

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: March 5 to 9, 2018**

**Date of Report: March 15, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



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

*Sevenson Environmental Services (SES)*

### Sheet Pile Installation

- Installation of falsework for transect at approximate Station 2+94 to commence installation in a northerly direction
- Installation of 12 pairs of sheet piling to upper waler to approximate Station 3+94 within transect
- Further driving of three (3) pairs of sheet piling to lower waler

### 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.
- No exceedances of the peak particle velocity level specified in the Contract Documents (0.40 inches per second) or acceleration level specified in the Contract Documents (0.1 g).

### *Quality Assurance and Control – Geosyntec*

- No exceedance of the turbidity trigger or action criteria during bulkhead support installation.
- Measurements for 3/5/18:
  - Daily average for ambient buoy – 16.0 NTU
  - Daily average for sentinel buoy – 13.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 0.6 NTU at 0900.
- Measurements for 3/6/18:
  - Daily average for ambient buoy – 13.6 NTU
  - Daily average for sentinel buoy – 10.7 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 2.3 NTU at 1145.
- Measurements for 3/7/18:
  - Daily average for ambient buoy – 13.6 NTU
  - Daily average for sentinel buoy – 10.4 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – no instances where sentinel exceeded ambient.
- Measurements for 3/8/18:
  - Daily average for ambient buoy – 12.1 NTU
  - Daily average for sentinel buoy – 10.1 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 2.8 NTU at 1115.



- Measurements for 3/9/18:
  - Daily average for ambient buoy – 12.7 NTU
  - Daily average for sentinel buoy – 12.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 20.8 NTU at 0830.

*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 – 13 µg/m<sup>3</sup> recorded on 03/09/18
  - Station 2 – 13 µg/m<sup>3</sup> recorded on 03/09/18
  - Station 3 – 3 µg/m<sup>3</sup> recorded on 03/09/18
  - Station 4 – 15 µg/m<sup>3</sup> recorded on 03/08/18 and 03/09/18
  - Station 5 – 22 µg/m<sup>3</sup> recorded on 03/08/18 and 03/09/18
  - Station 6 – 15 µg/m<sup>3</sup> recorded on 03/08/18
  - Station 7 – <1 µg/m<sup>3</sup> recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 3 ppb recorded on 03/09/18
  - Station 2 – 67 ppb recorded on 03/06/18
  - Station 3 – 77 ppb recorded on 03/06/18
  - Station 4 – 22 ppb recorded on 03/05/18 and 03/06/18
  - Station 5 – 33 ppb recorded on 03/06/18
  - Station 6 – 47 ppb recorded on 03/05/18 and 03/06/18
  - Station 7 – 116 ppb recorded on 03/09/18
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit.
- 23-hour collocated sample collected at ST-5 on 03/08 through 03/09. Laboratory turnaround time is 10 business days.

*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 work at southern noise monitor (NM-2) and at 3<sup>rd</sup> Avenue Bridge monitor (NM-3) during installation of sheet piling.
- Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 78.1 dBA during 1000-1100 on 03/09/18
  - Southern monitor (NM-2) – 87.3 dBA during 1000-1100 on 03/09/18
  - 3<sup>rd</sup> Avenue Bridge monitor (NM-3) – 93.5 dBA during 1400-1500 on 03/09/18
- 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) – 0.0382 in/sec event between 1100 and 1200 on 03/09/18
  - Southern monitor (VM-2) – 0.145 in/sec event between 0800 and 0900 on 03/09/18



*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:

- Complete installation of steel sheet pile bulkhead supports utilizing only hydraulic impact hammer to determine if change in means reduces vibrations and settlement. Variable moment vibratory hammer to be used to install falsework and if needed to regain verticality.
- Install granular backfill between installed sheet pile bulkhead supports and existing bulkheads.
- 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. Provide cultural resources training to personnel at Clean Earth of Claremont.

**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> 03-05-2018
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**Description**  
Driving corner piece with hydraulic impact hammer.



<b>Photo No.</b> 002	<b>Date</b> 03-05-2018
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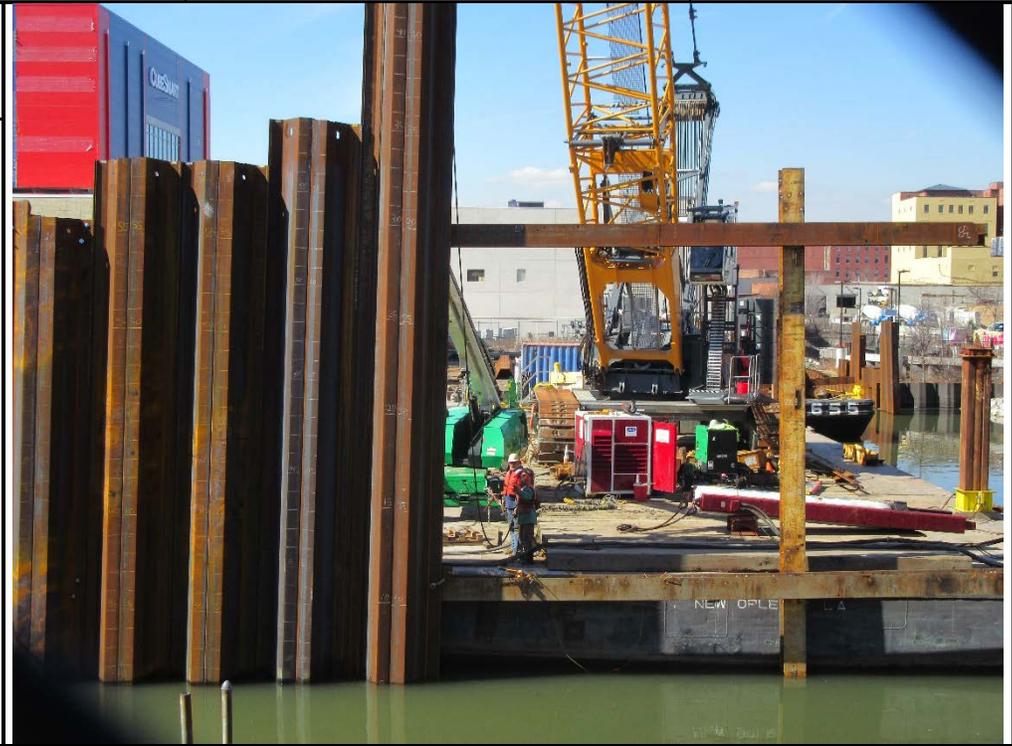
**Description**  
Cutting bolt hole into the sheet pile and the waler beam.



<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> 003	<b>Date</b> 03-06-2018
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**Description**  
Threading of fourth pair from 3<sup>rd</sup> Avenue Bridge.



<b>Photo No.</b> 004	<b>Date</b> 03-06-2018
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**Description**  
Setting up for threading sixth pair.



<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> 005	<b>Date</b> 03-08-2018
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**Description**  
Sheet pile pair threaded and quick release shackle being lifted.



<b>Photo No.</b> 006	<b>Date</b> 03-08-2018
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**Description**  
Hammer positioning for fourth pair.



<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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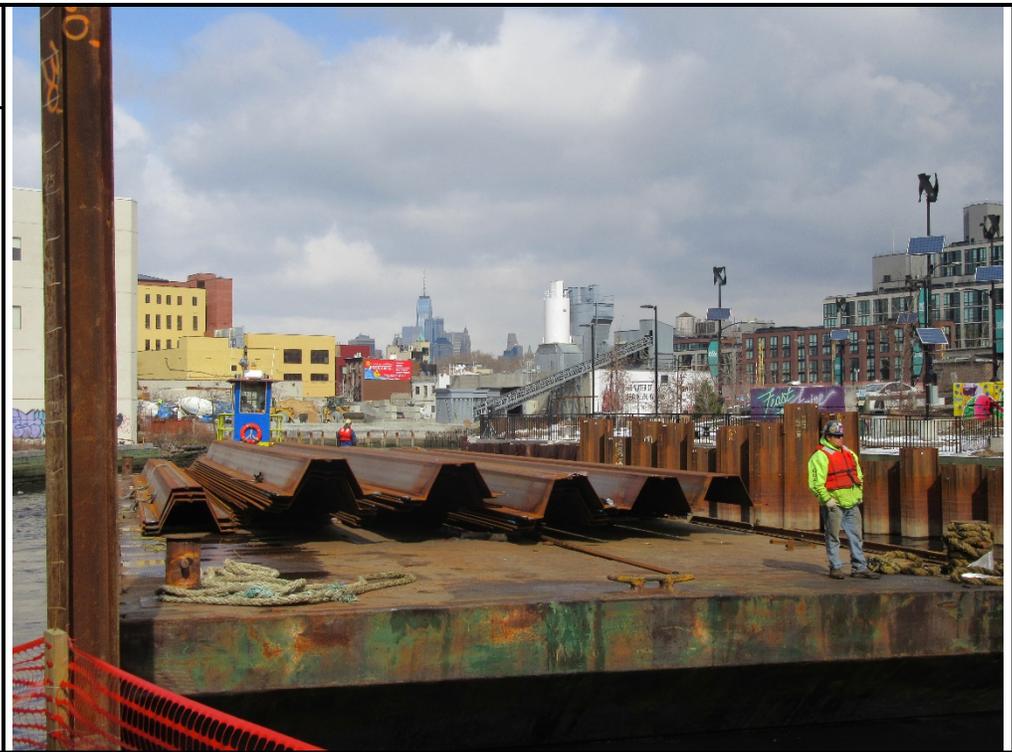
<b>Photo No.</b> 007	<b>Date</b> 03-09-2018
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**Description**  
Installing weep holes and filters.



<b>Photo No.</b> 008	<b>Date</b> 03-01-2018
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**Description**  
Barge Sharon moving out of TB4 to Citizens Site.



**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 March 5<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**   
consultants engineering p.c.

engineers | scientists | innovators

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Project Number HPH106A (52)

## 1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of March 5<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 March 5<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.











## 2.5 Friday, March 9<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)
3/9/2018 7:00	12.6	9.3	N	3/9/2018 12:15	11.6	15.1	Y
3/9/2018 7:15	12.6	10.0	N	3/9/2018 12:30	11.6	14.1	Y
3/9/2018 7:30	13.1	10.3	N	3/9/2018 12:45	11.2	11.6	Y
3/9/2018 7:45	11.7	9.9	N	3/9/2018 13:00	11.5	16.0	Y
3/9/2018 8:00	12.3	13.2	Y	3/9/2018 13:15	11.5	9.0	N
3/9/2018 8:15	11.9	13.7	Y	3/9/2018 13:30	12.0	8.1	N
3/9/2018 8:30	12.5	33.3	Y	3/9/2018 13:45	12.2	9.6	N
3/9/2018 8:45	13.5	19.3	Y	3/9/2018 14:00	11.9	8.2	N
3/9/2018 9:00	14.0	19.9	Y	3/9/2018 14:15	11.8	8.4	N
3/9/2018 9:15	14.8	17.9	Y	3/9/2018 14:30	11.6	8.5	N
3/9/2018 9:30	14.3	14.6	Y	3/9/2018 14:45	11.7	8.9	N
3/9/2018 9:45	13.8	13.3	N	3/9/2018 15:00	11.3	8.0	N
3/9/2018 10:00	13.2	13.0	N	3/9/2018 15:15	11.8	8.9	N
3/9/2018 10:15	14.0	13.2	N	3/9/2018 15:30	11.0	8.5	N
3/9/2018 10:30	14.2	11.4	N	3/9/2018 15:45	11.6	8.0	N
3/9/2018 10:45	15.3	13.8	N	3/9/2018 16:00	11.8	8.4	N
3/9/2018 11:00	14.2	13.7	N	3/9/2018 16:15	11.5	8.6	N
3/9/2018 11:15	16.1	14.2	N	3/9/2018 16:30	12.0	8.4	N
3/9/2018 11:30	14.2	18.6	Y	3/9/2018 16:45	12.2	8.5	N
3/9/2018 11:45	13.6	20.9	Y	3/9/2018 17:00	11.9	9.5	N
3/9/2018 12:00	14.1	20.1	Y				
Average	12.7	12.6	N				
Maximum	16.1	33.3	Y				

**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

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

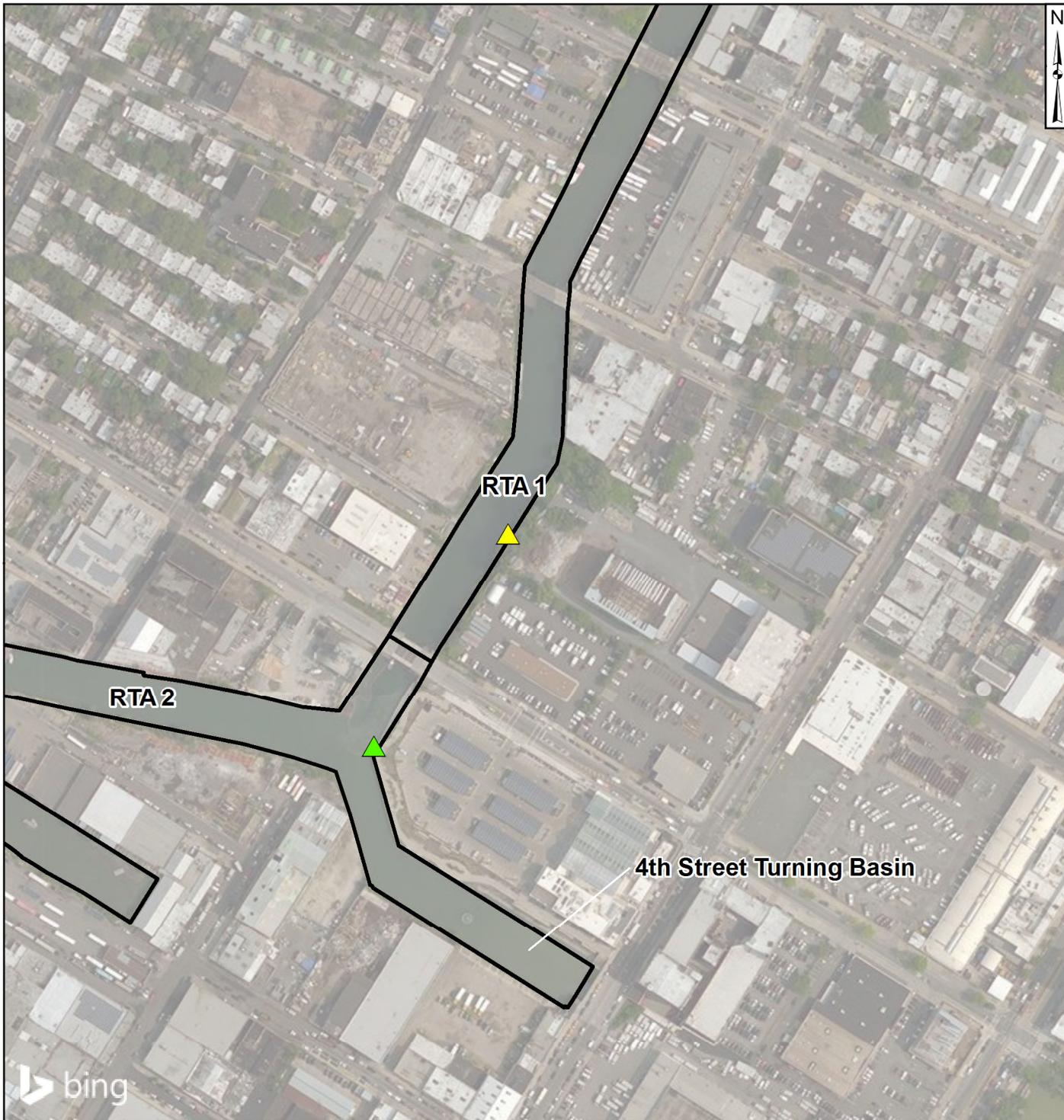
Visual observations are consistent with background conditions of the turning basin.

### 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.

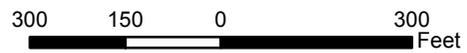
# **FIGURES**



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

**Community Air Monitoring Project  
22<sup>nd</sup> Weekly Monitoring Period  
Summary Report:  
March 5<sup>th</sup> through March 9<sup>th</sup>, 2018**

**Report Contents**

- Executive Summary
- Daily Data Summary Report – PM<sub>10</sub>/TVOC
  - Daily Meteorological Summary Report
    - Periodic Monitoring Results

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

## **Executive Summary – Week 22 Monitoring Period March 5<sup>th</sup> through March 9<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 22 monitoring period from March 5<sup>th</sup> through March 9<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 22 monitoring period there were no PM<sub>10</sub> or TVOC exceedances of the action level of 150 ug/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.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 22 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 22 monitoring period of March 5<sup>th</sup> through March 9<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Station 5. The ST-5 sample was collected on March 8<sup>th</sup>, through March 9<sup>th</sup>, 2018. The sample was collected over a 23-hour period. The Sample was shipped to Con-Test Analytical Laboratory for analyses. The results of the summa canister sampling are pending lab analyses.

Site activities which were conducted at the Citizen Property on March 5<sup>th</sup> through March 9<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

Site activities which were conducted at the 4<sup>th</sup> St Turning Basin Area of the Canal on March 5<sup>th</sup> through March 9<sup>th</sup>, 2018 included the following:

- Installation of falsework (i.e., vertical and horizontal alignment guide) for transect at Station 2+94 (approximate) to commence installation in a northerly direction
- Installation of 12 pairs of sheet piling to upper horizontal alignment guide to Station 3+94 (approximate) within transect
- Further driving of three (3) pairs of sheet piling to lower horizontal alignment guide and removal of upper horizontal alignment guide

**Gowanus Canal Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
03/05/2018 06:30 AM - 03/05/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	3	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	2	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

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

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	15	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	22	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	2	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	20	ppb	Max.	5	ug/m <sup>3</sup>
Avg.	8	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	6	ppb	Avg.	3	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 Station (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	70	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	7	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 Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
03/06/2018 00:00 AM -03/06/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

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

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	67	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	77	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	23	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	22	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	9	ppb	Avg.	2	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	33	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	13	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	47	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	39	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	83	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	46	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 Superfund Site**  
**TB-4 Dredging and Capping Pilot Study**  
**Brooklyn, New York**  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
03/08/2018 00:00 AM -03/08/2018 23:45 PM

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	1	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	1	ppb	Max.	11	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

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 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	1	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	5	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	22	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

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 Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Daily Station Report – TVOC/PM<sub>10</sub>  
(TRC Project No.274286-0000-00000)  
03/09/2018 00:00 AM -03/09/2018 16:00 PM**

**Station 1 (Citizen Property near Construction Trailers)**

TVOC			PM <sub>10</sub>		
Max.	3	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	6	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	7	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 3 (Whole Foods Property NW Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	27	ppb	Max.	3	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 4 (Whole Foods Property Central Riverwalk Location)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	15	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 5 (Whole Foods Property near 3rd Avenue Bridge)**

TVOC			PM <sub>10</sub>		
Max.	3	ppb	Max.	22	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 6 (Maritime Estates Property along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	<1	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	2	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

**Station 7 (386 3rd Avenue along Canal Fencing)**

TVOC			PM <sub>10</sub>		
Max.	116	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	57	ppb	Avg.	<1	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

TVOC – Total Volatile Organic Compounds

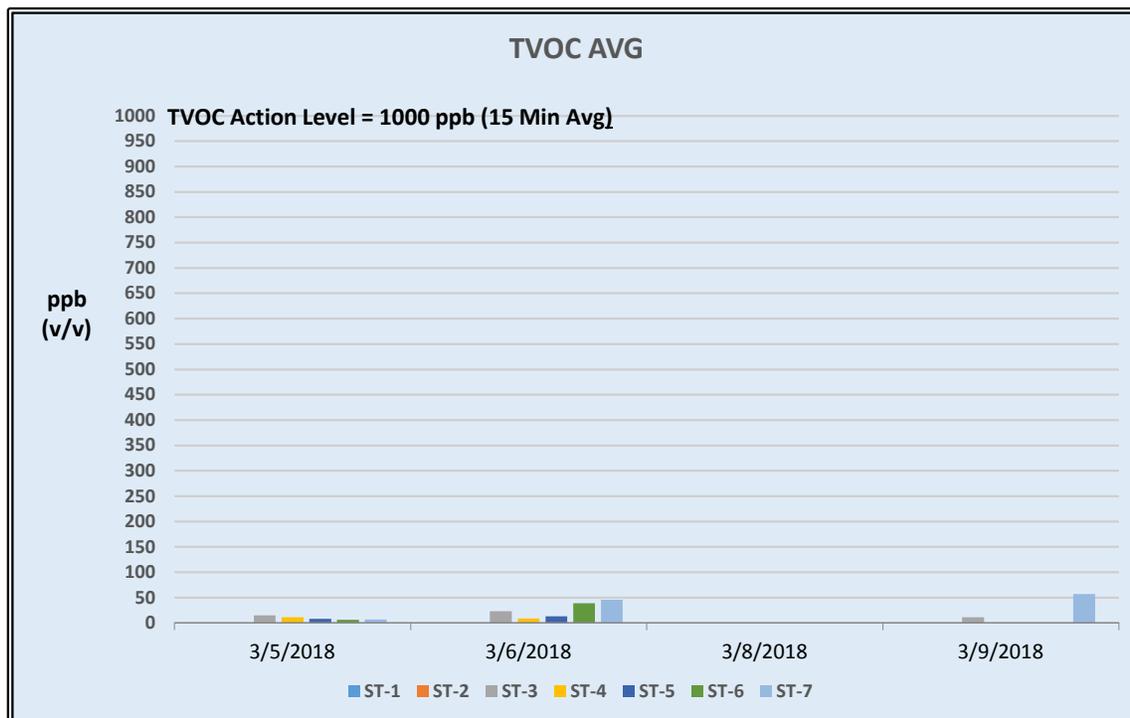
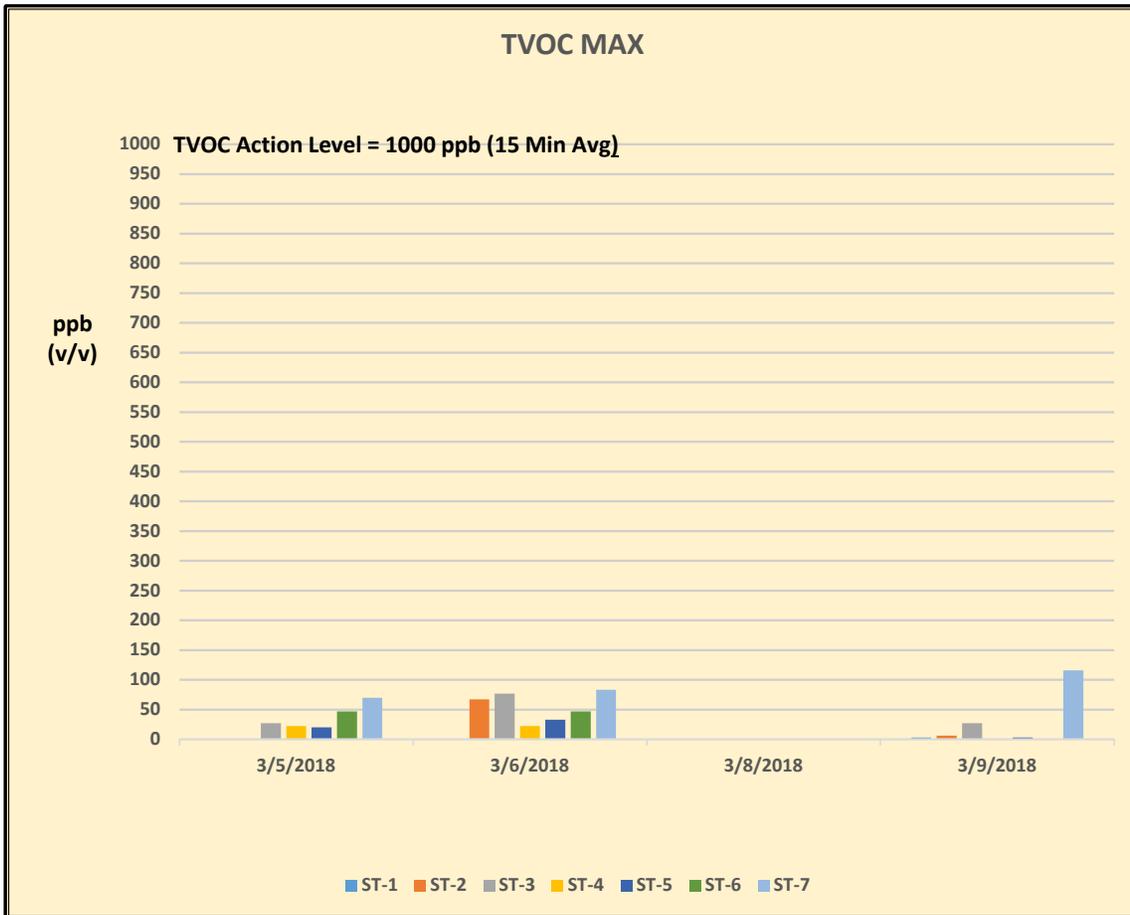
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

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

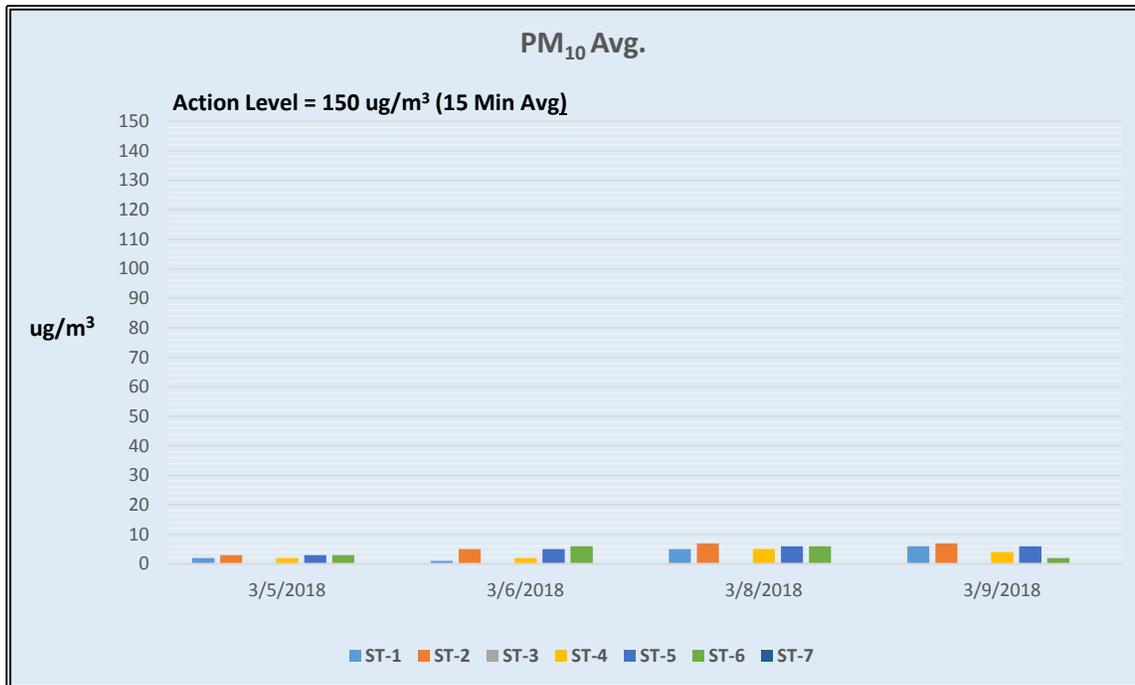
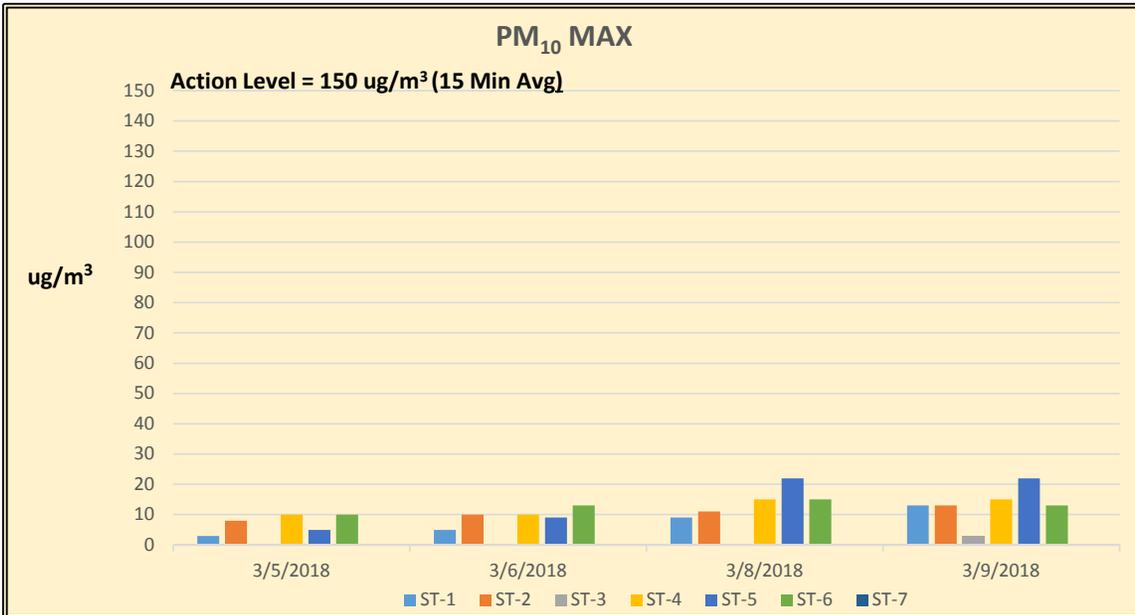
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

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 22**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 22**



**Table 1**

**Week 22**

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

March 5 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	7:00	<50	<3	<1.0
	13:15	<50	<3	<1.0
ST-2	7:05	<50	<3	<1.0
	13:20	<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
	14:15	<50	<3	<1.0
ST-5	7:25	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-6	7:40	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-7	8:00	<50	<3	<1.0
	15:00	<50	<3	<1.0

March 6 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	6:30	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-2	6:35	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-3	6:50	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-4	6:55	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-5	7:00	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-6	7:15	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-7	7:30	<50	<3	<1.0
	15:25	<50	<3	<1.0

**Table 1**

**Week 22**

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

March 8 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
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	7:45	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-4	7:50	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-5	8:00	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-6	8:20	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-7	8:40	<50	<3	<1.0
	15:00	<50	<3	<1.0

March 9 <sup>th</sup> , 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)	Hydrogen Sulfide (H <sub>2</sub> S) (ppb)	Ammonia (NH <sub>3</sub> ) (ppm)
ST-1	7:30	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	7:35	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	7:45	<50	<3	<1.0
	15:15	<50	<3	<1.0
ST-4	7:50	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	7:55	<50	<3	<1.0
	15:25	<50	<3	<1.0
ST-6	8:15	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-7	8:25	<50	<3	<1.0
	16:00	<50	<3	<1.0

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



**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Meteorological Summary  
March 5<sup>th</sup> through March 9<sup>th</sup>, 2018**

March 5 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>NW</b>	<b>5.24</b>	<b>39.0</b>

March 6 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>SE</b>	<b>4.69</b>	<b>39.4</b>

March 8 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>WSW</b>	<b>2.98</b>	<b>36.7</b>

March 9 <sup>th</sup> , 2018		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>WSW</b>	<b>2.91</b>	<b>34.0</b>

\*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 and Thursday.

\*All meteorological data represents an average for the time period of 00:00 to 16:00 for Friday.

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





WI #15-081

**MEMORANDUM**

March 12, 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, 5 March – 9 March, 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**

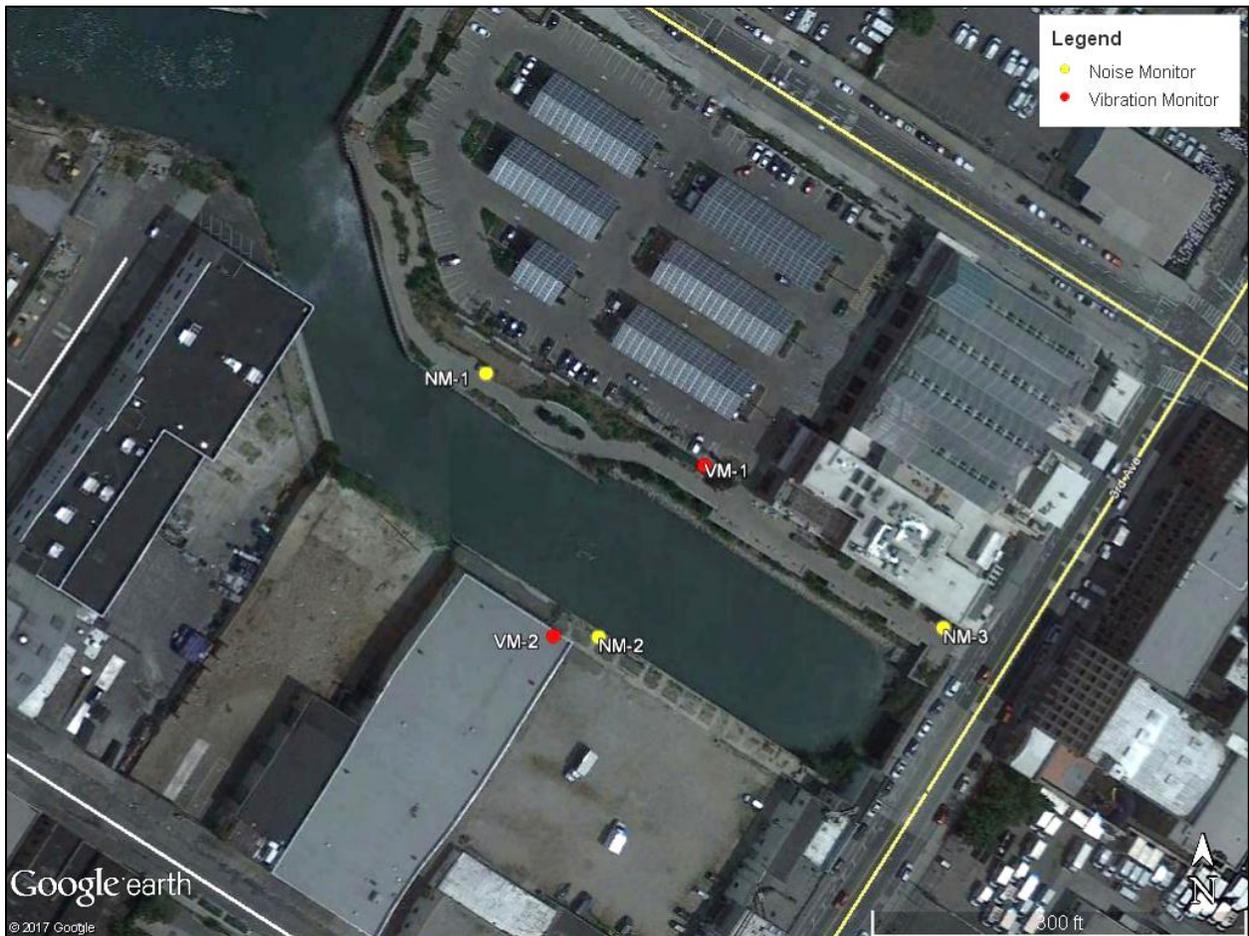
Figures 2 through 16 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan<sup>1</sup>. Commercial and Industrial land uses are assigned an hourly Leq noise limit of 80 dBA for Daytime and Evening time periods. The average baseline noise measured in the project area in 2015 are also shown for reference<sup>2</sup>. Noise level data for Northeast Monitor NM-3 on Monday, 7 March over the 15:00 interval, and Tuesday, 8 March over the 8:00 and 10:00 intervals are incomplete due to intermittent equipment issues.

<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.

### 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



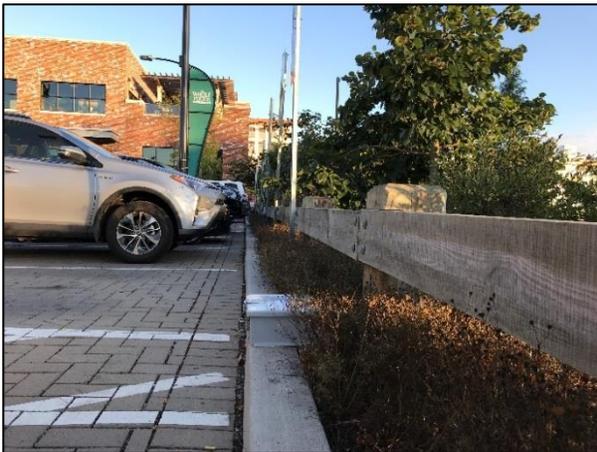
**Photo 1: Noise Monitoring Location NM-1**  
**(26 September 2017)**



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



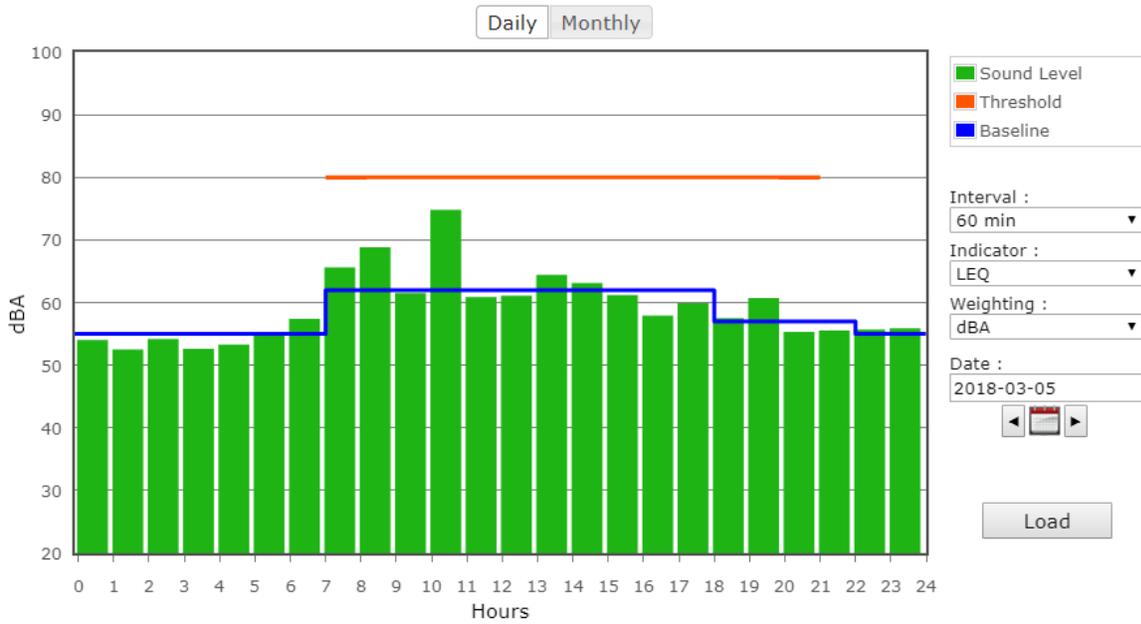
**Photo 3: Noise Monitoring Location NM-3**  
**(29 October 2017)**



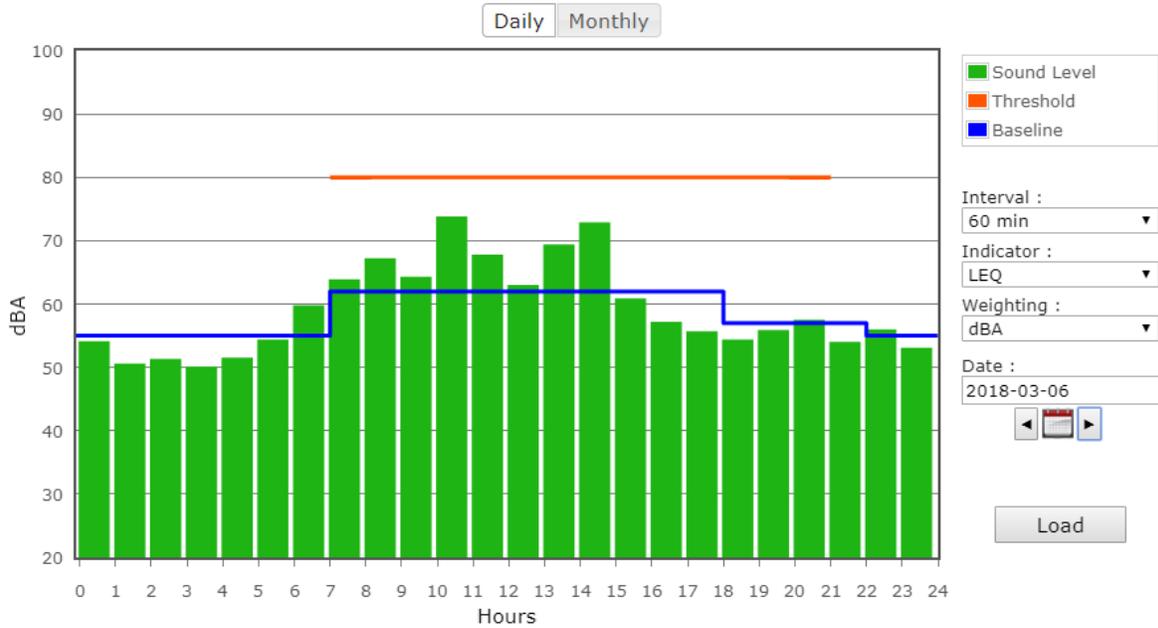
**Photo 4: Vibration Monitoring Location VM-1**  
**(12 October 2017)**



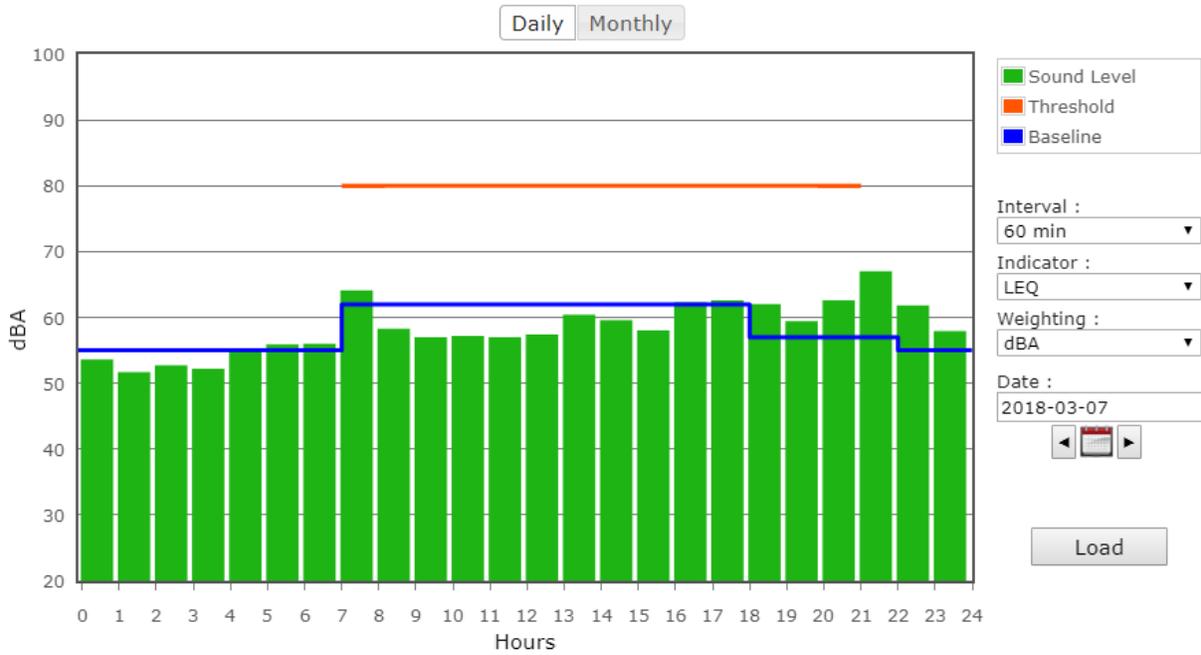
**Photo 5: Vibration Monitoring Location VM-2**  
**(12 October 2017)**



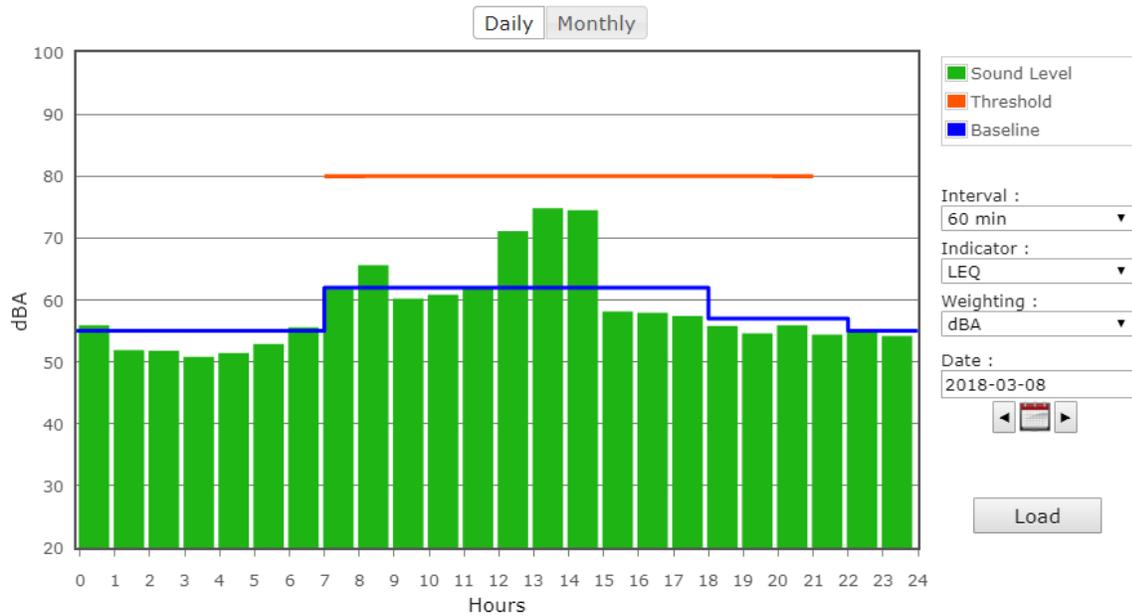
**Figure 2: North Monitor NM-1 on Monday**



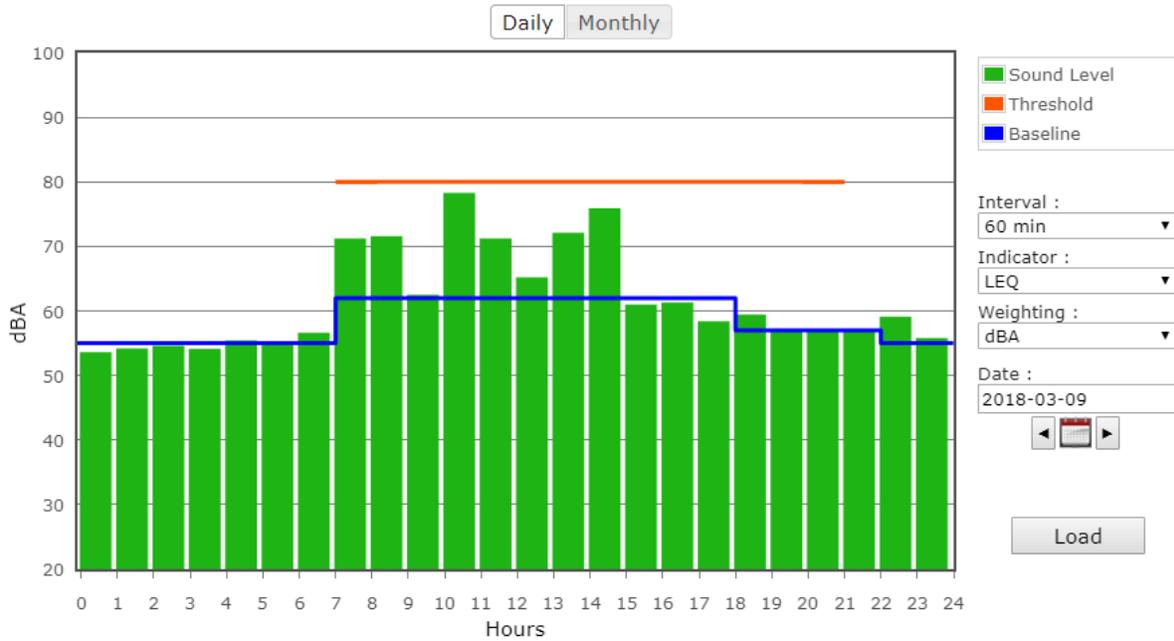
**Figure 3: North Monitor NM-1 on Tuesday**



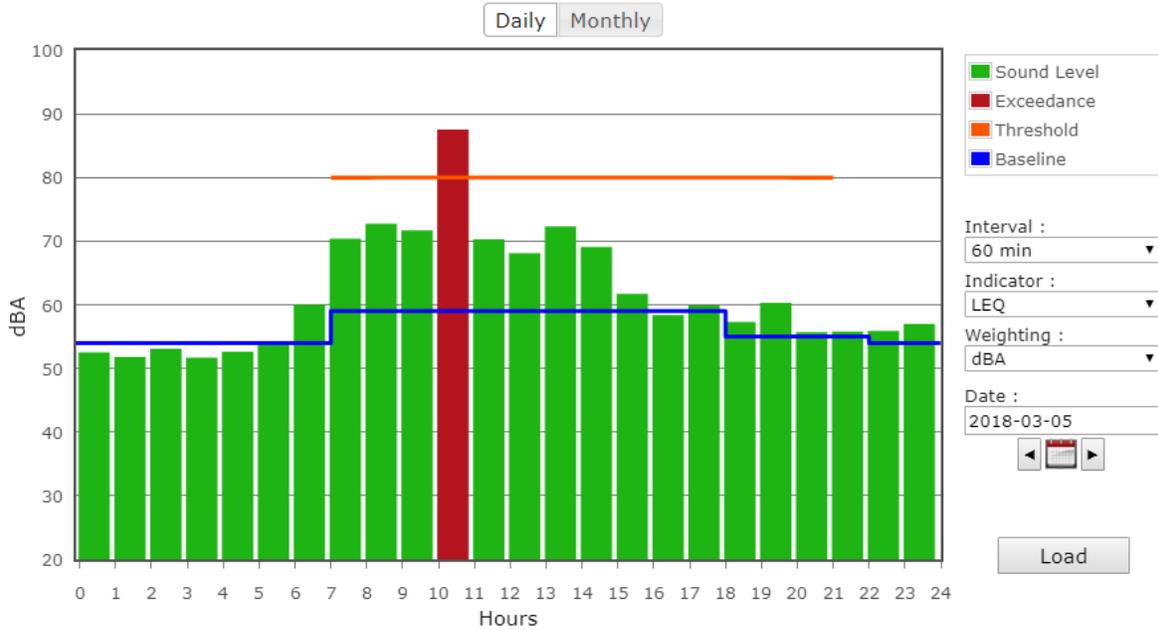
**Figure 4: North Monitor NM-1 on Wednesday**



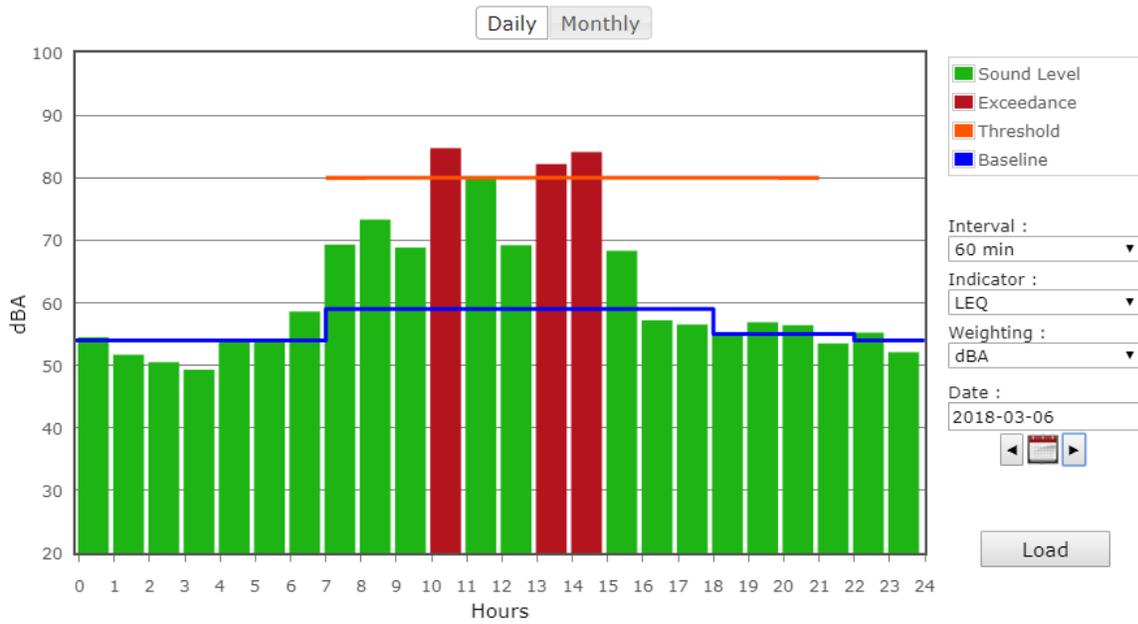
**Figure 5: North Monitor NM-1 on Thursday**



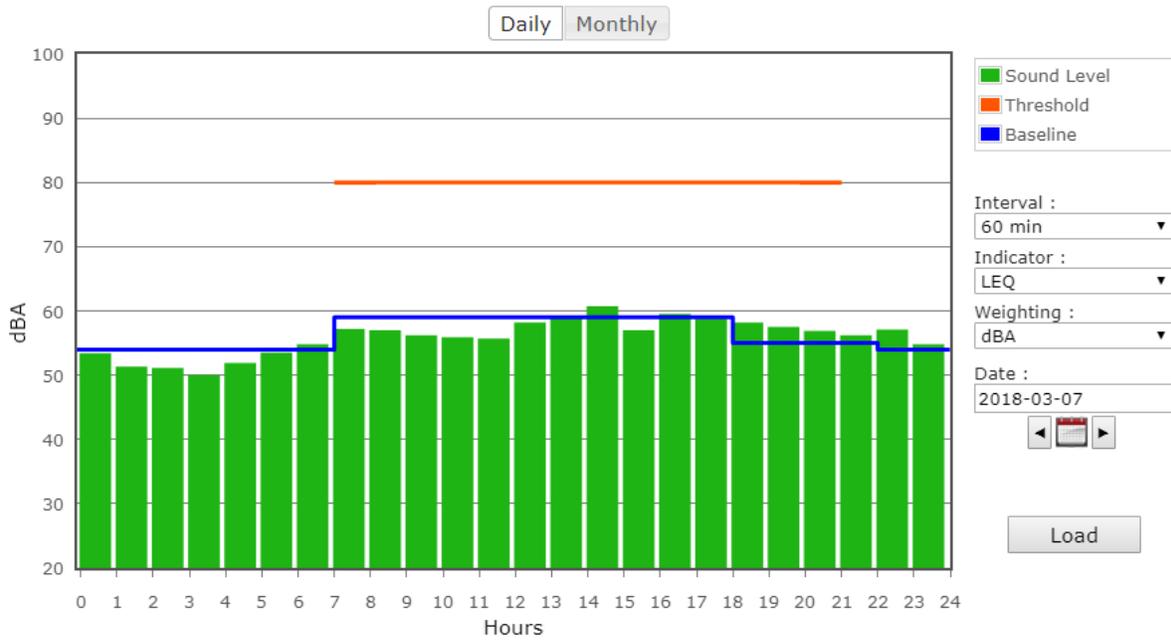
**Figure 6: North Monitor NM-1 on Friday**



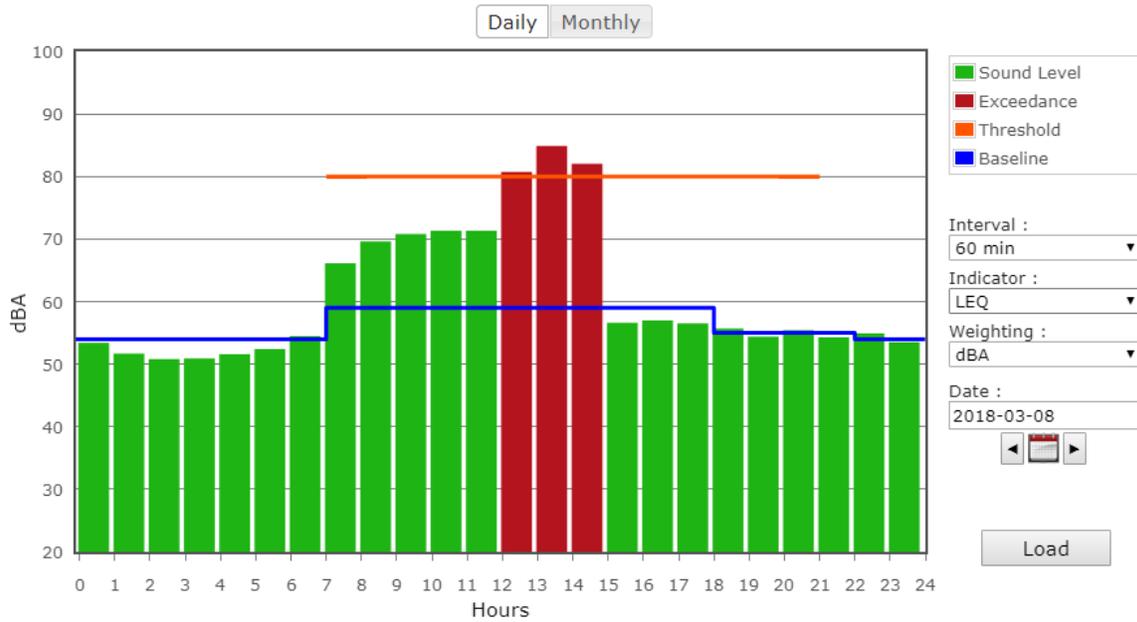
**Figure 7: South Monitor NM-2 on Monday**



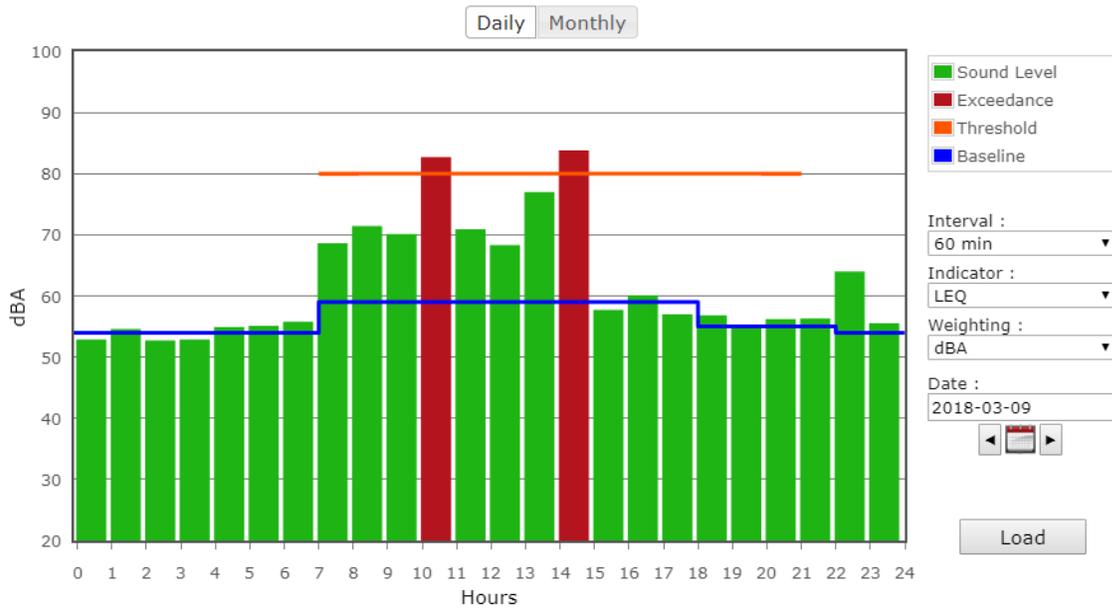
**Figure 8: South Monitor NM-2 on Tuesday**



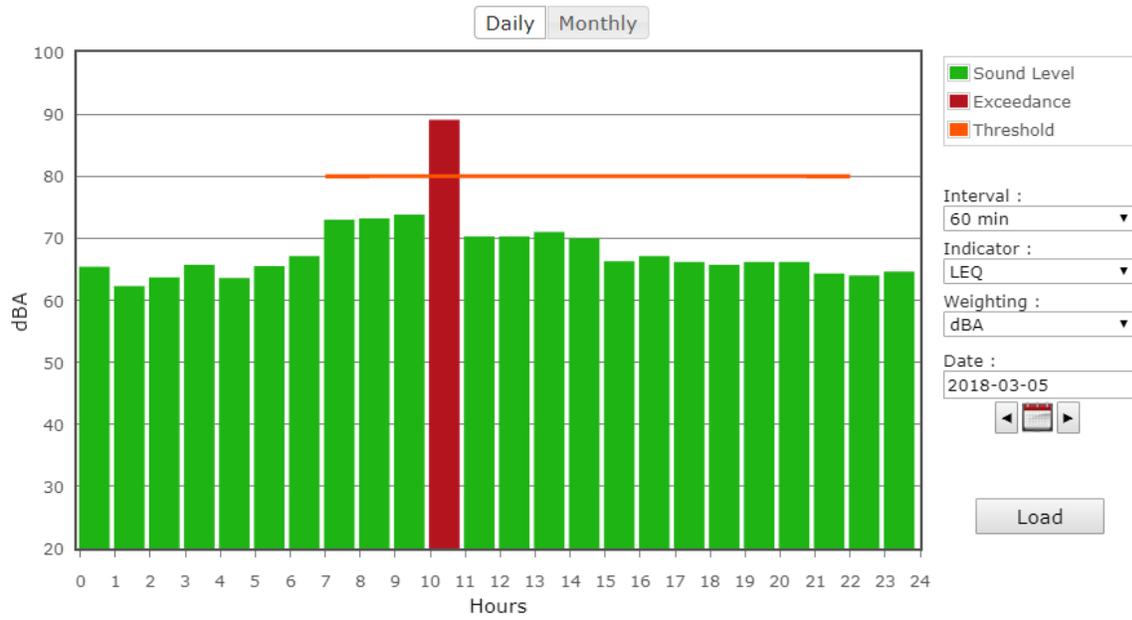
**Figure 9: South Monitor NM-2 on Wednesday**



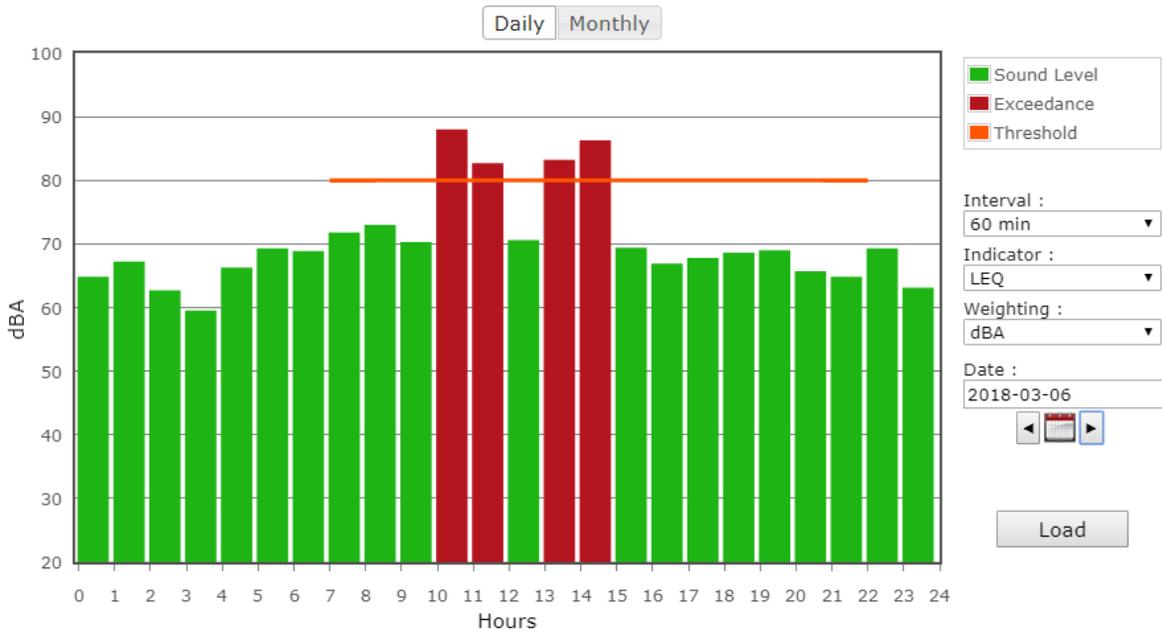
**Figure 10: South Monitor NM-2 on Thursday**



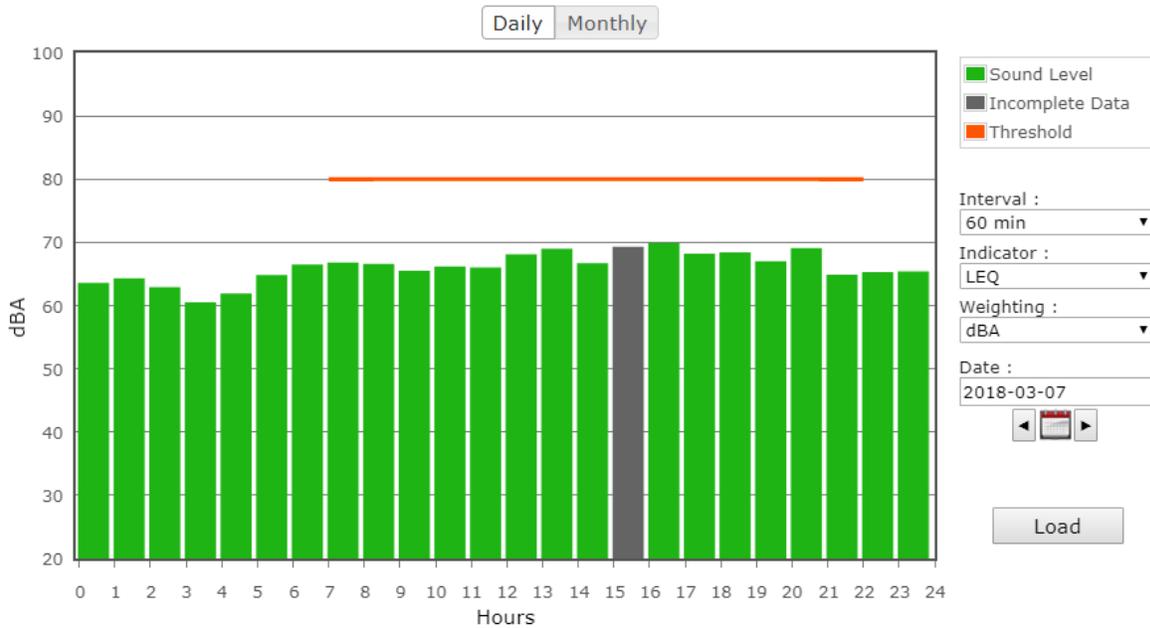
**Figure 11: South Monitor NM-2 on Friday**



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

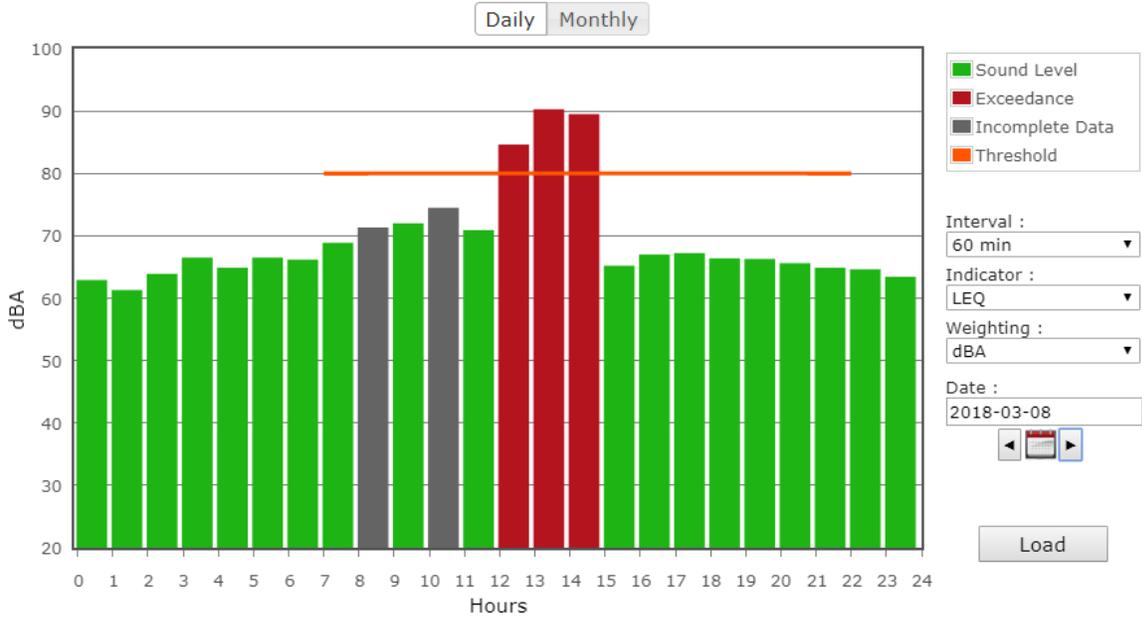


**Figure 13: Northeast Monitor NM-3 on Tuesday**



**Figure 14: Northeast Monitor NM-3 on Wednesday\***

\*Noise Levels for the 15:00 interval are incomplete.



**Figure 15: Northeast Monitor NM-3 on Thursday\***

\*Noise Levels for the 8:00 and 10:00 intervals are incomplete.

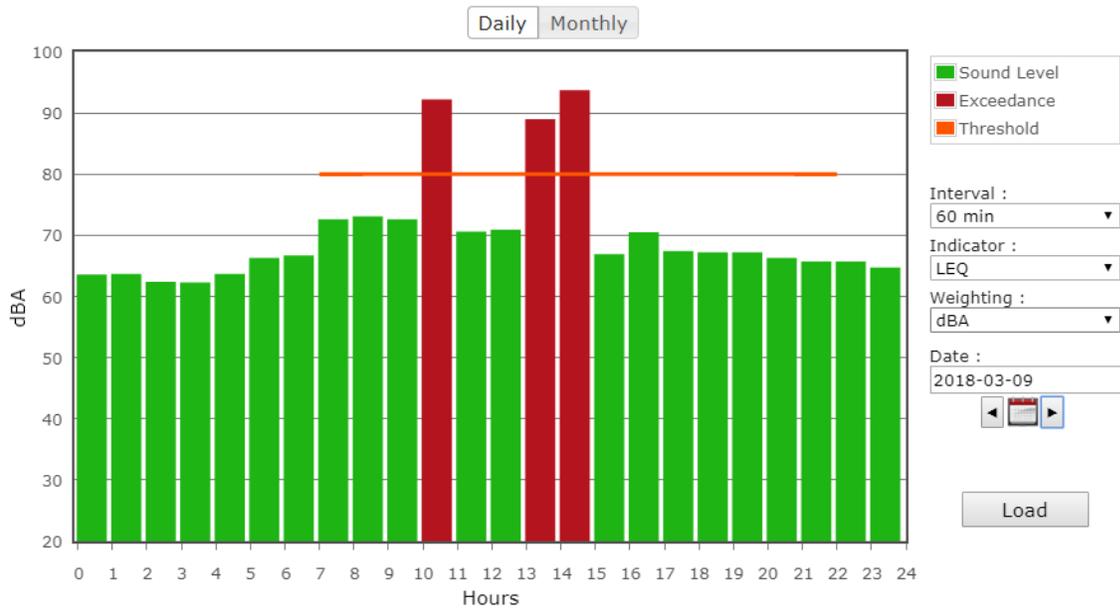


Figure 16: Northeast Monitor NM-3 on Friday\*

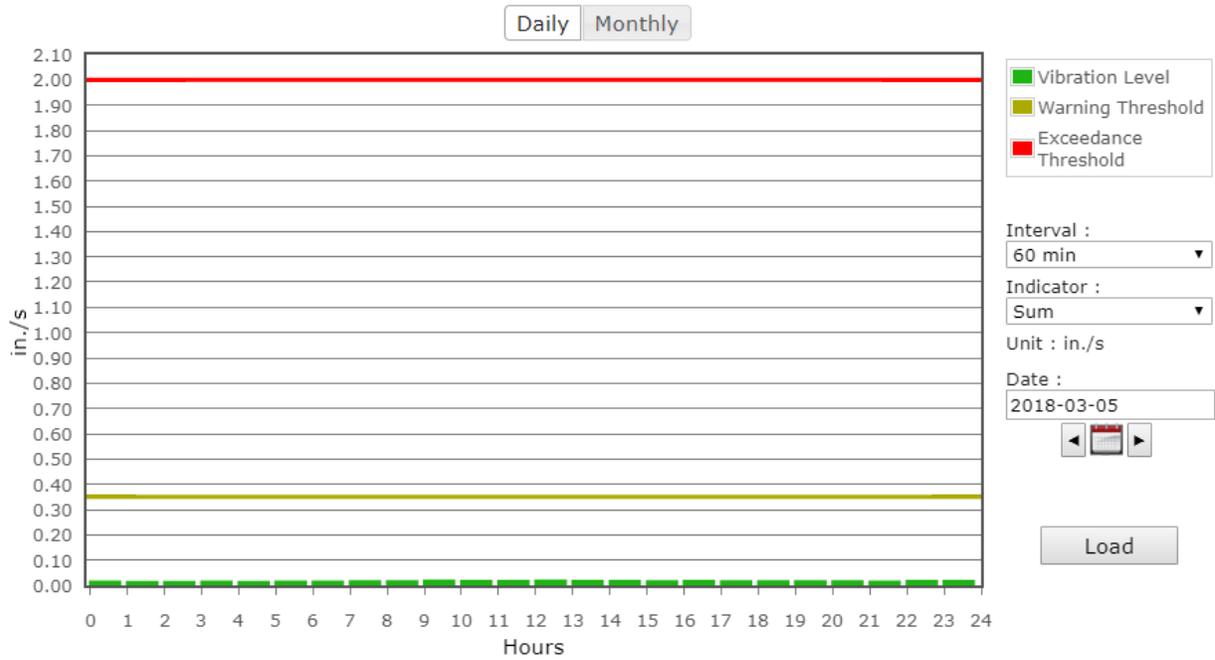
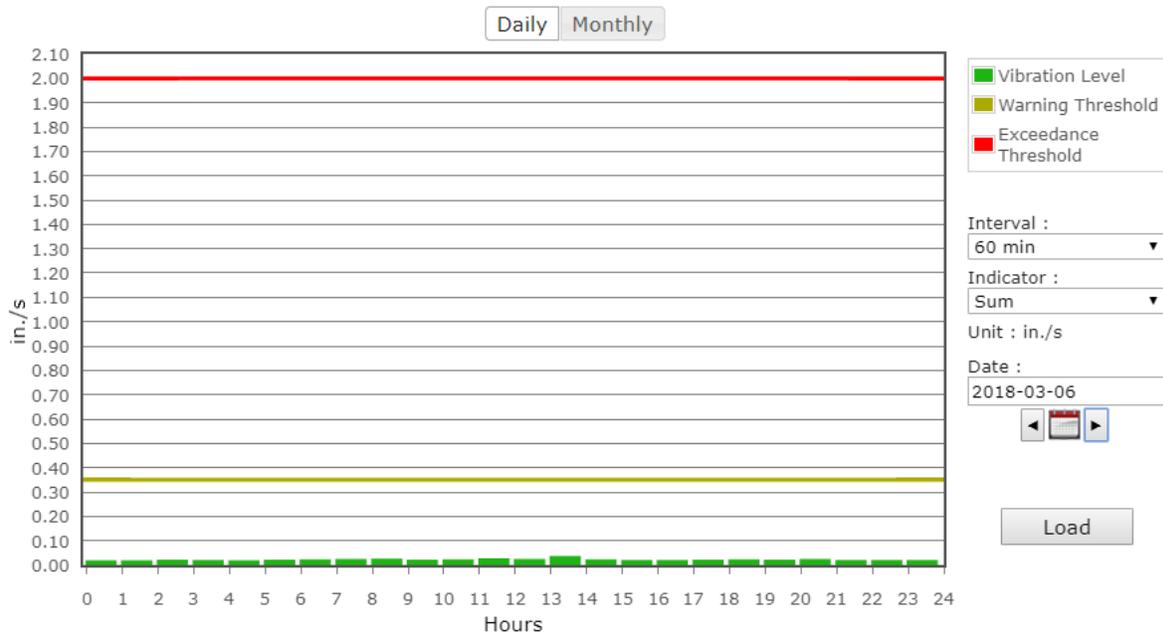
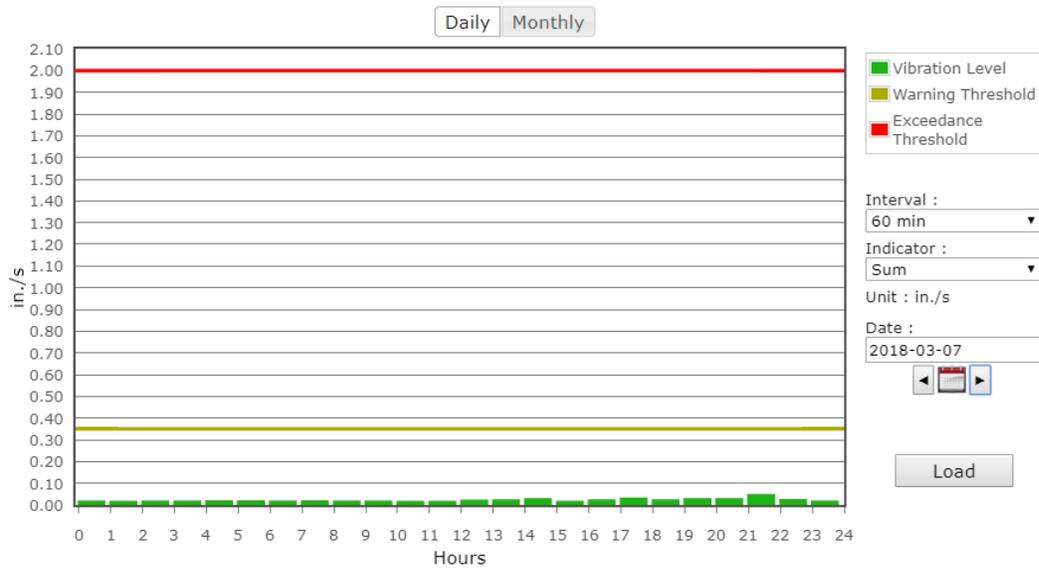


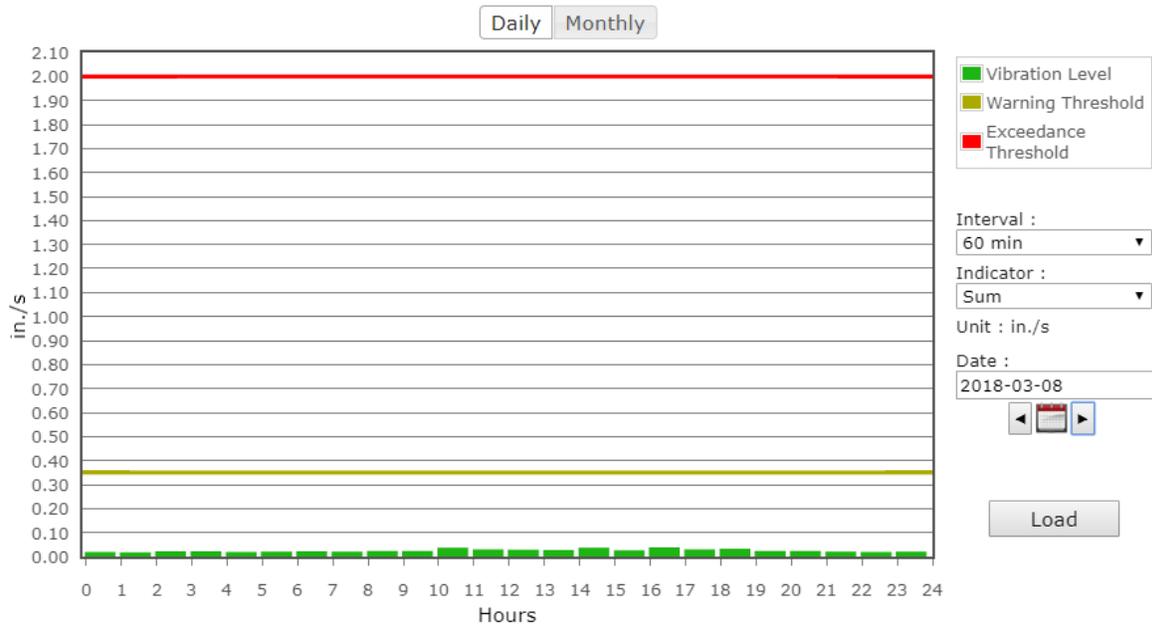
Figure 17: North Vibration Monitor VM-1 on Monday



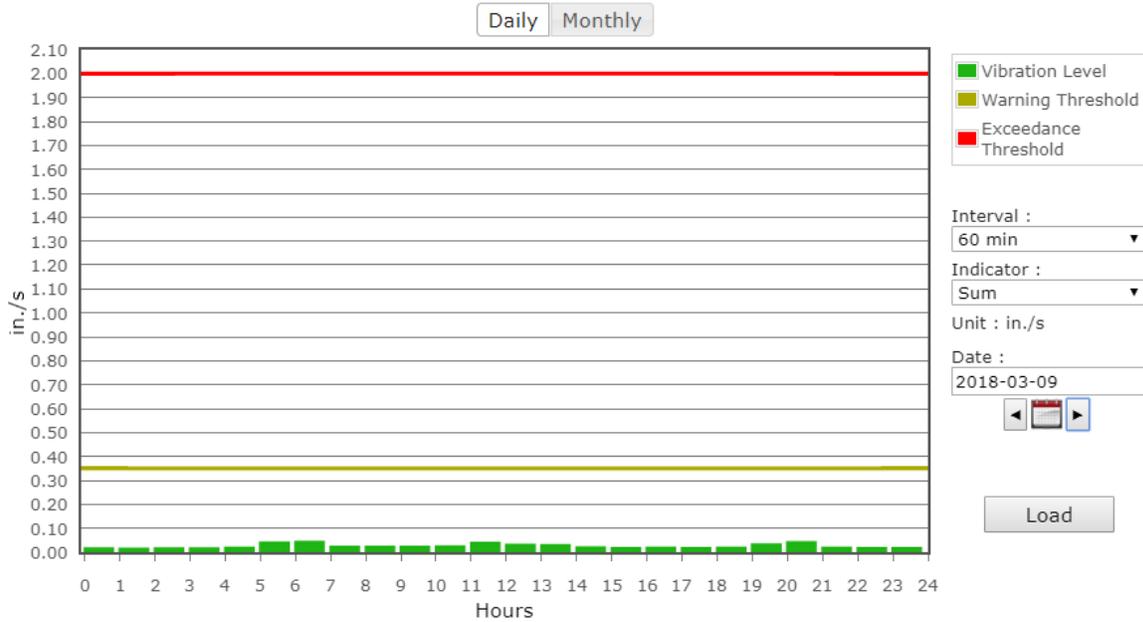
**Figure 18: North Vibration Monitor VM-1 on Tuesday**



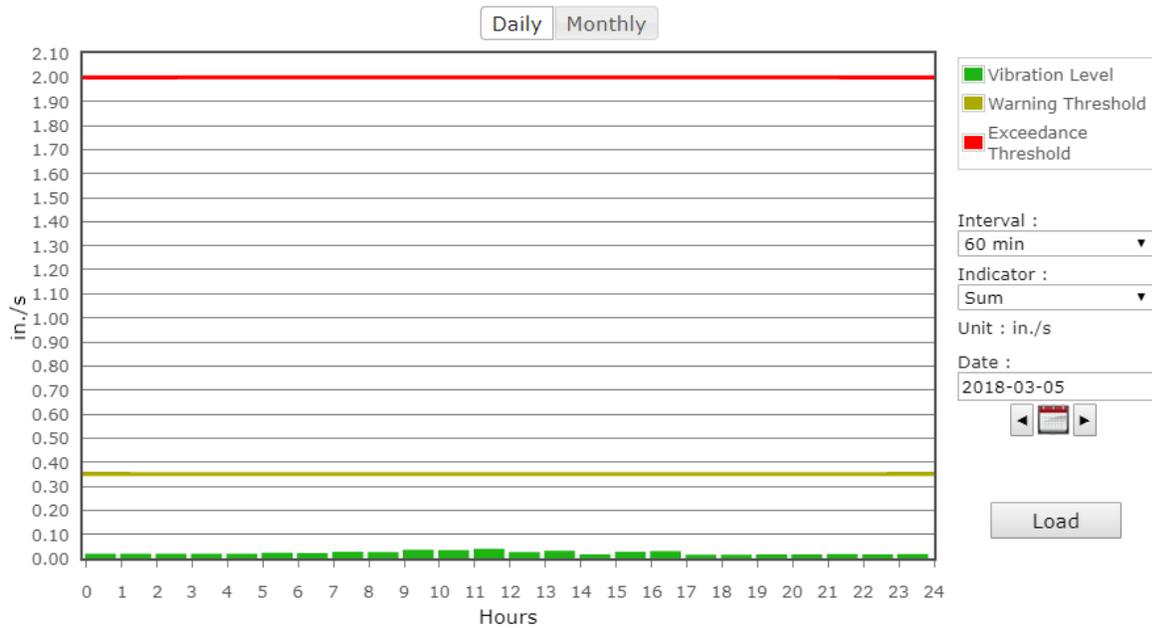
**Figure 19: North Vibration Monitor VM-1 on Wednesday**



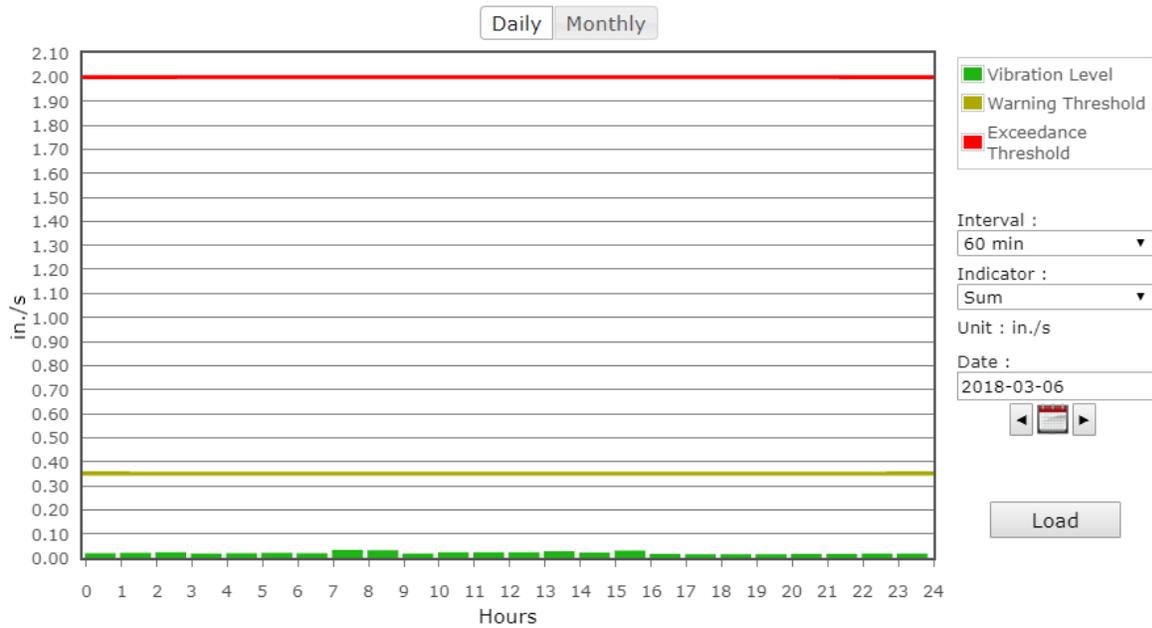
**Figure 20: North Vibration Monitor VM-1 on Thursday**



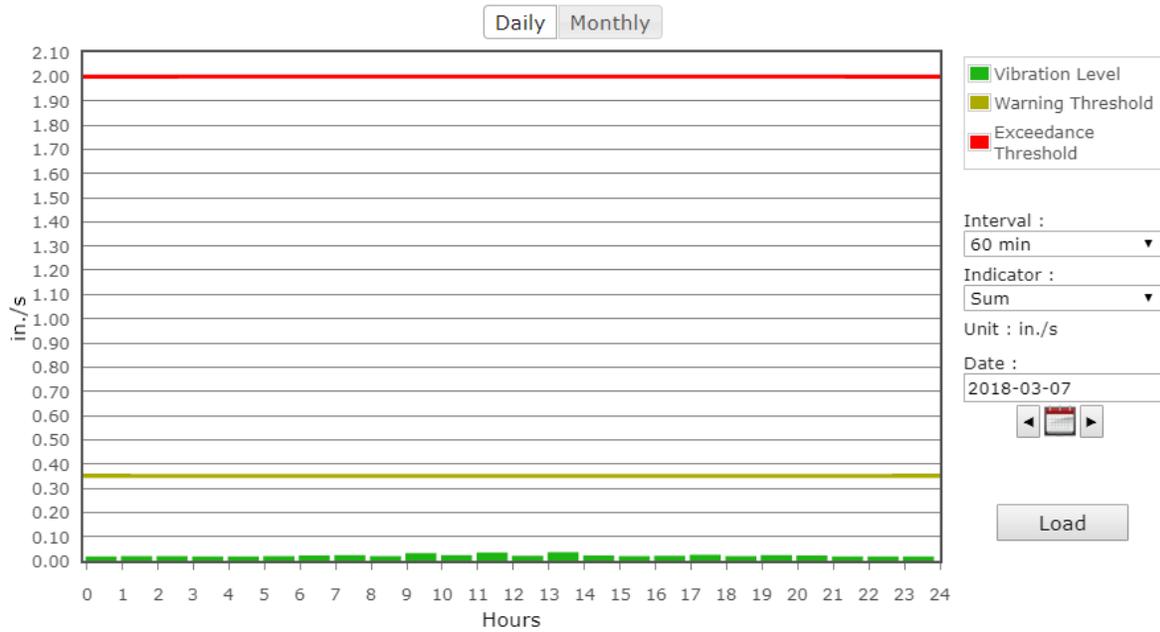
**Figure 21: North Vibration Monitor VM-1 on Friday**



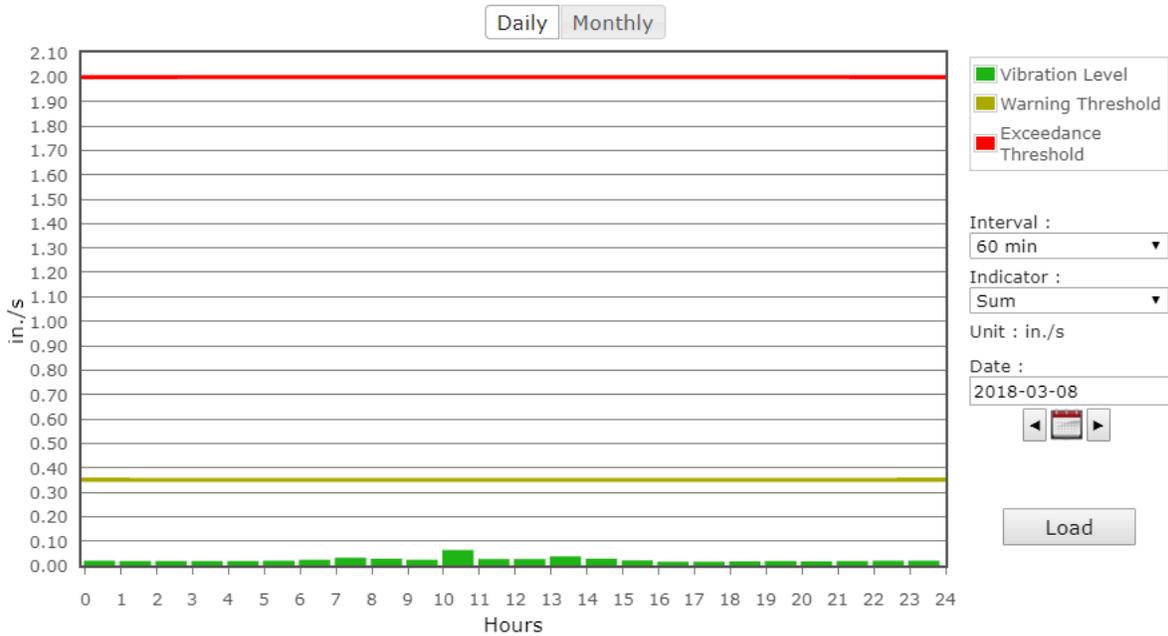
**Figure 22: South Vibration Monitor VM-2 on Monday**



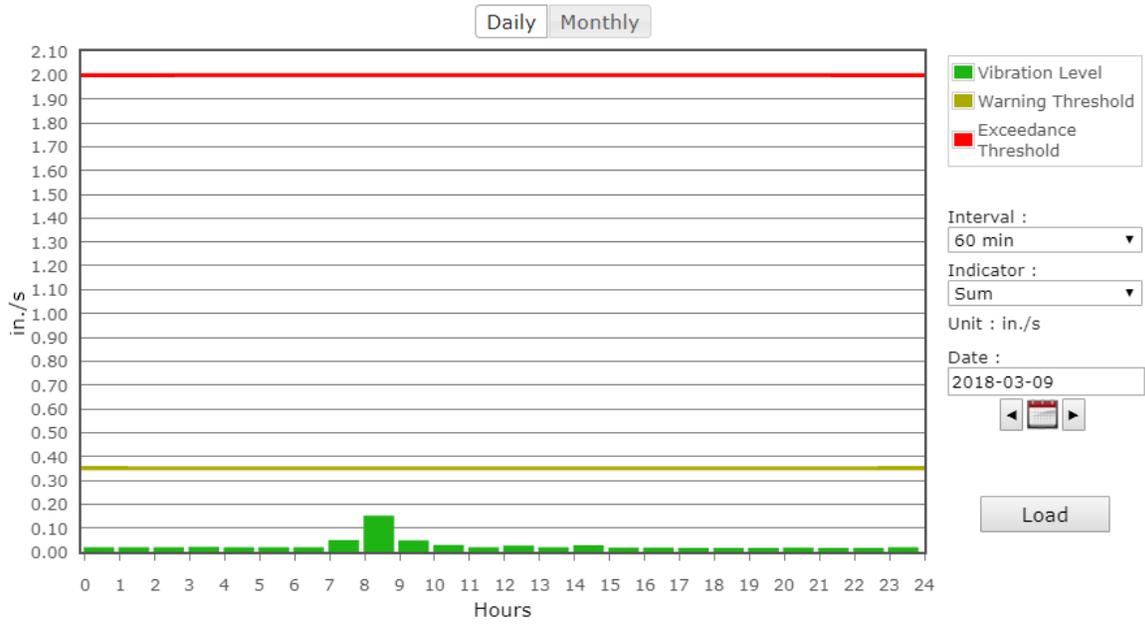
**Figure 23: South Vibration Monitor VM-2 on Tuesday**



**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)**