WEEKLY PROGRESS REPORT – TRC SOLUTIONS

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

Project number: 283126

Period: May 7 to 11, 2018

Date of Report: May 21, 2018

Rev: 0

Prepared For: Gowanus Environmental Remediation Trust

On-Site Activities Conducted During Week:

Sevenson Environmental Services (SES)

Phase I Dredging:

- Approximately 3,913 cubic yards of sediment dredged (volume provided by Sevenson and accepted as draft by Geosyntec)
- Decanted dredged sediment consolidated into approximate 750 cubic yard scows and transferred to Clean Earth Claremont

Water Treatment and Monitoring

- Discharged 5,954 and 32,296 gallons of treated accumulated stormwater on 05/09 and 05/10/18, respectively.
- No exceedances of continuous monitoring.
- Dredged sediment decanted prior to consolidation for off-site shipment.

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 4,338 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.
- No stabilized material was disposed off-site as daily cover during the period. A total of 527.8 tons of Phase I stabilized material has been shipped to Waste Management Fairless Hills.

Quality Assurance and Control – Geosyntec

- Water treatment system sampling performed on 05/09/18. Laboratory turnaround time is 10 business days.
- No exceedance of the turbidity trigger or action criteria during Phase I dredging.
- Measurements for 5/7/18:
    - Daily average for ambient buoy – 5.7 NTU
    - Daily average for sentinel buoy – 12.0 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 17.4 NTU at 1045.
- Measurements for 5/8/18:
    - Daily average for ambient buoy – 7.2 NTU
    - Daily average for sentinel buoy – 12.5 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 14.6 NTU at 0915.
- Measurements for 5/9/18:
    - Daily average for ambient buoy – 7.1 NTU
    - Daily average for sentinel buoy – 13.1 NTU
    - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 18.3 NTU at 1030.

- Measurements for 5/10/18:
  - Daily average for ambient buoy – 5.8 NTU
  - Daily average for sentinel buoy – 9.9 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 35.9 NTU at 1030.
- Measurements for 5/11/18:
  - Daily average for ambient buoy – 6.1 NTU
  - Daily average for sentinel buoy – 10.5 NTU
  - Greatest difference between ambient and sentinel buoy during 15-minute interval with sentinel buoy exceeding ambient buoy – 23.2 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 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 – 37 $\mu g/m^3$ recorded on 05/09/18
  - Station 2 –38 $\mu g/m^3$ recorded on 05/09/18
  - Station 3 – 48 $\mu g/m^3$ recorded on 05/09/18
  - Station 4 – 32 $\mu g/m^3$ recorded on 05/09/18
  - Station 5 – 52 $\mu g/m^3$ recorded on 05/07/18
  - 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 – 66 ppb recorded on 05/10/18
  - Station 2 – 38 ppb recorded on 05/09/18
  - Station 3 – 135 ppb recorded on 05/10/18
  - Station 4 – <1 ppb recorded throughout the week
  - Station 5 – 47 ppb recorded on 05/07/18
  - Station 6 – <1 ppb recorded throughout the week
  - Station 7 – 3 ppb recorded on 05/08/18
- All real-time readings of hydrogen sulfide, ammonia, or formaldehyde less than instrument reporting limit except for the following readings.
  - *Formaldehyde:*
    - Station 1 at 1500 on 05/08/18 – 1.11 ppb
    - Station 2 at 0905 on 05/07/18 – 6.16 ppb
    - Station 3 at 1500 on 05/07/18 – 1.16 ppb
    - Station 4 at 0920 on 05/09/18 – 3.47 ppb
    - Station 5 at 0820 on 05/08/18 – 10.07 ppb
    - Station 6 at 1530 on 05/07/18 – 1.1 ppb
  - *Hydrogen Sulfide:*
    - Station 2 at 0905 on 05/07/18 – 0.15 ppb
    - Station 5 at 0940 on 05/07/18 – 0.01 ppb
    - Station 4 at 0920 on 05/09/18 – 0.18 ppb
    - Station 7 at 1030 on 05/07/18 – 0.01 ppb
  - *Ammonia:*
    - Station 2 at 0905 on 05/07/18 – 0.1 ppm
    - Station 5 at 0940 on 05/07/18 – 0.07 ppm
    - Station 4 at 0920 on 05/09/18 – 0.08 ppm
    - Station 7 at 1030 on 05/07/18 – 0.07 ppm

- 23-hour sample collected at ST-2 (collocated) on 05/09 through 05/10 and ST-3 on 05/09 through 05/10. Laboratory turnaround time is 10 business days.
- Tabulated laboratory analytical results for 23-hour sample collected at ST-2 on 04/22 through 04/23, ST-7 (collocated) on 04/24 through 04/25, ST-1 on 05/01 through 05/02, and ST-3 on 05/02 through 05/03 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 exceedances of the hourly Leq noise limit of 80 dBA.
- Greatest hourly Leq noise measurements
    - Northern monitor (NM-1) – 73.9 dBA during 0900-1000 on 05/10/18
    - Southern monitor (NM-2) – 73.3 dBA during 1000-1100 on 05/09/18

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

- Reviewed photographs of screened debris from Phase I dredging at Clean Earth Claremont and Citizens Site. Conduct site inspection of segregated materials at Clean Earth Claremont. Wood debris, examples of spooled industrial fabric, and red brick with maker's stamp identified as requiring additional cleaning, recording, and measuring, along with possible coordination with SHPO and EPA.

Two-Week Look Ahead:

Sevenson:

- Continue Phase I 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.
- 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 system.

TRC CAMP Monitoring – Perform community air monitoring.

Wilson Ihrig – Perform noise monitoring,

AHRS:

- Finalize report of inspection of screened debris from Access Dredging in preparation for off-site disposal.
- Review photographs and perform inspection of screened debris from Phase I dredging at Clean Earth Claremont and 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

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

Photo No.	Date
001	05-07-2018

Description
Dredging material from TB-4.

Photo No.	Date
002	05-07-2018

Description
Dredging in the northeast corner of the sheet piled area.

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

Photo No.	Date
003	05-08-2018

Description
Loading scow with dredged material.

Photo No.	Date
004	05-08-2018

Description
Dredging with PC-800.

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

Photo No.	Date
005	05-09-2018

Description
Tugboat rotating barge in the main canal before re-entering TB-4 with the excavator in the forward position.

Photo No.	Date
006	05-09-2018

Description
Removing full scow from TB-4, going to Citizens property for consolidation in larger scow.

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

Photo No.	Date
007	05-10-2018

Description
Consolidating dredged sediment from small scow to larger scow for transport to Clean Earth Claremont.

Photo No.	Date
008	05-10-2018

Description
Full scow delivery to Citizens Site for transfer to larger scow. Note lack of water to be decanted.

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

Photo No.	Date
009	05-11-2018

Description
Full scow to be transferred to Citizens site along with empty scow being loaded.

Photo No.	Date
010	05-11-2018

Description
Geobags to assist in solids removal from water decanted from dredged sediment and sheet piling to be decontaminated on asphalt pad.

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 7th, 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.
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1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of May 7th, 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 7th. 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.

Geosyntec consultants

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

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.

Ewing, NJ | October 2017

Figure 1

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 7th to May 11th, 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 May 10 the sentinel buoy detected a one-time spike in turbidity of 46.4 NTU at 10:30 and on May 11 the sentinel buoy detected a one-time spike in turbidity of 30.7 NTU at 11:30.

2.1 Monday, May 7th, 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)
5/7/2018 7:00	5.4	4.8	N	5/7/2018 12:15	5.5	10.6	Y
5/7/2018 7:15	4.8	4.3	N	5/7/2018 12:30	5.0	13.6	Y
5/7/2018 7:30	7.1	5.0	N	5/7/2018 12:45	5.0	7.3	Y
5/7/2018 7:45	7.9	9.4	Y	5/7/2018 13:00	5.2	9.5	Y
5/7/2018 8:00	7.8	12.3	Y	5/7/2018 13:15	5.2	6.8	Y
5/7/2018 8:15	6.7	13.3	Y	5/7/2018 13:30	4.2	8.6	Y
5/7/2018 8:30	7.0	17.0	Y	5/7/2018 13:45	4.6	9.4	Y
5/7/2018 8:45	5.9	20.1	Y	5/7/2018 14:00	4.2	8.8	Y
5/7/2018 9:00	6.9	16.3	Y	5/7/2018 14:15	4.8	7.3	Y
5/7/2018 9:15	9.3	17.6	Y	5/7/2018 14:30	4.4	4.0	N
5/7/2018 9:30	9.0	15.3	Y	5/7/2018 14:45	4.4	3.7	N
5/7/2018 9:45	8.3	16.9	Y	5/7/2018 15:00	4.5	4.2	N
5/7/2018 10:00	6.8	20.0	Y	5/7/2018 15:15	5.5	9.1	Y
5/7/2018 10:15	7.0	16.0	Y	5/7/2018 15:30	5.7	10.0	Y
5/7/2018 10:30	6.7	17.5	Y	5/7/2018 15:45	5.0	13.3	Y
5/7/2018 10:45	6.7	24.1	Y	5/7/2018 16:00	4.6	13.5	Y
5/7/2018 11:00	6.2	17.1	Y	5/7/2018 16:15	4.2	13.8	Y
5/7/2018 11:15	5.1	20.4	Y	5/7/2018 16:30	4.0	12.7	Y
5/7/2018 11:30	5.1	15.1	Y	5/7/2018 16:45	4.8	7.5	Y
5/7/2018 11:45	4.9	12.9	Y	5/7/2018 17:00	4.7	10.3	Y
5/7/2018 12:00	5.3	12.9	Y				

Average	5.7	12.0	Y
Maximum	9.3	24.1	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period
Values highlighted in green are greater than 20 NTU above the ambient buoy reading
Values highlighted in blue are greater than 40 NTU above the ambient buoy reading

2.2 Tuesday, May 8th, 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)
5/8/2018 7:00	7.2	5.2	N	5/8/2018 12:15	6.1	14.1	Y
5/8/2018 7:15	7.9	5.6	N	5/8/2018 12:30	5.2	10.2	Y
5/8/2018 7:30	7.1	6.7	N	5/8/2018 12:45	5.5	12.9	Y
5/8/2018 7:45	5.9	20.0	Y	5/8/2018 13:00	5.3	11.7	Y
5/8/2018 8:00	6.2	11.1	Y	5/8/2018 13:15	5.5	10.1	Y
5/8/2018 8:15	7.2	16.4	Y	5/8/2018 13:30	5.0	16.0	Y
5/8/2018 8:30	12.1	18.9	Y	5/8/2018 13:45	5.6	10.4	Y
5/8/2018 8:45	14.3	22.4	Y	5/8/2018 14:00	5.1	7.8	Y
5/8/2018 9:00	13.7	28.0	Y	5/8/2018 14:15	4.9	12.5	Y
5/8/2018 9:15	12.1	26.7	Y	5/8/2018 14:30	4.7	9.6	Y
5/8/2018 9:30	11.2	17.8	Y	5/8/2018 14:45	4.2	10.5	Y
5/8/2018 9:45	9.7	21.7	Y	5/8/2018 15:00	5.3	11.7	Y
5/8/2018 10:00	8.5	12.9	Y	5/8/2018 15:15	5.5	3.3	N
5/8/2018 10:15	8.5	12.8	Y	5/8/2018 15:30	5.4	4.3	N
5/8/2018 10:30	8.6	14.1	Y	5/8/2018 15:45	8.0	13.2	Y
5/8/2018 10:45	8.6	13.8	Y	5/8/2018 16:00	5.9	10.6	Y
5/8/2018 11:00	7.7	11.4	Y	5/8/2018 16:15	5.2	11.1	Y
5/8/2018 11:15	8.1	11.5	Y	5/8/2018 16:30	6.3	5.3	N
5/8/2018 11:30	7.9	13.7	Y	5/8/2018 16:45	4.8	6.2	Y
5/8/2018 11:45	6.9	11.2	Y	5/8/2018 17:00	4.9	7.5	Y
5/8/2018 12:00	8.2	13.5	Y				

Average	7.2	12.5	Y
Maximum	14.3	28.0	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period
Values highlighted in green are greater than 20 NTU above the ambient buoy reading
Values highlighted in blue are greater than 40 NTU above the ambient buoy reading

2.3 Wednesday, May 9th, 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)
5/9/2018 7:00	6.6	5.5	N	5/9/2018 12:15	6.9	10.7	Y
5/9/2018 7:15	6.2	6.9	Y	5/9/2018 12:30	5.3	13.3	Y
5/9/2018 7:30	6.2	6.0	N	5/9/2018 12:45	7.3	13.9	Y
5/9/2018 7:45	6.2	5.4	N	5/9/2018 13:00	6.6	11.8	Y
5/9/2018 8:00	6.9	6.1	N	5/9/2018 13:15	5.1	15.2	Y
5/9/2018 8:15	6.6	7.2	Y	5/9/2018 13:30	6.6	10.9	Y
5/9/2018 8:30	7.6	6.8	N	5/9/2018 13:45	5.7	14.1	Y
5/9/2018 8:45	8.8	13.0	Y	5/9/2018 14:00	5.7	9.4	Y
5/9/2018 9:00	8.2	22.2	Y	5/9/2018 14:15	4.6	13.1	Y
5/9/2018 9:15	9.8	16.3	Y	5/9/2018 14:30	5.0	8.7	Y
5/9/2018 9:30	12.8	26.0	Y	5/9/2018 14:45	4.9	11.7	Y
5/9/2018 9:45	14.2	29.0	Y	5/9/2018 15:00	4.8	10.7	Y
5/9/2018 10:00	11.5	27.5	Y	5/9/2018 15:15	4.8	12.3	Y
5/9/2018 10:15	10.7	19.7	Y	5/9/2018 15:30	5.3	14.1	Y
5/9/2018 10:30	9.7	28.0	Y	5/9/2018 15:45	4.2	4.4	Y
5/9/2018 10:45	9.3	20.4	Y	5/9/2018 16:00	4.4	3.4	N
5/9/2018 11:00	7.7	19.9	Y	5/9/2018 16:15	5.9	3.3	N
5/9/2018 11:15	8.1	20.5	Y	5/9/2018 16:30	5.7	3.8	N
5/9/2018 11:30	8.3	16.2	Y	5/9/2018 16:45	5.7	12.1	Y
5/9/2018 11:45	7.3	13.2	Y	5/9/2018 17:00	5.9	12.1	Y
5/9/2018 12:00	7.5	14.2	Y				

Average	7.1	13.1	Y
Maximum	14.2	29.0	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period
Values highlighted in green are greater than 20 NTU above the ambient buoy reading
Values highlighted in blue are greater than 40 NTU above the ambient buoy reading

2.4 Thursday, May 10th, 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)
5/10/2018 7:00	3.6	3.0	N	5/10/2018 12:15	6.0	24.4	Y
5/10/2018 7:15	3.5	3.5	N	5/10/2018 12:30	6.0	16.1	Y
5/10/2018 7:30	3.7	2.9	N	5/10/2018 12:45	5.4	13.4	Y
5/10/2018 7:45	3.7	2.6	N	5/10/2018 13:00	6.1	17.2	Y
5/10/2018 8:00	3.9	2.5	N	5/10/2018 13:15	5.4	11.4	Y
5/10/2018 8:15	3.8	2.6	N	5/10/2018 13:30	5.0	4.7	N
5/10/2018 8:30	4.4	3.2	N	5/10/2018 13:45	4.9	4.0	N
5/10/2018 8:45	5.0	6.8	Y	5/10/2018 14:00	5.4	6.8	Y
5/10/2018 9:00	5.0	5.8	Y	5/10/2018 14:15	6.9	11.1	Y
5/10/2018 9:15	5.7	7.2	Y	5/10/2018 14:30	5.5	5.5	N
5/10/2018 9:30	5.4	4.6	N	5/10/2018 14:45	5.1	8.1	Y
5/10/2018 9:45	6.4	9.9	Y	5/10/2018 15:00	5.7	5.2	N
5/10/2018 10:00	7.5	14.5	Y	5/10/2018 15:15	4.8	5.5	Y
5/10/2018 10:15	8.0	16.0	Y	5/10/2018 15:30	5.0	4.9	N
5/10/2018 10:30	10.5	46.4	Y	5/10/2018 15:45	5.0	4.2	N
5/10/2018 10:45	11.0	29.5	Y	5/10/2018 16:00	5.5	4.4	N
5/10/2018 11:00	11.2	20.7	Y	5/10/2018 16:15	5.2	6.2	Y
5/10/2018 11:15	8.7	15.4	Y	5/10/2018 16:30	5.0	4.1	N
5/10/2018 11:30	8.0	13.0	Y	5/10/2018 16:45	4.6	5.7	Y
5/10/2018 11:45	7.3	17.8	Y	5/10/2018 17:00	4.2	4.4	Y
5/10/2018 12:00	6.2	11.2	Y				

Average	5.8	9.9	Y
Maximum	11.2	46.4	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period
Values highlighted in green are greater than 20 NTU above the ambient buoy reading
Values highlighted in blue are greater than 40 NTU above the ambient buoy reading

2.5 Friday, May 11th, 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)
5/11/2018 7:00	5.0	3.0	N	5/11/2018 12:15	6.6	15.6	Y
5/11/2018 7:15	4.7	3.3	N	5/11/2018 12:30	6.0	13.1	Y
5/11/2018 7:30	5.0	4.0	N	5/11/2018 12:45	6.2	16.2	Y
5/11/2018 7:45	5.2	5.6	Y	5/11/2018 13:00	6.4	14.0	Y
5/11/2018 8:00	5.4	5.9	Y	5/11/2018 13:15	6.2	12.8	Y
5/11/2018 8:15	5.0	8.4	Y	5/11/2018 13:30	6.3	7.2	Y
5/11/2018 8:30	4.5	18.5	Y	5/11/2018 13:45	6.4	14.3	Y
5/11/2018 8:45	5.5	18.8	Y	5/11/2018 14:00	6.2	13.9	Y
5/11/2018 9:00	4.9	16.6	Y	5/11/2018 14:15	6.4	8.4	Y
5/11/2018 9:15	5.0	2.7	N	5/11/2018 14:30	6.6	19.5	Y
5/11/2018 9:30	4.8	3.1	N	5/11/2018 14:45	5.9	9.3	Y
5/11/2018 9:45	5.2	3.0	N	5/11/2018 15:00	6.1	7.4	Y
5/11/2018 10:00	4.9	4.7	N	5/11/2018 15:15	7.3	4.9	N
5/11/2018 10:15	4.9	7.7	Y	5/11/2018 15:30	5.4	5.1	N
5/11/2018 10:30	7.8	4.2	N	5/11/2018 15:45	5.1	4.2	N
5/11/2018 10:45	7.7	10.6	Y	5/11/2018 16:00	7.7	6.0	N
5/11/2018 11:00	7.9	16.5	Y	5/11/2018 16:15	5.4	8.4	Y
5/11/2018 11:15	8.8	17.8	Y	5/11/2018 16:30	7.1	4.9	N
5/11/2018 11:30	7.5	30.7	Y	5/11/2018 16:45	5.6	6.9	Y
5/11/2018 11:45	7.6	24.8	Y	5/11/2018 17:00	6.0	7.1	Y
5/11/2018 12:00	7.1	21.9	Y				

Average	6.1	10.5	Y
Maximum	8.8	30.7	Y

Notes:

No exceedances to rolling average threshold criteria during reporting period

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

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

3. HANDHELD MEASURMENTS

No handheld measurements were collected for this reporting period.

4. SUMMARY OF VISUAL OBSERVATIONS

Sheen was frequently observed outside of the turning basin beyond the air curtain in the main channel of the canal. This sheen was observed each day prior to the start of dredging and so in-waterway construction activities were determined to not be the source of the sheen. This sheen was consistent with background conditions of the main channel of the canal.

5. REPORT OF EXCEEDANCES

Although no exceedances of the water quality monitoring threshold criteria were met during the reporting period, improvements to best management practices (BMPs) were implemented as a proactive measure to prevent any future exceedances. Procedures for cleaning the decks of the pocket scows were revised to minimize the presence of residual sediment on the decks of the pocket scows during shuttling between the turning basin and the staging area.

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
31st Weekly Monitoring Period
Summary Report:

May 7th, through May 11th, 2018

Report Contents

- Executive Summary
- Daily Data Summary Report – PM_{10}/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 31 Monitoring Period
May 7th through May 11th, 2018

The following report summarizes site air monitoring activities for the Week 31 monitoring period from May 7th through May 11th, 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 31 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 31 monitoring period twice daily. The results of these measurements are shown in Table 1.

During the Week 31 monitoring period of May 7th through May 11th, 2018 TRC conducted Volatile Organic Compounds (USEPA Method TO-15) sampling at Stations 2 and 4. Co-located samples (ST-2A and ST-2B) were collected at Station 2 on May 8th, through May 9th, 2018 and the ST-4 sample was collected on May 9th, through May 10th, 2018. The 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 7 during Week 29. ST-2 was collected on April 22nd, through April 23rd, 2018. Co-located samples (ST-7A and ST-7B) were collected at Station 7 on April 24th, through April 25th, 2018. Sampling results were either not detected above the laboratory detection limit or consistent with concentrations detected during background monitoring conducted between August 28th and 31st, 2017.

Site activities which were conducted at the Citizen Property on May 7th through May 11th, 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
- Huntington Street entrance pad removed and replaced

Site activities which were conducted at the 4th St Turning Basin Area of the Canal on May 7th through May 11th, 2018 included the following:

- Dredged approximately 3,913 cubic yards of soft sediments

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)
05/07/2018 06:30 AM - 05/07/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	32	ppb	Max.	9	ug/m^3
Avg.	9	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	24	ppb	Max.	12	ug/m^3
Avg.	3	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	49	ppb	Max.	18	ug/m^3
Avg.	<1	ppb	Avg.	5	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	12	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.	47	ppb	Max.	52	ug/m^3
Avg.	5	ppb	Avg.	3	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)
05/08/2018 00:00 AM - 05/08/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	32	ppb	Max.	13	ug/m^3
Avg.	11	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	26	ppb	Max.	18	ug/m^3
Avg.	6	ppb	Avg.	8	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	58	ppb	Max.	<1	ug/m^3
Avg.	2	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.	3	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.	3	ppb	Max.	<1	ug/m^3
Avg.	2	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)
05/09/2018 00:00 AM - 05/09/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	37	ug/m^3
Avg.	18	ppb	Avg.	12	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	38	ppb	Max.	38	ug/m^3
Avg.	10	ppb	Avg.	14	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	54	ppb	Max.	48	ug/m^3
Avg.	14	ppb	Avg.	19	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	32	ug/m^3
Avg.	<1	ppb	Avg.	15	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})

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)
05/10/2018 00:00 AM - 05/10/2018 23:45 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	66	ppb	Max.	25	ug/m^3
Avg.	11	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	4	ppb	Max.	30	ug/m^3
Avg.	<1	ppb	Avg.	9	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	135	ppb	Max.	28	ug/m^3
Avg.	29	ppb	Avg.	12	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.	9	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})

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)
05/11/2018 00:00 AM - 05/11/2018 18:00 PM

Station 1 (Citizen Property near Construction Trailers)

TVOC			PM_{10}		
Max.	33	ppb	Max.	18	ug/m^3
Avg.	15	ppb	Avg.	6	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 2 (Citizen Property near Pad Area)

TVOC			PM_{10}		
Max.	25	ppb	Max.	23	ug/m^3
Avg.	1	ppb	Avg.	7	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 3 (Whole Foods Property NW Riverwalk Location)

TVOC			PM_{10}		
Max.	28	ppb	Max.	35	ug/m^3
Avg.	6	ppb	Avg.	11	ug/m^3
Exc.	0	total	Exc.	0	Total

Station 4 (Whole Foods Property Central Riverwalk Location)

TVOC			PM_{10}		
Max.	<1	ppb	Max.	24	ug/m^3
Avg.	<1	ppb	Avg.	4	ug/m^3
Exc.	0	total	Exc.	0	Total

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

TVOC			PM_{10}		
Max.	8	ppb	Max.	5	ug/m^3
Avg.	3	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

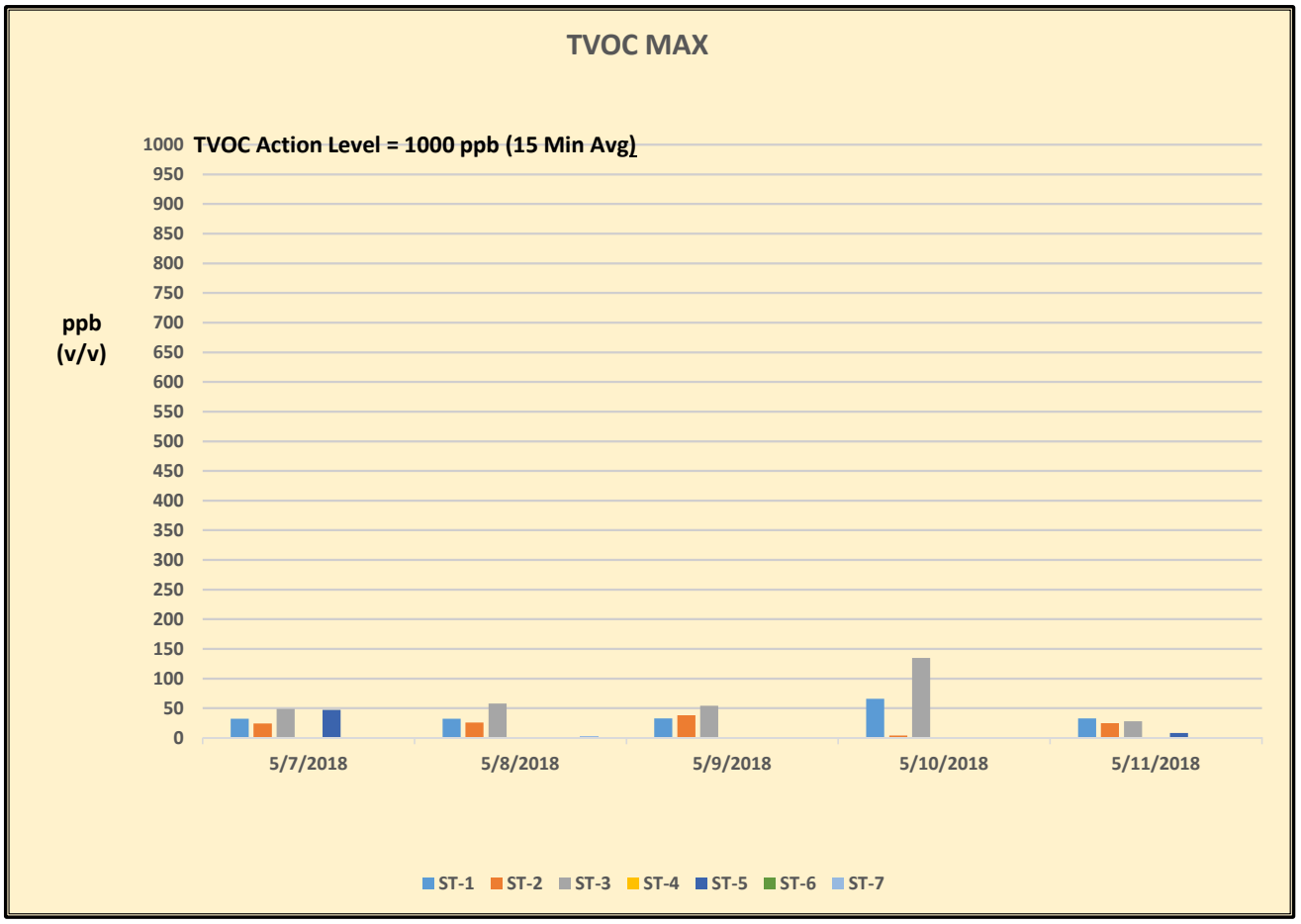
TVOC – Total Volatile Organic Compounds PM_{10} – Particulates as PM_{10}

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 31



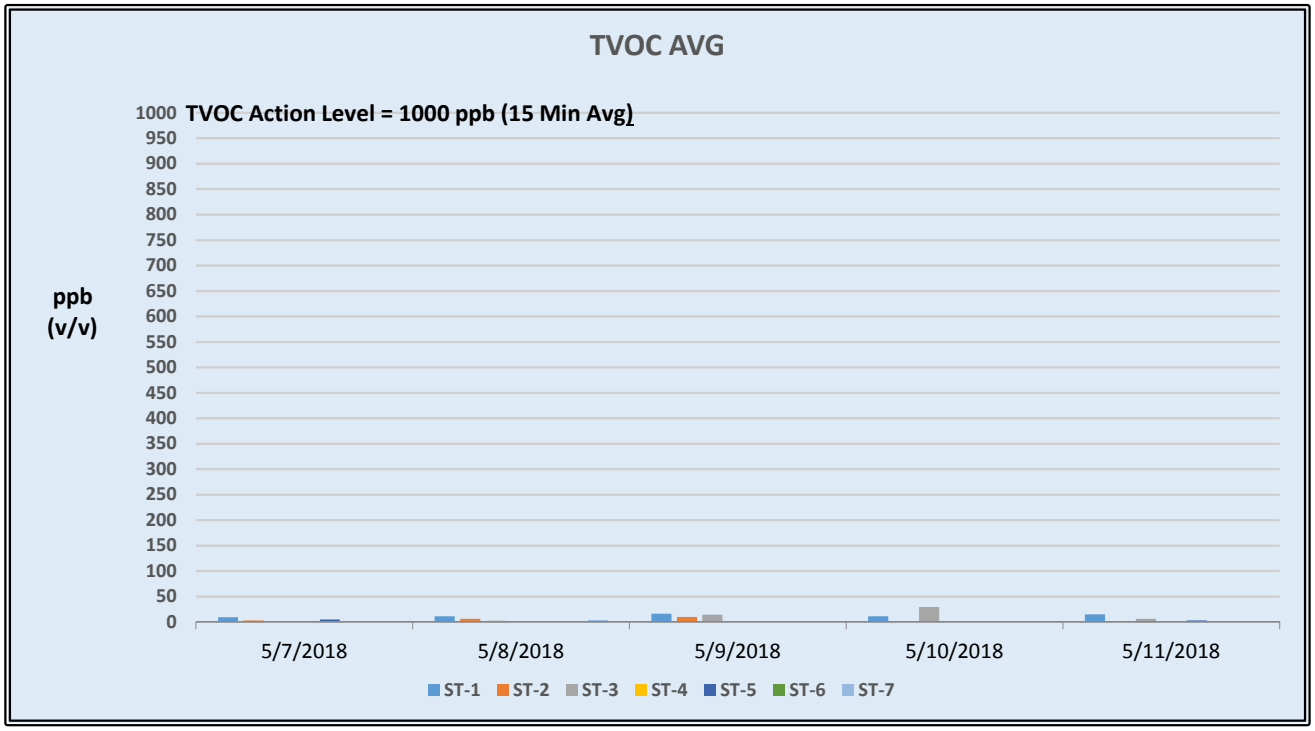
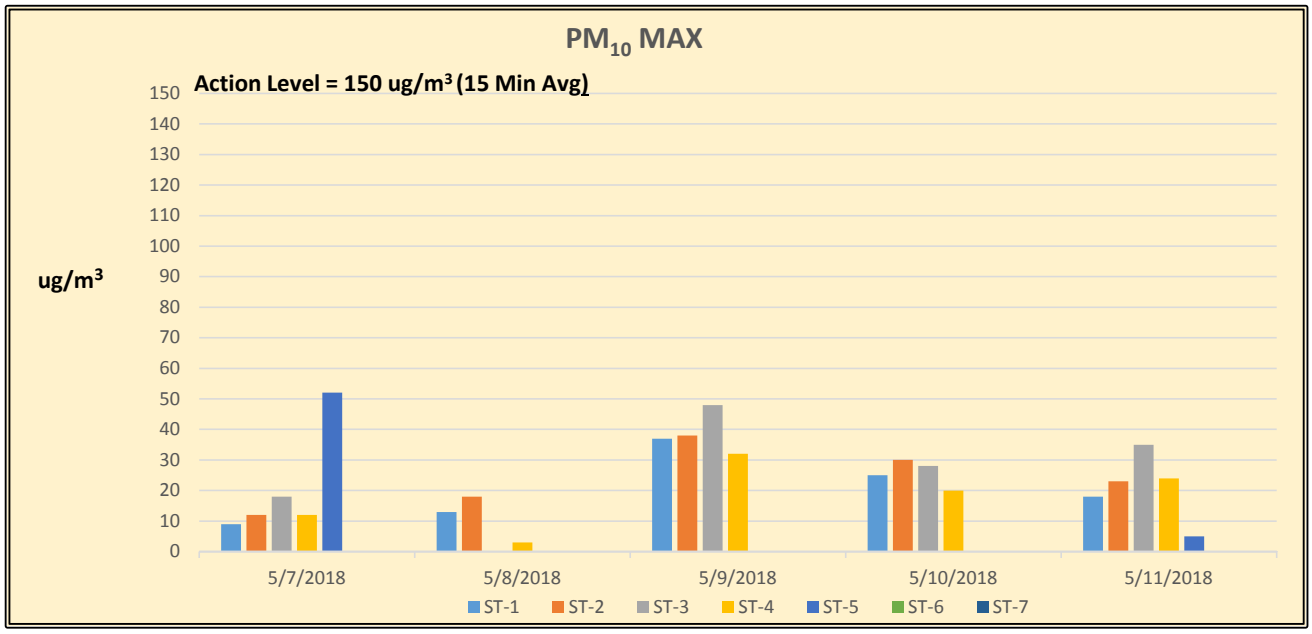
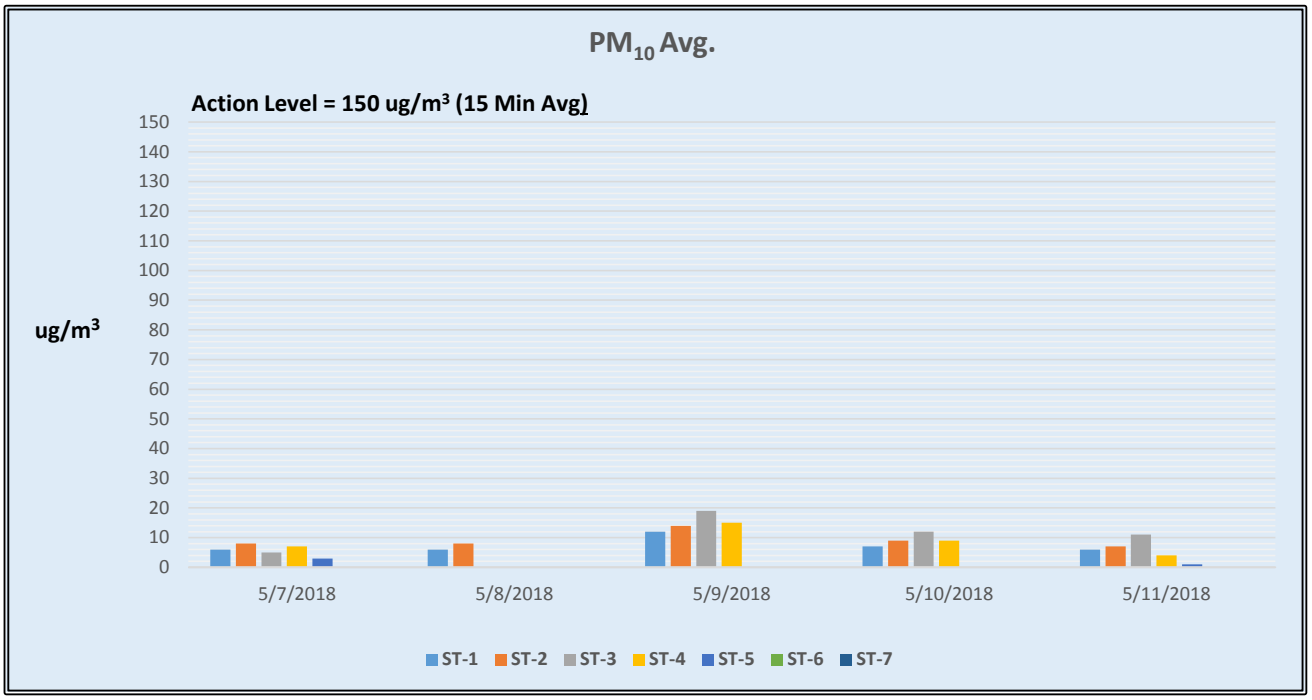
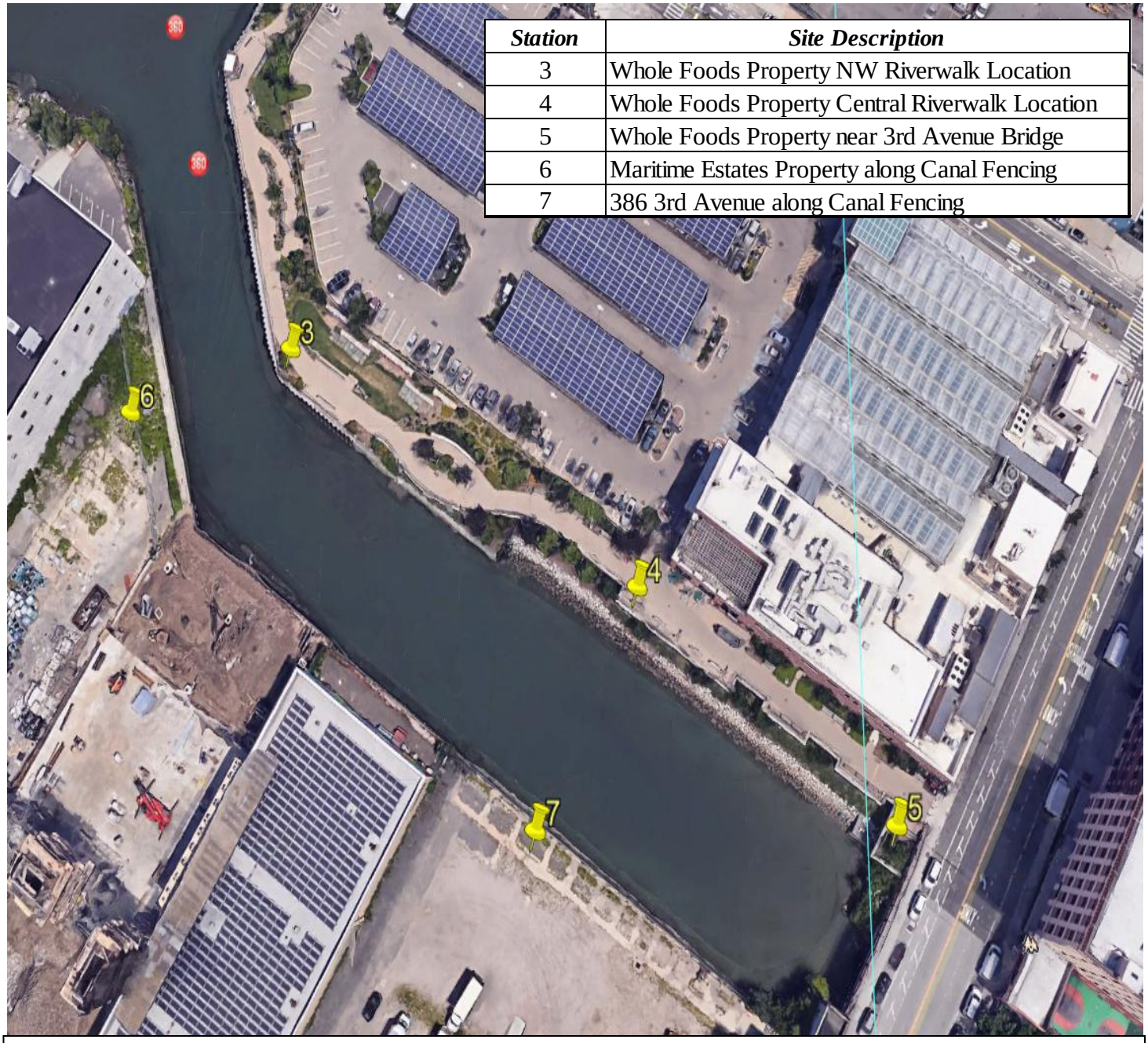


Figure 2
Gowanus Canal Superfund Site - TB4 Dredging and Capping Pilot Program
TRC CAMP PM_{10} Monitoring Data - Week 31







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 31
Summary of Additional Periodic (Daily) Monitoring Data

May 7th, 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
	14:40	<50	<3	<1.0
ST-3	9:25	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-4	9:30	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-6	10:10	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-7	10:30	<50	<3	<1.0
	15:30	<50	<3	<1.0

May 8th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	7:30	<50	<3	<1.0
	15:00	<50	<3	<1.0
ST-2	7:45	<50	<3	<1.0
	15:05	<50	<3	<1.0
ST-3	8:30	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-4	8:15	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-5	8:20	<50	<3	<1.0
	15:40	<50	<3	<1.0
ST-6	8:45	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-7	9:00	<50	<3	<1.0
	16:10	<50	<3	<1.0

Table 1

Week 31
Summary of Additional Periodic (Daily) Monitoring Data

May 9th, 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	9:40	<50	<3	<1.0
	15:30	<50	<3	<1.0
ST-7	9:50	<50	<3	<1.0
	15:40	<50	<3	<1.0

May 10th, 2018				
Station Id	Time	Formaldehyde (CHO) (ppb)*	Hydrogen Sulfide (H_2S) (ppb)*	Ammonia (NH_3) (ppm)**
ST-1	8:45	<50	<3	<1.0
	13:30	<50	<3	<1.0
ST-2	8:50	<50	<3	<1.0
	13:35	<50	<3	<1.0
ST-3	9:10	<50	<3	<1.0
	13:45	<50	<3	<1.0
ST-4	9:25	<50	<3	<1.0
	13:50	<50	<3	<1.0
ST-5	9:40	<50	<3	<1.0
	13:55	<50	<3	<1.0
ST-6	10:00	<50	<3	<1.0
	14:15	<50	<3	<1.0
ST-7	10:15	<50	<3	<1.0
	14:30	<50	<3	<1.0

Table 1

Week 31
Summary of Additional Periodic (Daily) Monitoring Data

May 11th, 2018				
Station Id	**Time**	**Formaldehyde (CHO) (ppb)***	**Hydrogen Sulfide (H_2S) (ppb)***	**Ammonia (NH_3) (ppm)****
ST-1	9:00	<50	<3	<1.0
	14:45	<50	<3	<1.0
ST-2	9:15	<50	<3	<1.0
	14:50	<50	<3	<1.0
ST-3	9:45	<50	<3	<1.0
	15:10	<50	<3	<1.0
ST-4	9:50	<50	<3	<1.0
	15:20	<50	<3	<1.0
ST-5	9:55	<50	<3	<1.0
	15:35	<50	<3	<1.0
ST-6	10:15	<50	<3	<1.0
	15:50	<50	<3	<1.0
ST-7	10:40	<50	<3	<1.0
	16:10	<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 29 VOCs Results: April 22nd through 23rd and April 24th through 25th (Co-located)

Sample ID	ST-2-VOC-042218		ST-7A-VOC-042318		ST-7B-VOC-042318		
Laboratory ID	18D1237-01		18D1317-01		18D1317-02		Relative Precent
Date Sampled	4/22/18 11:15 - 4/23/18 10:15		4/24/18 14:30 - 4/25/18 13:30		4/24/18 14:30 - 4/25/18 13:30		Difference
Location	Station 2		Station 7		Station 7 Duplicate		Station 7 Pair
	ppbV	ug/m^3	ppbV	ug/m^3	ppbV	ug/m^3	
VOCs - TO-15							
Acetone	**6.8**	**16**	**7.2**	**17**	**4.5**	**11**	**46.2%**
Benzene	**0.18**	**0.59**	**0.18**	**0.56**	**0.091**	**0.29**	**65.7%**
Benzyl chloride	<0.030	<0.16	<0.035	<0.18	<0.040	<0.21	NC
Bromodichloromethane	<0.030	<0.20	<0.035	<0.24	<0.040	<0.27	NC
Bromoform	<0.030	<0.31	<0.035	<0.36	<0.040	<0.41	NC
Bromomethane	<0.030	<0.12	<0.035	<0.14	<0.040	<0.16	NC
1,3-Butadiene	<0.030	<0.066	<0.035	<0.078	<0.040	<0.088	NC
2-Butanone (MEK)	<1.2	<3.5	<1.4	<4.1	<1.6	<4.7	NC
Carbon Disulfide	<0.30	<0.93	<0.35	<1.1	<0.40	<1.2	NC
Carbon Tetrachloride	**0.08**	**0.51**	**0.072**	**0.45**	**0.075**	**0.47**	**4.1%**
Chlorobenzene	<0.030	<0.14	<0.035	<0.16	<0.040	<0.18	NC
Chloroethane	<0.030	<0.079	<0.035	<0.093	<0.040	<0.11	NC
Chloroform	**0.035**	**0.17**	**0.051**	**0.25**	**0.047**	**0.23**	**8.2%**
Chloromethane	**0.83**	**1.7**	**0.66**	**1.4**	**0.72**	**1.5**	**8.7%**
Cyclohexane	<0.030	<0.10	**0.2**	**0.67**	<0.040	< 0.14	NC
Dibromochloromethane	<0.030	<0.26	<0.035	<0.30	<0.040	<0.34	NC
1,2-Dibromoethane (EDB)	<0.030	<0.23	<0.035	<0.27	<0.040	<0.31	NC
1,2-Dichlorobenzene	<0.030	<0.18	<0.035	<0.21	<0.040	<0.24	NC
1,3-Dichlorobenzene	<0.030	<0.18	<0.035	<0.21	<0.040	<0.24	NC
1,4-Dichlorobenzene	**0.054**	**0.32**	<0.035	<0.21	<0.040	<0.24	NC
Dichlorodifluoromethane (Freon 12)	**0.25**	**1.2**	**0.17**	**0.86**	**0.22**	**1.1**	**25.6%**
1,1-Dichloroethane	<0.030	<0.12	<0.035	<0.14	<0.040	<0.16	NC
1,2-Dichloroethane	<0.030	<0.12	<0.035	<0.14	<0.040	<0.16	NC
1,1-Dichloroethylene	<0.030	<0.12	<0.035	<0.14	<0.040	<0.16	NC
cis-1,2-Dichloroethylene	<0.030	<0.12	<0.035	<0.14	<0.040	<0.16	NC
trans-1,2-Dichloroethylene	<0.030	<0.12	<0.035	<0.14	<0.040	<0.16	NC
1,2-Dichloropropane	<0.030	<0.14	**0.038**	**0.18**	<0.040	<0.18	NC
cis-1,3-Dichloropropene	<0.030	<0.14	<0.035	<0.16	<0.040	<0.18	NC
trans-1,3-Dichloropropene	<0.030	<0.14	<0.035	<0.16	<0.040	<0.18	NC
1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon 114)	<0.030	<0.21	<0.035	<0.25	<0.040	<0.28	NC
1,4-Dioxane	<0.30	<1.1	<0.35	<1.3	<0.40	<1.4	NC
Ethanol	**7.8**	**15**	**8.1**	**15**	**3.5**	**6.7**	**79.3%**
Ethyl Acetate	**0.084**	**0.3**	**5.9**	**21** J	**0.67**	**2.4** J	**159.2%**
Ethylbenzene	**0.053**	**0.23**	**0.087**	**0.38**	<0.040	<0.17	NC
4-Ethyltoluene	<0.030	<0.15	<0.035	<0.17	<0.040	<0.20	NC
Heptane	**0.097**	**0.4**	**0.18**	**0.75**	**0.11**	**0.44**	**48.3%**
Hexachlorobutadiene	<0.030	<0.32	<0.035	<0.37	<0.040	<0.43	NC
Hexane	<1.2	<4.2	**1.6**	**5.6**	<1.6	<5.6	NC
2-Hexanone (MBK)	**0.095**	**0.39**	<0.035	<0.14	**0.082**	**0.33**	NC
Isopropanol	**1.5**	**3.6**	**5.3**	**13**	<1.6	<3.9	NC
Methyl tert-Butyl Ether (MTBE)	<0.030	<0.11 J-	<0.035	<0.13	<0.040	<0.14	NC
Methylene Chloride	**1.2**	**4**	**1.3**	**4.4**	<0.40	<1.4	NC
4-Methyl-2-pentanone (MIBK)	**0.092**	**0.38** J	**0.14**	**0.58**	<0.040	<0.16	NC
Naphthalene	**0.077**	**0.41**	**0.059**	**0.31** J+	<0.040	<0.21	NC
Propene	<1.2	<2.1	<1.4	<2.4	<1.6	<2.8	NC
Styrene	<0.030	<0.13	**0.23**	**0.98**	<0.040	<0.17	NC
1,1,2,2-Tetrachloroethane	<0.030	<0.21	<0.035	<0.24	<0.040	<0.27	NC
Tetrachloroethylene	**0.087**	**0.59**	**0.038**	**0.26**	<0.040	<0.27	NC
Tetrahydrofuran	<0.030	<0.088	<0.035	<0.10	<0.040	<0.12	NC
Toluene	**0.45**	**1.7**	**2.5**	**9.3** J	**0.26**	**0.96** J	**162.3%**
1,2,4-Trichlorobenzene	<0.12	<0.89	<0.035	<0.26	<0.040	<0.30	NC
1,1,1-Trichloroethane	<0.030	<0.16	<0.035	<0.19	<0.040	<0.22	NC
1,1,2-Trichloroethane	<0.030	<0.16	<0.035	<0.19	<0.040	<0.22	NC
Trichloroethylene	<0.030	<0.16	<0.035	<0.19	<0.040	<0.21	NC
Trichlorofluoromethane (Freon 11)	**0.25**	**1.4**	**0.25**	**1.4**	**0.24**	**1.4**	**4.1%**
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	<0.12	<0.92	<0.14	<1.1	<0.16	<1.2	NC
1,2,4-Trimethylbenzene	**0.092**	**0.45**	<0.035	<0.17	<0.040	<0.20	NC
1,3,5-Trimethylbenzene	<0.030	<0.15	<0.035	<0.17	<0.040	<0.20	NC
Vinyl Acetate	<0.60	<02.1	<0.70	<2.5	<0.80	<2.8	NC
Vinyl Chloride	<0.030	<0.077	<0.035	<0.090	<0.040	<0.10	NC
m&p-Xylene	**0.16**	**0.71**	**0.29**	**1.2**	**0.11**	**0.48**	**90.0%**
o-Xylene	**0.062**	**0.27**	**0.11**	**0.47**	**0.04**	**0.17**	**93.3%**

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
J: The results for 4-methyl-2-pentanone (MIBK), toluene, and ethyl acetate are estimated quanitities.
The associated numerical values are the approximate concentration of the analyte in the sample.
J-: The results for methyl tert-butyl ether (MTBE) are estimated and may be biased low.
J+: The result for naphthalene is an estimated quantity, but may be biased high.

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

Meteorological Summary
May 7th through May 11th, 2018

May 7th, 2018 *		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	**5.16**	**64.9**

May 8th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
E	**4.06**	**60.4**

May 9th , 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	**3.43**	**61.5**

May 10th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
ESE	**4.28**	**58.1**

May 11th, 2018 **		
Wind Direction (°)	Wind Speed (mph)	Temperature (°F)
W	**2.42**	**66.0**

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

** Tuesday's 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 18:00.

WILSON IHRIG WEEKLY NOISE AND VIBRATION MONITORING REPORT

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

WI #15-081

MEMORANDUM

May 14, 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, 7 May – 11 May, 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.

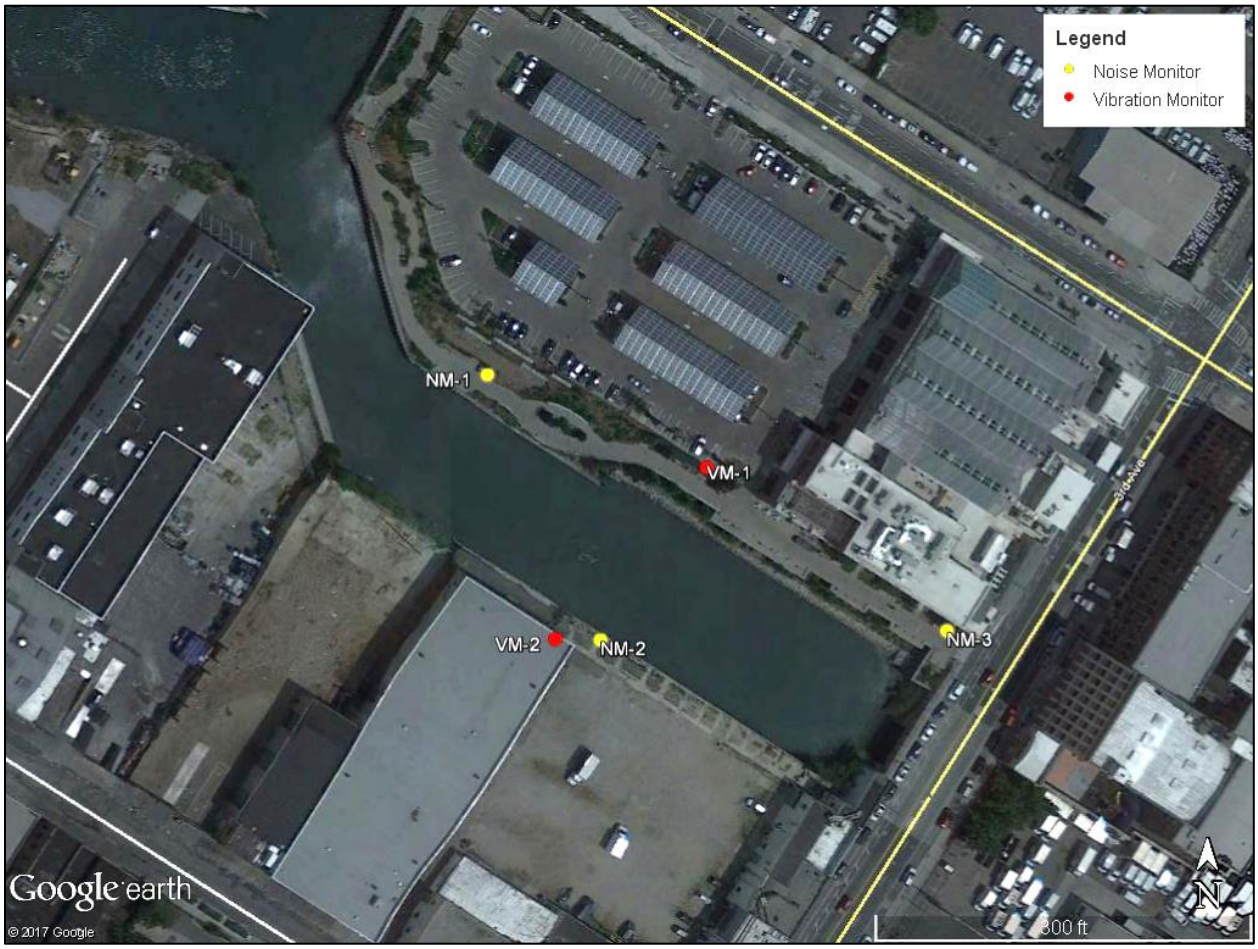


Figure 1: Long-term Noise and Vibration Monitoring Locations for Gowanus TB4 Dredging and Capping Pilot Study

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

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

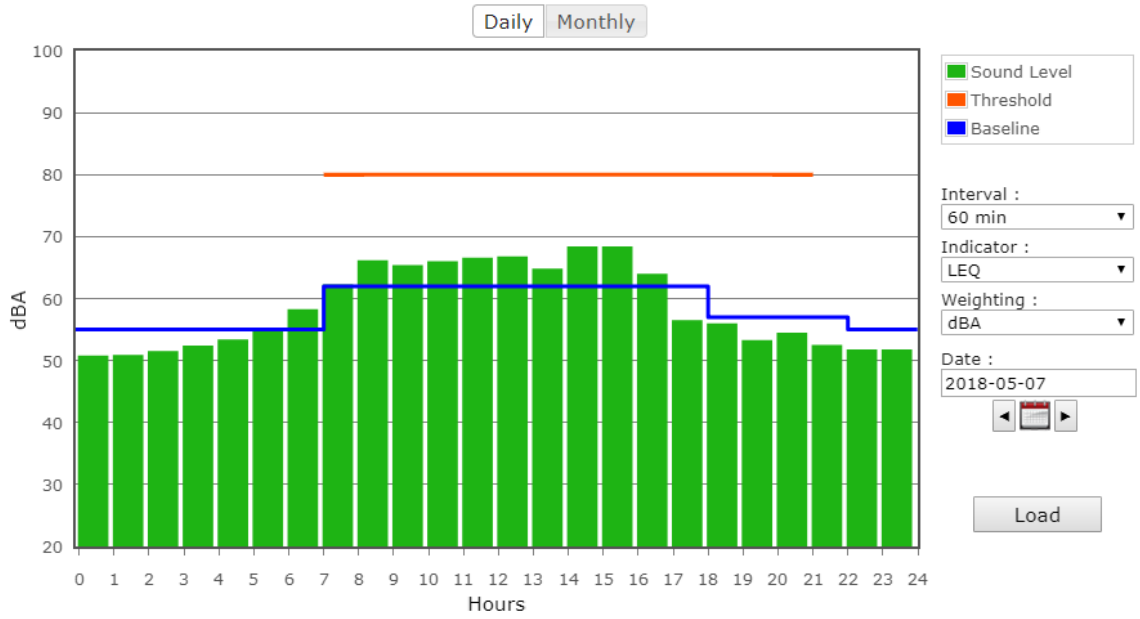


Figure 2: North Monitor NM-1 on Monday

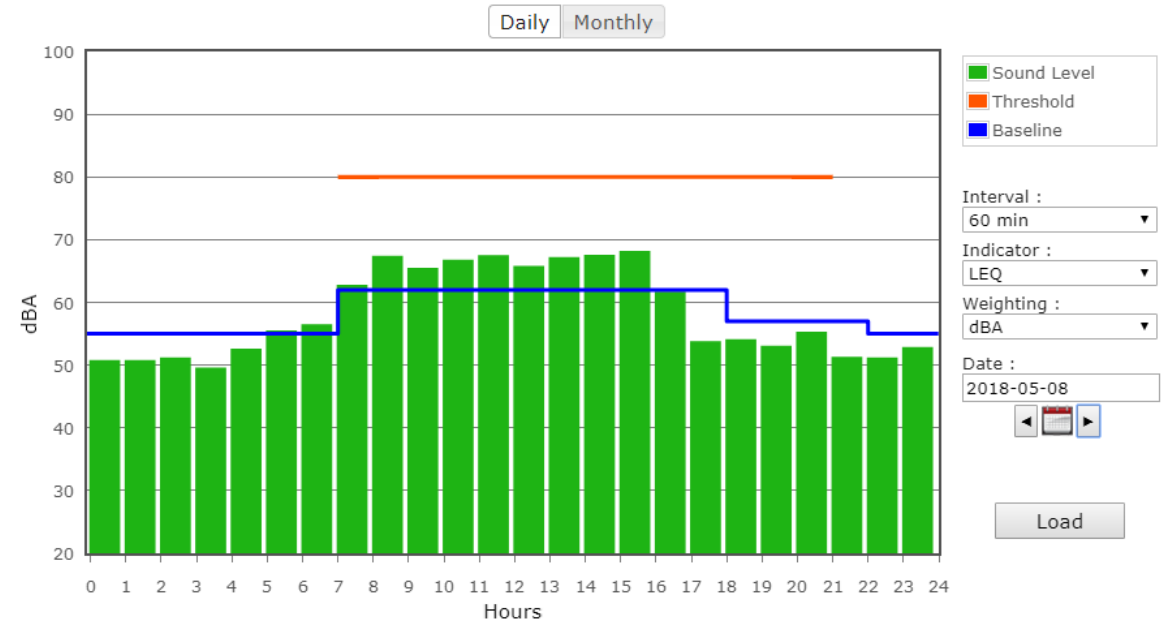


Figure 3: North Monitor NM-1 on Tuesday

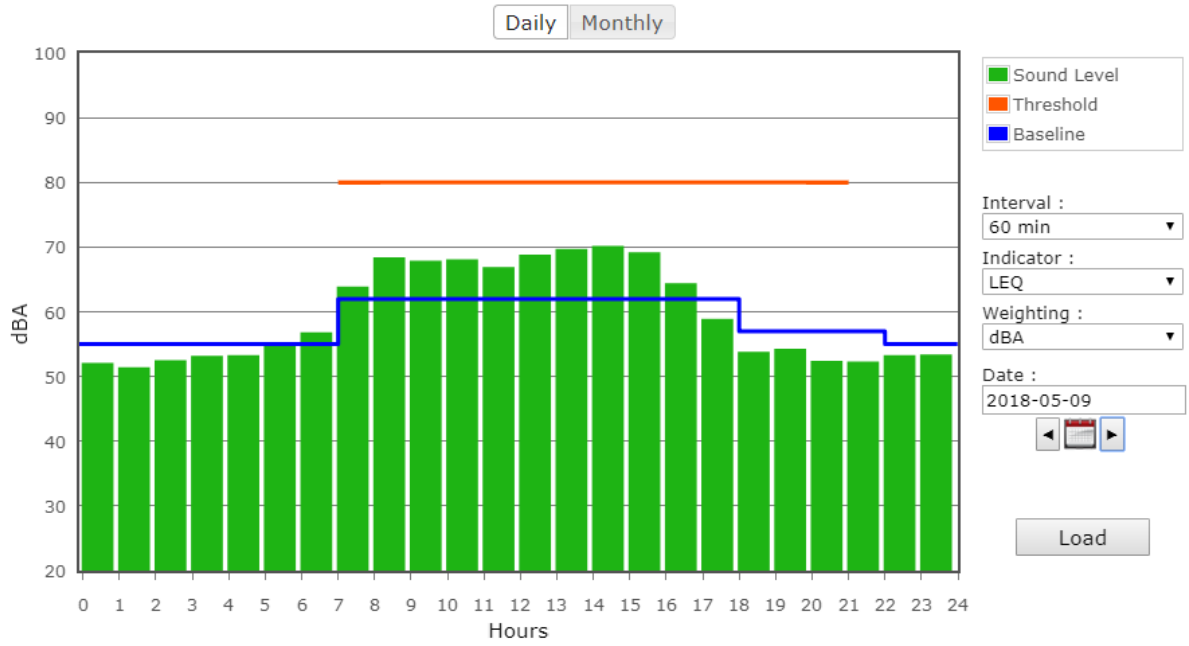


Figure 4: North Monitor NM-1 on Wednesday

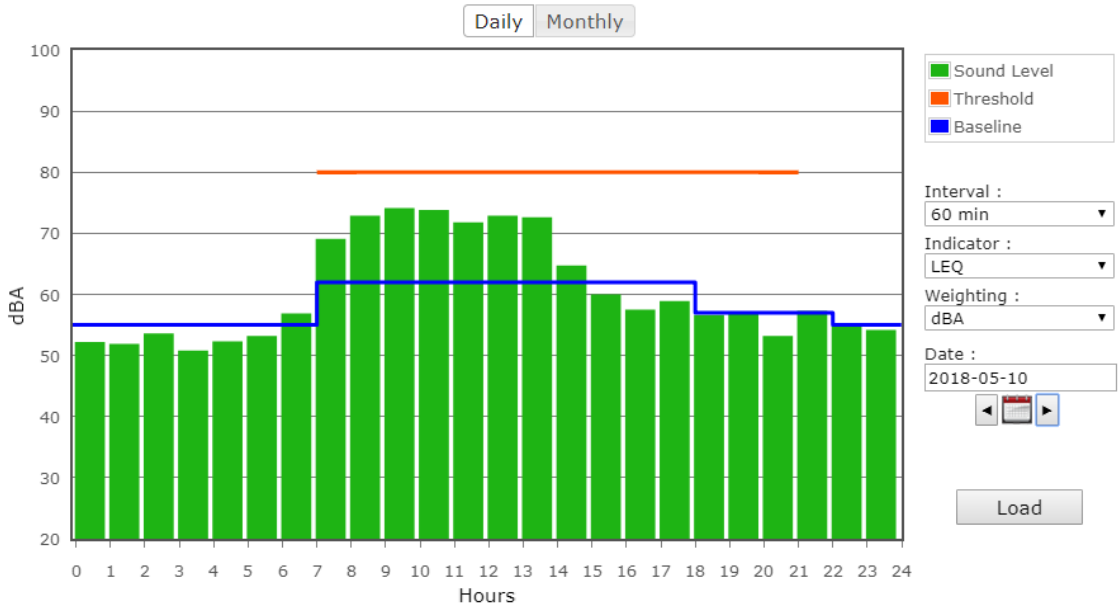


Figure 5: North Monitor NM-1 on Thursday

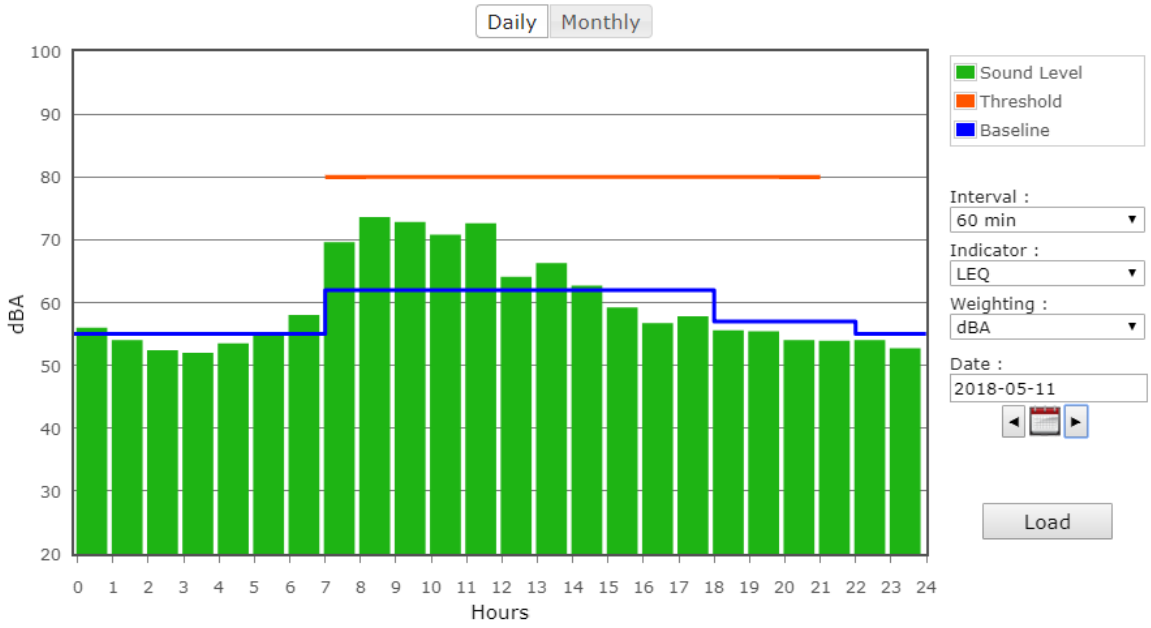


Figure 6: North Monitor NM-1 on Friday

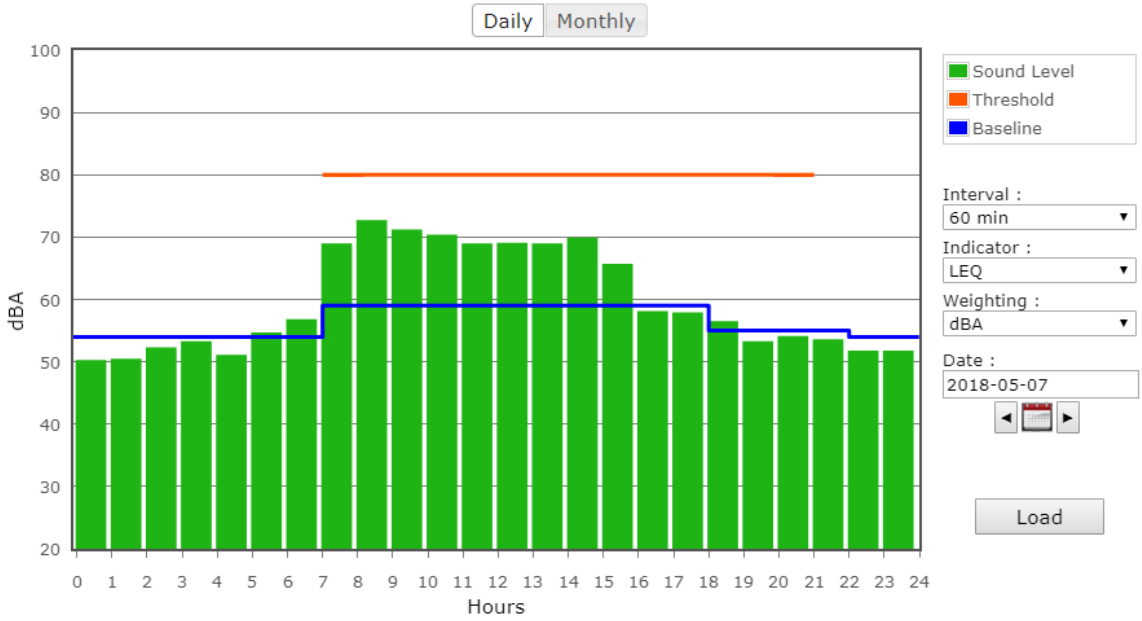


Figure 7: South Monitor NM-2 on Monday

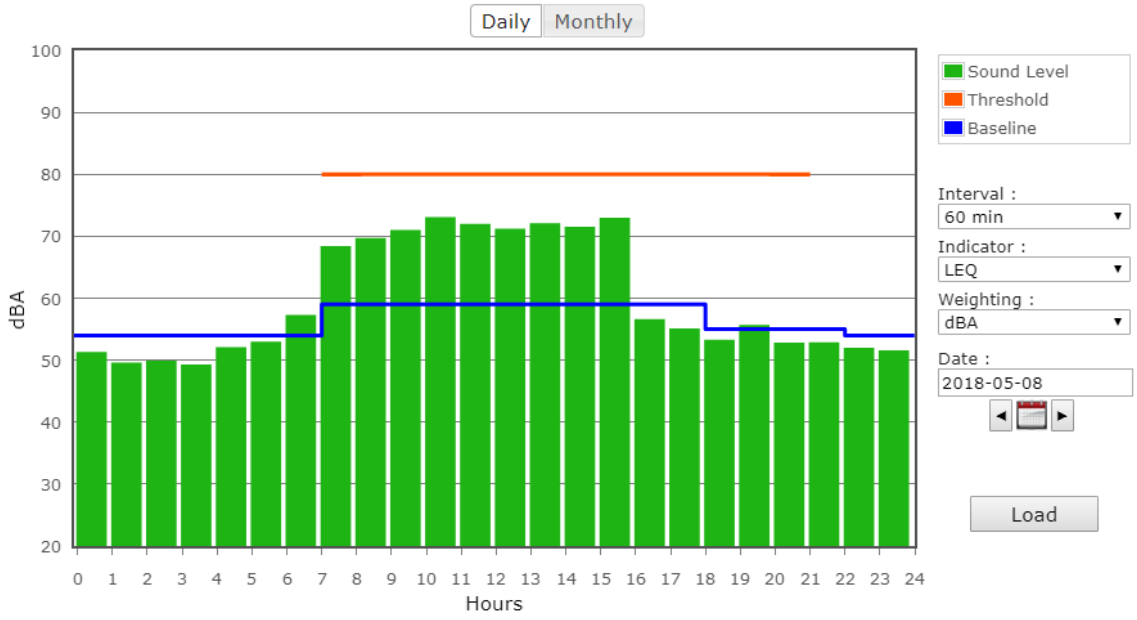


Figure 8: South Monitor NM-2 on Tuesday

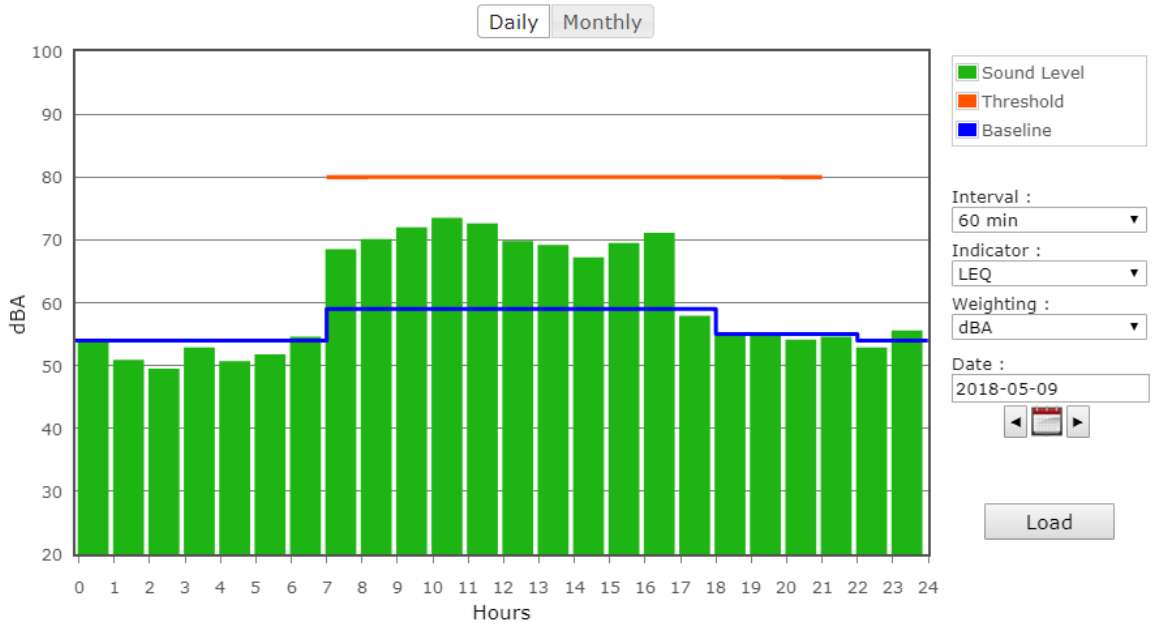


Figure 9: South Monitor NM-2 on Wednesday

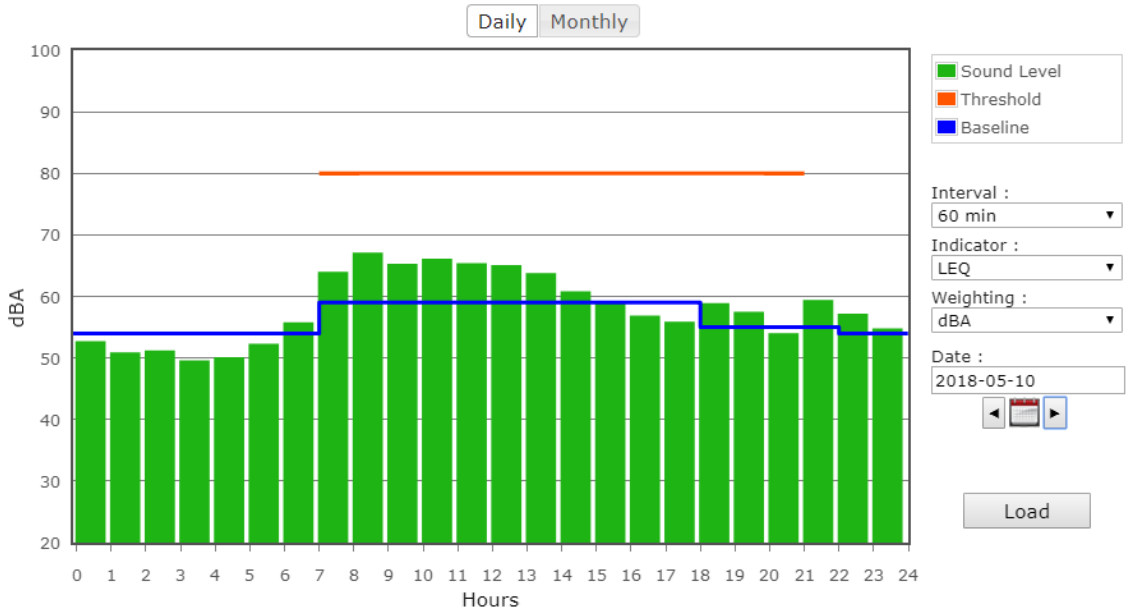


Figure 10: South Monitor NM-2 on Thursday

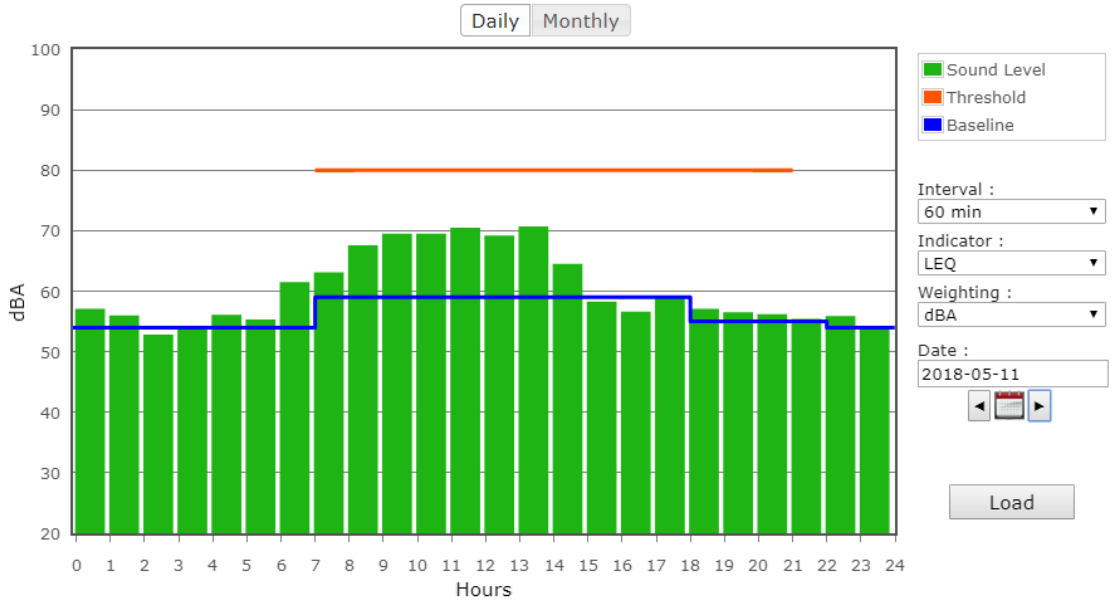


Figure 11: South Monitor NM-2 on Friday

AHRS WEEKLY REPORT

ARCHAEOLOGY MONITORING REPORT

PROJECT	DATES	PROJECT LOCATION	AHRS PERSONNEL IN FIELD
Turning Basin 4 Pilot Capping and Dredging	5/7 to 5/11/18	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 5/10/2018 to review accumulated debris. Wood debris, examples of spooled industrial fabric, and red brick with maker's stamp are being retained at Clean Earth for recording after additional washing. All other debris reviewed was cleared by AHRS for disposal.

Monday, May 7

AHRS reviewed photos from Clean Earth of materials screened 5/3-4 of the previous week and from May 7. No photos from Citizens Site.

Tuesday, May 8

AHRS reviewed photos from Clean Earth daily debris screening. Reviewed photos from Citizens Site. Wood debris will need to be inspected by AHRS archaeologist during site visit.

Wednesday, May 9

No photos were uploaded from Clean Earth. Reviewed photos from Citizens Site. Wood debris will need to be inspected by AHRS archaeologist during site visit.

Thursday, May 10

No photos were uploaded from Clean Earth. Reviewed photos from Citizens Site.

Friday, May 11

Reviewed photos from Clean Earth for debris screened 5/9 to 5/10. No photos posted from Clean Earth 5/11. Photos from Citizen Site for debris collected 5/11 not posted until morning Monday, 5/14.

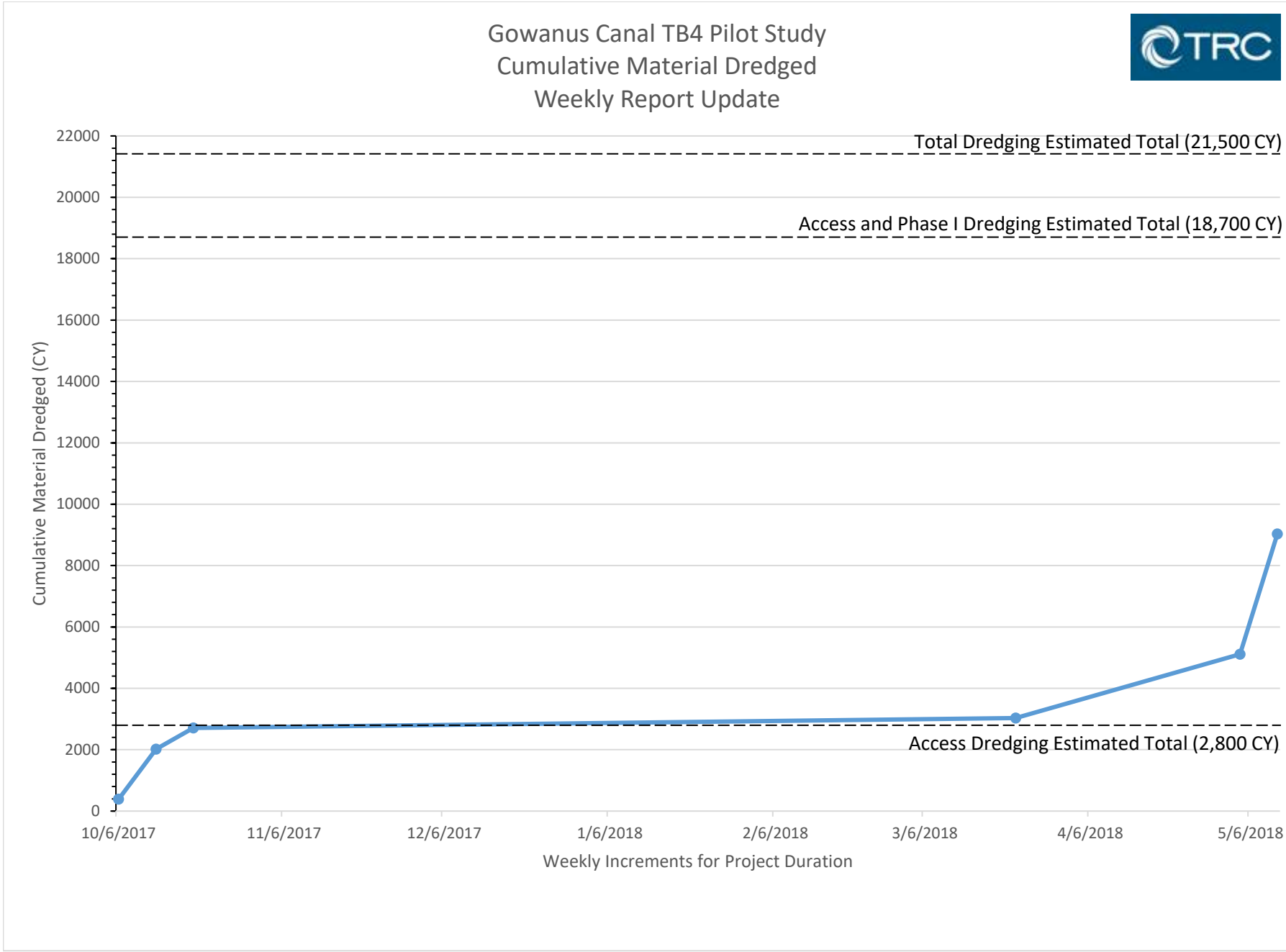
NEXT WEEK

Continue to review daily pictures from Citizens Site and Clean Earth. Archaeologist site visit tentatively scheduled for Clean Earth facility 5/15/18. Site visits to Clean Earth and Citizens Site tentatively scheduled for 5/21/18.

WATER TREATMENT SYSTEM MONITORING LABORATORY ANALYTICAL DATA

(NO ACTIVITIES DURING CURENT WEEK)

CUMULATIVE DREDGED MATERIAL CHART


Gowanus Canal TB4 Pilot Study
Cumulative Material Dredged
Weekly Report Update
TRC
Total Dredging Estimated Total (21,500 CY)
Access and Phase I Dredging Estimated Total (18,700 CY)
Access Dredging Estimated Total (2,800 CY)
Cumulative Material Dredged (CY)
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
10/6/2017
11/6/2017
12/6/2017
1/6/2018
2/6/2018
3/6/2018
4/6/2018
5/6/2018
Weekly Increments for Project Duration