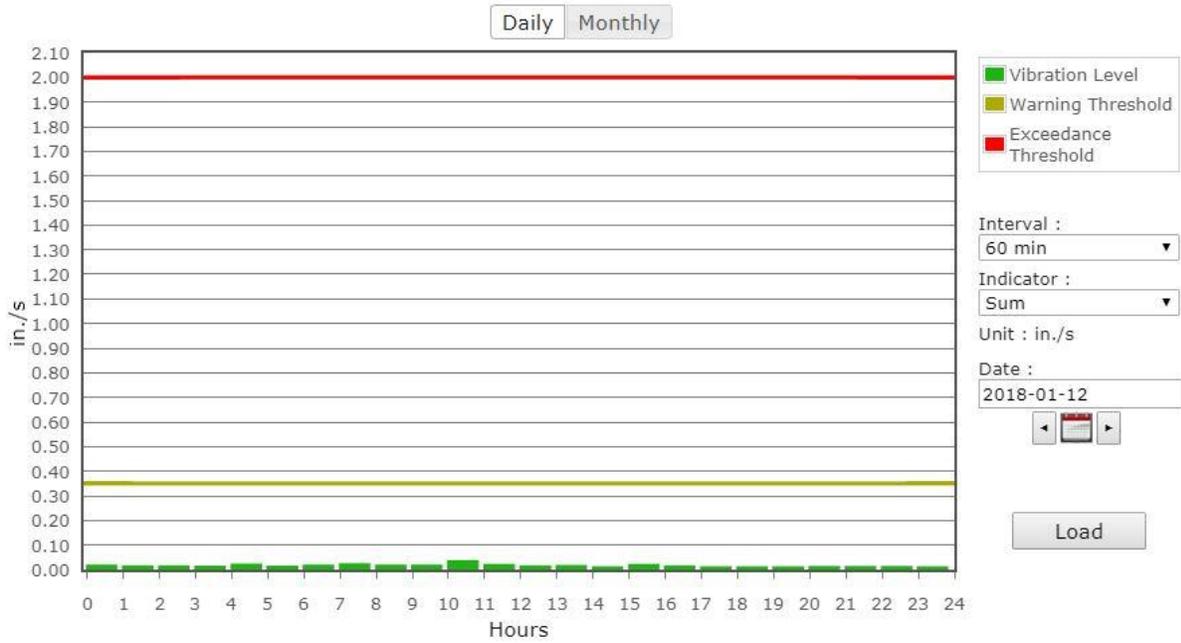


Figure 25: South Vibration Monitor VM-2 on Thursday



**Figure 26: South Vibration Monitor VM-2 on Friday**

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**AHRS WEEKLY REPORT**  
**(NO ACTIVITIES DURING CURENT WEEK)**



**WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA  
(NO ACTIVITIES DURING CURRENT WEEK)**

**CUMULATIVE DREDGED MATERIAL CHART  
(NO ACTIVITIES DURING CURENT WEEK)**