

**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: April 16 to 20, 2018**

**Date of Report: April 27, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**



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

*Sevenson Environmental Services (SES)*

### Sheet Pile Installation

- Remove and replace three (3) pairs of previously installed sheet piling with new sheet piling and install 7.5 pairs of sheet piling to complete installation adjacent to Dykes Lumber, third section finished with Giken Silent Press
- Relocate crane and material barges to commence removal and replacement of sheet piling at Station 6+25

### 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*

- Tabulated analytical data from sample collected on 03/27/18 attached.
- No exceedance of the turbidity trigger or action criteria during bulkhead support installation.
- Measurements for 4/16/18:
  - Daily average for ambient buoy – 19.3 NTU
  - Daily average for sentinel buoy – 15.6 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 4.7 NTU at 0815.
- Measurements for 4/17/18:
  - Daily average for ambient buoy – 12.8 NTU
  - Daily average for sentinel buoy – 9.4 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 4/18/18:
  - Daily average for ambient buoy – 12.8 NTU
  - Daily average for sentinel buoy – 12.7 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 5.3 NTU at 1415.
- Measurements for 4/19/18:
  - Daily average for ambient buoy – 13.2 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 – 1.8 NTU at 1500.



- Measurements for 4/20/18:
  - Daily average for ambient buoy – 13.8 NTU
  - Daily average for sentinel buoy – 16.3 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 202.7 NTU at 1130.

*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 – 22 µg/m<sup>3</sup> recorded on 04/19/18
  - Station 2 – 14 µg/m<sup>3</sup> recorded on 04/19/18
  - Station 3 – 18 µg/m<sup>3</sup> recorded on 04/17/18
  - Station 4 – 35 µg/m<sup>3</sup> recorded on 04/10/18
  - Station 5 – 8 µg/m<sup>3</sup> recorded on 04/20/18
  - Station 6 – 33 µg/m<sup>3</sup> recorded on 04/18/18
  - Station 7 – <1 µg/m<sup>3</sup> recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
  - Station 1 – 9 ppb recorded on 04/18/18
  - Station 2 – 24 ppb recorded on 04/20/18
  - Station 3 – 72 ppb recorded on 04/19/18
  - Station 4 – <1 ppb recorded throughout the week
  - Station 5 – 9 ppb recorded on 04/20/18
  - Station 6 – <1 ppb recorded throughout the week
  - Station 7 – 72 ppb recorded on 04/20/18
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit.
- 23-hour sample collected at ST-3 on 04/17 through 04/18 and ST-6 on 04/19 through 04/20. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-3 on 03/29 through 03/30, ST-1 on 04/05 through 04/06, and ST-4 on 04/05 through 04/06 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).
- No exceedances of the hourly Leq noise limit of 80 dBA.
- . Greatest hourly Leq noise measurements
  - Northern monitor (NM-1) – 73.7 dBA during 1300-1400 on 04/20/18
  - Southern monitor (NM-2) – 78.6 dBA during 1300-1400 on 04/20/18
  - 3<sup>rd</sup> Avenue Bridge monitor (NM-3) – 74 dBA during 1000-1100 on 04/16/18
- 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) – 0.0422 in/sec event between 1400 and 1500 on 04/19/18
  - Southern monitor (VM-2) – 0.54 in/sec event between 0700 and 0800 on 04/20/18 (possibly due to human interference)

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

- No activities during the week.

**Two-Week Look Ahead:**

Sevenson:

- Utilize GIKEN Silent Press to complete the removal and installation of sheet piling adjacent to Whole Foods.
- Place granular backfill between installed sheet piling and existing bulkheads.
- Perform vibration, benchmark, and optical monitoring of bulkheads and surrounding structures.
- Recommence Phase I dredging.

Geosyntec – Perform construction quality assurance responsibilities.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise and vibration monitoring,

AHRS – Submit report of inspection of screened debris from Access Dredging in preparation for off-site disposal.

**Key Milestones**

- No key milestones during current week.

Attachments:

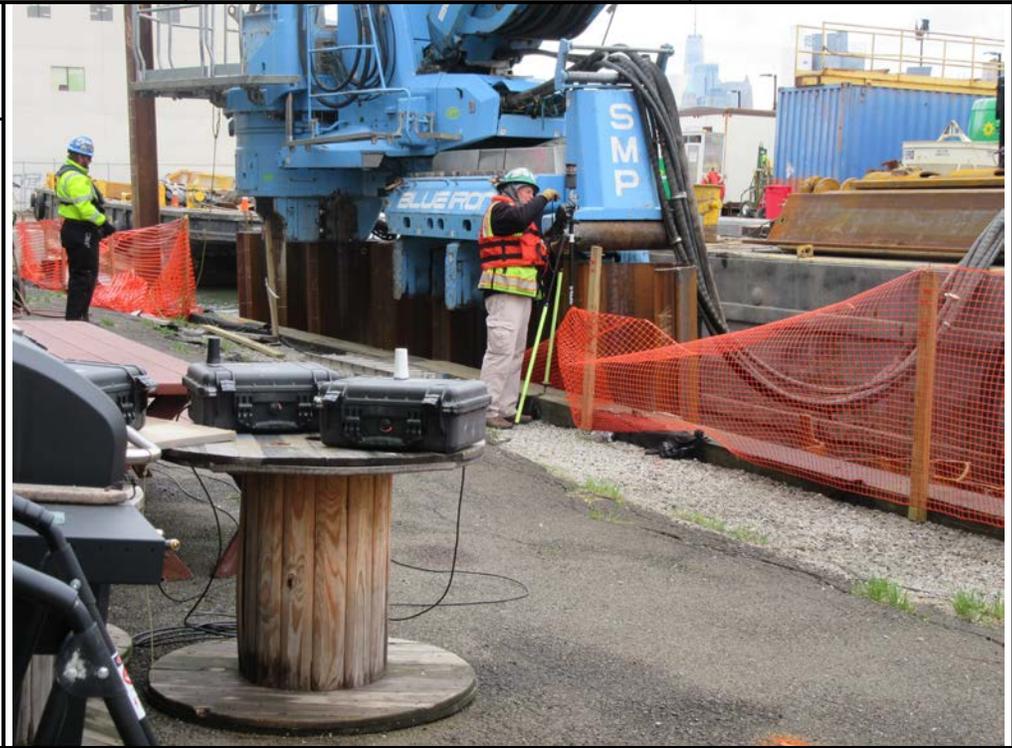
1. Geosyntec In-Canal Water Quality Monitoring Weekly Data Summary
2. TRC Weekly CAMP Report
3. Wilson Ihrig Weekly Noise and Vibration Monitoring Report
4. AHRS Weekly Report (no activities during current week)
5. Water Treatment System Monitoring Analytical Laboratory Data
6. Cumulative Dredged Material 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> 04-17-2018
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**Description**  
Giken pressing sheets along with surveyor conducting daily survey.



<b>Photo No.</b> 002	<b>Date</b> 04-17-2018
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**Description**  
Removal of previously installed sheet pile.



<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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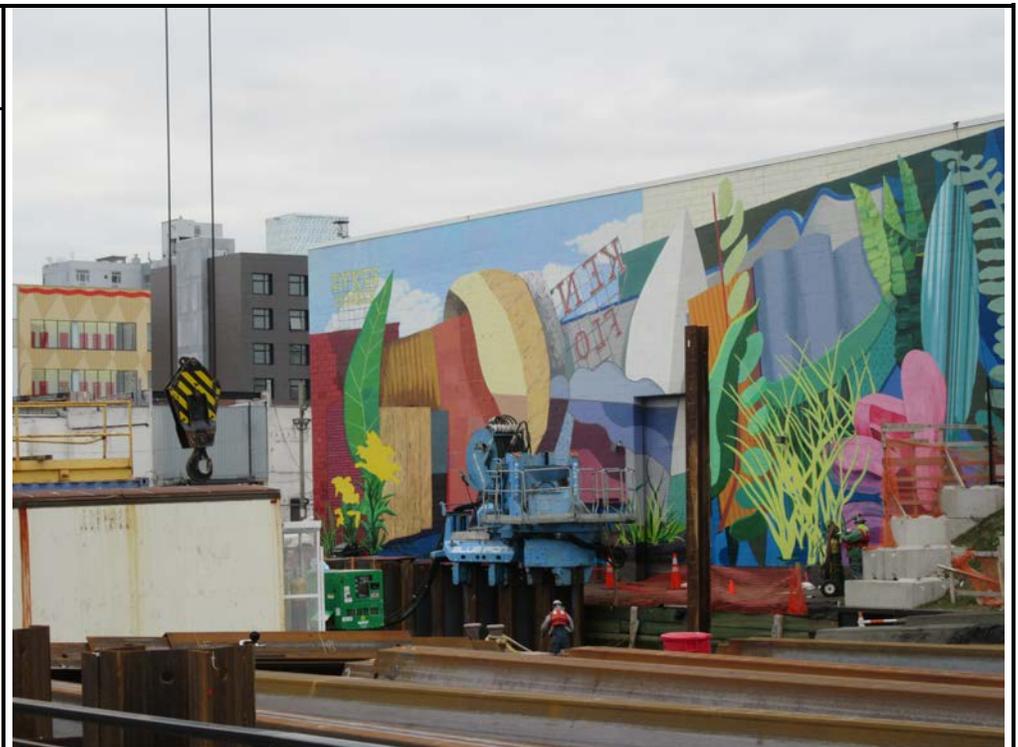
<b>Photo No.</b> 003	<b>Date</b> 04-17-2018
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**Description**  
Threading of sheet pile into Giken.



<b>Photo No.</b> 004	<b>Date</b> 04-18-2018
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**Description**  
Giken placed on sheet piling for the day.



<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> 04-18-2018
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**Description**  
Giken moving closer to sheet pile pair being pushed to grade.



<b>Photo No.</b> 006	<b>Date</b> 04-18-2018
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**Description**  
Overlap of installed sheet piling and existing bulkhead.



<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> 04-19-2018
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**Description**  
Installed sheet piling between Station 8+63 and 8+95.



<b>Photo No.</b> 008	<b>Date</b> 04-19-2018
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**Description**  
Removal of water in preparation of removal and replacement of previously installed sheet pile.



<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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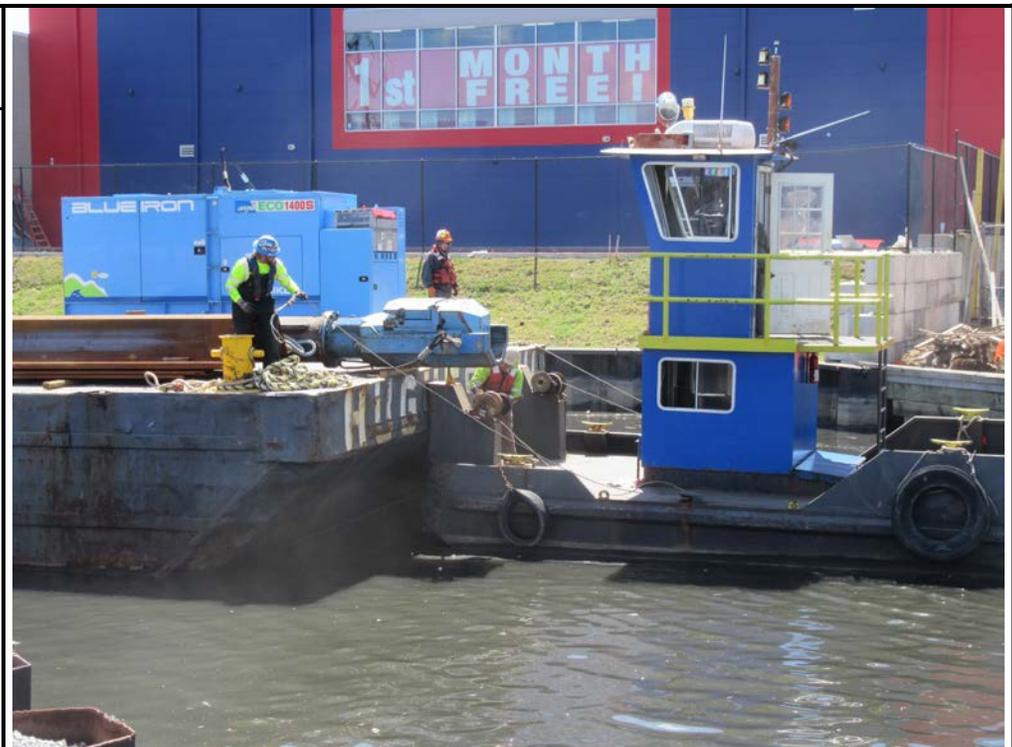
<b>Photo No.</b> 009	<b>Date</b> 04-20-2018
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**Description**  
Placing Giken onto barge for relocation to north side.



<b>Photo No.</b> 010	<b>Date</b> 04-20-2018
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**Description**  
Preparation to relocate to north side.



**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 April 16<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

*an affiliate of Geosyntec Consultants*

7 Graphics Drive, Suite 106  
Ewing, NJ 08628  
Project Number HPH106A (52)

## 1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of April 16<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 April 16<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 April 16<sup>th</sup> to April 20<sup>th</sup>, 2018. Background data prior to the start of dredging is provided in Appendix A. No exceedances to the rolling average threshold criteria were observed during the reporting period. On April 20<sup>th</sup> the sentinel buoy detected a one-time spike in turbidity of 216.0 NTU at 11:30.

### 2.1 Monday, April 16<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)
4/16/2018 7:00	12.3	13.4	Y	4/16/2018 12:15	16.6	14.1	N
4/16/2018 7:15	14.2	12.4	N	4/16/2018 12:30	19.0	17.0	N
4/16/2018 7:30	17.5	11.5	N	4/16/2018 12:45	14.6	15.4	Y
4/16/2018 7:45	13.3	11.5	N	4/16/2018 13:00	13.1	14.0	Y
4/16/2018 8:00	14.0	12.2	N	4/16/2018 13:15	13.1	12.2	N
4/16/2018 8:15	11.9	16.6	Y	4/16/2018 13:30	11.8	11.1	N
4/16/2018 8:30	25.8	20.6	N	4/16/2018 13:45	11.2	12.4	Y
4/16/2018 8:45	23.7	22.1	N	4/16/2018 14:00	12.7	10.1	N
4/16/2018 9:00	19.6	21.4	Y	4/16/2018 14:15	11.4	9.5	N
4/16/2018 9:15	36.0	21.2	N	4/16/2018 14:30	10.8	13.0	Y
4/16/2018 9:30	36.5	23.8	N	4/16/2018 14:45	13.8	9.1	N
4/16/2018 9:45	36.7	26.1	N	4/16/2018 15:00	14.1	8.5	N
4/16/2018 10:00	40.2	26.9	N	4/16/2018 15:15	19.4	7.5	N
4/16/2018 10:15	36.5	30.2	N	4/16/2018 15:30	19.6	8.9	N
4/16/2018 10:30	32.0	27.5	N	4/16/2018 15:45	12.2	7.1	N
4/16/2018 10:45	31.1	27.4	N	4/16/2018 16:00	11.0	6.9	N
4/16/2018 11:00	29.4	30.3	Y	4/16/2018 16:15	8.8	6.4	N
4/16/2018 11:15	29.0	22.6	N	4/16/2018 16:30	9.6	5.6	N
4/16/2018 11:30	25.4	21.2	N	4/16/2018 16:45	9.3	6.0	N
4/16/2018 11:45	22.9	20.6	N	4/16/2018 17:00	9.2	6.1	N
4/16/2018 12:00	21.3	18.9	N				
Average	19.3	15.6	N				
Maximum	40.2	30.3	N				
<b>Notes:</b>							
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							







**2.5 Friday, April 20<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)
4/20/2018 7:00	12.9	11.9	N	4/20/2018 12:15	12.0	14.3	Y
4/20/2018 7:15	12.0	8.0	N	4/20/2018 12:30	13.7	11.8	N
4/20/2018 7:30	12.7	10.1	N	4/20/2018 12:45	18.7	9.0	N
4/20/2018 7:45	13.6	9.2	N	4/20/2018 13:00	16.6	9.4	N
4/20/2018 8:00	11.8	10.6	N	4/20/2018 13:15	16.5	17.4	Y
4/20/2018 8:15	11.6	9.1	N	4/20/2018 13:30	16.3	12.1	N
4/20/2018 8:30	12.7	8.2	N	4/20/2018 13:45	16.0	14.1	N
4/20/2018 8:45	12.2	8.3	N	4/20/2018 14:00	15.6	12.4	N
4/20/2018 9:00	13.2	8.1	N	4/20/2018 14:15	15.2	14.2	N
4/20/2018 9:15	13.9	9.0	N	4/20/2018 14:30	13.8	11.2	N
4/20/2018 9:30	14.4	9.0	N	4/20/2018 14:45	13.6	12.7	N
4/20/2018 9:45	17.0	10.7	N	4/20/2018 15:00	12.8	10.4	N
4/20/2018 10:00	17.5	11.0	N	4/20/2018 15:15	12.7	9.9	N
4/20/2018 10:15	16.7	9.2	N	4/20/2018 15:30	12.7	9.5	N
4/20/2018 10:30	17.2	10.2	N	4/20/2018 15:45	12.5	9.8	N
4/20/2018 10:45	15.3	12.2	N	4/20/2018 16:00	11.4	9.9	N
4/20/2018 11:00	13.7	20.5	Y	4/20/2018 16:15	11.8	10.3	N
4/20/2018 11:15	14.4	19.3	Y	4/20/2018 16:30	11.8	8.7	N
4/20/2018 11:30	13.3	216.0	Y	4/20/2018 16:45	10.8	8.0	N
4/20/2018 11:45	12.2	17.2	Y	4/20/2018 17:00	11.0	8.1	N
4/20/2018 12:00	11.9	17.2	Y				
<hr/>							
Average	13.8	16.3	Y				
Maximum	18.7	216.0	Y				
<hr/>							
<b>Notes:</b>							
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

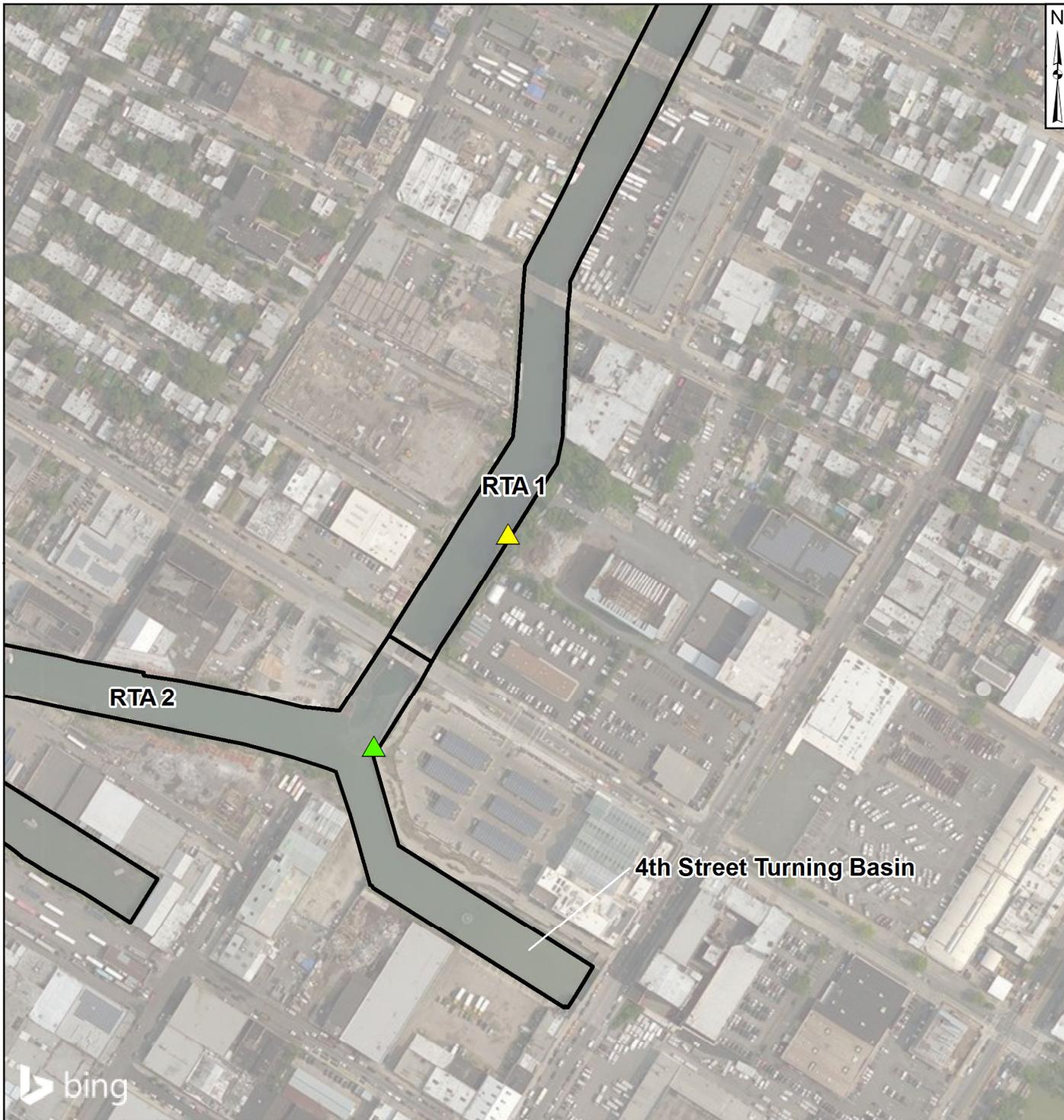
Visual observations are consistent with background conditions of the turning basin.

### 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.

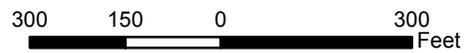
# **FIGURES**



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  
28<sup>th</sup> Weekly Monitoring Period  
Summary Report:**

April 17<sup>th</sup> through April 20<sup>th</sup>, 2018

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

## **Executive Summary – Week 28 Monitoring Period April 17<sup>th</sup> through April 20<sup>th</sup>, 2018**

The following report summarizes site air monitoring activities for the Week 28 monitoring period from April 17<sup>th</sup> through April 20<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 28 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 2017*.

Figure 1 depicts Total Volatile Organics (TVOC) daily averages and maximums. Figure 2 depicts particulate monitoring (PM<sub>10</sub>) daily averages and maximums. Figure 3 depicts the station locations along the Gowanus Canal.

Additional monitoring for hydrogen sulfide, ammonia, and formaldehyde took place at all stations throughout the Week 28 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 28 monitoring period of April 17<sup>th</sup> through April 20<sup>th</sup>, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 3 and 6. The ST-3 sample was collected on April 17<sup>th</sup>, through April 18<sup>th</sup>, 2018. The ST-6 sample was collected on April 19<sup>th</sup>, through April 20<sup>th</sup>, 2018. The samples were collected over a 23-hour period. The 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 Station 3 during Week 25. The ST-3 sample was collected on March 29<sup>th</sup> through 30<sup>th</sup>, 2018. 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>, 2017

Table 3 presents the analytical results for 24-hour samples collected at Station 1 and 4 during Week 26. The ST-1 sample was collected on April 5<sup>th</sup> through 6<sup>th</sup>, 2018. The ST-4 sample was collected on April 5<sup>th</sup> through 6<sup>th</sup>, 2018. 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>, 2017.

Site activities which were conducted at the Citizen Property on April 17<sup>th</sup> through April 20<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 April 17<sup>th</sup> through April 20<sup>th</sup>, 2018 included the following:

- Remove and replace four (4) pairs of previously installed sheet piling with new sheet piling to Station 5+25 (approximate), completing first section with Giken Silent Press
- Install six (6) pairs of sheet piling to complete transect, second section finished with Giken Silent Press
- Relocate crane and material barges to commence removal and replacement of sheet piling at Dykes Lumber
- Installation of waler at Station 0+70 (approximate) to provide additional reaction force for Giken Silent Press
- Remove and replace two (2) pairs of previously installed sheet piling with new sheet piling west of Station 0+60 (approximate)

**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)  
04/17/2018 06:30 AM - 04/17/2018 23:45 PM

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

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 2 (Citizen Property near Pad Area)**

TVOC			PM <sub>10</sub>		
Max.	1	ppb	Max.	10	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	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.	18	ug/m <sup>3</sup>
Avg.	7	ppb	Avg.	5	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.	8	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.	<1	ppb	Max.	4	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	1	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.	10	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	4	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)  
04/18/2018 00:00 AM - 04/18/2018 23:45 PM**

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

TVOC			PM <sub>10</sub>		
Max.	9	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	1	ppb	Avg.	4	ug/m <sup>3</sup>
Exc.	0	total	Exc.	0	Total

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

TVOC			PM <sub>10</sub>		
Max.	12	ppb	Max.	13	ug/m <sup>3</sup>
Avg.	2	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.	45	ppb	Max.	12	ug/m <sup>3</sup>
Avg.	11	ppb	Avg.	3	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.	35	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	6	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.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	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.	33	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.	72	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 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)  
04/19/2018 00:00 AM - 04/19/2018 23:45 PM

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

TVOC			PM <sub>10</sub>		
Max.	8	ppb	Max.	22	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.	16	ppb	Max.	14	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.	72	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	13	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.	14	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	10	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.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	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.	11	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	1	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.	37	ppb	Max.	<1	ug/m <sup>3</sup>
Avg.	24	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)  
04/20/2018 00:00 AM - 04/20/2018 16:00 PM

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

TVOC			PM <sub>10</sub>		
Max.	3	ppb	Max.	4	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.	24	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	8	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.	<1	ppb	Max.	9	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	8	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.	3	ug/m <sup>3</sup>
Avg.	<1	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.	9	ppb	Max.	8	ug/m <sup>3</sup>
Avg.	4	ppb	Avg.	2	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.	<1	ug/m <sup>3</sup>
Avg.	<1	ppb	Avg.	<1	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

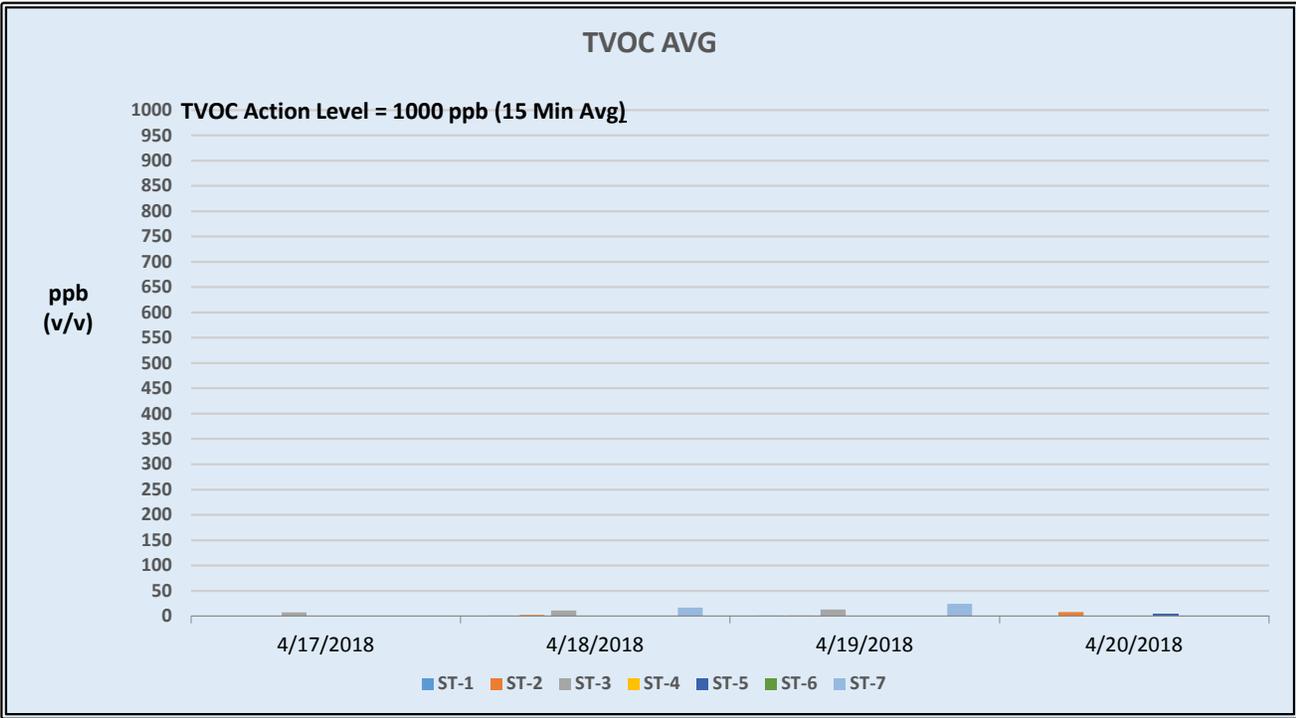
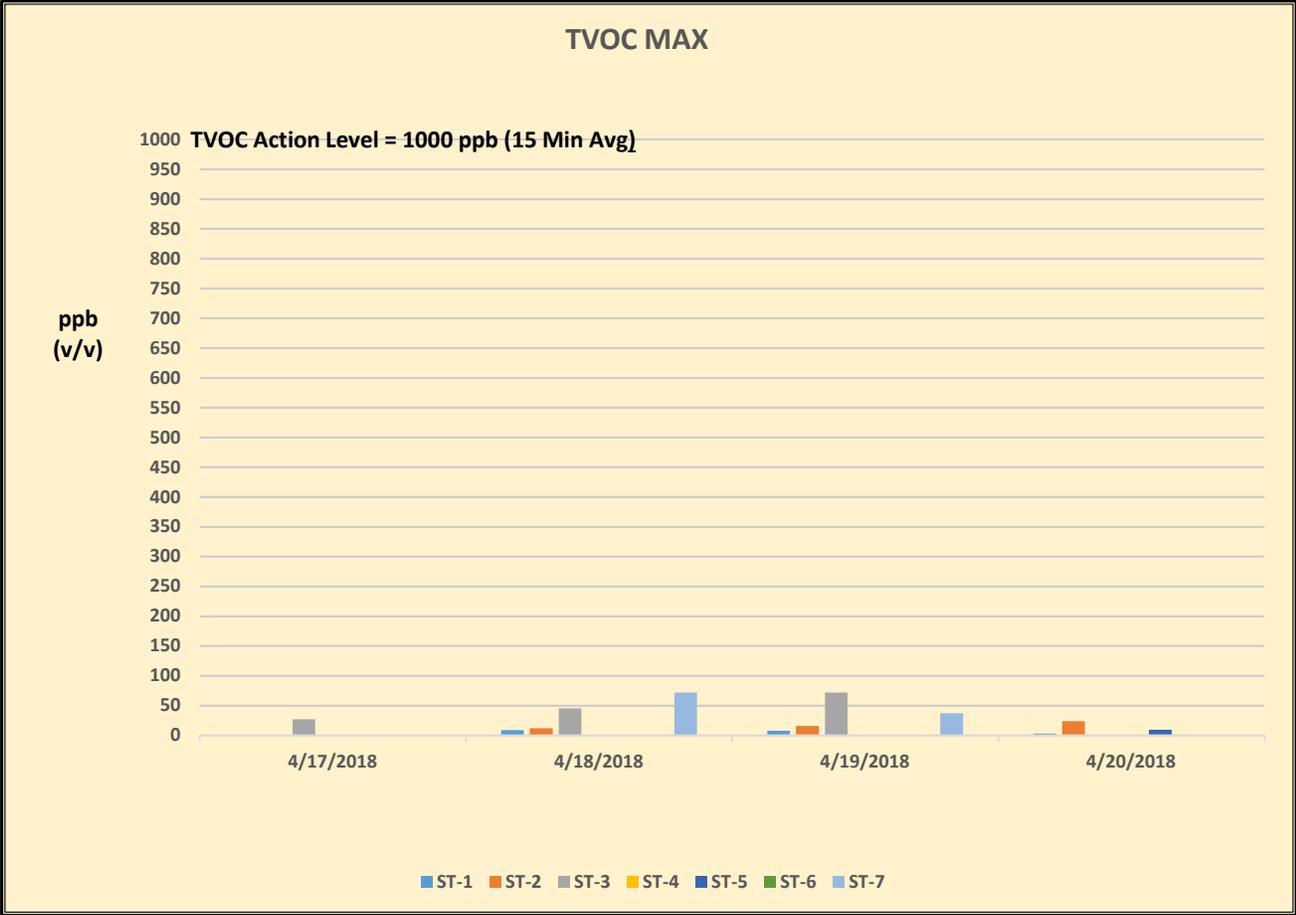
PM<sub>10</sub> – Particulates as PM<sub>10</sub>

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

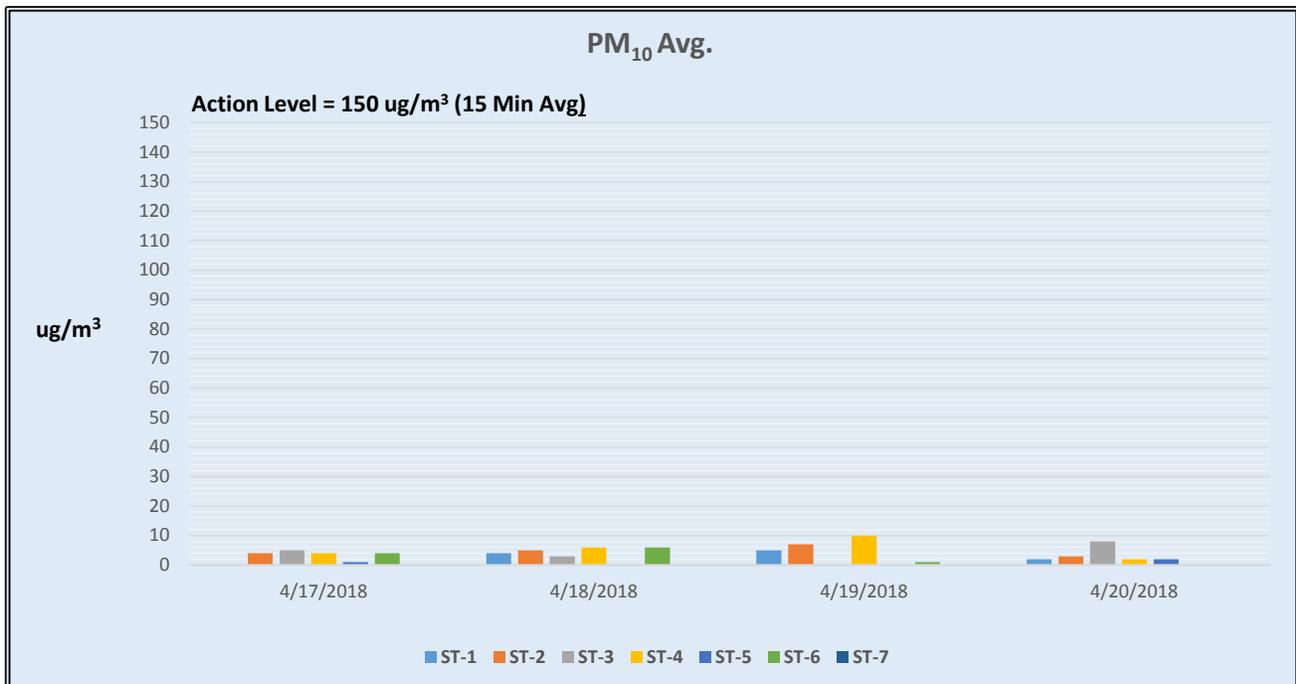
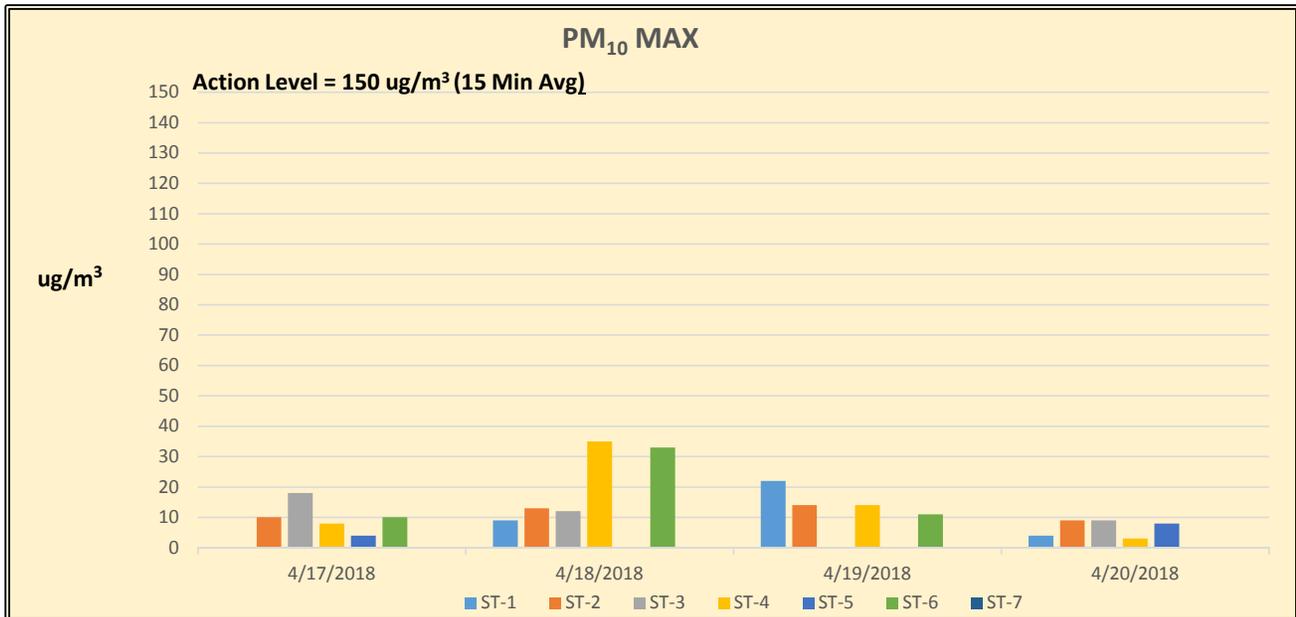
Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – PM<sub>10</sub>)

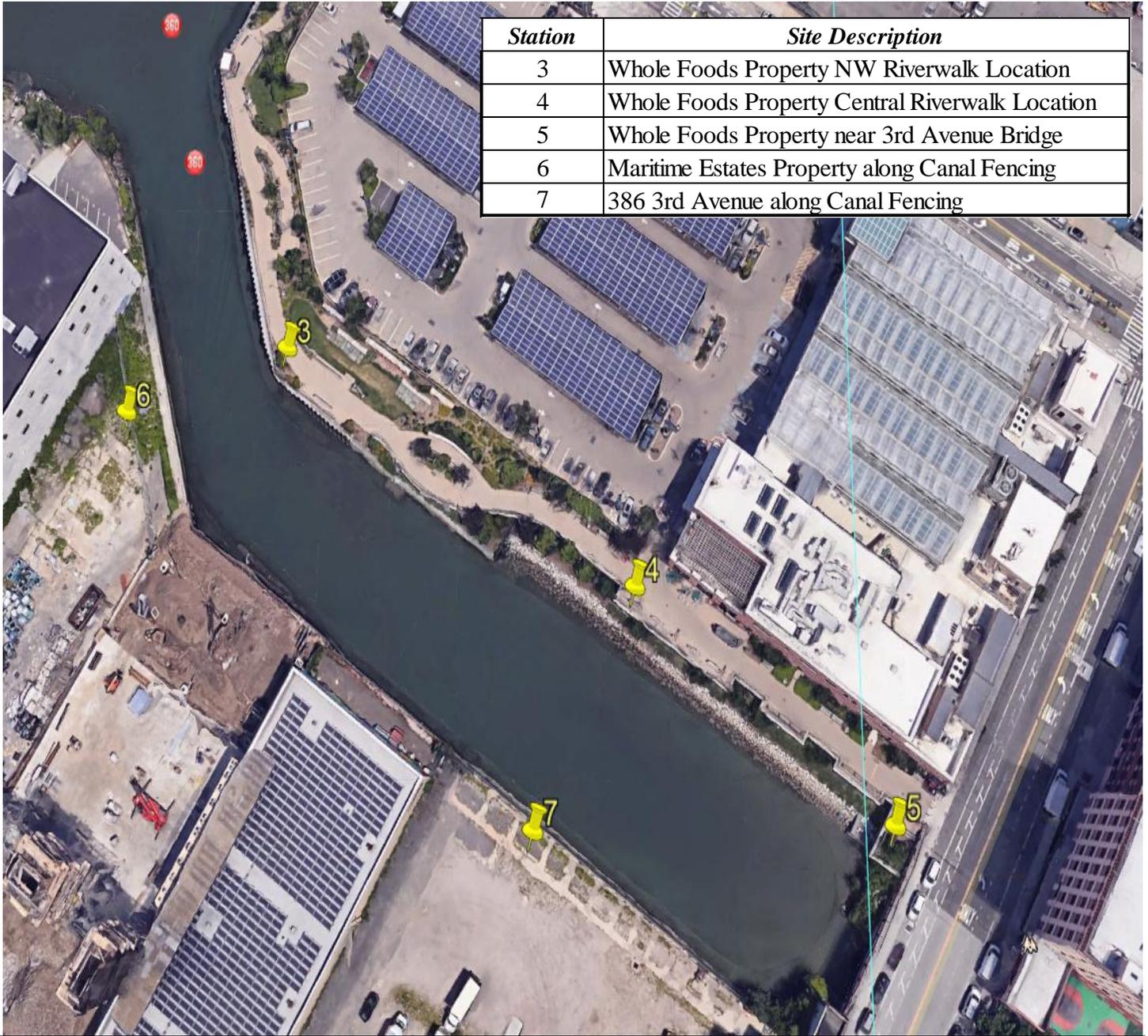
Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m<sup>3</sup> - PM<sub>10</sub>)

**Figure 1**  
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**  
**TVOC Monitoring Data - Week 28**



**Figure 2**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**TRC CAMP PM<sub>10</sub> Monitoring Data - Week 28**





**FIGURE 3**  
**Gowanus Canal Superfund Site-TB4**  
**Dredging and Capping Pilot Program**

**Table 1**

**Week 28**

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

April 17 <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	8:50	<50	<3	<1.0
	14:00	<50	<3	<1.0
ST-2	8:55	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-3	9:30	<50	<3	<1.0
	14:20	<50	<3	<1.0
ST-4	9:35	<50	<3	<1.0
	14:25	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-6	9:55	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	15:00	<50	<3	<1.0
April 18 <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	9:00	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	14:55	<50	<3	<1.0
ST-3	9:30	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-4	9:35	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	15:45	<50	<3	<1.0
ST-6	9:55	<50	<3	<1.0
	15:55	<50	<3	<1.0
ST-7	10:10	<50	<3	<1.0
	16:05	<50	<3	<1.0

**Table 1**

**Week 28**

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

April 19 <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	7:50	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	7:55	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	8:10	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-4	8:20	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-5	8:35	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-6	9:00	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-7	9:10	<50	<3	<1.0
	16:05	<50	<3	<1.0

April 20 <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	9:00	<50	<3	<1.0
	14:05	<50	<3	<1.0
ST-2	9:05	<50	<3	<1.0
	14:10	<50	<3	<1.0
ST-3	9:15	<50	<3	<1.0
	14:30	<50	<3	<1.0
ST-4	9:20	<50	<3	<1.0
	14:35	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	14:40	<50	<3	<1.0
ST-6	9:55	<50	<3	<1.0
	14:55	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	15:15	<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 25 VOCs Results: March 29th through March 30th**

Sample ID	ST-3-VOC-032918		
Laboratory ID	18D0207-01		
Date Sampled	3/29/18 14:00 - 3/30/18 13:00		
Location	Station 3		
	ppbV	ug/m <sup>3</sup>	
<b>VOCs - TO-15</b>			
Acetone	<b>2.9</b>	<b>6.8</b>	
Benzene	<b>0.3</b>	<b>0.97</b>	
Benzyl chloride	<0.040	<0.21	
Bromodichloromethane	<0.040	<0.27	
Bromoform	<0.040	<0.41	
Bromomethane	<0.040	<0.16	
1,3-Butadiene	<0.040	<0.088	
2-Butanone (MEK)	<1.6	<4.7	
Carbon Disulfide	<0.40	<1.2	
Carbon Tetrachloride	<b>0.063</b>	<b>0.4</b>	
Chlorobenzene	<0.040	<0.18	
Chloroethane	<0.040	<0.11	
Chloroform	<0.040	<0.20	
Chloromethane	<b>0.46</b>	<b>0.96</b>	
Cyclohexane	<b>0.12</b>	<b>0.42</b>	
Dibromochloromethane	<0.040	<0.34	
1,2-Dibromoethane (EDB)	<0.040	<0.31	
1,2-Dichlorobenzene	<0.040	<0.24	
1,3-Dichlorobenzene	<0.040	<0.24	
1,4-Dichlorobenzene	<b>0.079</b>	<b>0.48</b>	J+
Dichlorodifluoromethane (Freon 12)	<b>0.32</b>	<b>1.6</b>	
1,1-Dichloroethane	<0.040	<0.16	
1,2-Dichloroethane	<0.040	<0.16	
1,1-Dichloroethylene	<0.040	<0.16	
cis-1,2-Dichloroethylene	<0.040	<0.16	
trans-1,2-Dichloroethylene	<0.040	<0.16	
1,2-Dichloropropane	<0.040	<0.18	
cis-1,3-Dichloropropene	<0.040	<0.19	
trans-1,3-Dichloropropene	<0.040	<0.20	
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.040	<0.28	
1,4-Dioxane	<0.40	<1.4	
Ethanol	<b>8.8</b>	<b>17</b>	
Ethyl Acetate	<0.040	<0.14	
Ethylbenzene	<b>0.057</b>	<b>0.25</b>	
4-Ethyltoluene	<0.040	<0.20	
Heptane	<b>0.098</b>	<b>0.4</b>	
Hexachlorobutadiene	<0.040	<0.43	
Hexane	<1.6	<5.6	
2-Hexanone (MBK)	<0.040	<0.16	
Isopropanol	<1.6	<3.9	
Methyl tert-Butyl Ether (MTBE)	<0.040	<0.14	
Methylene Chloride	<0.40	<1.4	
4-Methyl-2-pentanone (MIBK)	<0.040	<0.16	
Naphthalene	<b>0.054</b>	<b>0.29</b>	J
Propene	<1.6	<2.4	
Styrene	<0.040	<0.17	
1,1,2,2-Tetrachloroethane	<0.040	<0.27	
Tetrachloroethylene	<b>0.098</b>	<b>0.66</b>	
Tetrahydrofuran	<0.040	<0.12	
Toluene	<b>0.51</b>	<b>1.9</b>	
1,2,4-Trichlorobenzene	<0.040	<0.30	J
1,1,1-Trichloroethane	<0.040	<0.22	
1,1,2-Trichloroethane	<0.040	<0.22	
Trichloroethylene	<0.040	<0.21	
Trichlorofluoromethane (Freon 11)	<b>0.2</b>	<b>1.1</b>	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.16	<1.2	
1,2,4-Trimethylbenzene	<b>0.088</b>	<b>0.43</b>	
1,3,5-Trimethylbenzene	<0.040	<0.20	
Vinyl Acetate	<0.80	<2.8	J-
Vinyl Chloride	<0.040	<0.10	
m&p-Xylene	<b>0.19</b>	<b>0.83</b>	
o-Xylene	<b>0.082</b>	<b>0.35</b>	

Notes:

Values in **bold** indicate detected concentrations

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

acetone, ethanol, methylene chloride and isopropanol

J: The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J+: The result for 1,4-dichlorobenzene is an estimated quantity, but may be biased high.

J-: The result for vinyl acetate is an estimated quantity, but may be biased high.

**Table 3:**  
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**  
**Week 26 VOCs Results: April 5th through 6th**

Sample ID	ST-1-VOC-040518		ST-4-VOC-040518	
Laboratory ID	18D0355-01		18D0355-02	
Date Sampled	4/5/18 13:30 - 4/6/18 12:30		4/5/18 16:00 - 4/6/18 15:00	
Location	Station 1		Station 4	
	ppbV	ug/m3	ppbV	ug/m3
<b>VOCs - TO-15</b>				
Acetone	<b>3.4</b>	<b>8</b>	<b>3.1</b>	<b>7.5</b>
Benzene	<b>0.27</b>	<b>0.87</b>	<b>0.17</b>	<b>0.54</b>
Benzyl chloride	<0.070	<0.36	<0.070	<0.36
Bromodichloromethane	<0.035	<0.24	<0.035	<0.24
Bromoform	<0.035	<0.36	<0.035	<0.36
Bromomethane	<0.070	<0.27	<0.070	<0.27
1,3-Butadiene	<0.14	<0.31	<0.14	<0.31
2-Butanone (MEK)	<1.4	<4.1	<1.4	<4.1
Carbon Disulfide	<0.35	<1.1	<0.35	<1.1
Carbon Tetrachloride	<b>0.084</b>	<b>0.53</b>	<b>0.082</b>	<b>0.52</b>
Chlorobenzene	<0.035	<0.16	<0.035	<0.16
Chloroethane	<0.14	<0.37	<0.14	<0.37
Chloroform	<b>0.043</b>	<b>0.21</b>	<0.035	<0.17
Chloromethane	<b>0.65</b>	<b>1.3</b>	<b>0.58</b>	<b>1.2</b>
Cyclohexane	0.065	0.22	<b>0.044</b>	<b>0.15</b>
Dibromochloromethane	<0.035	<0.30	<0.035	<0.30
1,2-Dibromoethane (EDB)	<0.035	<0.27	<0.035	<0.27
1,2-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,3-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
1,4-Dichlorobenzene	<0.035	<0.21	<0.035	<0.21
Dichlorodifluoromethane (Freon 12)	<b>0.39</b>	<b>1.9</b>	<b>0.34</b>	<b>1.7</b>
1,1-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,2-Dichloroethane	<0.035	<0.14	<0.035	<0.14
1,1-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
cis-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
trans-1,2-Dichloroethylene	<0.035	<0.14	<0.035	<0.14
1,2-Dichloropropane	<0.035	<0.16	<0.035	<0.16
cis-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
trans-1,3-Dichloropropene	<0.035	<0.16	<0.035	<0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.035	<0.25	<0.035	<0.25
1,4-Dioxane	<0.35	<1.3	<0.35	<1.3
Ethanol	<b>7.4</b>	<b>14</b>	<b>5.7</b>	<b>11</b>
Ethyl Acetate	<b>0.58</b>	<b>2.1</b>	<b>0.8</b>	<b>2.9</b>
Ethylbenzene	<b>0.087</b>	<b>0.38</b>	<b>0.053</b>	<b>0.23</b>
4-Ethyltoluene	<0.035	<0.17	<0.035	<0.17
Heptane	<b>0.082</b>	<b>0.34</b>	<b>0.068</b>	<b>0.28</b>
Hexachlorobutadiene	<0.035	<0.37	<0.035	<0.37
Hexane	<1.4	<4.9	<1.4	<4.9
2-Hexanone (MBK)	<0.035	<0.14	<b>0.041</b>	<b>0.17</b>
Isopropanol	<1.4	<3.4	<1.4	<3.4
Methyl tert-Butyl Ether (MTBE)	<0.035	<0.13	<0.035	<0.13
Methylene Chloride	<b>0.17</b>	<b>0.59</b>	<b>0.2</b>	<b>0.71</b>
4-Methyl-2-pentanone (MIBK)	<0.035	<0.14	<b>0.039</b>	<b>0.16</b>
Naphthalene	<b>0.072</b>	<b>0.38</b>	<0.070	<0.37
Propene	<1.4	<2.4	<1.4	<2.4
Styrene	<0.035	<0.15	<0.035	<0.15
1,1,2,2-Tetrachloroethane	<0.035	<0.24	<0.035	<0.24
Tetrachloroethylene	<b>0.4</b>	<b>2.7</b>	<b>0.38</b>	<b>2.6</b>
Tetrahydrofuran	<0.070	<0.21	<0.070	<0.21
Toluene	<b>0.43</b>	<b>1.6</b>	<b>0.46</b>	<b>1.7</b>
1,2,4-Trichlorobenzene	<0.070	<0.52	<0.070	<0.52
1,1,1-Trichloroethane	<0.035	<0.19	<0.035	<0.19
1,1,2-Trichloroethane	<0.035	<0.19	<0.035	<0.19
Trichloroethylene	<0.035	<0.19	<0.035	<0.19
Trichlorofluoromethane (Freon 11)	<b>0.29</b>	<b>1.7</b>	<b>0.27</b>	<b>1.5</b>
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.14	<1.1	<0.14	<1.1
1,2,4-Trimethylbenzene	<b>0.091</b>	<b>0.45</b>	<b>0.067</b>	<b>0.33</b>
1,3,5-Trimethylbenzene	<0.035	<0.17	<0.035	<0.17
Vinyl Acetate	<0.70	<2.5	<0.70	<2.5
Vinyl Chloride	<0.070	<0.18	<0.070	<0.18
m&p-Xylene	<b>0.23</b>	<b>1</b>	<b>0.18</b>	<b>0.3</b>
o-Xylene	<b>0.083</b>	<b>0.36</b>	<b>0.06</b>	<b>0.15</b>

Notes:

Values in **bold** indicate detected concentrations

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

acetone, ethanol, methylene chloride and isopropanol

J: The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.



**Gowanus Canal Superfund Site  
TB-4 Dredging and Capping Pilot Study  
Brooklyn, New York  
Meteorological Summary  
April 17<sup>th</sup> through April 20<sup>th</sup>, 2018**

April 17 <sup>th</sup> , 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>WSW</b>	<b>3.58</b>	<b>43.7</b>

April 18 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>WSW</b>	<b>2.77</b>	<b>45.9</b>

April 19 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>S</b>	<b>4.23</b>	<b>44.3</b>

April 20 <sup>th</sup> , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
<b>W</b>	<b>4.30</b>	<b>42.0</b>

\* Tuesday's meteorological data represents an average for the time period of 06:30 to 23:45.

\*\* Wednesday and Thursday's meteorological data represents averages for the time period of 00:00 to 23:45.

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

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





WI #15-081

**MEMORANDUM**

April 23, 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, 16 April – 20 April, 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**

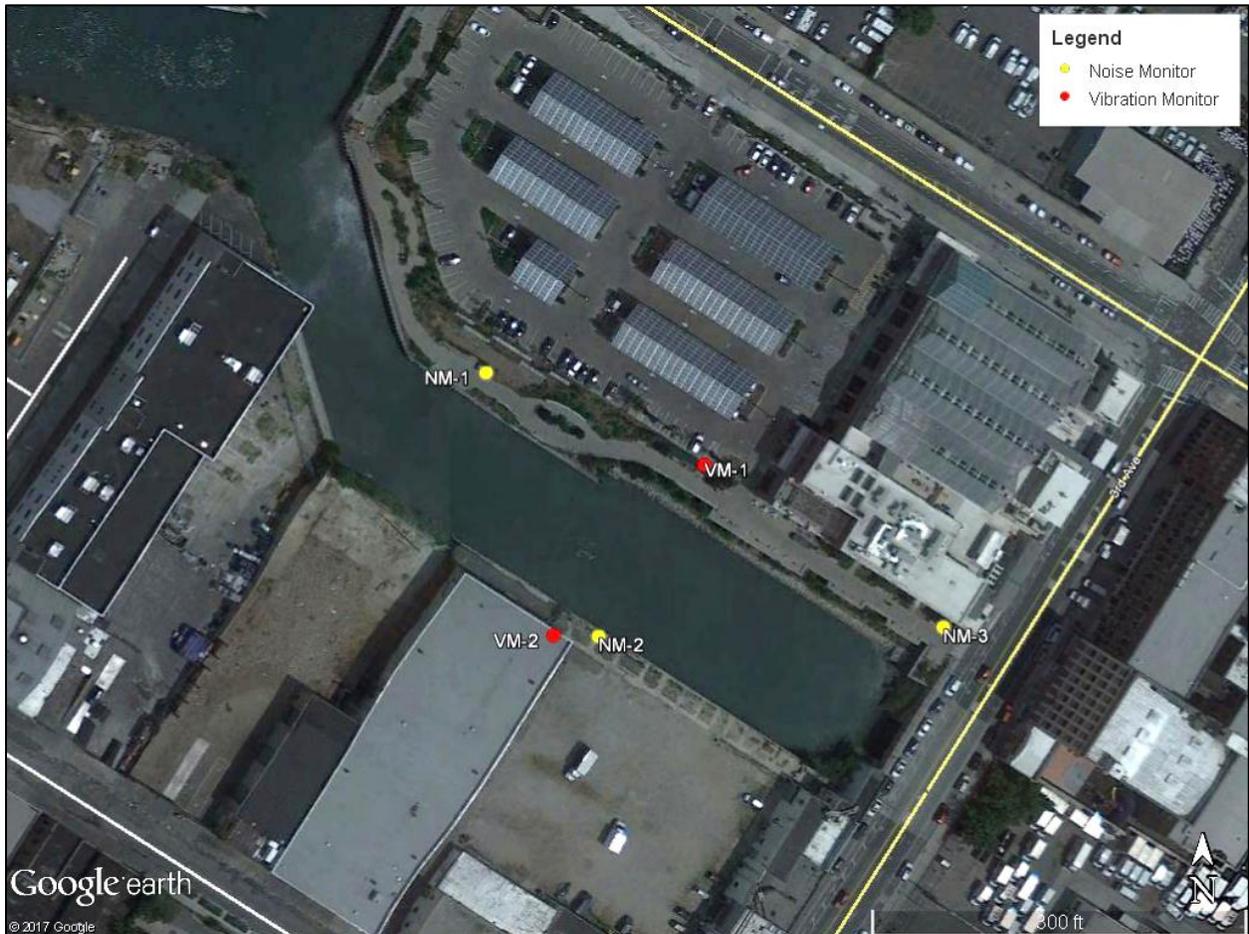
Figures 2 through 16 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan<sup>1</sup>. Commercial and Industrial land uses are assigned an hourly Leq noise limit of 80 dBA for Daytime and Evening time periods. The average baseline noise measured in the project area in 2015 are also shown for reference<sup>2</sup>. Noise data for Northeast Monitor NM-3 is unavailable for Monday April 16 22:00 – Wednesday April 17 11:00 due to battery failure.

<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



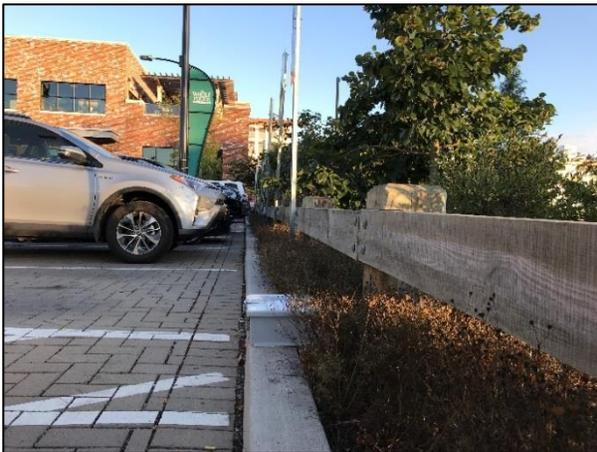
**Photo 1: Noise Monitoring Location NM-1  
(26 September 2017)**



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



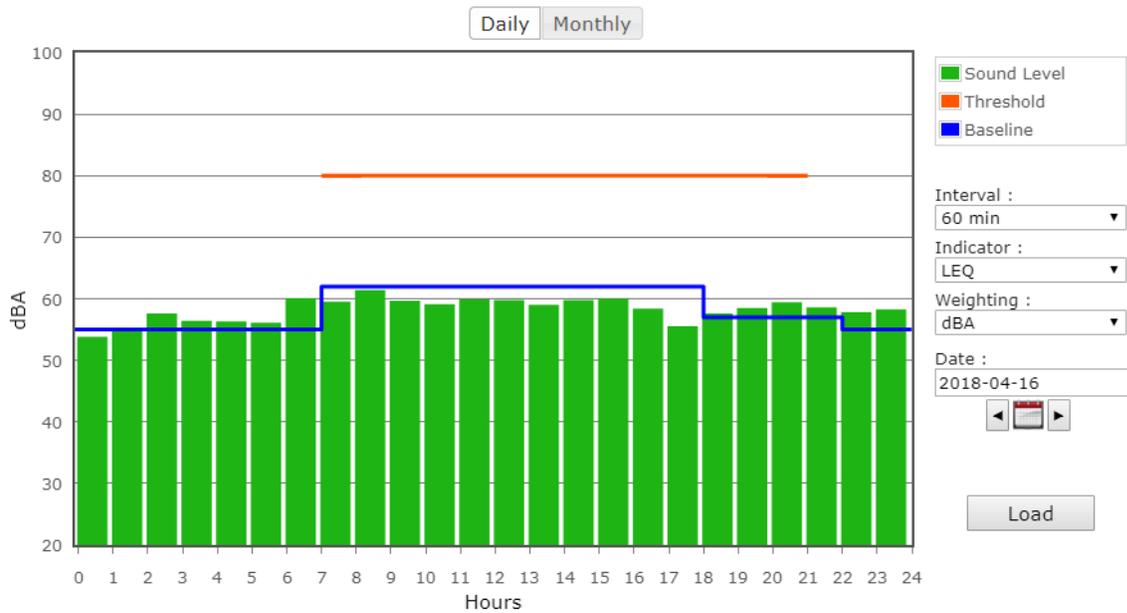
**Photo 3: Noise Monitoring Location NM-3  
(29 October 2017)**



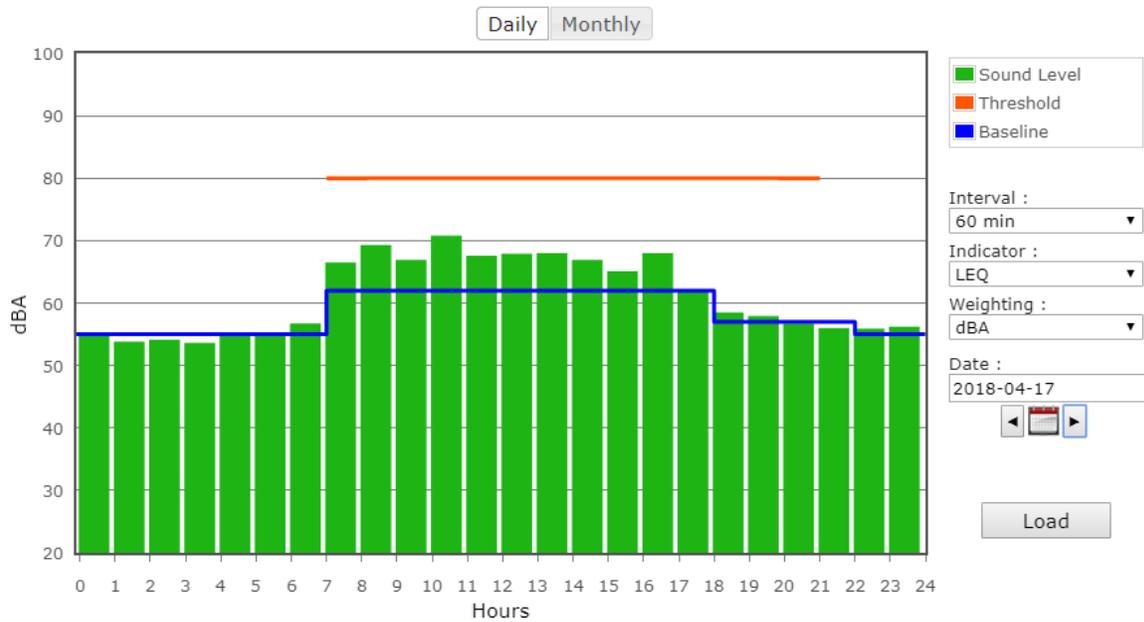
**Photo 4: Vibration Monitoring Location VM-1  
(12 October 2017)**



**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**

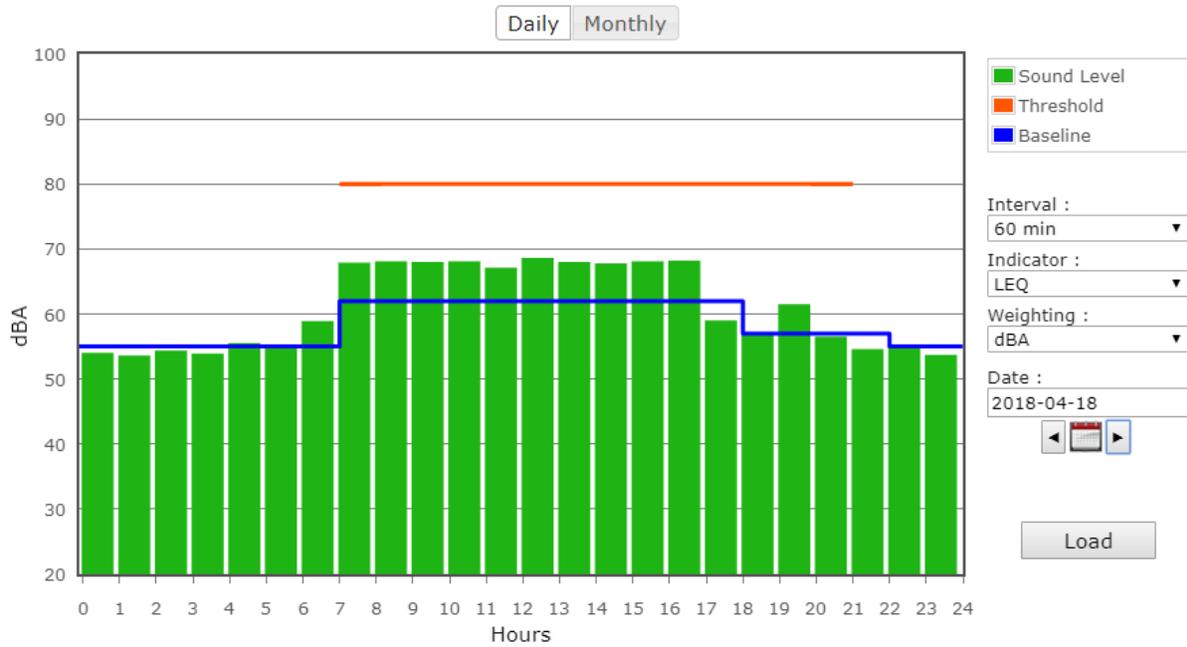


Figure 4: North Monitor NM-1 on Wednesday

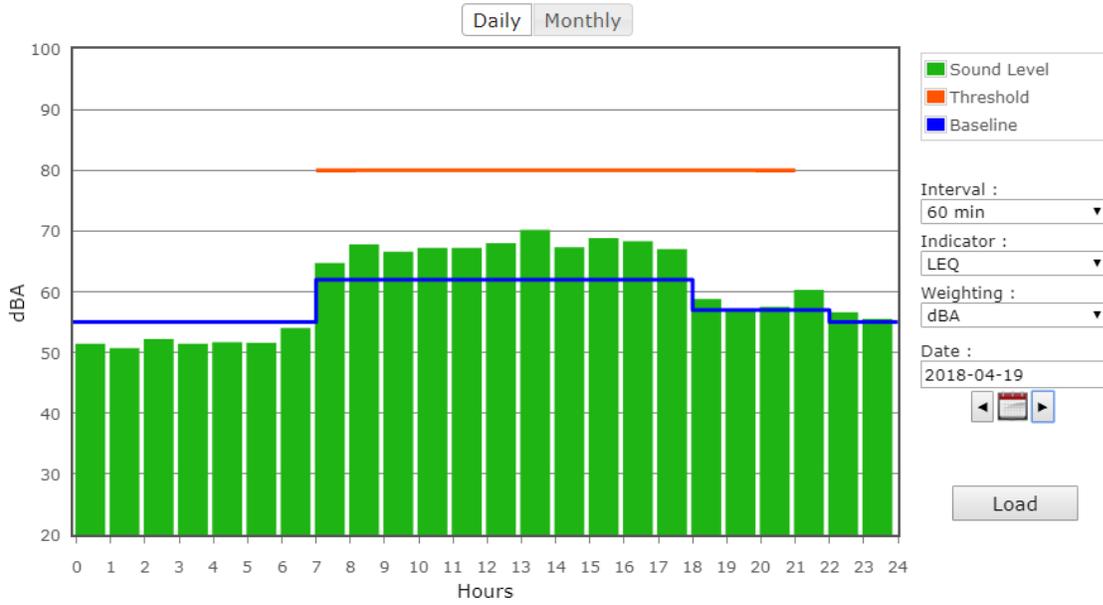
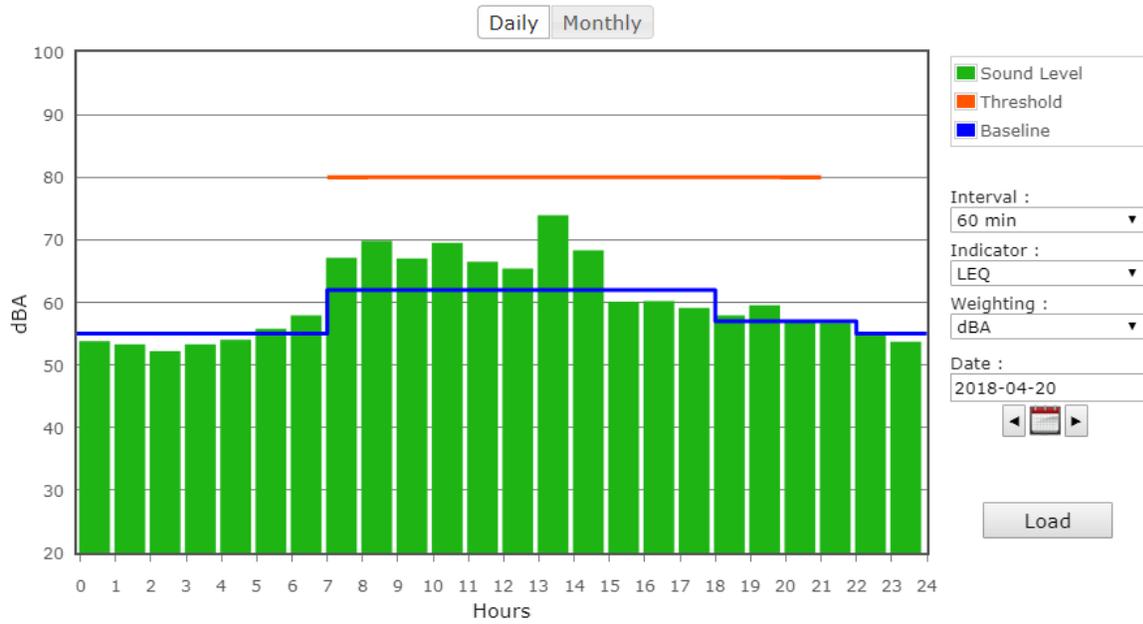
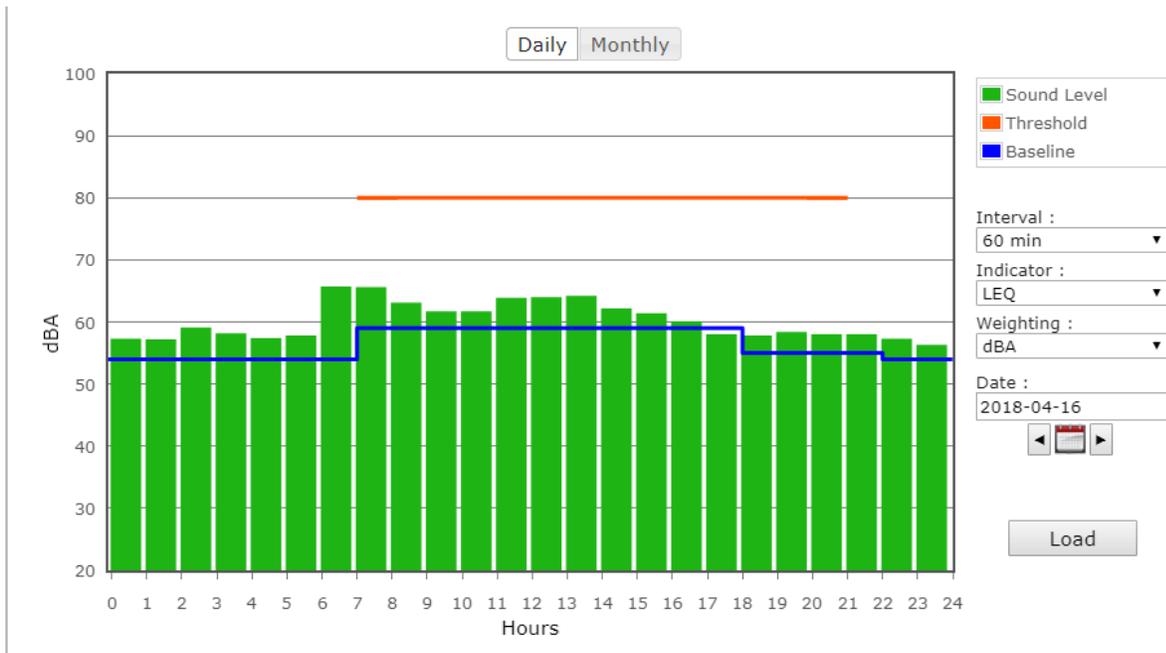


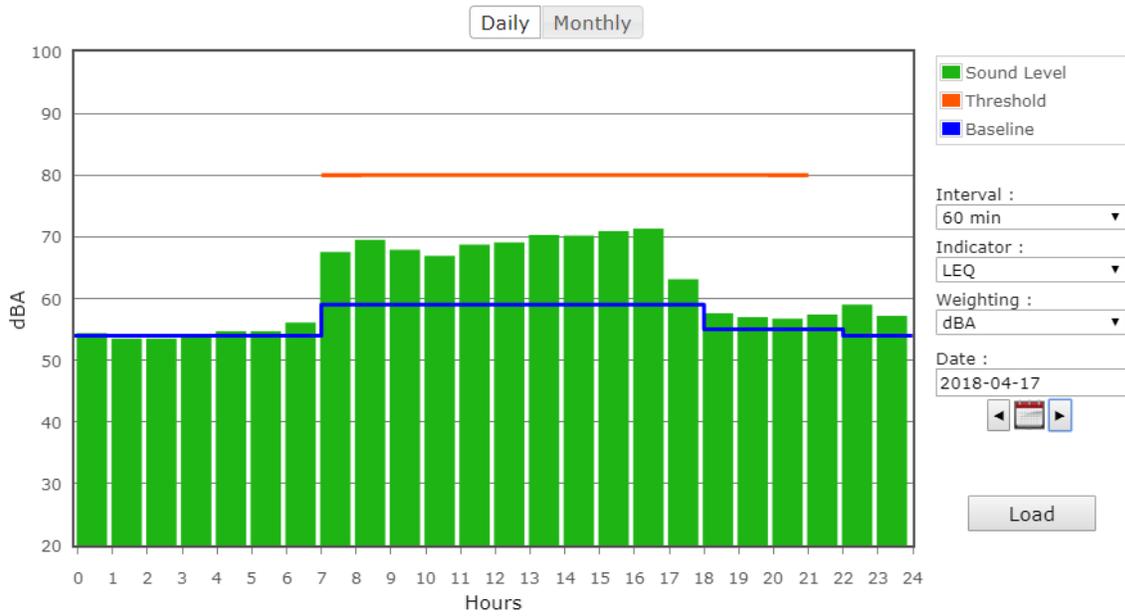
Figure 5: North Monitor NM-1 on Thursday



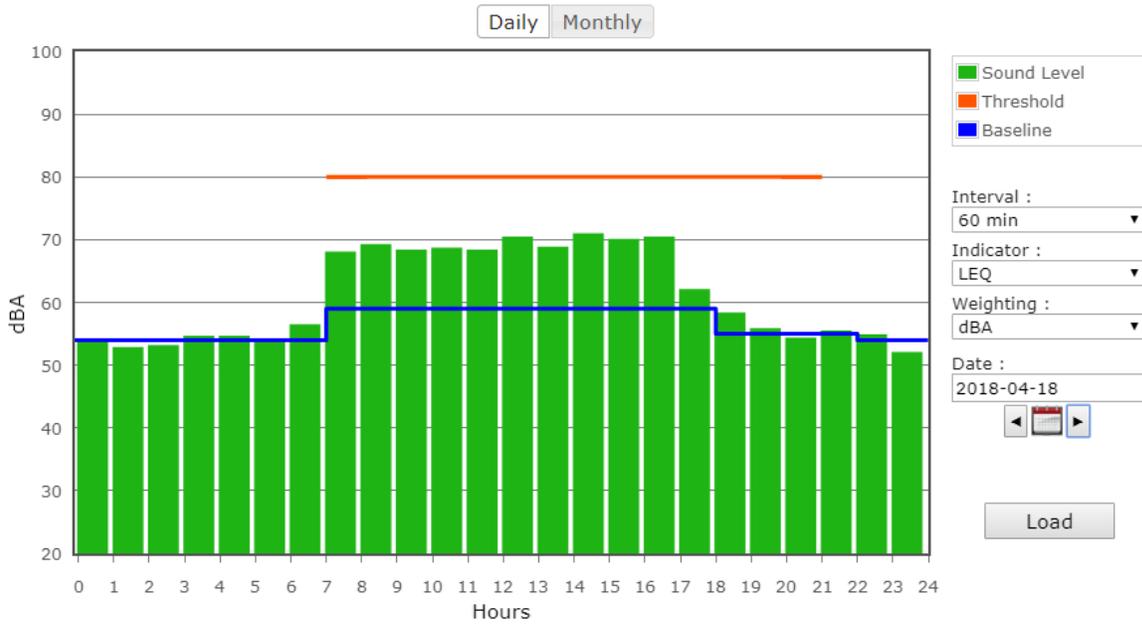
**Figure 6: North Monitor NM-1 on Friday**



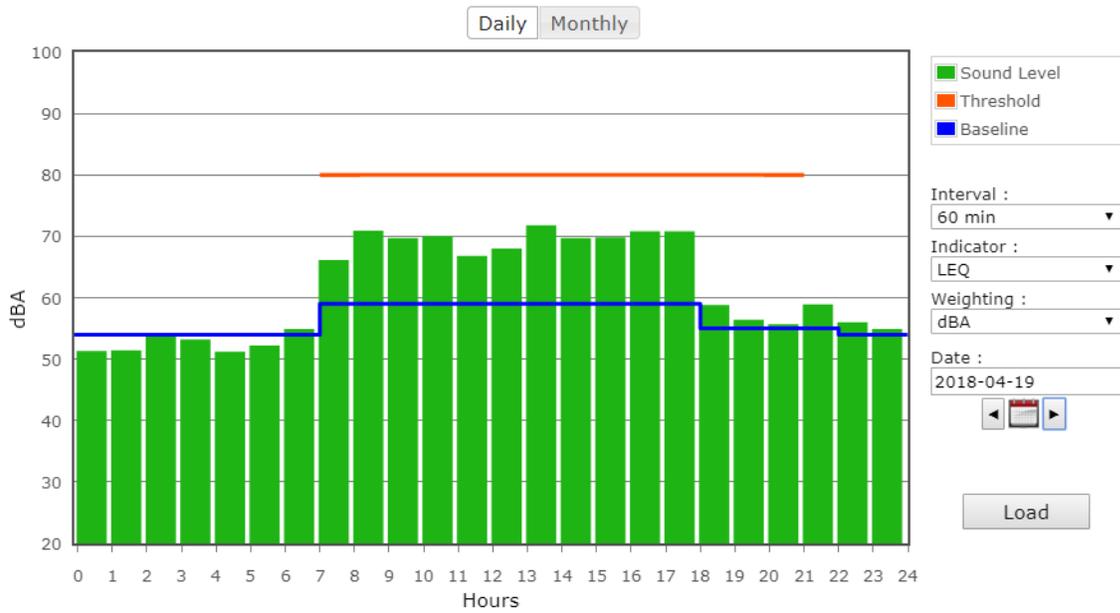
**Figure 7: South Monitor NM-2 on Monday**



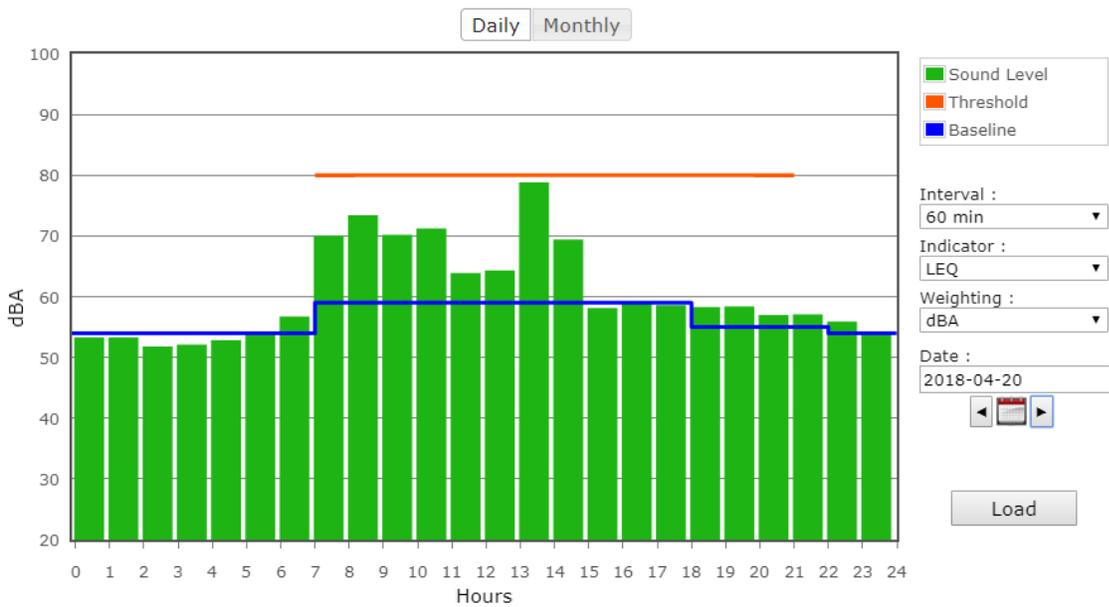
**Figure 8: South Monitor NM-2 on Tuesday**



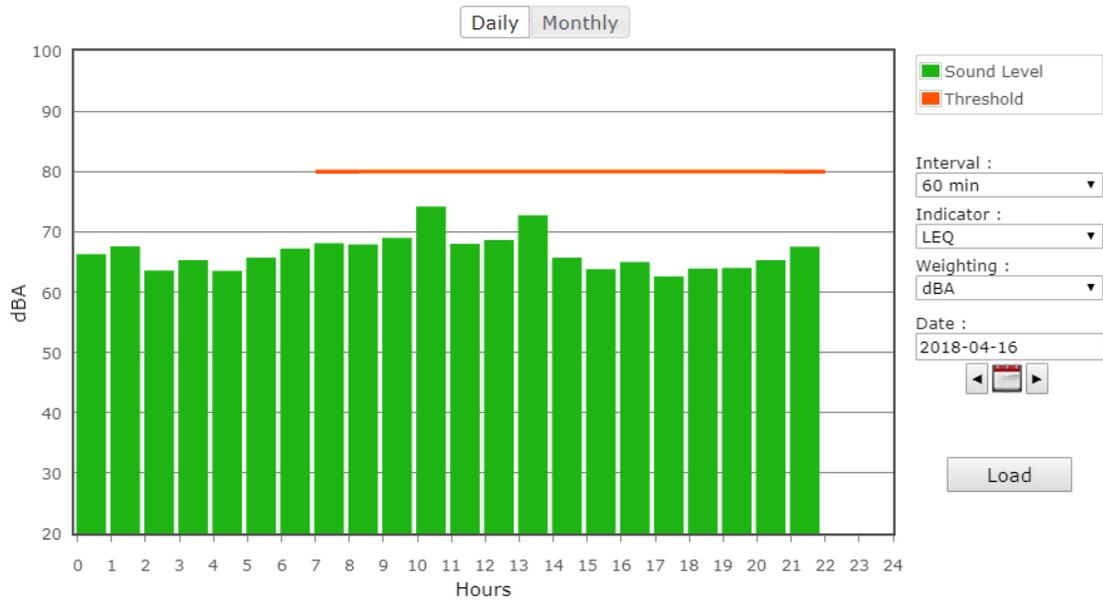
**Figure 9: South Monitor NM-2 on Wednesday**



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



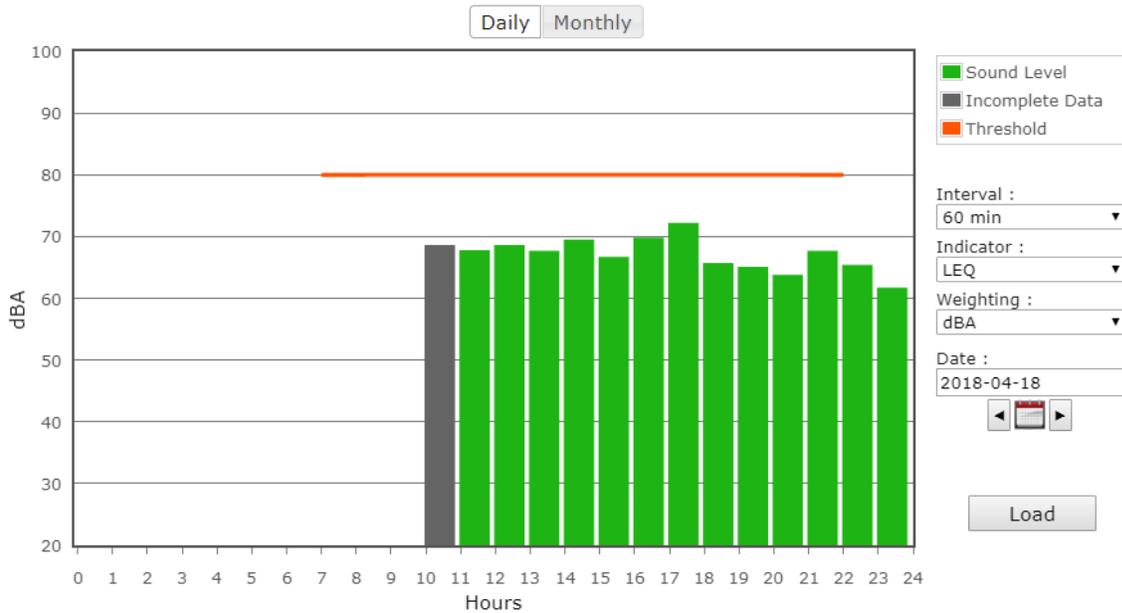
**Figure 11: South Monitor NM-2 on Friday**



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

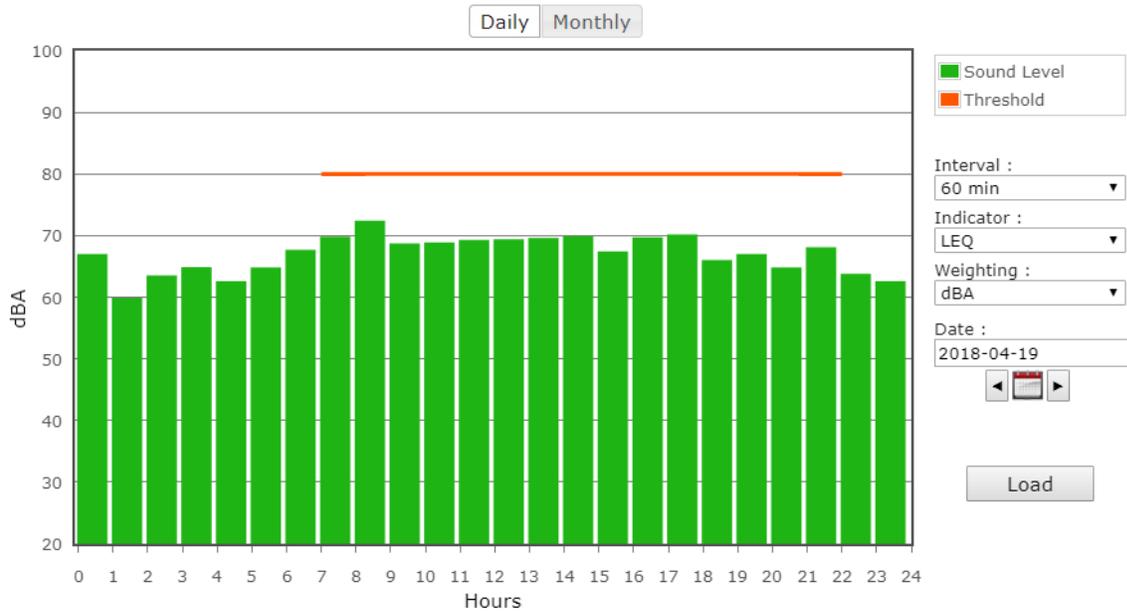
\*Noise data is unavailable for the 22:00-24:00 intervals due to battery failure.

**\*Noise Data for Tuesday, April 17 is missing due to battery failure. The batteries were replaced and normal operation resumed on Wednesday, April 18, 11:00AM**



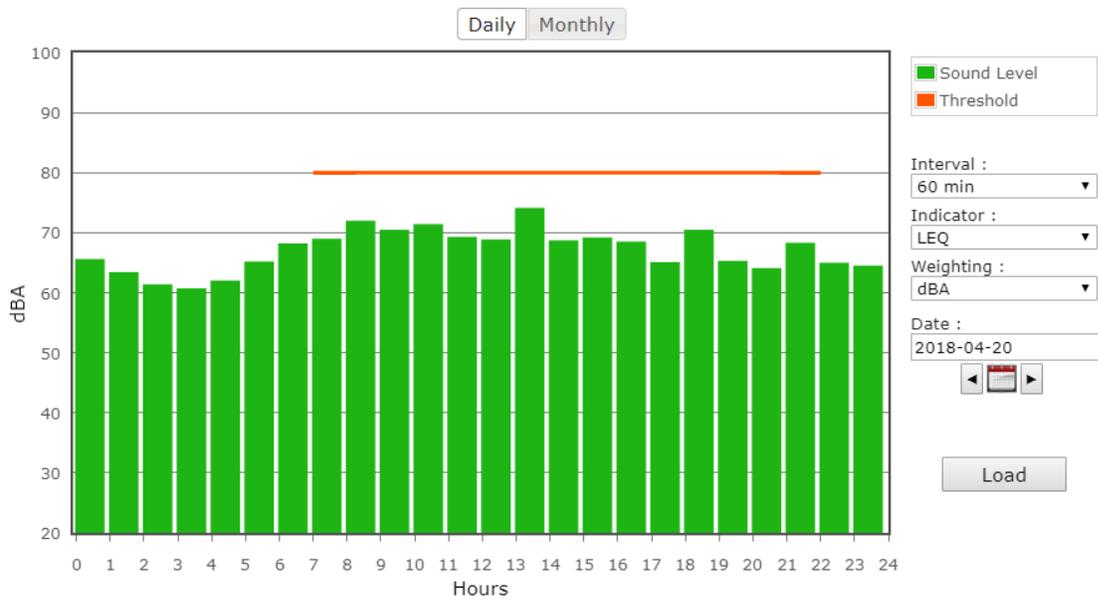
**Figure 13: Northeast Monitor NM-3 on Wednesday\***

\*Noise data is unavailable/incomplete for the 0:00-10:00 intervals due to battery failure.

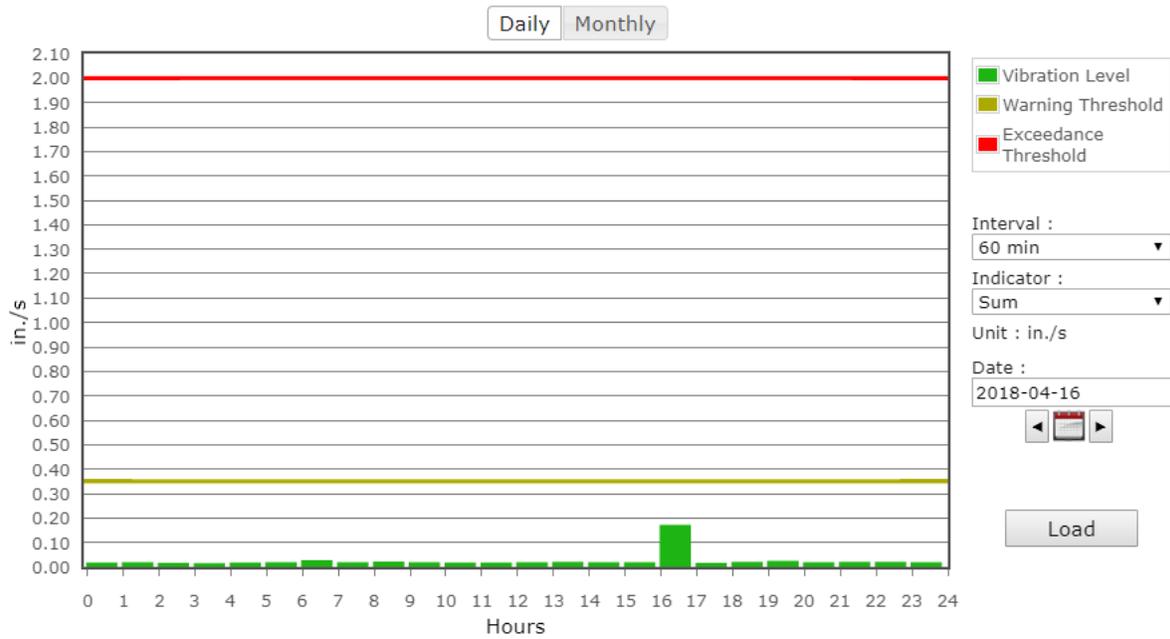


**14: Northeast Monitor NM-3 on Thursday**

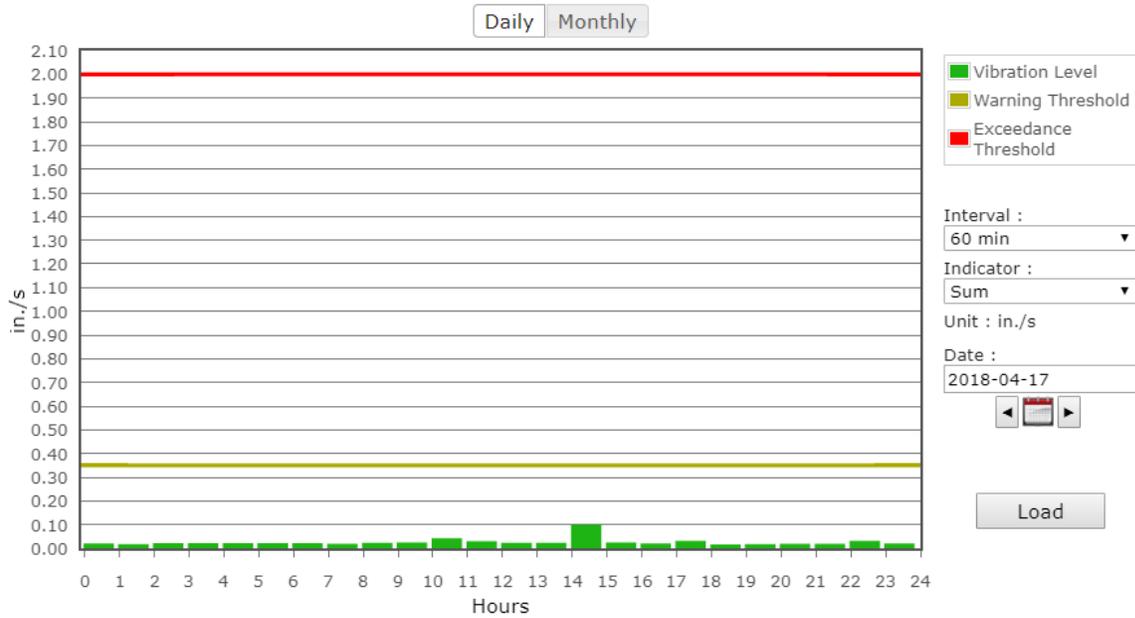
**Figure**



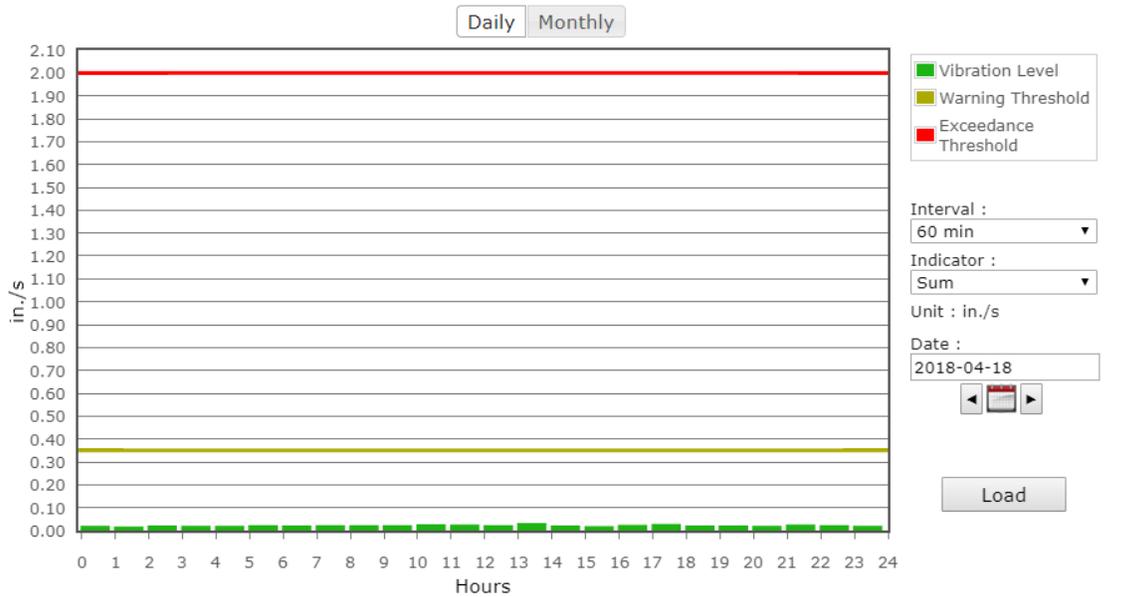
**Figure 15: Northeast Monitor NM-3 on Friday**



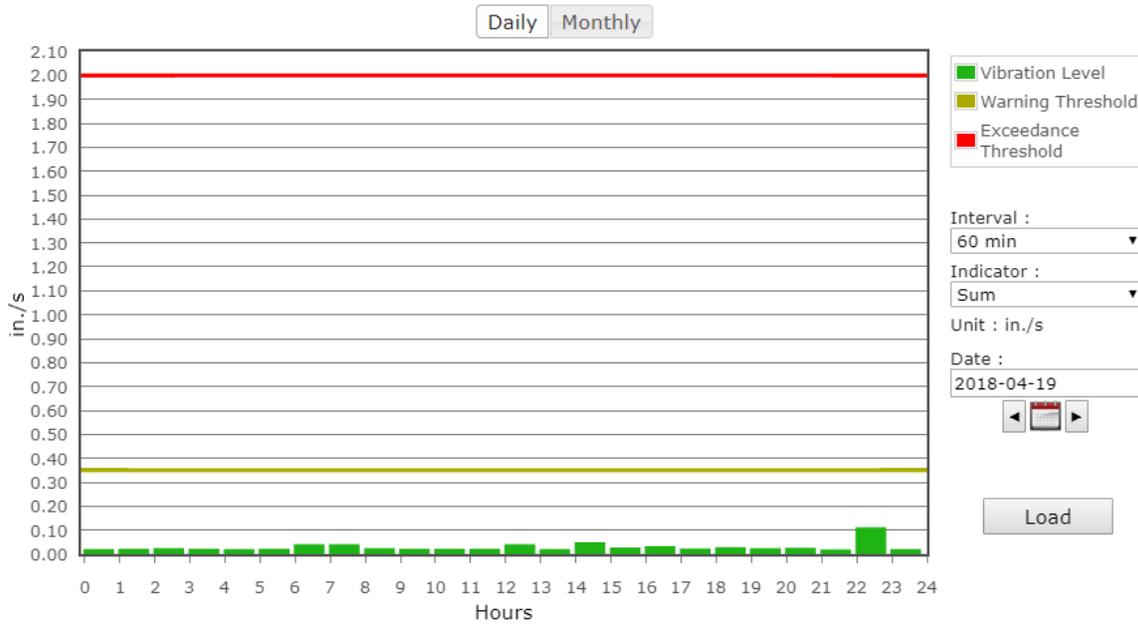
**Figure 16: North Vibration Monitor VM-1 on Monday**



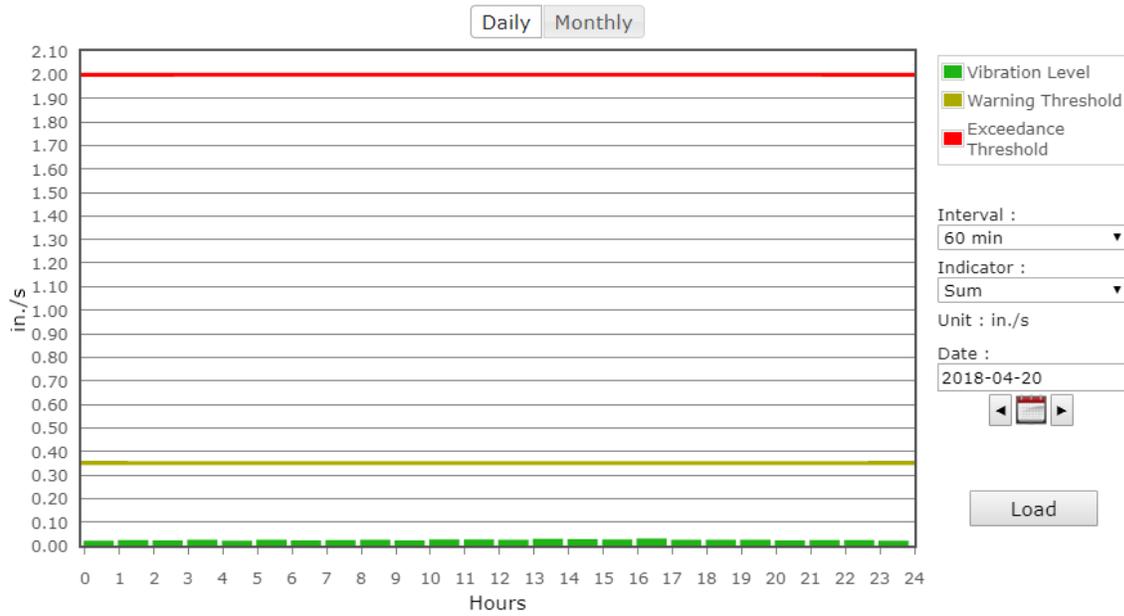
**Figure 17: North Vibration Monitor VM-1 on Tuesday**



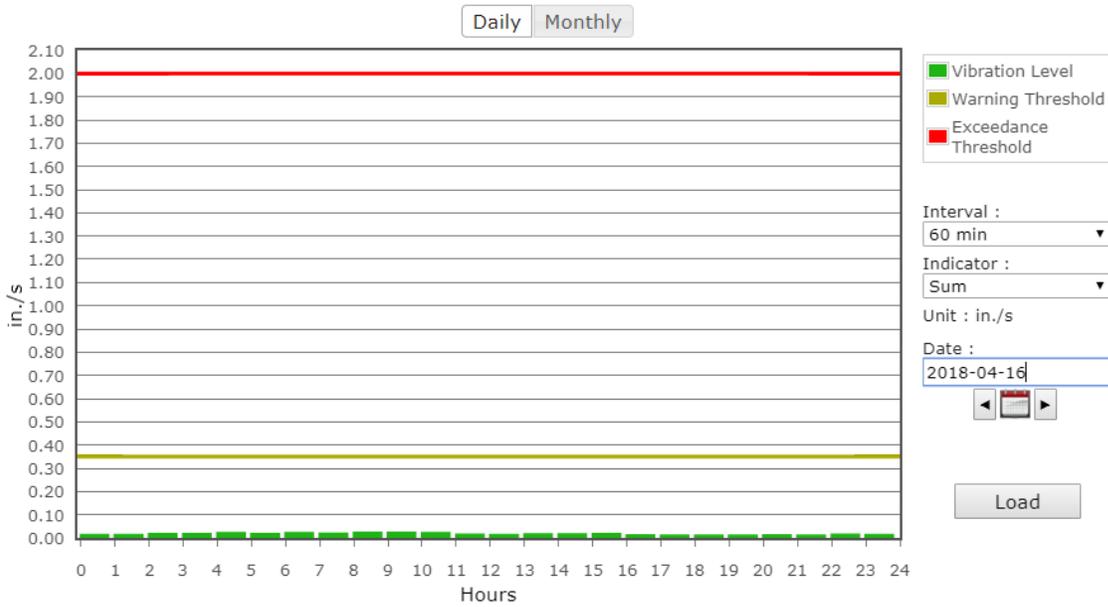
**Figure 18: North Vibration Monitor VM-1 on Wednesday**



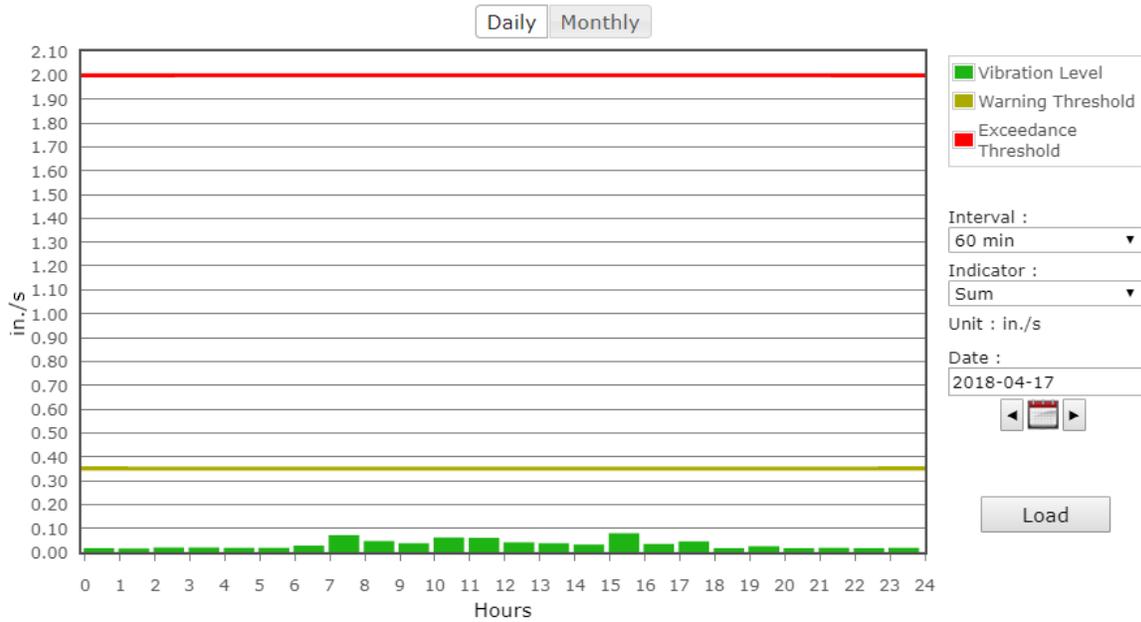
**Figure 19: North Vibration Monitor VM-1 on Thursday**



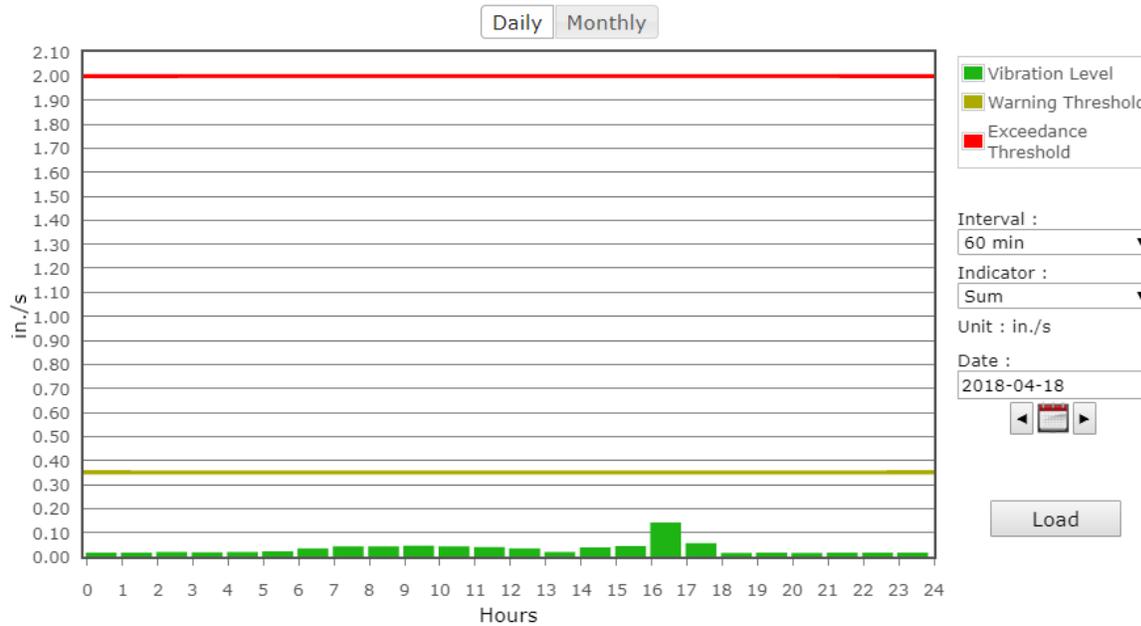
**Figure 20: North Vibration Monitor VM-1 on Friday**



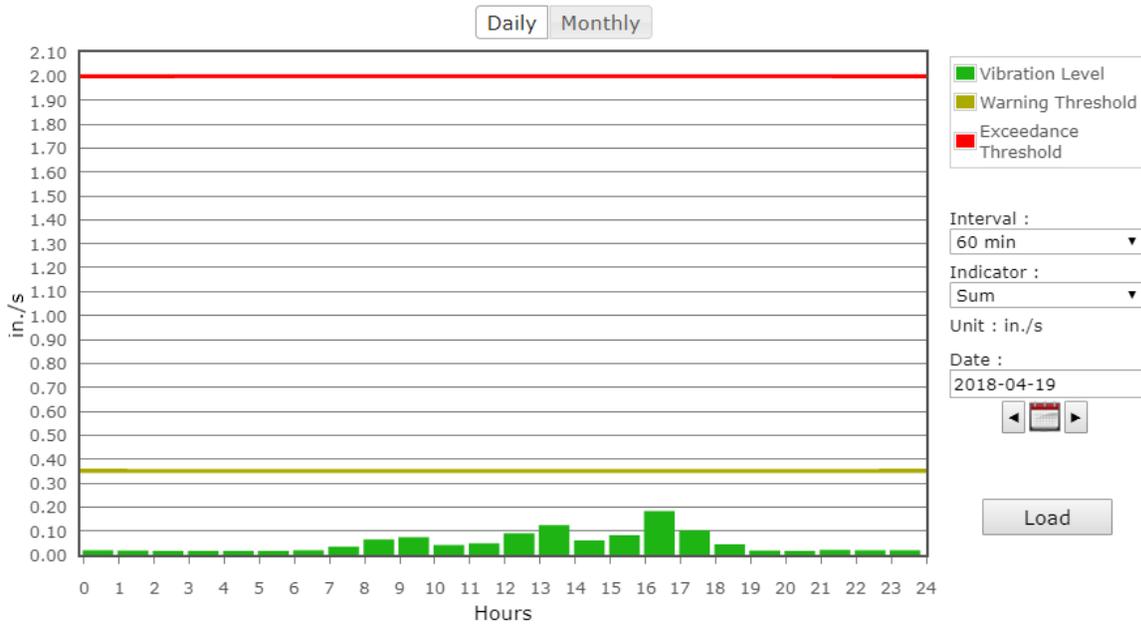
**Figure 21: South Vibration Monitor VM-2 on Monday**



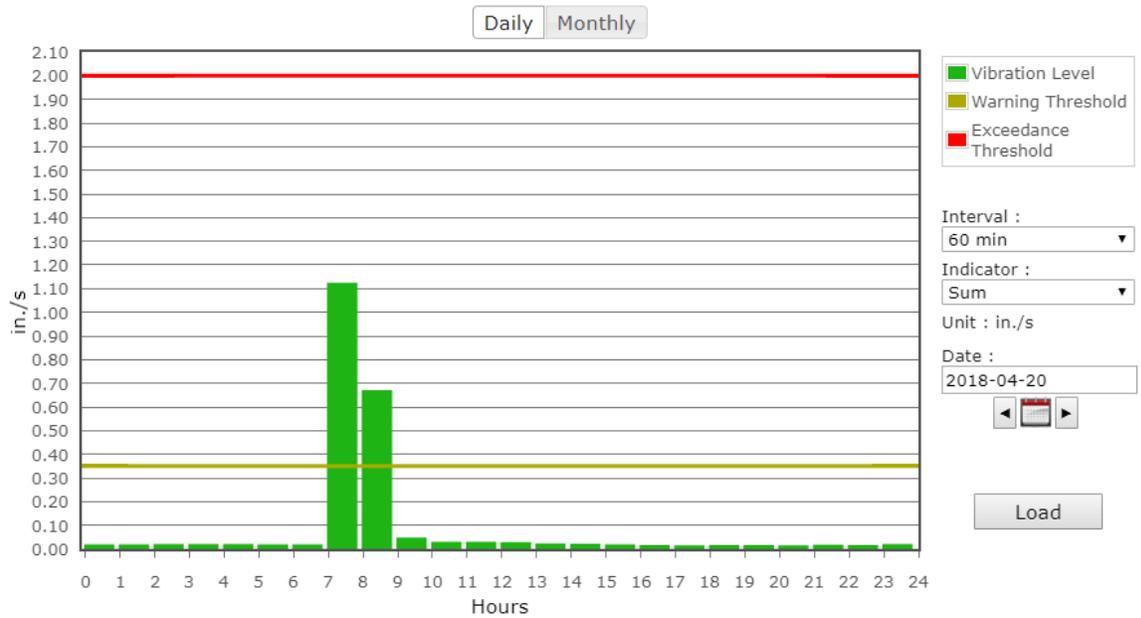
**Figure 22: South Vibration Monitor VM-2 on Tuesday**



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



**Figure 24: South Vibration Monitor VM-2 on Thursday**



**Figure 25: South Vibration Monitor VM-2 on Friday**

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



**WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA**



**Effluent Monitoring Results  
4th Street Turning Basin Pilot Study Dredge Water Treatment System**

**PERMIT EQUIVALENCY DISCHARGE MONITORING RESULTS - WEEKLY**

Analyte	Analytical Results		Discharge Limit	Units
	3/27/18 Result	Qualifier		
pH	5.33	--	Monitor	s.u.
Biological Oxygen Demand	ND	U	20	mg/l
Dissolved oxygen	8.38	--	Monitor	mg/l
Oil and grease	ND	U	15	mg/l
Total suspended solids	4		20	mg/l
Copper	23	J	79	ug/l
Lead	4.5	J	200	ug/l
Benzo(a)pyrene	ND	U	0.090	ug/l
Aroclor 1016	ND	U	0.200	ug/l
Aroclor 1221	ND	U	0.200	ug/l
Aroclor 1232	ND	U	0.200	ug/l
Aroclor 1242	ND	U	0.200	ug/l
Aroclor 1248	ND	U	0.200	ug/l
Aroclor 1254	ND	U	0.200	ug/l
Aroclor 1260	ND	U	0.200	ug/l

**Notes:**

ug/l = micrograms per liter

mg/l = milligrams per liter

ND = not detected

NA = not applicable

s.u. = standard units

J-qualifier means the result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

**CUMULATIVE DREDGED MATERIAL CHART  
(NO ACTIVITIES THIS WEEK)**

