**WEEKLY PROGRESS REPORT – TRC SOLUTIONS**

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

**Project number: 283126**

**Period: May 29 to June 1, 2018**

**Date of Report: June 7, 2018**

**Rev: 0**

**Prepared For: Gowanus Environmental Remediation Trust**

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

*Sevenson Environmental Services (SES)*

Phase I Dredging:

- Continued to dislodge sediment within webbing of installed sheet piling. Sediment to be removed from TB4 during dredging to design grade.
- Performed survey within webbing to confirm removal of sediment to design elevation.
- Completed GPS calibration for excavator conventional bucket.

Water Treatment and Monitoring

- Discharged 29,067 gallons of treated decant water on 05/31/18.
- No exceedances of continuous monitoring.

Turbidity Monitoring

- Turbid water not observed migrating from the 4th Street Turning Basin.

Debris Screening Activities

- Large debris (i.e., debris greater than 5 feet in any direction) segregated and placed on the asphalt pad at Citizens Site. Photographs of debris provided for AHRS consultation.
- Screening and segregating of dredged sediment following removal of non-large debris performed at Clean Earth Claremont for inspection by AHRS.

Sediment Stabilization Activities

- Clean Earth Claremont stabilized 366 tons of dredged sediment by adding 8% Portland cement by weight.
- Stabilized material is segregated on-site pending waste characterization sampling results receipt and disposal facility acceptance.
- Three (3) shipments of stabilized material were disposed off-site as daily cover, consisting of approximately 2,155 tons. An approximate total of 5,645 tons of Phase I stabilized material has been shipped to Waste Management Fairless Hills.

Capping Activities

- Assemble mixing plant to blend bentonite and sand to meet specifications.

*Quality Assurance and Control – Geosyntec*

- Water treatment system sampling performed on 05/31/18. Laboratory turnaround time is 10 business days.
- No exceedance of the turbidity trigger or action criteria
- Measurements for 5/28/18:
    - Daily average for ambient buoy – 4.3 NTU
    - Daily average for sentinel buoy – 0.6 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 5/29/18:
    - Daily average for ambient buoy – 7.7 NTU
    - Daily average for sentinel buoy – 5.3 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 6.4 NTU at 1300.

- Measurements for 5/30/18:
    - Daily average for ambient buoy – 6.5 NTU
    - Daily average for sentinel buoy – 5.3 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 5.3 NTU at 0730.
- Measurements for 5/31/18:
    - Daily average for ambient buoy – 9.7 NTU
    - Daily average for sentinel buoy – 10.5 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 11.5 NTU at 1230.
- Measurements for 6/1/18:
    - Daily average for ambient buoy – 18.7 NTU
    - Daily average for sentinel buoy – 6.9 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 17.3 NTU at 0815.

*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 4th Street Turning Basin Area.
- No exceedances of particulate matter of 10 microns in diameter or smaller ($PM_{10}$) 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 $PM_{10}$ in $\mu g/m^3$
    - Station 1 – 81 $\mu g/m^3$ recorded on 05/31/18
    - Station 2 – 42 $\mu g/m^3$ recorded on 06/01/18
    - Station 3 – 6 $\mu g/m^3$ recorded on 05/29/18
    - Station 4 – 33 $\mu g/m^3$ recorded on 05/29/18
    - Station 5 – 36 $\mu g/m^3$ recorded on 05/31/18
    - Station 6 – <1 $\mu g/m^3$ recorded throughout the week
    - Station 7 – <1 $\mu g/m^3$ recorded throughout the week
- Maximum weekly measurements of TVOC in ppb
    - Station 1 – 101 ppb recorded on 06/01/18
    - Station 2 – 39 ppb recorded on 05/31/18
    - Station 3 – 135 ppb recorded on 05/30/18
    - Station 4 – <1 ppb recorded throughout the week
    - Station 5 – 90 ppb recorded on 05/30/18
    - Station 6 – <1 ppb recorded throughout the week
    - Station 7 – 36 ppb recorded on 05/30/18
- All real-time readings of formaldehyde, hydrogen sulfide, or ammonia less than instrument reporting limit.
- 23-hour sample collected at ST-4 on 05/29 through 05/30 and ST-5 on 05/31 through 06/01. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-2 (collocated) on 05/08 through 05/09 and ST-4 on 05/09 through 05/10 presented in weekly CAMP report.

*Noise and Vibration Monitoring – Wilson Ihrig*

- Operated and maintained two (2) noise monitors: NM-1 (north side of canal on Whole Foods promenade) and NM-2 (south side of canal on southeast corner of 386 3rd Avenue).
- No exceedance of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
    - Northern monitor (NM-1) – 70.9 dBA during 1100-1200 on 05/31/18
    - Southern monitor (NM-2) – 75.9 dBA during 1300-1400 on 05/31/18

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

- Draft and finalize memoranda to facilitate the disposal of non-archaeologically sensitive debris staged at Clean Earth and Citizens Site.
- Conduct site inspection of segregated materials at Clean Earth Claremont. Wood debris and metal industrial debris identified as requiring additional cleaning, recording, and measuring, along with possible coordination with SHPO and EPA.

**Two-Week Look Ahead:**

Sevenson:

- Continue and complete Phase I dredging.
- Commence Phase II dredging.
- Shipment of dredged sediment to Clean Earth Claremont for screening and stabilization prior to shipment to Waste Management Fairless Hills for beneficial reuse.
- Treatment and discharge of water decanted from dredged sediment.
- Complete assembly and testing of mixing plant.
- Perform optical monitoring of bulkheads and surrounding structures with autonomous total survey stations. Along with weekly optical surveys conducted by subcontractor.

Geosyntec – Perform construction quality assurance responsibilities, including collection of water samples from dredge water treatment system.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS:

- Attend EPA community advisory group site visit to view segregated debris located on the asphalt pad at Citizens Site.
- Review photographs and perform inspection of screened debris from Phase I dredging at Clean Earth Claremont and Citizens Site.
- Draft and finalize memoranda to facilitate the disposal of non-archaeologically sensitive debris staged at Clean Earth and Citizens Site.
- Perform Level 2 monitoring of native alluvium at Citizens Site.

**Key Milestones**

- No milestones during 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
5. Water Treatment System Monitoring Analytical Laboratory Data (no activities during current week)
6. Cumulative Dredged Material Chart (no activities during current week)

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus ERT | TB-4 Pilot Study | 283126.0000.0001 |

| Photo No. | Date |
|---|---|
| 001 | 05-29-2018 |

**Description**
Progress of assembly of mixing plant.


| Photo No. | Date |
|---|---|
| 002 | 05-29-2018 |

**Description**
Sevenson operator employing lead line to determine if additional sediment removal within webbing is required.

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus ERT | TB-4 Pilot Study | 283126.0000.0001 |

| Photo No. | Date |
|---|---|
| 003 | 05-29-2018 |

**Description**
Removal of sediment from webbing of installed sheet piling.


| Photo No. | Date |
|---|---|
| 004 | 05-30-2018 |

**Description**
Ramp for loader to access the hoppers in the mix plant.

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus ERT | TB-4 Pilot Study | 283126.0000.0001 |

| Photo No. | Date |
|---|---|
| 005 | 05-30-2018 |

**Description**
Electrical control panels being hooked up.


| Photo No. | Date |
|---|---|
| 006 | 05-31-2018 |

**Description**
Attachment bolted to PC-800 bucket to reach inside the sheet pile webs/bellies.

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus ERT | TB-4 Pilot Study | 283126.0000.0001 |

| Photo No. | Date |
|---|---|
| 007 | 05-31-2018 |

**Description**
Decontamination of used sheet piles on the asphalt pad.


| Photo No. | Date |
|---|---|
| 008 | 06-01-2018 |

**Description**
Lead lining the webs of the sheet pile wall to ensure completion of the removal activities.

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus ERT | TB-4 Pilot Study | 283126.0000.0001 |

| Photo No. | Date |
|---|---|
| 009 | 06-01-2018 |

**Description**
Weekly survey of the points along the turning basin to check for movement.

| Photo No. | Date |
|---|---|
| 010 | 06-01-2018 |

**Description**
Removing the soft sediments in the sheet pile webs to designed elevations.

# 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 May 28th, 2018

## Report Contents

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

*Prepared by*

Geosyntec consultants
engineers | scientists | innovators

Beech and Bonaparte engineering p.c.
*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 May 28th, 2018. Two turbidity buoys were deployed to monitor turbidity during the pilot study. One turbidity buoy was deployed just outside of the 4th 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 May 28th. 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.


**Legend**

- Ambient Buoy
- Sentinel Buoy
- RTA Boundary

300 150 0 300 Feet

## Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

Gowanus Canal Remedial Design Group

Geosyntec consultants

Beech and Bourgarie engineering p.c.

Figure 1

Ewing, NJ | October 2017

## 2. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 5 PM from May 28th to June 1st, 2018. Background data prior to the start of dredging is provided in Appendix A. No exceedances to the numerical rolling average threshold criteria were observed during the reporting period. On May 30th the sentinel and ambient buoys did not record turbidity between 08:30 and 09:45 during buoy servicing. Buoys were serviced due to the negative values the buoys recorded since the last calibration of the turbidity meters. Negative values continue to be recorded and further servicing is required. However, since the numerical criteria is based on the difference between the ambient and sentinel turbidity buoy measurements, these negative values do not impact monitoring.

### 2.1 Monday, May 28th, 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) |
|---|---|---|---|---|---|---|---|
| 5/28/2018 7:00 | 0.1 | -2.8 | N | 5/28/2018 12:15 | 7.7 | 0.8 | N |
| 5/28/2018 7:15 | 0.3 | -2.6 | N | 5/28/2018 12:30 | 6.3 | 2.8 | N |
| 5/28/2018 7:30 | 0.7 | -3.1 | N | 5/28/2018 12:45 | 6.7 | 2.8 | N |
| 5/28/2018 7:45 | 0.6 | -2.7 | N | 5/28/2018 13:00 | 7.2 | 1.3 | N |
| 5/28/2018 8:00 | 0.2 | -3.3 | N | 5/28/2018 13:15 | 8.0 | 3.2 | N |
| 5/28/2018 8:15 | 0.3 | -2.6 | N | 5/28/2018 13:30 | 8.0 | 1.4 | N |
| 5/28/2018 8:30 | 0.4 | -1.6 | N | 5/28/2018 13:45 | 9.3 | 3.5 | N |
| 5/28/2018 8:45 | -0.2 | -2.8 | N | 5/28/2018 14:00 | 7.3 | 4.4 | N |
| 5/28/2018 9:00 | 0.4 | -2.7 | N | 5/28/2018 14:15 | 8.5 | 2.6 | N |
| 5/28/2018 9:15 | 0.1 | -2.0 | N | 5/28/2018 14:30 | 7.8 | 5.3 | N |
| 5/28/2018 9:30 | -0.1 | -2.9 | N | 5/28/2018 14:45 | 8.1 | 4.4 | N |
| 5/28/2018 9:45 | 0.4 | -2.7 | N | 5/28/2018 15:00 | 7.6 | 4.1 | N |
| 5/28/2018 10:00 | 0.0 | -2.9 | N | 5/28/2018 15:15 | 8.1 | 4.2 | N |
| 5/28/2018 10:15 | 0.5 | -2.0 | N | 5/28/2018 15:30 | 6.8 | 3.2 | N |
| 5/28/2018 10:30 | 0.2 | -2.9 | N | 5/28/2018 15:45 | 5.9 | 4.6 | N |
| 5/28/2018 10:45 | 1.3 | 0.8 | N | 5/28/2018 16:00 | 6.3 | 5.0 | N |
| 5/28/2018 11:00 | 2.7 | 0.1 | N | 5/28/2018 16:15 | 6.3 | 2.5 | N |
| 5/28/2018 11:15 | 4.2 | -2.3 | N | 5/28/2018 16:30 | 7.7 | 4.3 | N |
| 5/28/2018 11:30 | 5.8 | -1.7 | N | 5/28/2018 16:45 | 7.0 | 3.3 | N |
| 5/28/2018 11:45 | 6.8 | 0.2 | N | 5/28/2018 17:00 | 6.3 | 3.0 | N |
| 5/28/2018 12:00 | 6.0 | 0.8 | N | | | | |

| | | | |
|---|---|---|---|
| Average | 4.3 | 0.6 | N |
| Maximum | 9.3 | 5.3 | N |

**Notes:**

No exceedances to rolling average threshold criteria during reporting period

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

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

## 2.2 Tuesday, May 29th, 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) |
|---|---|---|---|---|---|---|---|
| 5/29/2018 7:00 | 2.6 | -0.9 | N | 5/29/2018 12:15 | 5.8 | 5.6 | N |
| 5/29/2018 7:15 | 4.8 | -1.3 | N | 5/29/2018 12:30 | 4.7 | 7.3 | Y |
| 5/29/2018 7:30 | 2.7 | -0.8 | N | 5/29/2018 12:45 | 4.3 | 7.3 | Y |
| 5/29/2018 7:45 | 3.7 | -1.5 | N | 5/29/2018 13:00 | 3.9 | 10.3 | Y |
| 5/29/2018 8:00 | 4.3 | 2.4 | N | 5/29/2018 13:15 | 5.2 | 6.8 | Y |
| 5/29/2018 8:15 | 8.4 | 0.7 | N | 5/29/2018 13:30 | 5.0 | 5.2 | Y |
| 5/29/2018 8:30 | 7.5 | 0.4 | N | 5/29/2018 13:45 | 5.5 | 5.5 | N |
| 5/29/2018 8:45 | 9.8 | 2.3 | N | 5/29/2018 14:00 | 6.0 | 6.7 | Y |
| 5/29/2018 9:00 | 13.4 | 5.5 | N | 5/29/2018 14:15 | 5.1 | 8.4 | Y |
| 5/29/2018 9:15 | 13.2 | 7.1 | N | 5/29/2018 14:30 | 5.4 | 2.8 | N |
| 5/29/2018 9:30 | 14.3 | 8.7 | N | 5/29/2018 14:45 | 5.9 | 5.3 | N |
| 5/29/2018 9:45 | 14.6 | 10.9 | N | 5/29/2018 15:00 | 4.8 | 5.7 | Y |
| 5/29/2018 10:00 | 18.9 | 7.6 | N | 5/29/2018 15:15 | 5.9 | 5.8 | N |
| 5/29/2018 10:15 | 17.2 | 12.0 | N | 5/29/2018 15:30 | 5.1 | 2.7 | N |
| 5/29/2018 10:30 | 13.4 | 13.4 | N | 5/29/2018 15:45 | 4.7 | 4.0 | N |
| 5/29/2018 10:45 | 11.6 | 13.2 | Y | 5/29/2018 16:00 | 4.9 | 1.3 | N |
| 5/29/2018 11:00 | 13.3 | 11.6 | N | 5/29/2018 16:15 | 5.3 | 1.4 | N |
| 5/29/2018 11:15 | 11.5 | 10.3 | N | 5/29/2018 16:30 | 5.3 | 0.8 | N |
| 5/29/2018 11:30 | 10.5 | 8.1 | N | 5/29/2018 16:45 | 4.7 | 2.7 | N |
| 5/29/2018 11:45 | 7.5 | 6.2 | N | 5/29/2018 17:00 | 7.0 | 1.6 | N |
| 5/29/2018 12:00 | 7.0 | 5.5 | N | | | | |

| | | | |
|---|---|---|---|
| Average | 7.7 | 5.3 | N |
| Maximum | 18.9 | 13.4 | N |

**Notes:**

No exceedances to rolling average threshold criteria during reporting period

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

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

## 2.3 Wednesday, May 30th, 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) |
|---|---|---|---|---|---|---|---|
| 5/30/2018 7:00 | 2.4 | -1.3 | N | 5/30/2018 12:15 | 7.2 | 6.9 | N |
| 5/30/2018 7:15 | 2.3 | -1.7 | N | 5/30/2018 12:30 | 7.0 | 5.5 | N |
| 5/30/2018 7:30 | 2.2 | 7.5 | Y | 5/30/2018 12:45 | 4.9 | 3.5 | N |
| 5/30/2018 7:45 | 3.2 | -0.5 | N | 5/30/2018 13:00 | 3.8 | 2.6 | N |
| 5/30/2018 8:00 | 2.7 | -0.9 | N | 5/30/2018 13:15 | 3.2 | 3.7 | Y |
| 5/30/2018 8:15 | 3.2 | 0.2 | N | 5/30/2018 13:30 | 3.2 | 3.8 | Y |
| 5/30/2018 8:30 | -- | -- | N | 5/30/2018 13:45 | 2.3 | 4.8 | Y |
| 5/30/2018 8:45 | -- | -- | N | 5/30/2018 14:00 | 1.4 | 4.0 | Y |
| 5/30/2018 9:00 | -- | -- | N | 5/30/2018 14:15 | 1.0 | 2.6 | Y |
| 5/30/2018 9:15 | -- | -- | N | 5/30/2018 14:30 | 5.8 | 6.0 | Y |
| 5/30/2018 9:30 | -- | -- | N | 5/30/2018 14:45 | 3.3 | 3.1 | N |
| 5/30/2018 9:45 | -- | -- | N | 5/30/2018 15:00 | 3.5 | 2.9 | N |
| 5/30/2018 10:00 | 14.9 | 10.1 | N | 5/30/2018 15:15 | 4.7 | 2.9 | N |
| 5/30/2018 10:15 | 14.4 | 8.0 | N | 5/30/2018 15:30 | 5.7 | 4.5 | N |
| 5/30/2018 10:30 | 18.6 | 11.0 | N | 5/30/2018 15:45 | 6.1 | 3.4 | N |
| 5/30/2018 10:45 | 19.0 | 12.1 | N | 5/30/2018 16:00 | 6.3 | 4.9 | N |
| 5/30/2018 11:00 | 17.9 | 16.0 | N | 5/30/2018 16:15 | 5.7 | 5.5 | N |
| 5/30/2018 11:15 | 14.4 | 14.0 | N | 5/30/2018 16:30 | 3.5 | 6.0 | Y |
| 5/30/2018 11:30 | 12.5 | 12.3 | N | 5/30/2018 16:45 | 2.7 | 4.3 | Y |
| 5/30/2018 11:45 | 9.6 | 8.8 | N | 5/30/2018 17:00 | 1.3 | 3.6 | Y |
| 5/30/2018 12:00 | 8.5 | 5.8 | N | | | | |

| | | | |
|---|---|---|---|
| Average | 6.5 | 5.3 | N |
| Maximum | 19.0 | 16.0 | N |

**Notes:**

No exceedances to rolling average threshold criteria during reporting period

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

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

## 2.4 Thursday, May 31st, 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) |
|---|---|---|---|---|---|---|---|
| 5/31/2018 7:00 | 0.1 | -1.0 | N | 5/31/2018 12:15 | 12.1 | 20.6 | Y |
| 5/31/2018 7:15 | -0.4 | 0.3 | Y | 5/31/2018 12:30 | 9.0 | 20.5 | Y |
| 5/31/2018 7:30 | -0.3 | 1.8 | Y | 5/31/2018 12:45 | 11.1 | 17.9 | Y |
| 5/31/2018 7:45 | 0.4 | 3.8 | Y | 5/31/2018 13:00 | 10.1 | 18.7 | Y |
| 5/31/2018 8:00 | 1.0 | 2.9 | Y | 5/31/2018 13:15 | 9.1 | 15.8 | Y |
| 5/31/2018 8:15 | 3.6 | 3.3 | N | 5/31/2018 13:30 | 5.2 | 15.9 | Y |
| 5/31/2018 8:30 | 41.8 | 3.1 | N | 5/31/2018 13:45 | 7.6 | 15.0 | Y |
| 5/31/2018 8:45 | 1.8 | 2.6 | Y | 5/31/2018 14:00 | 4.1 | 14.7 | Y |
| 5/31/2018 9:00 | 80.5 | 3.5 | N | 5/31/2018 14:15 | 3.1 | 14.6 | Y |
| 5/31/2018 9:15 | 7.6 | 3.3 | N | 5/31/2018 14:30 | 4.0 | 14.3 | Y |
| 5/31/2018 9:30 | 9.5 | 3.7 | N | 5/31/2018 14:45 | 3.4 | 9.4 | Y |
| 5/31/2018 9:45 | 4.8 | 5.8 | Y | 5/31/2018 15:00 | 2.9 | 13.6 | Y |
| 5/31/2018 10:00 | 10.6 | 8.5 | N | 5/31/2018 15:15 | 5.4 | 15.1 | Y |
| 5/31/2018 10:15 | 10.3 | 9.2 | N | 5/31/2018 15:30 | 6.3 | 15.9 | Y |
| 5/31/2018 10:30 | 10.6 | 10.9 | Y | 5/31/2018 15:45 | 4.1 | 14.3 | Y |
| 5/31/2018 10:45 | 12.9 | 9.8 | N | 5/31/2018 16:00 | 5.0 | 8.3 | Y |
| 5/31/2018 11:00 | 16.3 | 15.7 | N | 5/31/2018 16:15 | 5.4 | 12.3 | Y |
| 5/31/2018 11:15 | 20.3 | 13.1 | N | 5/31/2018 16:30 | 3.6 | 8.9 | Y |
| 5/31/2018 11:30 | 20.3 | 13.4 | N | 5/31/2018 16:45 | 1.8 | 8.8 | Y |
| 5/31/2018 11:45 | 16.8 | 18.5 | Y | 5/31/2018 17:00 | 4.9 | 7.8 | Y |
| 5/31/2018 12:00 | 12.8 | 16.9 | Y | | | | |

| | | | |
|---|---|---|---|
| Average | 9.7 | 10.5 | Y |
| Maximum | 80.5 | 20.6 | N |

**Notes:**

No exceedances to rolling average threshold criteria during reporting period

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

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

## 2.5 Friday, June 1st, 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) |
|---|---|---|---|---|---|---|---|
| 6/1/2018 7:00 | 328.2 | -0.9 | N | 6/1/2018 12:15 | 14.2 | 8.7 | N |
| 6/1/2018 7:15 | 35.3 | -0.8 | N | 6/1/2018 12:30 | 10.1 | 7.7 | N |
| 6/1/2018 7:30 | -1.1 | 0.0 | Y | 6/1/2018 12:45 | 6.5 | 10.9 | Y |
| 6/1/2018 7:45 | -0.4 | 1.6 | Y | 6/1/2018 13:00 | 4.9 | 12.7 | Y |
| 6/1/2018 8:00 | -2.0 | 0.5 | Y | 6/1/2018 13:15 | 4.7 | 10.9 | Y |
| 6/1/2018 8:15 | -1.2 | 16.1 | Y | 6/1/2018 13:30 | 5.7 | 8.6 | Y |
| 6/1/2018 8:30 | 2.8 | 10.3 | Y | 6/1/2018 13:45 | 4.5 | 10.1 | Y |
| 6/1/2018 8:45 | 2.8 | 10.3 | Y | 6/1/2018 14:00 | 3.6 | 11.0 | Y |
| 6/1/2018 9:00 | 6.0 | 2.9 | N | 6/1/2018 14:15 | 3.1 | 12.8 | Y |
| 6/1/2018 9:15 | 4.5 | 5.0 | Y | 6/1/2018 14:30 | 3.1 | 9.0 | Y |
| 6/1/2018 9:30 | 5.9 | 3.5 | N | 6/1/2018 14:45 | 2.0 | 9.0 | Y |
| 6/1/2018 9:45 | 6.9 | 3.8 | N | 6/1/2018 15:00 | 3.2 | 6.3 | Y |
| 6/1/2018 10:00 | 8.7 | 7.8 | N | 6/1/2018 15:15 | 1.0 | 4.7 | Y |
| 6/1/2018 10:15 | 9.2 | 5.1 | N | 6/1/2018 15:30 | 2.5 | 4.6 | Y |
| 6/1/2018 10:30 | 5.4 | 5.6 | Y | 6/1/2018 15:45 | 227.9 | 6.5 | N |
| 6/1/2018 10:45 | 5.2 | 7.5 | Y | 6/1/2018 16:00 | -0.1 | 3.5 | Y |
| 6/1/2018 11:00 | 5.8 | 8.0 | Y | 6/1/2018 16:15 | 1.3 | 8.0 | Y |
| 6/1/2018 11:15 | 8.0 | 10.5 | Y | 6/1/2018 16:30 | 1.5 | 6.5 | Y |
| 6/1/2018 11:30 | 10.9 | 7.2 | N | 6/1/2018 16:45 | 1.8 | 7.7 | Y |
| 6/1/2018 11:45 | 9.7 | 7.5 | N | 6/1/2018 17:00 | 2.4 | 3.8 | Y |
| 6/1/2018 12:00 | 13.5 | 10.0 | N | | | | |

| | | | |
|---|---|---|---|
| Average | 18.7 | 6.9 | N |
| Maximum | 328.2 | 16.1 | N |

**Notes:**

No exceedances to rolling average threshold criteria during reporting period

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

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

## 3. HANDHELD MEASURMENTS

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


**Legend**

- Ambient Buoy
- Sentinel Buoy
- RTA Boundary

300 150 0 300 Feet

# 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

X:\03_GIS\mxd\Canal_Wide\Turbidity Buoy Locations.mxd; acarnes; 10/19/2017

# APPENDIX A
# PRE-DREDGE TURBIDITY BUOY DATA

PRELIMINARY DATA
NOT YET SUBJECT TO QC REVIEW

Geosyntec consultants

Beech and Bonaparte engineering p.c.
*an affiliate of Geosyntec Consultants*

| 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
## 34th Weekly Monitoring Period
## Summary Report:

May 29th, through June 1st, 2018

## Report Contents

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

## Executive Summary – Week 34 Monitoring Period
## May 29th through June 1st, 2018

The following report summarizes site air monitoring activities for the Week 34 monitoring period from May 29th through June 1st, 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 4th 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 34 monitoring period there were no $PM_{10}$ or TVOC exceedances of the action level of 150 ug/$m^3$ 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 ($PM_{10}$) 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 34 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 34 monitoring period of May 29th through June 1st, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 4 and 5. The ST-4 sample was collected on May 29th, through May 30th, 2018 and the ST-5 sample was collected on May 31st, through June 1st, 2018. Both samples were collected over a 23-hour period and 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 23-hour samples collected at Station 2 and 4 during Week 31. Co-located samples (ST-2A and ST-2B) were collected at Station 2 on May 8th through May 9th, 2018. ST-4 was collected on May 9th, through May 10th, 2018. Results for the majority of the analyties were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28th and 31st, 2017. Results for the Station 2 samples included concentrations for a number of aromatic hydrocarbons that were slightly elevated above background levels. These included a number of compounds commonly associated with Manufactured Gas Plant (MGP) residuals (naphthalene, toluene, benzene, trimethyl benzenes, ethyl toluene and xylene isomers (o,m,p) ).

Site activities which were conducted at the Citizen Property on May 29th through June 1st, 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
- De-watering of dredging sediment
- Transfer dredged material to larger scow for shipment to Clean Earth Claremont
- Assembly of mixing plant
- Grubbing of non-stoned areas

Site activities which were conducted at the 4th St Turning Basin Area of the Canal on May 29th through June 1st, 2018 included the following:

- Continued dislodging of sediment within webbing of installed sheet piling. The sediment will be removed from TB4 during dredging to final design grade
- Performed survey within webbing to confirm removal of sediment to design elevation
- Calibrated GPS for conventional excavator bucket

# Gowanus Canal Superfund Site
# TB-4 Dredging and Capping Pilot Study
# Brooklyn, New York
## Daily Station Report – TVOC/$PM_{10}$
## (TRC Project No.274286-0000-00000)
## 05/29/2018 06:30 AM - 05/29/2018 23:45 PM

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | ug/$m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 29 | ppb | Max. | 35 | ug/$m^3$ |
| Avg. | 5 | ppb | Avg. | 22 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 28 | ppb | Max. | 6 | ug/$m^3$ |
| Avg. | 7 | ppb | Avg. | <1 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | 33 | ug/$m^3$ |
| Avg. | <1 | ppb | Avg. | 20 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 63 | ppb | Max. | 34 | ug/$m^3$ |
| Avg. | 26 | ppb | Avg. | 16 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | ug/$m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | ug/$m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | ug/$m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

TVOC – Total Volatile Organic Compounds  $PM_{10}$ – Particulates as $PM_{10}$

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - $PM_{10}$)

# Gowanus Canal Superfund Site
# TB-4 Dredging and Capping Pilot Study
# Brooklyn, New York
## Daily Station Report – TVOC/$PM_{10}$
## (TRC Project No.274286-0000-00000)
## 05/30/2018 00:00 AM - 05/30/2018 23:45 PM

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 36 | ppb | Max. | 17 | $ug/m^3$ |
| Avg. | 15 | ppb | Avg. | 4 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 18 | ppb | Max. | 24 | $ug/m^3$ |
| Avg. | 1 | ppb | Avg. | 8 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 135 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | 37 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | 20 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | 7 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 90 | ppb | Max. | 15 | $ug/m^3$ |
| Avg. | 28 | ppb | Avg. | 2 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 36 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | 29 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

TVOC – Total Volatile Organic Compounds  $PM_{10}$ – Particulates as $PM_{10}$

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - $PM_{10}$)

# Gowanus Canal Superfund Site
# TB-4 Dredging and Capping Pilot Study
# Brooklyn, New York
## Daily Station Report – TVOC/$PM_{10}$
## (TRC Project No.274286-0000-00000)
## 05/31/2018 00:00 AM - 05/31/2018 23:45 AM

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 73 | ppb | Max. | 81 | $ug/m^3$ |
| Avg. | 25 | ppb | Avg. | 11 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 39 | ppb | Max. | 24 | $ug/m^3$ |
| Avg. | 1 | ppb | Avg. | 14 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 86 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | 43 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | 13 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | 2 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | 36 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | 1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

TVOC – Total Volatile Organic Compounds  $PM_{10}$ – Particulates as $PM_{10}$

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - $PM_{10}$)

# Gowanus Canal Superfund Site
# TB-4 Dredging and Capping Pilot Study
# Brooklyn, New York
## Daily Station Report – TVOC/$PM_{10}$
## (TRC Project No.274286-0000-00000)
## 06/01/2018 00:00 AM - 06/01/2018 16:00 PM

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 101 | ppb | Max. | 41 | $ug/m^3$ |
| Avg. | 46 | ppb | Avg. | 18 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | 25 | ppb | Max. | 42 | $ug/m^3$ |
| Avg. | 8 | ppb | Avg. | 23 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

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

| TVOC | | | $PM_{10}$ | | |
|---|---|---|---|---|---|
| Max. | <1 | ppb | Max. | <1 | $ug/m^3$ |
| Avg. | <1 | ppb | Avg. | <1 | $ug/m^3$ |
| Exc. | 0 | total | Exc. | 0 | Total |

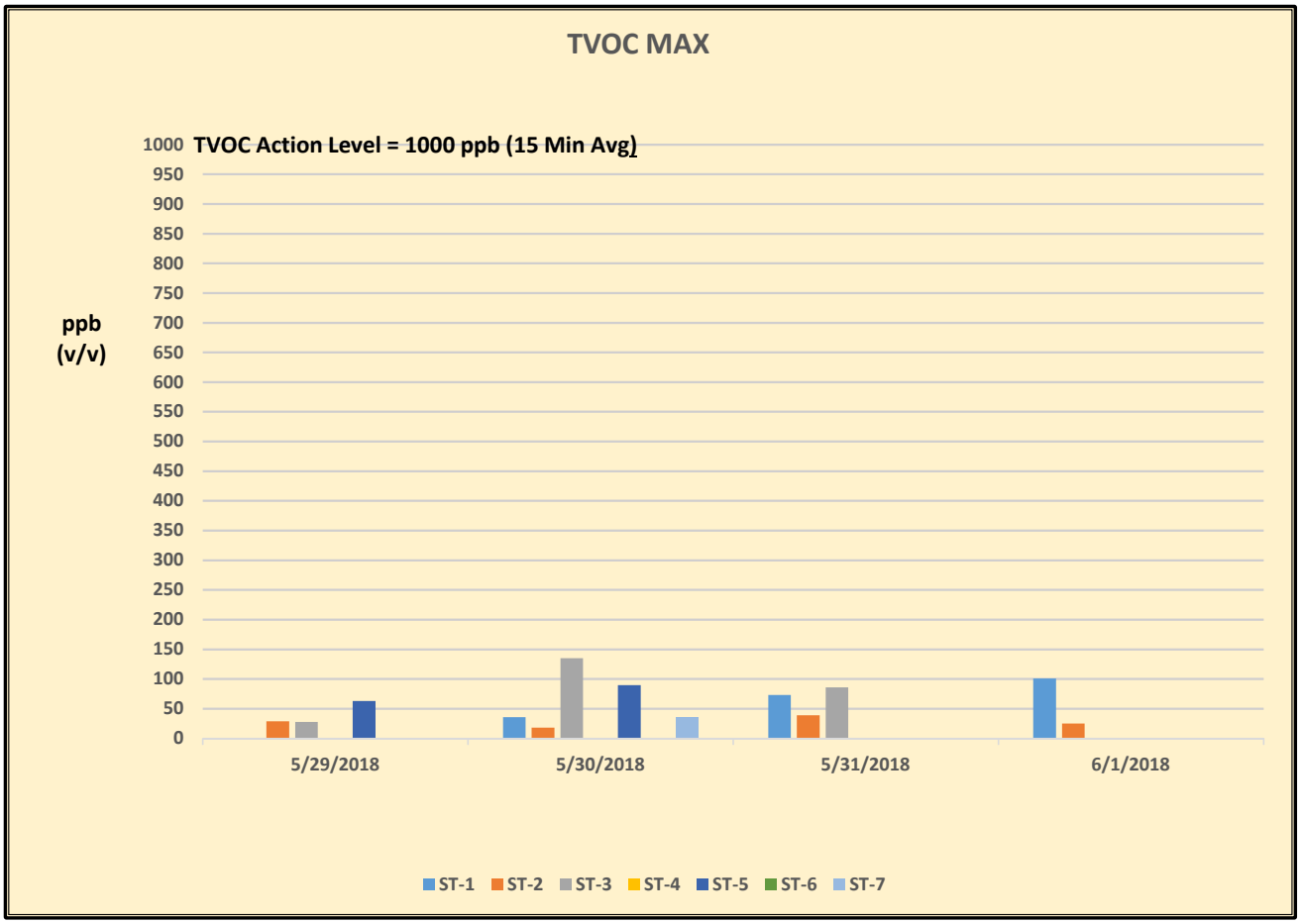
TVOC – Total Volatile Organic Compounds  $PM_{10}$ – Particulates as $PM_{10}$

Max. – Maximum daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Avg. – Daily average (15 min. avg. – TVOC / 15 min. avg. – $PM_{10}$)

Exc. – Total # of averages which exceed the action level (≥1 ppm - TVOC / ≥150 ug/m3 - $PM_{10}$)

**Figure 1**
**Gowanus Canal Superfund Site -TB4 Dredging and Capping Pilot Program**
**TVOC Monitoring Data - Week 34**



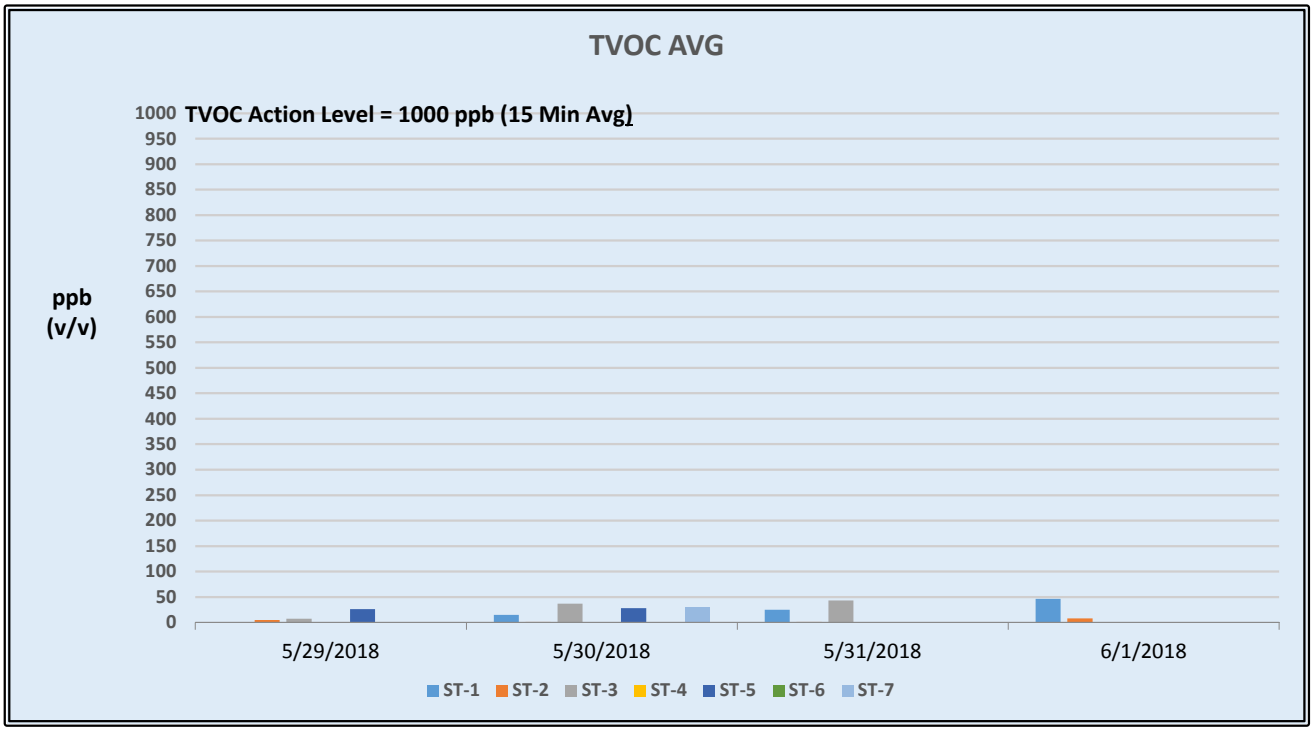
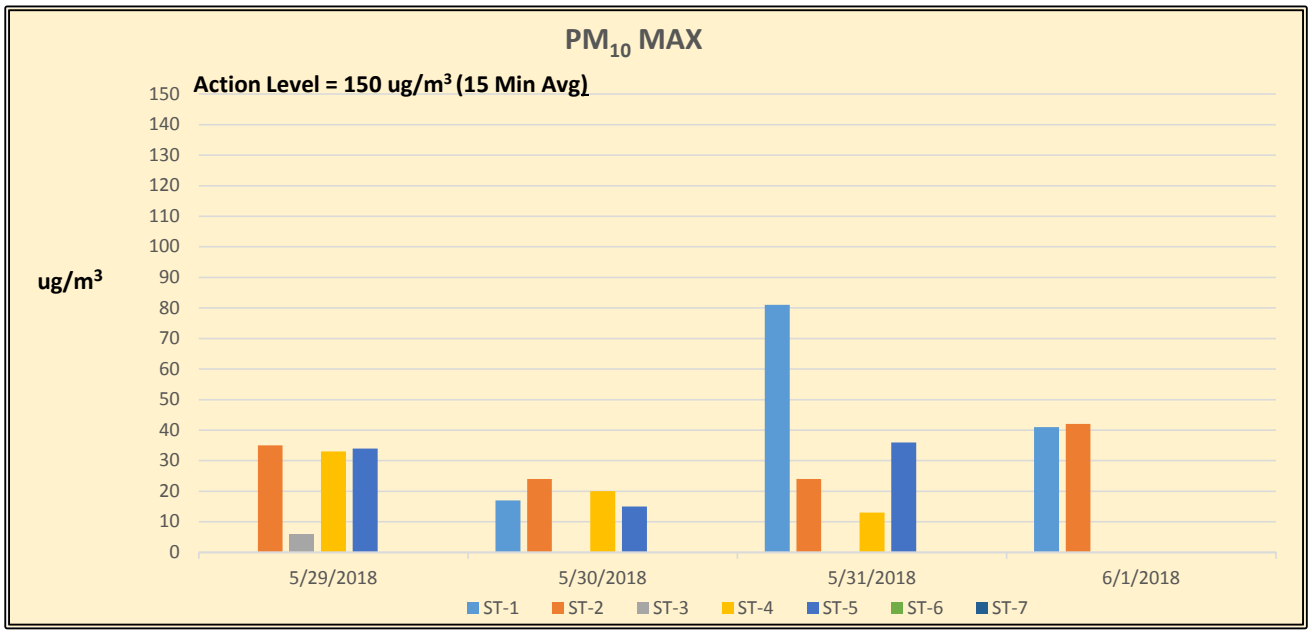
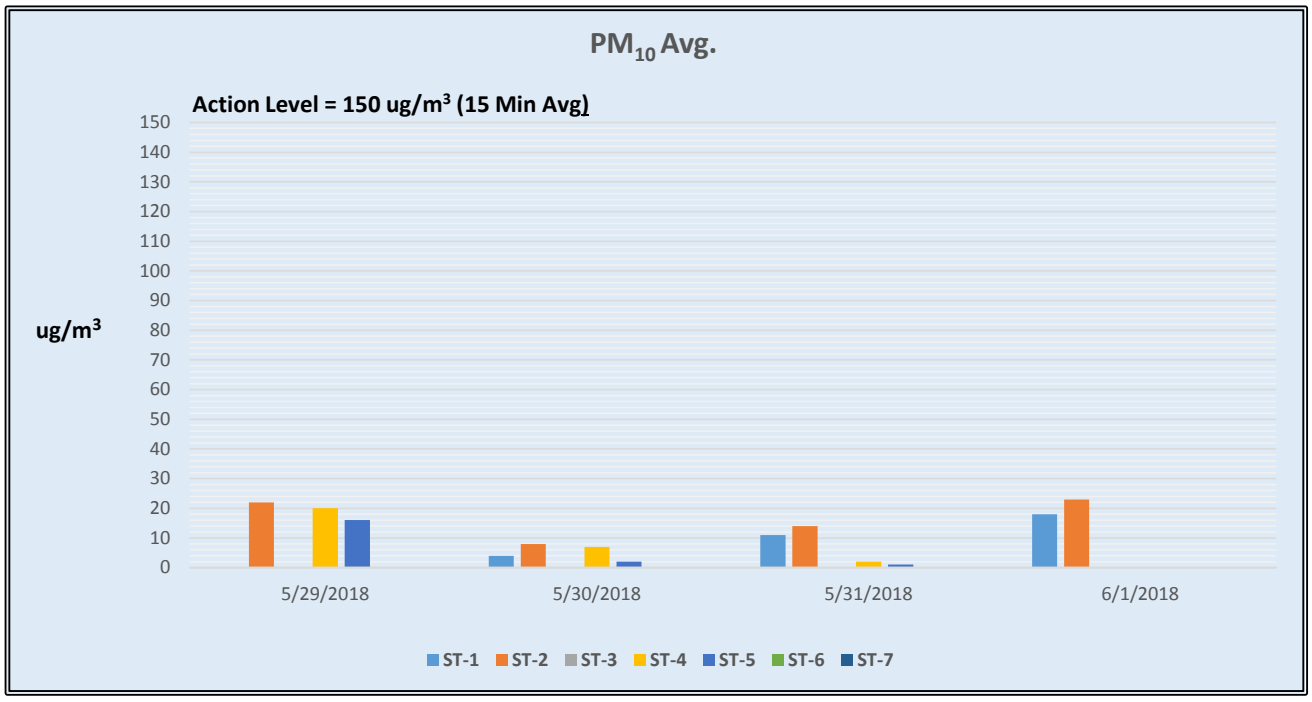
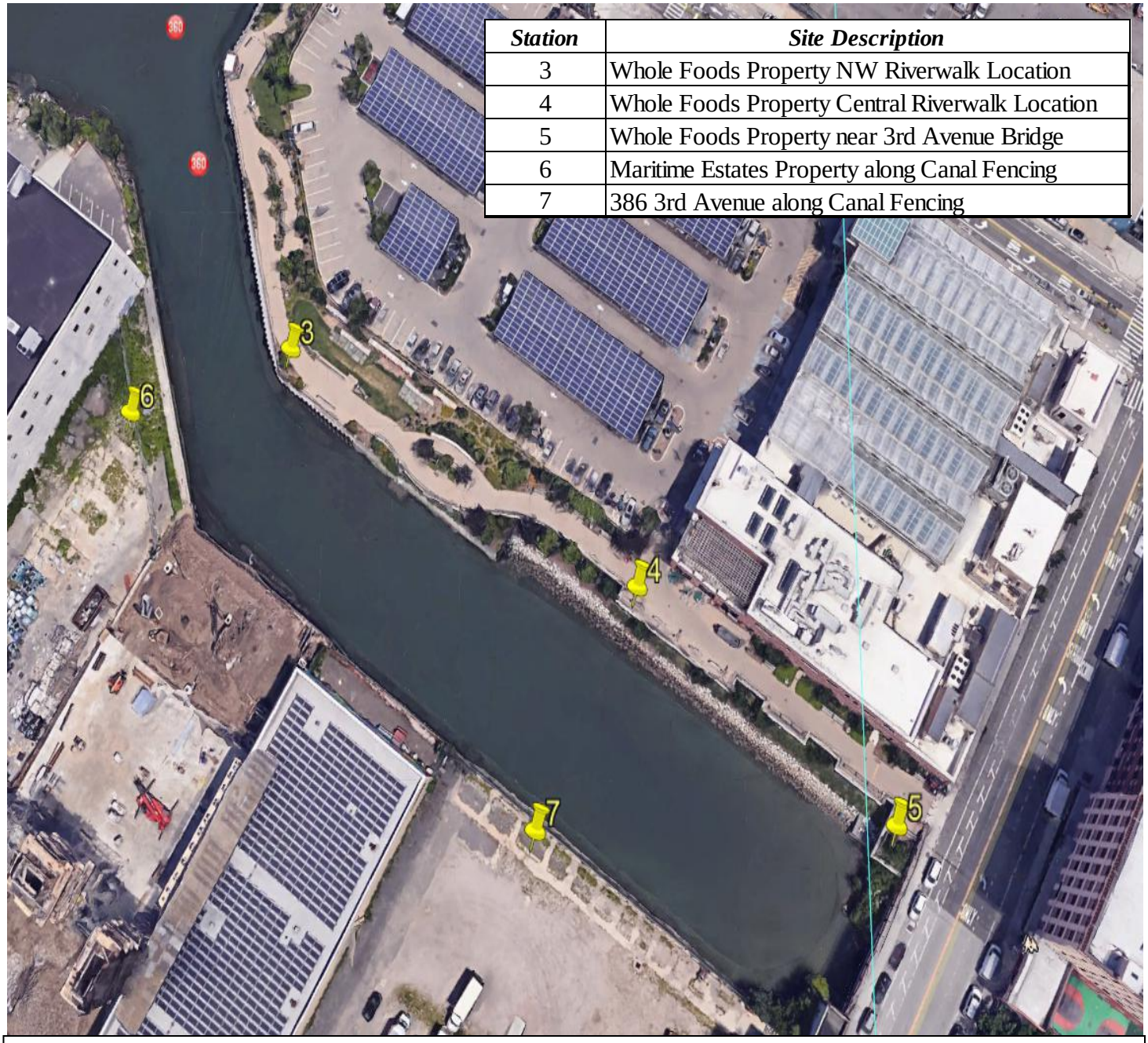



**Figure 2**
**Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program**
**TRC CAMP $PM_{10}$ Monitoring Data - Week 34**






| *Station* | *Site Description* |
|---|---|
| 3 | Whole Foods Property NW Riverwalk Location |
| 4 | Whole Foods Property Central Riverwalk Location |
| 5 | Whole Foods Property near 3rd Avenue Bridge |
| 6 | Maritime Estates Property along Canal Fencing |
| 7 | 386 3rd Avenue along Canal Fencing |

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

**Table 1**

**Week 34**
**Summary of Additional Periodic (Daily) Monitoring Data**

| May 29th, 2018 | | | | |
|---|---|---|---|---|
| Station Id | Time | Formaldehyde (CHO) (ppb)* | Hydrogen Sulfide ($H_2S$) (ppb)* | Ammonia ($NH_3$) (ppm)** |
| ST-1 | 9:00 | <50 | <3 | <1.0 |
| | 13:00 | <50 | <3 | <1.0 |
| ST-2 | 9:05 | <50 | <3 | <1.0 |
| | 13:05 | <50 | <3 | <1.0 |
| ST-3 | 9:15 | <50 | <3 | <1.0 |
| | 13:20 | <50 | <3 | <1.0 |
| ST-4 | 9:20 | <50 | <3 | <1.0 |
| | 13:25 | <50 | <3 | <1.0 |
| ST-5 | 9:25 | <50 | <3 | <1.0 |
| | 13:30 | <50 | <3 | <1.0 |
| ST-6 | 9:40 | <50 | <3 | <1.0 |
| | 14:00 | <50 | <3 | <1.0 |
| ST-7 | 9:55 | <50 | <3 | <1.0 |
| | 14:15 | <50 | <3 | <1.0 |

| May 30th, 2018 | | | | |
|---|---|---|---|---|
| Station Id | Time | Formaldehyde (CHO) (ppb)* | Hydrogen Sulfide ($H_2S$) (ppb)* | Ammonia ($NH_3$) (ppm)** |
| ST-1 | 8:00 | <50 | <3 | <1.0 |
| | 14:00 | <50 | <3 | <1.0 |
| ST-2 | 8:05 | <50 | <3 | <1.0 |
| | 14:05 | <50 | <3 | <1.0 |
| ST-3 | 8:25 | <50 | <3 | <1.0 |
| | 14:20 | <50 | <3 | <1.0 |
| ST-4 | 8:30 | <50 | <3 | <1.0 |
| | 14:25 | <50 | <3 | <1.0 |
| ST-5 | 8:35 | <50 | <3 | <1.0 |
| | 14:30 | <50 | <3 | <1.0 |
| ST-6 | 8:50 | <50 | <3 | <1.0 |
| | 14:40 | <50 | <3 | <1.0 |
| ST-7 | 9:05 | <50 | <3 | <1.0 |
| | 14:55 | <50 | <3 | <1.0 |

**Table 1**

**Week 34**
**Summary of Additional Periodic (Daily) Monitoring Data**

| May 31st, 2018 | | | | |
|---|---|---|---|---|
| Station Id | Time | Formaldehyde (CHO) (ppb)* | Hydrogen Sulfide ($H_2S$) (ppb)* | Ammonia ($NH_3$) (ppm)** |
| ST-1 | 9:00 | <50 | <3 | <1.0 |
| | 14:30 | <50 | <3 | <1.0 |
| ST-2 | 9:05 | <50 | <3 | <1.0 |
| | 14:35 | <50 | <3 | <1.0 |
| ST-3 | 9:15 | <50 | <3 | <1.0 |
| | 15:00 | <50 | <3 | <1.0 |
| ST-4 | 9:20 | <50 | <3 | <1.0 |
| | 15:05 | <50 | <3 | <1.0 |
| ST-5 | 9:25 | <50 | <3 | <1.0 |
| | 15:10 | <50 | <3 | <1.0 |
| ST-6 | 9:45 | <50 | <3 | <1.0 |
| | 15:30 | <50 | <3 | <1.0 |
| ST-7 | 9:55 | <50 | <3 | <1.0 |
| | 15:45 | <50 | <3 | <1.0 |

| June 1st, 2018 | | | | |
|---|---|---|---|---|
| Station Id | Time | Formaldehyde (CHO) (ppb)* | Hydrogen Sulfide ($H_2S$) (ppb)* | Ammonia ($NH_3$) (ppm)** |
| ST-1 | 10:00 | <50 | <3 | <1.0 |
| | 14:00 | <50 | <3 | <1.0 |
| ST-2 | 10:05 | <50 | <3 | <1.0 |
| | 14:05 | <50 | <3 | <1.0 |
| ST-3 | 10:30 | <50 | <3 | <1.0 |
| | 14:30 | <50 | <3 | <1.0 |
| ST-4 | 10:35 | <50 | <3 | <1.0 |
| | 14:35 | <50 | <3 | <1.0 |
| ST-5 | 10:40 | <50 | <3 | <1.0 |
| | 14:40 | <50 | <3 | <1.0 |
| ST-6 | 10:50 | <50 | <3 | <1.0 |
| | 15:00 | <50 | <3 | <1.0 |
| ST-7 | 11:00 | <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 31 VOCs Results: May 8th through 9th (Co-located) and May 9th through 10th**

| Sample ID | ST-4-VOC-050918 | | ST-2A-VOC-050818 | | ST-2B-VOC-050818 | | |
|---|---|---|---|---|---|---|---|
| Laboratory ID | 18E0761-01 | | 18E0762-01 | | 18E0762-02 | | Relative Precent |
| Date Sampled | 5/9/18 10:50 - 5/10/18 09:50 | | 5/8/18 09:45 - 5/9/18 08:45 | | 5/8/18 09:45 - 5/9/18 08:45 | | Difference |
| Location | Station 4 | | Station 2 | | Station 2 Duplicate | | Station 2 Pair |
| ***VOCs - TO-15*** | ppbV | ug/m$^3$ | ppbV | ug/m3 | ppbV | ug/m3 | |
| ***Acetone*** | **3.7** | **8.8** | **11** | **26** | **7.5** | **18** | **36.4%** |
| ***Benzene*** | **0.12** | **0.39** | **0.44** | **1.4** | **0.29** | **0.93** | **40.3%** |
| ***Benzyl chloride*** | <0.035 | <0.18 | <0.035 | <0.18 | <0.047 | <0.24 | NC |
| ***Bromodichloromethane*** | <0.035 | <0.24 | <0.035 | <0.24 | <0.047 | <0.31 | NC |
| ***Bromoform*** | <0.035 | <0.36 | <0.035 | <0.36 | <0.047 | <0.49 | NC |
| ***Bromomethane*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.18 | NC |
| ***1,3-Butadiene*** | <0.035 | <0.078 | <0.035 | <0.078 | <0.047 | <0.10 | NC |
| ***2-Butanone (MEK)*** | <1.4 | <4.1 | <1.4 | <4.1 | <1.9 | <5.5 | NC |
| ***Carbon Disulfide*** | <0.35 | <1.1 | <0.35 | <1.1 | <0.47 | <1.5 | NC |
| ***Carbon Tetrachloride*** | **0.07** | **0.44** | **0.074** | **0.47** | **0.076** | **0.48** | **2.1%** |
| ***Chlorobenzene*** | <0.035 | <0.16 | <0.035 | <0.16 | <0.047 | <0.22 | NC |
| ***Chloroethane*** | <0.035 | <0.093 | <0.035 | <0.093 | <0.047 | <0.12 | NC |
| ***Chloroform*** | <0.035 | <0.17 | **0.043** | **0.21** | <0.047 | <0.23 | NC |
| ***Chloromethane*** | **0.58** | **1.2** | **0.59** | **1.2** | **0.57** | **1.2** | **0.0%** |
| ***Cyclohexane*** | <0.035 | <0.12 | **0.49** | **1.7** | **0.22** | **0.76** | **76.4%** |
| ***Dibromochloromethane*** | <0.035 | <0.30 | <0.035 | <0.30 | <0.047 | <0.40 | NC |
| ***1,2-Dibromoethane (EDB)*** | <0.035 | <0.27 | <0.035 | <0.27 | <0.047 | <0.36 | NC |
| ***1,2-Dichlorobenzene*** | <0.035 | <0.21 | <0.035 | <0.21 | <0.047 | <0.28 | NC |
| ***1,3-Dichlorobenzene*** | <0.035 | <0.21 | <0.035 | <0.21 | <0.047 | <0.28 | NC |
| ***1,4-Dichlorobenzene*** | **0.036** | **0.22** | **0.037** | **0.22** | <0.047 | <0.28 | NC |
| ***Dichlorodifluoromethane (Freon 12)*** | **0.34** | **1.7** | **0.35** | **1.7** | **0.4** | **2** | **16.2%** |
| ***1,1-Dichloroethane*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.19 | NC |
| ***1,2-Dichloroethane*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.19 | NC |
| ***1,1-Dichloroethylene*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.19 | NC |
| ***cis-1,2-Dichloroethylene*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.19 | NC |
| ***trans-1,2-Dichloroethylene*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.19 | NC |
| ***1,2-Dichloropropane*** | <0.035 | <0.16 | <0.035 | <0.16 | <0.047 | <0.22 | NC |
| ***cis-1,3-Dichloropropene*** | <0.035 | <0.16 | <0.035 | <0.16 | <0.047 | <0.21 | NC |
| ***trans-1,3-Dichloropropene*** | <0.035 | <0.16 | <0.035 | <0.16 | <0.047 | <0.21 | NC |
| ***1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)*** | <0.035 | <0.25 | <0.035 | <0.25 | <0.047 | <0.33 | NC |
| ***1,4-Dioxane*** | <0.35 | <1.3 | <0.35 | <1.3 | <0.47 | <1.7 | NC |
| ***Ethanol*** | **6.1** | **11** | **19** | **36** | **11** | **22** | **48.3%** |
| ***Ethyl Acetate*** | **0.12** | **0.44** | **0.6** | **2.2** | **0.55** | **2** | **9.5%** |
| ***Ethylbenzene*** | **0.053** | **0.23** | **0.41** | **1.8** | **0.23** | **1** | **57.1%** |
| ***4-Ethyltoluene*** | <0.035 | <0.17 | **0.19** | **0.91** | **0.11** | **0.53** | **52.8%** |
| ***Heptane*** | **0.13** | **0.53** | **0.9** | **3.7** | **0.33** | **1.3** | **96.0%** |
| ***Hexachlorobutadiene*** | <0.035 | <0.37 | <0.035 | <0.37 | <0.047 | <0.50 | NC |
| ***Hexane*** | <1.4 | <4.9 | **1.5** | **5.2** | <1.9 | <6.6 | NC |
| ***2-Hexanone (MBK)*** | <0.035 | <0.14 | <0.035 | <0.14 | <0.047 | <0.19 | NC |
| ***Isopropanol*** | **2.3** | **5.6** | **11** | **27** | **2.6** | **6.5** | **122.4%** |
| ***Methyl tert-Butyl Ether (MTBE)*** | <0.035 | <0.13 | <0.035 | <0.13 | <0.047 | <0.17 | NC |
| ***Methylene Chloride*** | **0.35** | **1.2** | **0.45** | **1.6** | <0.47 | <1.6 | NC |
| ***4-Methyl-2-pentanone (MIBK)*** | <0.035 | <0.14 | **0.09** | **0.37** | **0.09** | **0.37** | NC |
| ***Naphthalene*** | <0.035 | <0.18 | **1.8** | **9.5** | **0.98** | **5.1** | **60.3%** |
| ***Propene*** | <1.4 | <2.4 | <1.4 | <2.4 | <1.9 | <3.2 | NC |
| ***Styrene*** | <0.035 | <0.15 | **0.05** | **0.21** | <0.047 | <0.20 | NC |
| ***1,1,2,2-Tetrachloroethane*** | <0.035 | <0.24 | <0.035 | <0.24 | <0.047 | <0.32 | NC |
| ***Tetrachloroethylene*** | **0.12** | **0.79** | **0.18** | **1.2** | **0.2** | **1.4** | NC |
| ***Tetrahydrofuran*** | <0.035 | <0.10 | <0.035 | <0.10 | <0.047 | <0.14 | NC |
| ***Toluene*** | **0.37** | **1.4** | **2.5** | **9.4** | **1.6** | **6.1** | **42.6%** |
| ***1,2,4-Trichlorobenzene*** | <0.035 | <0.26 | <0.035 | <0.26 | <0.047 | <0.35 | NC |
| ***1,1,1-Trichloroethane*** | <0.035 | <0.19 | <0.035 | <0.19 | <0.047 | <0.26 | NC |
| ***1,1,2-Trichloroethane*** | <0.035 | <0.19 | <0.035 | <0.19 | <0.047 | <0.26 | NC |
| ***Trichloroethylene*** | <0.035 | <0.19 | <0.035 | <0.19 | <0.047 | <0.25 | NC |
| ***Trichlorofluoromethane (Freon 11)*** | **0.23** | **1.3** | **0.29** | **1.6** | **0.29** | **1.6** | **0.0%** |
| ***1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)*** | <0.14 | <1.1 | <0.14 | <1.1 | <0.19 | <1.4 | NC |
| ***1,2,4-Trimethylbenzene*** | **0.079** | **0.39** | **0.58** | **2.9** | **0.33** | **1.6** | **57.8%** |
| ***1,3,5-Trimethylbenzene*** | <0.035 | <0.17 | **0.18** | **0.87** | **0.1** | **0.49** | **55.9%** |
| ***Vinyl Acetate*** | <0.70 | <2.5 | **0.73** | **2.6** | <0.94 | <3.3 | NC |
| ***Vinyl Chloride*** | <0.035 | <0.090 | <0.035 | <0.090 | <0.047 | <0.12 | NC |
| ***m&p-Xylene*** | **0.18** | **0.79** | **1.3** | **5.7** | **0.73** | **3.2** | **56.2%** |
| ***o-Xylene*** | **0.073** | **0.32** | **0.51** | **2.2** | **0.29** | **1.3** | **51.4%** |

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

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

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

where: X1 = original sample, X2 = duplicate sample

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

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

## Meteorological Summary
## May 29th through June 1st, 2018

| May 29th, 2018 * | | |
|---|---|---|
| Wind Direction (°) | Wind Speed (mph) | Temperature (°F) |
| **SE** | **2.62** | **92.1** |

| May 30th, 2018 ** | | |
|---|---|---|
| Wind Direction (°) | Wind Speed (mph) | Temperature (°F) |
| **E** | **5.48** | **80.3** |

| May 31st , 2018 ** | | |
|---|---|---|
| Wind Direction (°) | Wind Speed (mph) | Temperature (°F) |
| **E** | **4.73** | **80.8** |

| June 1st 2018 ** | | |
|---|---|---|
| Wind Direction (°) | Wind Speed (mph) | Temperature (°F) |
| **E** | **2.37** | **65.5** |

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

** Thursday's and Wednesday'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

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #15-081

**MEMORANDUM**

June 4, 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 Monitoring Report, 28 May – 1 June, 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. Photos 1 and 2 show the recent field conditions at the monitors.

## Noise Monitoring Results

Figures 2 through 11 present the hourly Leq noise levels compared with the noise thresholds discussed in the noise monitoring plan[1]. 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[2].

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

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

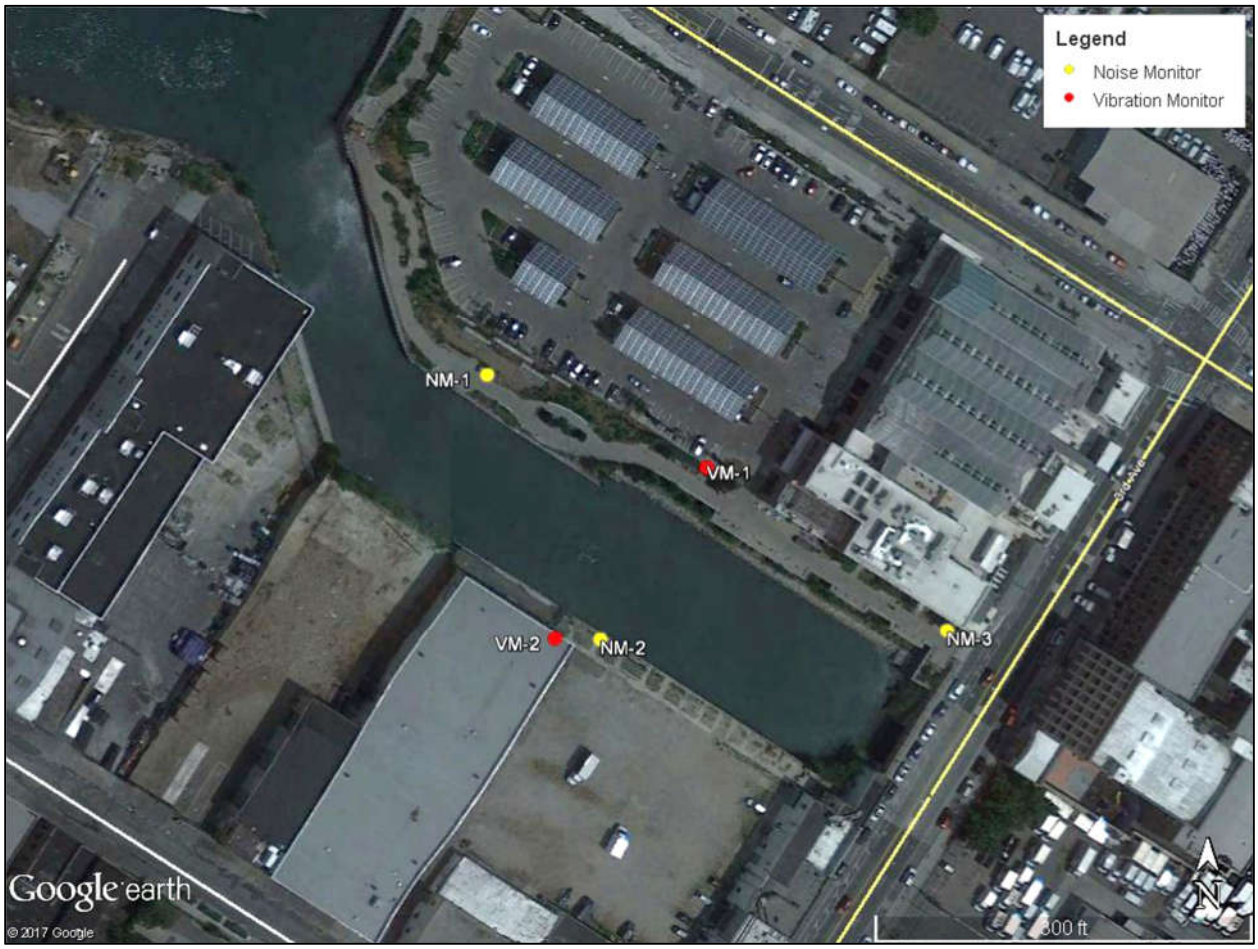



***Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study***

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

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

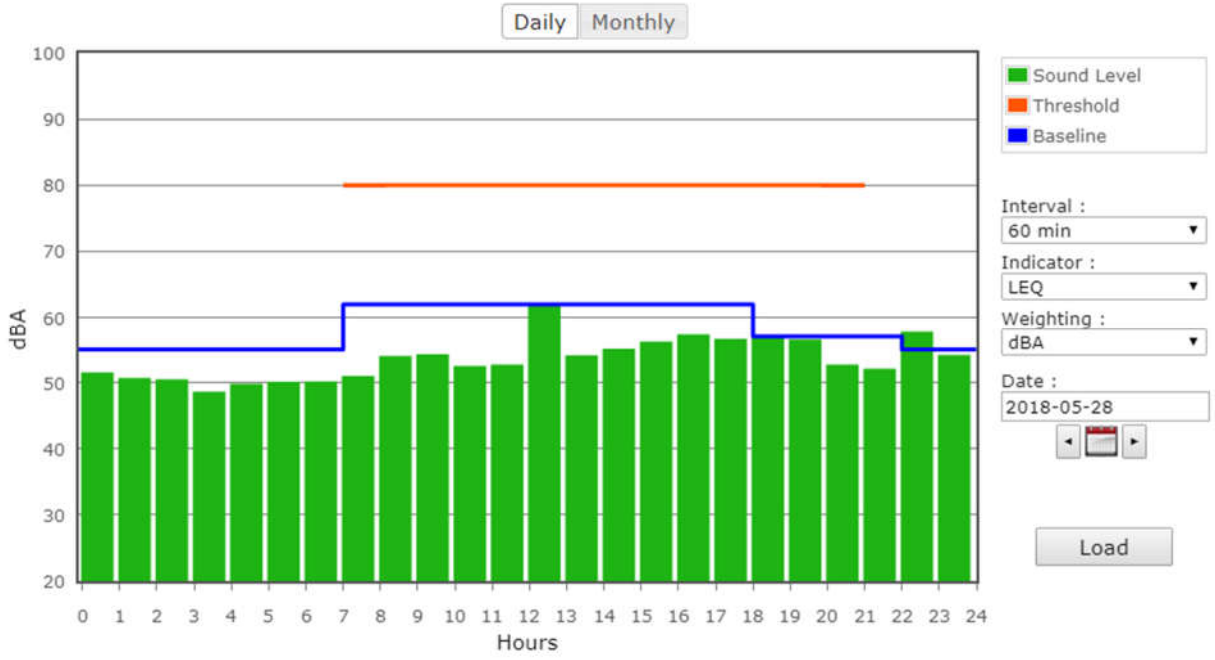



***Figure 2: North Monitor NM-1 on Monday***

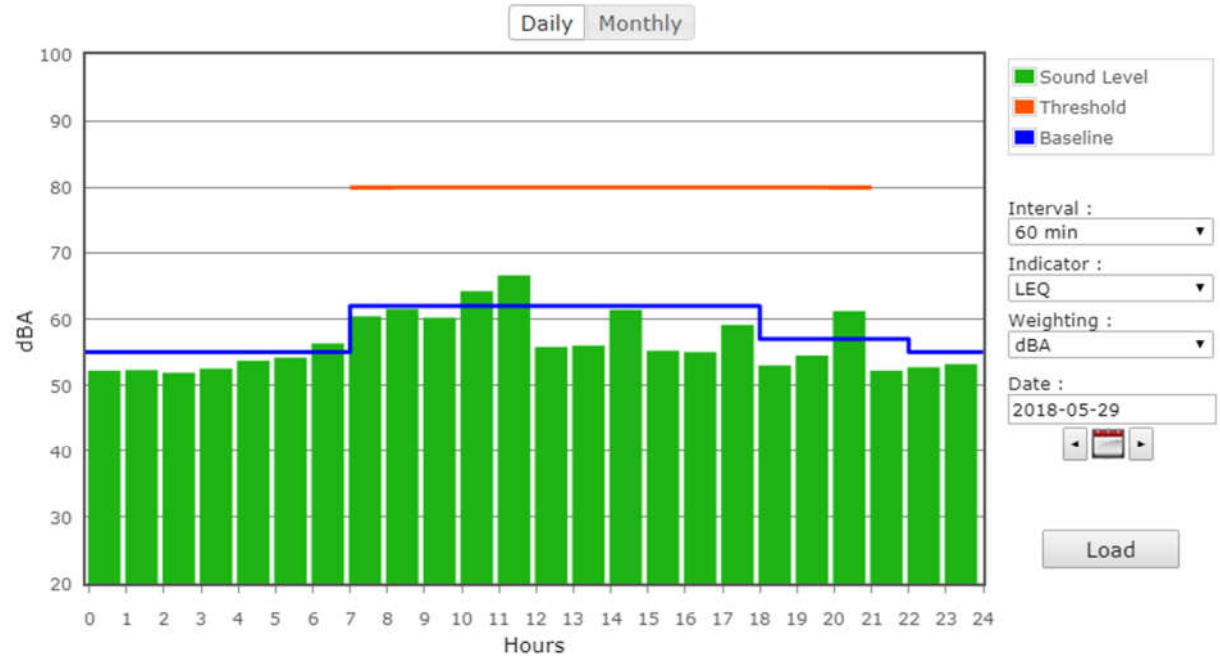



***Figure 3: North Monitor NM-1 on Tuesday***

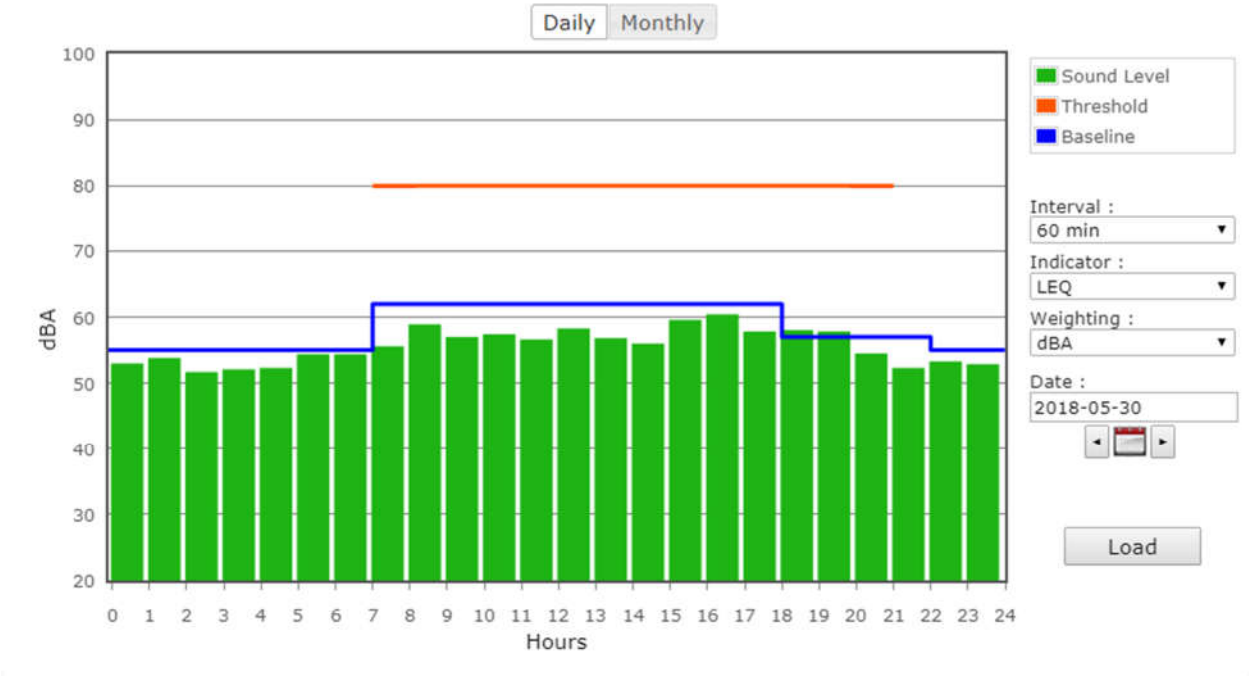



***Figure 4: North Monitor NM-1 on Wednesday***

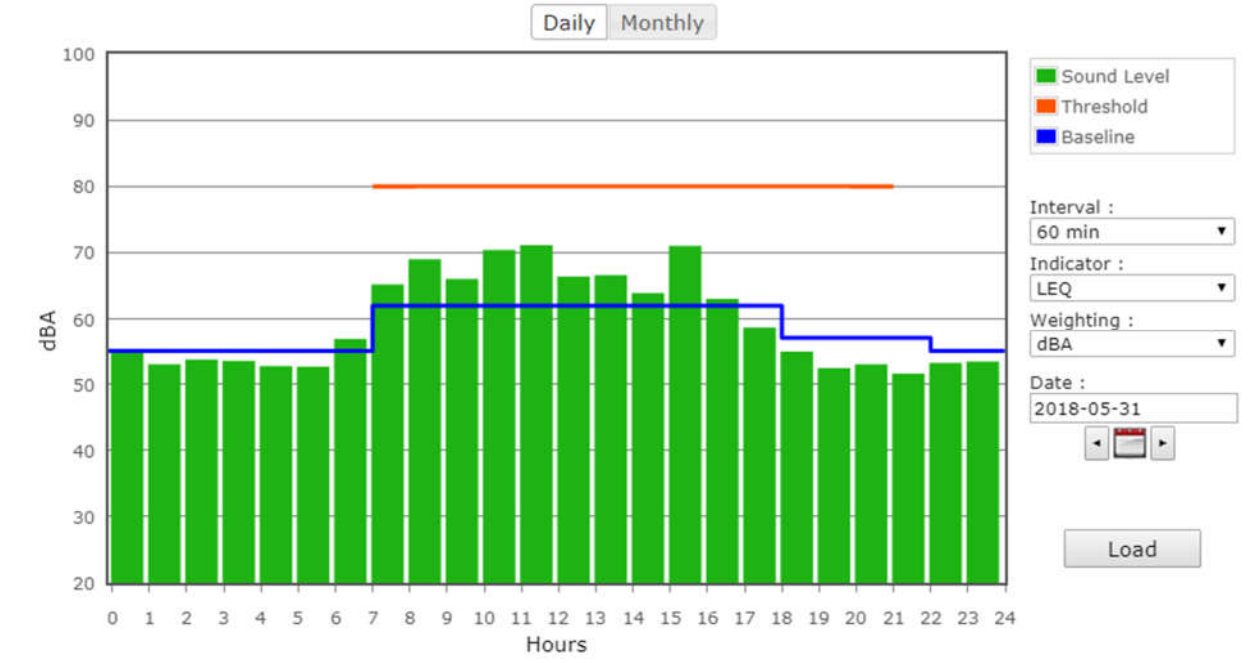



***Figure 5: North Monitor NM-1 on Thursday***

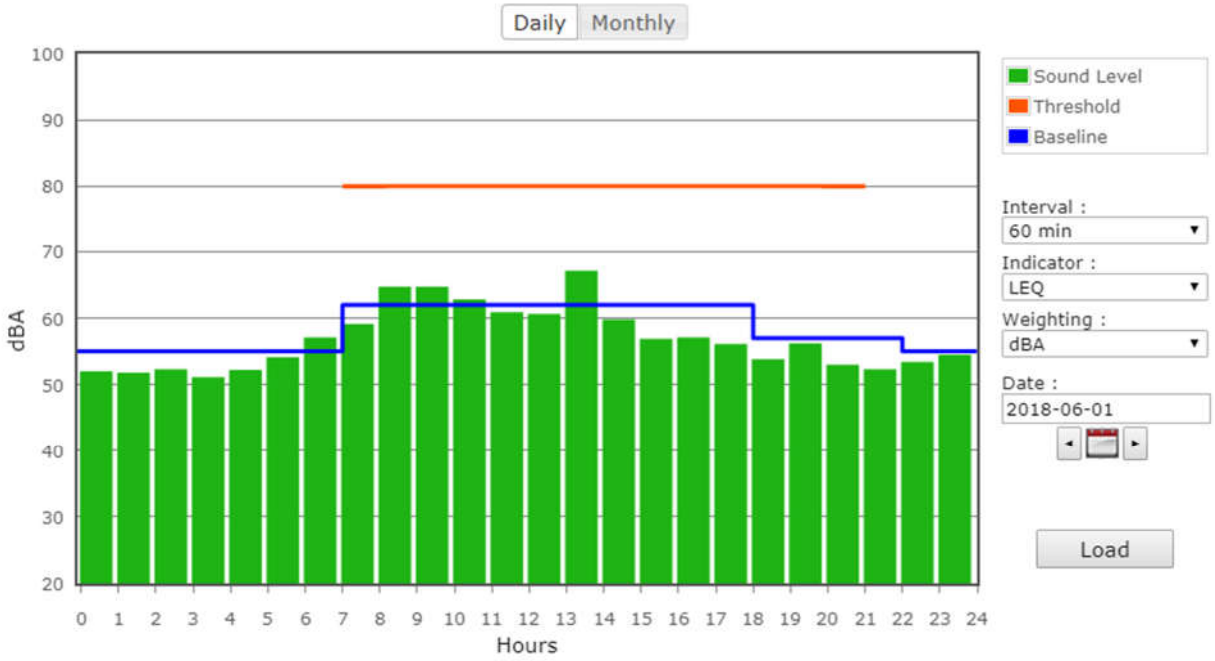



***Figure 6: North Monitor NM-1 on Friday***

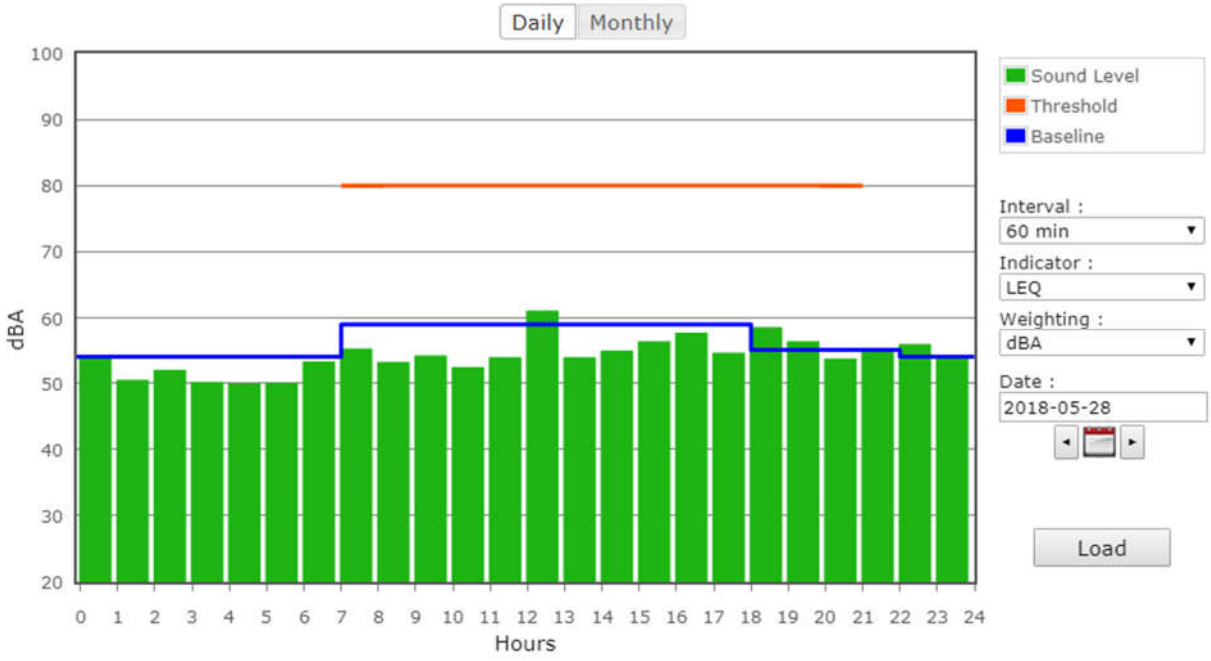



***Figure 7: South Monitor NM-2 on Monday***

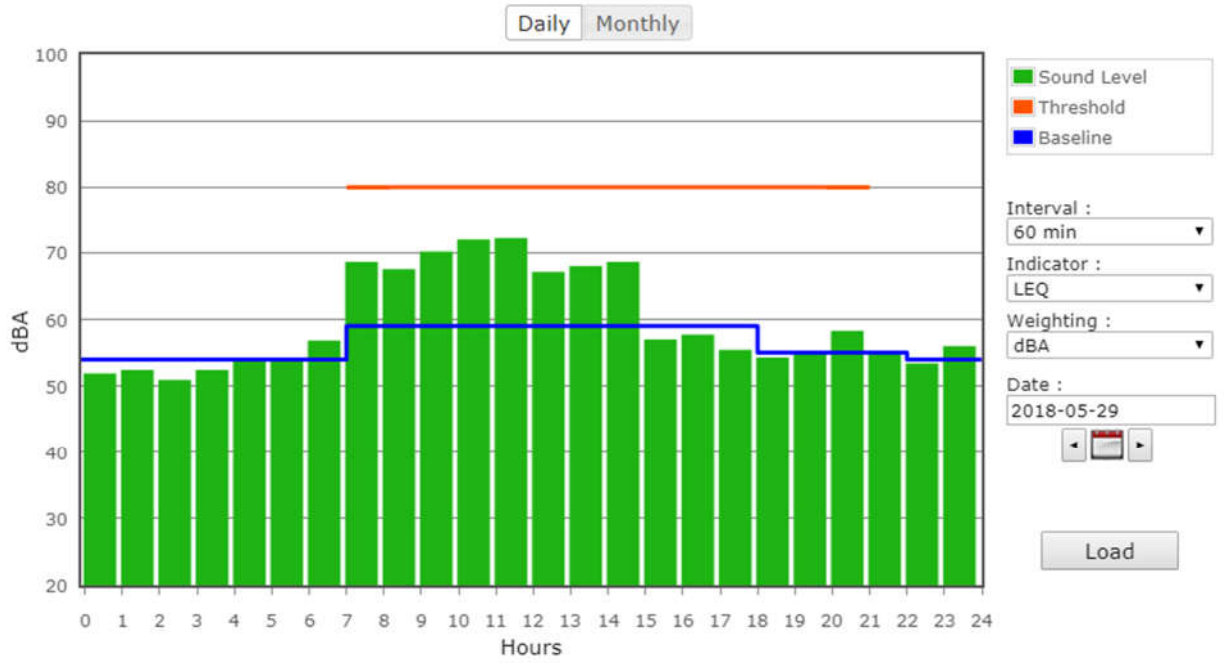



***Figure 8: South Monitor NM-2 on Tuesday***

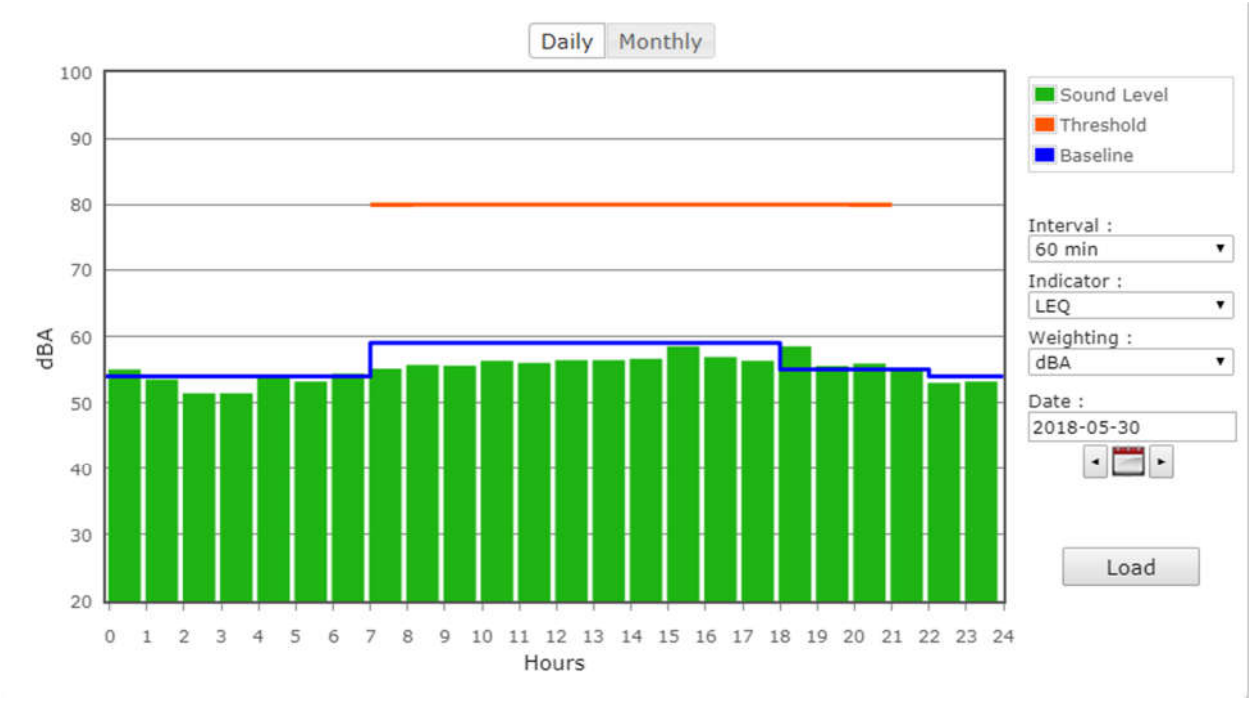



***Figure 9: South Monitor NM-2 on Wednesday***

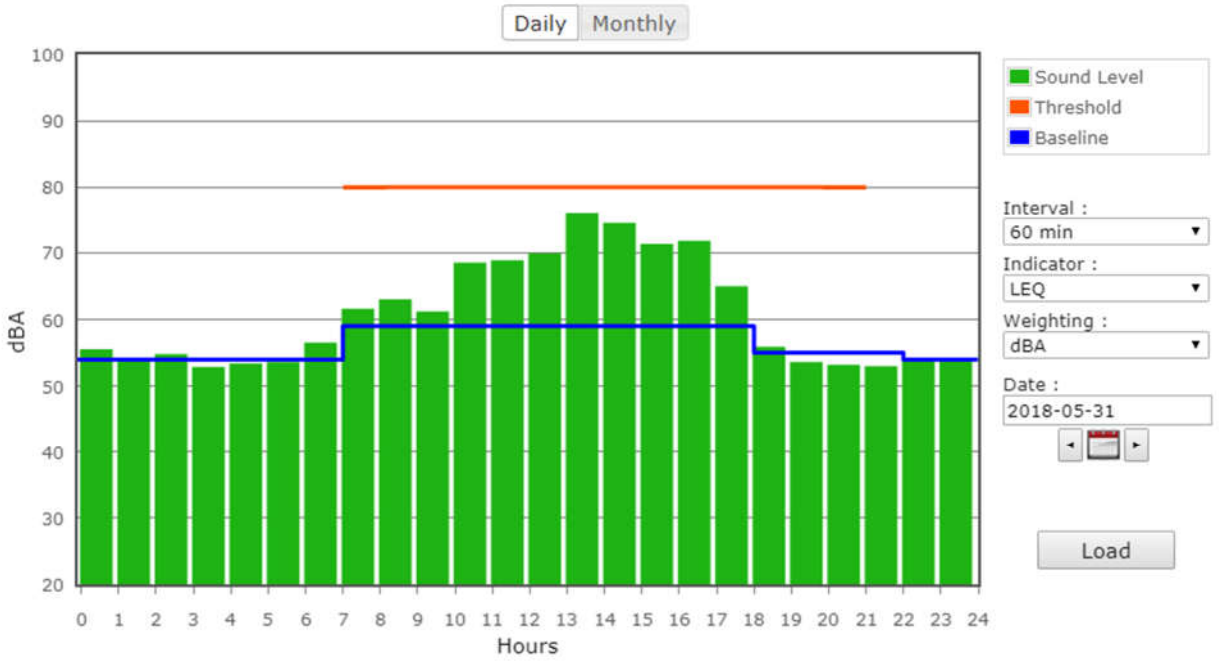



***Figure 10: South Monitor NM-2 on Thursday***

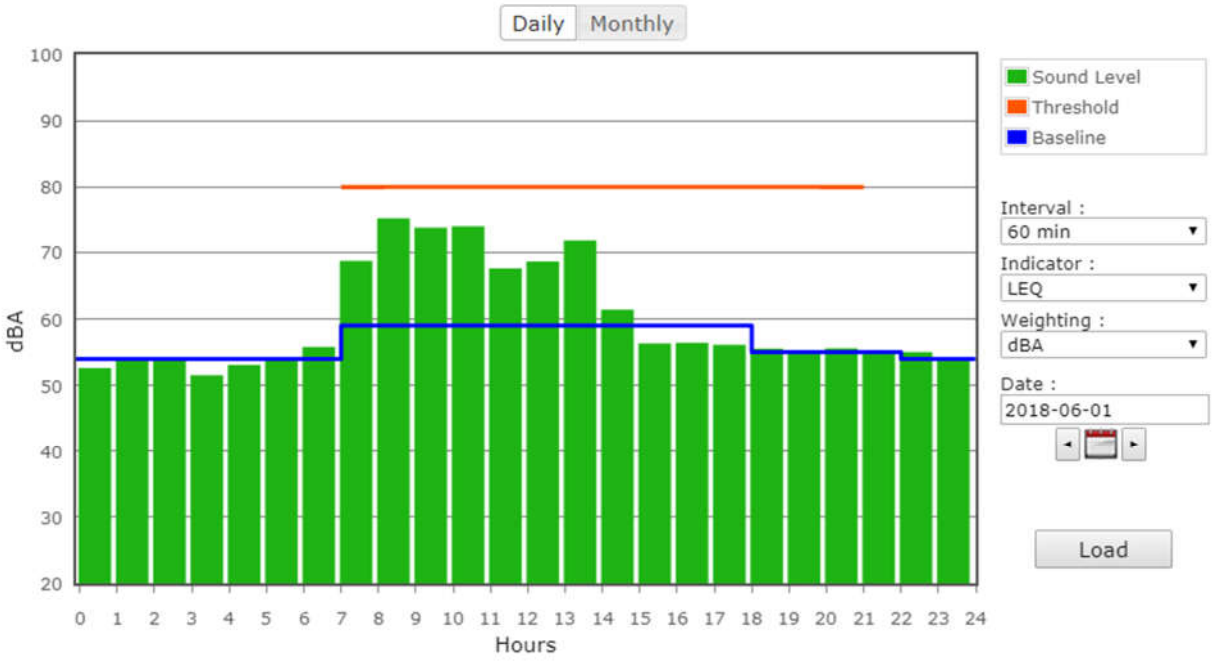



***Figure 11: South Monitor NM-2 on Friday***

**AHRS WEEKLY REPORT**

**ARCHAEOLOGY MONITORING REPORT**

| PROJECT | DATES | PROJECT LOCATION | AHRS PERSONNEL IN FIELD |
|---|---|---|---|
| Turning Basin 4 Pilot Capping and Dredging | 5/28 to 6/1/18 | TB4/Citizens Site & Clean Earth - Claremont | Jonathan Bream |

Week Overview

AHRS is conducting Level 1 archaeological monitoring in coordination with soft sediment dredging in TB4. AHRS archaeologist K. French reviewed photographs of artifacts of large debris staged at Citizens Site and photographs of screened debris from Clean Earth. Project archaeologist J. Bream also conducted a site visit to Clean Earth's Claremont facility 6/1/2018 to review accumulated debris. Additional metal industrial debris and wood debris were segregated for additional washing and review. All other debris reviewed was cleared by AHRS for disposal.

Monday, May 28

Memorial Day – No work scheduled.

Tuesday, May 29

AHRS submitted draft of memo to EPA to clear non-archaeologically sensitive debris for disposal at Clean Earth and Citizens. No photos posted from Clean Earth or Citizens Site.

Wednesday, May 30

No photos posted from Clean Earth or Citizens Site.

Thursday, May 31

No photos posted from Clean Earth or Citizens Site.

Friday, June 1

Jonathan Bream conducted a site visit to the Clean Earth facility. The majority of material reviewed was modern, including modern plastics and brick. Some metal and wood debris pulled out for additional washing and will need to be reviewed again. Reviewed posted photos from Clean Earth of debris screened 5/30 (same debris reviewed by Jonathan Bream). No photos posted from Citizens.

NEXT WEEK

J. Bream will attend the EPA community event Monday, June 4 at 2:30 PM at Citizens Site. Level 2 monitoring of native alluvium is scheduled to begin Tuesday, 6/5. Screening will take place at the Citizens site.

**WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA**

**(NO ACTIVITIES DURING CURENT WEEK)**

**CUMULATIVE DREDGED MATERIAL CHART**

**(NO ACTIVITIES DURING CURENT WEEK)**