# WEEKLY PROGRESS REPORT
# RTA1 REMEDIAL CONSTRUCTION

## GOWANUS CANAL SUPERFUND SITE
## BROOKLYN, NEW YORK

## PERIOD: October 11 to October 14, 2022

## Date of Report: October 24, 2022

Submitted by:
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Gowanus Canal Project Coordinator

# WEEKLY PROGRESS REPORT

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| RTA1 – Gowanus Canal Superfund Site | Weekly Progress Report No. 113 |
| USEPA Unilateral Administrative Orders | Period 10/11/2022 to 10/14//2022 |
| Docket No. CERCLA-02-2019-2010 | |
| Docket No. CERCLA-02-2020-2003 | Submittal Date: October 24, 2022 |

This weekly progress report, which documents remedial activities completed at the Gowanus Canal Superfund Site during the reporting period, has been submitted to the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation pursuant to Section X, Paragraph 73 of Unilateral Administrative Order with docket number CERCLA 02-2019-2010 and Section X, Paragraph 64 of Unilateral Administrative Order with docket number CERCLA 02-2020-2003, and in response to EPA's request for weekly progress reports as detailed in the EPA Project Manager's e-mail to the Project Coordinator, dated August 14, 2020.

## Activities Conducted During Reporting Week

- **Site Work performed by Cashman and its subcontractors**
  - Safety Officer conducted Toolbox Talks, and stretch and flex exercises with the crew daily
  - Superintendent reviewed the plan of the day and specific safety issues with the crew daily
  - Operated and maintained pumps in the sump areas
  - Housekeeping and site maintenance
  - Continued operation and maintenance of the DWTS
  - Continued monitoring erosion and sediment controls
  - Conducted SWPPP Inspection of the Staging Site
  - DWTS remains on power supplied by the 320kW Generator
  - Maintained exclusion zone on Decon pad
  - Maintained temporary covers over monitoring wells in the transloading area
  - Continued maintenance of Union Street detour sign package for daily closure, as needed
  - Continued maintenance of Carroll Street detour sign package for extended closure
  - CAT 390 Excavator Barge:
    - Operated while connected to anchor cables
    - Continued Phase 3 Dredging from Carroll Street to Union Street
    - Switched to the sheet pile bucket and removed material from the sheet piles
    - Changed back to the TGS bucket for cleanup passes
  - 30-Ton Grove Barge
    - Assisted with other canal operations as needed
    - Assisted with dredge bucket changes
  - Dredging
    - Dredge Carroll Street to Union Street (bulk removal)
    - 564 CY dredged this week (56,493 CY dredged to date)
  - Union Street Bridge
    - Hellman electric connected new control and power cables to termination points and conducted continuity and resistance testing,
  - Carroll Street Bridge
    - Maintained bridge closure and detour signs

- DeGraw Street
  - Received and began installing sheet pile cap plate
- Survey:
  - Continued project support activities such as air and noise monitoring
  - Provided support for dredging and submarine cable operations
  - Conducted bathymetric surveys of dredged areas
  - Conducted site survey of existing conditions at the new staging site
  - Conducted weekly manual survey up the Canal
- Continued monitoring of existing buildings, bulkheads, and their supports
- Completed reinstallation/welding of cap plate sections from 365 Bond and 420 Carroll bulkhead that were removed to facilitate tie-in sheet installation
- Completed torch cutting of closure sheets to final elevation south of Carroll Street Bridge
- Continued operation of air curtain south of 3rd Street Bridge during working hours
- Continued deployment of the turbidity curtain south of 3rd Street Bridge during non-working hours
- Continued maintenance of the TB4 boom
- Transloading Operation:
  - Dewatered mini hoppers
  - Transloaded sediments into large hoppers
  - Continued transportation of large hopper barges to Clean Earth
  - Conducted equipment maintenance as needed

- **Material Processing Facility**
  - 700 tons of sediments offloaded/processed
  - Approximately 76,936 tons of sediments offloaded/processed (by draft) to date
  - 48.28 tons of stabilizer used this past week (5,714.20 tons to-date)
  - 700 tons of sediment disposed this past week (71,857 tons of sediment disposed to-date)
  - 100 tons of debris recovered this past week (4,786 tons of debris recovered to date)
  - 200 tons of debris was disposed this past week (4,029 tons of debris disposed to date)

- **595 Smith Street Staging Site**
  - Mobilize site development equipment
  - Installed new chain link fence and removed old wooden fence
  - Remove debris and prepare Site
  - Received concrete bin blocks from the Citizens Site
  - Continued site security coverage
  - Continued grading northern portion of the site

- **Staten Island Yard**
  - No Activity

- **Construction Quality Control**
  - Plans reviewed this week with the superintendent and crews included:
    - EHASP
    - Dredge Water Treatment System Operation
    - Asphalt Pad Management
    - SWPPP
    - Phase III Dredging
    - Permanent Submarine Cable Installation

- Site Development and Dust Control Work Plans

- **Construction Quality Assurance**
  - The following activities were monitored this week:
    - Oversight of Phase 3 Dredging between Station 9+40 to 13+00.
    - Oversight of Contractor operations in RTA1 and at the Citizen's staging site
    - CQA of Phase III dredge depths and refusal depths
    - Communications between contractor and client representatives pertaining to adherence to project specifications

- **Air Monitoring**
  - Monitored for air quality and odor at 14 locations in RTA1 and the staging site.
  - There were no occurrences of PM10 or TVOC concentrations above Action Levels (CAAL) during non-project or project related activities.
  - Site odor surveys were conducted at least once daily at all monitoring stations during workdays this week, and at least twice daily at Stations 4, 5, 6, 7A, 8, 11, and 12 near active remediation. During these surveys, no occurrences of odors were recorded above a "1" on the odor scale.
  - There were no periods of TVOC monitoring instrument downtime during the Week 100 monitoring period. However, on October 8, 2022 a Station 10 instrument voltage malfunction resulted in approximately 2 hours of PM10 monitoring downtime. Active Station 10 PM10 monitoring resumed at approximately 13:30 on October 8, 2022. There were no additional periods of PM10 or TVOC monitoring instrument downtime during the monitoring period.
  - *Refer to Appendix C for community air monitoring summary report.*

- **Movement and Vibration Monitoring**
  - Project related activities conducted during the reporting period included dredging north of Carroll Street Bridge and south of the Union Street Bridge and began cap installation at DeGraw Street W.
  - Non-project related activities conducted during the reporting period that could have influenced movement and vibration monitoring data Powerhouse Project, Sackett Street, President Street properties, 318 Nevins Street, 420 Carroll Street, and Fulton Street.
  - AMTS2 was shut down on October 11, 2022at approximately 7:30 am and will continue to be shut down for the remainder of the week. This instrument was shut down during lock out tag out operations while Hellman Electric performed work under the Union Street Bridge creating gaps in data collection at prisms read by this instrument.
  - Continued optical monitoring along the Canal and at RTA1 bridges.
    - Union Street Bridge: Received multiple combined easting and northing alerts at locations UN-12 and UN-21; a single combined easting and northing alert at location UN-01; many easting alerts at locations UN-04, UN-12, and UN-21; several easting alerts at locations UN-01 and UN-22; multiple northing alerts at locations UN-04 and UN-21; a single northing alert at locations UN-01 and UN-12; and multiple elevation alerts at locations UN-01 and UN-12 greater than 0.25". These alerts were consistent with data trends observed at these locations. The NYCDOT has been informed of the cumulative movement greater than 0.25". Subsequent readings at these remaining locations returned to previously observed data trends as noted below in "Trends Identified to Date".

  - Carroll Street Bridge: Received many easting alerts at location CA-13, and multiple northing alerts at location CA-35A greater than 0.25". These alerts were consistent with data trends observed at these locations. The NYCDOT has been informed of the cumulative movement greater than 0.25".
  - Displacement of greater than 0.25" occurred on the southeast side of the Carroll Street bridge because of pipe pile installation. Additionally, displacement of greater than 0.25" occurred on the southwest side and the northeast side of the bridge. The displacements greater than 0.25" included either elevation, northing, or easting at locations CA-02, CA-03A, CA-04-05, CA-06, CA-14, CA-15, CA-16, CA-22A, CA-32, CA-34, CA-35, and CA-40. Northing and/or easting readings of greater than 0.25" also occurred at monitoring locations CA-04, CA-04-05, CA-06, CA-14, CA-35A, CA-42, CA-45, CA-46, CA-47, and CA-48. Once the 0.25" displacement was identified, the NYCDOT was notified, and a visual inspection of the bridge occurred. These visual inspections then occurred daily during work activities including cycling of the bridge.
  - 3rd Street Bridge: Received several easting alerts at locations 3RD-03 and 3RD-04 greater than 0.25". These alerts were consistent with data trends observed at these locations. The NYC DOT been informed of the cumulative movement greater than 0.25" at various locations on the 3rd Street bridge.
- Received multiple combined easting and northing alerts at locations 524-01, 524-02, 322-04A, 322-08, 322-09, and DEP-03; a single combined easting and northing alert at locations DEP-04 and DEP-05; multiple easting alerts at locations 322-01, 322-02, 524-01, 524-02, DEP-01, and 322-04A; a single easting alert at locations DEP-04, DEP-06, 322-08, and 322-09; several northing alerts at locations 322-08 and 322-09; a single northing alert at locations DEP-01, DEP-03, DEP-04, DEP-05, 524-01, and 524-02; many elevation alerts at location 322-07; several elevation alerts at location 322-06; and a single elevation alert at location DEP-02B greater than 0.25". These alerts, except for the easting and elevation alerts at DEP-02B, were consistent with data trends observed at these locations. The alerts at DEP-02B were erroneous readings that have subsequently returned to previous data trends observed at this location.
- Received several easting alerts at location L17-56; multiple easting alerts at locations L16-00A, L15-49B, L15-52, and L15-27; a single easting alert at locations L10-00, L17-49, and R17-43; and a single northing alert at location L10-97 greater than 2". These alerts, expect for the alerts at L10-00 and L10-97, were consistent with data trends observed at these locations. The alerts at L10-00 and L10-97 were erroneous readings. These prisms appear to have been bumped on October 13, 2022and will be reset.
- Changes were observed in crack gauges CA-03, CA-05, CA-07, CA-09A, CA-11, CA-12, CA-13, CA-14, CA-15, UN-02, UN-03, UN-07, 479-01, CM-02, CM-03, and CM-05.
- A change from -0.25 degrees to -0.5 degrees in inclinometer 479 IN-01 East.
- Readings have a negative or positive reading depending on the direction of change from zero. A positive reading on an east facing inclinometer indicates movement towards the south, and a negative reading indicates movement towards the north. A positive reading on a south facing inclinometer indicates movement towards the west, and a negative reading indicates movement towards the east. A positive reading on a north facing inclinometer indicates movement towards the east, and a negative reading indicates movement towards the west.
- *Refer to Appendix D for the weekly optical, vibration, and crack gauge monitoring report.*

- **Water Quality Monitoring**
  - Monitored turbidity in RTA1 during construction activities using turbidity buoys pursuant to the Water Quality Monitoring Plan.

- No exceedances to trigger or action criteria were observed during the reporting period.
- Maintenance activities on the 3rd Street Sentinel Buoy remain ongoing as of October 14, 2022.
- Sheen was observed above background conditions during work operations. These sheens were contained within RTA1 by the air curtain deployed south of the 3rd Street Bridge. Absorbent booms were also deployed south of dredging activities to contain sheens north of the Carroll Street Bridge.
- *Refer to Appendix E for weekly water quality monitoring report for additional information.*

- **Noise Monitoring**
  - Cashman conducted noise level monitoring using a PCE-322A along the Promenade near 365 Bond Street, at Union Street and at DeGraw Street
  - No exceedances of the hourly Leq noise limit of 80 dBA were recorded during this monitoring period.
  - *Refer to Appendix F for weekly noise monitoring report for additional information.*

- **Cultural Resources Monitoring**
  - An AHRS representative was onsite performing Level 2 monitoring during the Phase 3 dredging activities.
  - *The Cultural Resources Monitoring Report for this reporting period will be included with a future report when finalized.*

- **Dredge Water Treatment System**
  - The DWTS operated and discharged this week
  - 80,971 gallons water processed last week (5,109,535 gallons total to-date)
  - 69,180 gallons discharged last week (3,849,163 gallons total to-date)
  - 4,000 gallons backwashed (556,564 gallons total to-date)
  - Results of DWTS effluent samples collected on September 28, 2022, were received, and reviewed on October 12, 2022. The results are as follows:
    - TSS = 28.4 mg/L
    - BOD5 = 4.0 mg/L
    - Oil and Grease= ND
    - Lead = ND
    - Copper = 5.0 mg/L
    - Total PCB = ND ng/L
    - Benzo[a]pyrene = ND µg/L
  - TSS exceeded the discharge permit limits of 20mg/L.
  - Results of DWTS effluent samples collected on October 5, 2022, were received, and reviewed on October 12, 2022. The results are as follows:
    - TSS = 10.0 mg/L
    - BOD5 = 62.6 mg/L
    - Ammonia = 15.2 mg/L
    - Oil and Grease= ND
    - Lead = ND
    - Copper = 1.2 mg/L
    - Total PCB = ND ng/L
    - Benzo[a]pyrene = ND µg/L
  - BOD5 exceeded the discharge permit limits of 20mg/L.

  - Due to the exceedances of TSS and BOD5 discharge of the DWTS ceased on October 12, 2022.
  - *Refer to Appendix H for Dredge Water Treatment Analytical Results*

- **Property Access Agreements for Condition Assessments, Monitoring, and Bulkhead Support Construction**
  - Property access agreements required for RTA1 construction to date have been executed.

**Anticipated Activities – Week of October 17, 2022**

- **Citizens Site**
  - Continue noise and air monitoring
  - Continue office cleaning service and trash removal
  - Continue site security services
  - Operate Dredge Water Treatment System as needed
  - Continue dewatering and transloading operations
  - Load and transport bin blocks and sheet piles to the Smith Street Site
- **595 Smith Street Site**
  - Continue noise and air monitoring
  - Continue site security services
  - Continue removing debris and preparing and grading site
  - Remove existing wood fence and installing new chain link fence
  - Receive concrete bin and sheet piles blocks from the Citizens site
  - Pave stockpile areas
  - Receive pugmill and conveyor system
- **Gowanus Canal**
  - Phase III Dredging from Carroll Street to Union Street
  - Dredge Carroll Street to Union Street (bulk removal)
  - Conduct cleanup passes from sheet pile scraping
  - Remove temporary submarine cables and fender guards
  - Dredge temporary submarine cable trench
  - Install cap plate and handrail at DeGraw St
  - Drill and install angle supports for grating at the Union St bridge
- **Permanent Submarine Cables**
  - Shutdown power to the Union Street Bridge for power cables
  - Conduct continuity and resistance testing
  - Conduct bridge functioning test
  - Roll up temp cables on pier caps / remove excess temporary support materials

- Return bridge to service

**Health and Safety Update**

- No health and safety issues were reported.

**Delays Encountered or Anticipated**

- The potential damage to Carroll Street Bridge as a result of the observed movement is being evaluated in coordination with NYCDOT. Repairs will be needed, and the magnitude and duration of those repairs are to be determined. It is possible that in-water work will be necessary to implement the repairs, and the in-water work may affect the RTA1 construction schedule.

**Ongoing Coordination with EPA**

- Please see preceding weekly reports for previously documented coordination regarding the development of the Cultural Resources Monitoring Plan (CRMP). On June 29, 2022, the PRP Group provided a revised CRMP that addressed outstanding comments from EPA and the CAG. On August 24, 2022, EPA provided the PRP Group with additional comments on the revised CRMP for finalization. The PRP Group submitted a revised, proposed final version of the CRMP for approval on October 11, 2022. While approval of the CRMP is pending, EPA has communicated to the PRP Group to initiate dredging in accordance with the draft CRMP.
- Coordination between the PRP Group and EPA pertaining to repairs to the Carroll Street Bridge is still ongoing. Please see preceding weekly reports for previously documented coordination regarding this activity.
- Please see preceding weekly reports for previously documented coordination regarding the deterioration at the 37 9th Street bulkhead. On June 20, 2022, the PRP Group informed EPA that a contingency plan was being developed in the event the bulkhead deterioration at 37 9th Street impedes construction activities on the Canal. The plan is in preparation and will be shared with EPA when drafted.
- On October 12, 2022, the PRP Group informed EPA that NYCDOT completed repairs of the 3rd Street Bridge over the weekend and that the bridge was returned to normal operational status. Please see preceding weekly reports for previously documented coordination regarding this activity.
- On October 14, 2022, the PRP Group informed EPA that work was planned for Saturday, October 15 using a DOB work hour variance under the permit equivalency process. The scope of work was to install fence posts at the new staging location. This work was planned for Saturday to maintain the expedited schedule of the staging site build-out.

**Attachments:**

**Appendix A:** Photographs

**Appendix B:** RTA1 4-Week Construction Look Ahead Schedule

**Appendix C:** Weekly Community Air Monitoring Report

**Appendix D:** Weekly Optical and Vibration Monitoring Report

**Appendix E:** Weekly Water Quality Monitoring Summary Report

**Appendix F**: Weekly Noise Monitoring Report

**Appendix G**: Cultural Resources Monitoring Report *(to be provided with a future weekly report)*

**Appendix H:** Dredge Water Treatment Analytical Results

# Appendix A

Photographs

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus Environmental Remediation Trust | Gowanus Canal | 271 |

| Photo No. | Date |
|---|---|
| 001 | 10/11/2022 |

**Description**

Moving Bin Blocks from the Citizens Site to the Smith Street Site

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus Environmental Remediation Trust | Gowanus Canal | 271 |

| Photo No. | Date |
|---|---|
| 002 | 10/12/2022 |

**Description**

Handrails for DeGraw St Sheet Pile Cap

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus Environmental Remediation Trust | Gowanus Canal | 271 |

| Photo No. | Date |
|---|---|
| 003 | 10/13/2022 |

**Description**

**Installing Angle Brackets for Sheet Pile Cap at DeGraw St**

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus Environmental Remediation Trust | Gowanus Canal | 271 |

| Photo No. | Date |
|---|---|
| 004 | 10/13/2022 |

**Description**

**Preparing Finished Grade for Material Stockpile Area at the Smith Street Site**

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus Environmental Remediation Trust | Gowanus Canal | 271 |

| Photo No. | Date |
|---|---|
| 004 | 10/14/2022 |

**Description**

**Drilling Bolt Holes for Cap Plate at DeGraw Street**

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Gowanus Environmental Remediation Trust | Gowanus Canal | 271 |

| Photo No. | Date |
|---|---|
| 004 | 10/7/2022 |

**Description**

**Cap Plate Installed at DeGraw Street**

# Appendix B

RTA1 4-Week Construction Look Ahead Schedule

# Four Week Rolling Schedule

**Contractor : Cashman Dredging & Marine Contracting Co., LLC.**
Project : Gowanus Canal Remediation Target Area (RTA) 1 - Phase 2
3-Jan
Administrator: *GZA Environmental, inc.*
Owner: Gowrus Environmental Remedial Trust Group (GERT)

Data Date: 10/10/2022
Meeting Date: 10/10/2022
Scheduled ---------
Actual XXXXXX

| Area/Concern | SAFETY CRITICAL | Bridge Condition | Activity Description | Start Date | Finish Date | Revised Start Date | Revised Finish Date | Delta Between Original and Revised | Reasons for Delay | Remaining Duration (Days) | Percent Complete | 3-Oct M | 4-Oct T | 5-Oct W | 6-Oct Th | 7-Oct F | 8-Oct S | 9-Oct Su | 10-Oct M | 11-Oct T | 12-Oct W | 13-Oct Th | 14-Oct F | 15-Oct S | 16-Oct Su | 17-Oct M | 18-Oct T | 19-Oct W | 20-Oct Th | 21-Oct F | 22-Oct S | 23-Oct Su | 24-Oct M | 25-Oct T | 26-Oct W | 27-Oct Th | 28-Oct F | 29-Oct S | 30-Oct Su | 31-Oct M | 1-Nov T | 2-Nov W | 3-Nov Th | 4-Nov F | 5-Nov S | 6-Nov Su |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/10/2022 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | **General Work Activities** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Pave Roadway with HMA | | | 26-Sep-22 | 28-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | DeGraw Street - Cut drain holes/Install filtration sock | | | 29-Sep-22 | 30-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | DeGraw Street End - Receive /Install Cap Plate | | | 7-Oct-22 | 17-Oct-22 | | | 7 | 0% | | | | | X | | | - | - | - | - | | | - | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | DeGraw Street - Receive/Install Handrail | | | 17-Oct-22 | 21-Oct-22 | | | 11 | 0% | | | | | | | | | | | | | | - | - | - | - | - | | | | | | | | | | | | | | | | | |
| Construction | | NA | DeGraw Street - Install guardrail | | | 24-Oct-22 | 28-Oct-22 | | | 18 | 0% | | | | | | | | | | | | | | | | | | | | | - | - | - | - | - | | | | | | | | | | |
| Construction | | NA | Install Anchor Wale at 365 Bond Street | | | 6-Oct-22 | 6-Oct-22 | | | 0 | 100% | | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | **Union Street Pier Sediment Removal** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | OP | Core concrete shelf / sample sediments East pier | | | 22-Aug-22 | 12-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | OP | Receive Direction on Path Forward | | | 19-Sep-22 | 7-Oct-22 | | | 0 | 100% | X | X | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | OP | Repair Fender in Required Locations | | | 17-Oct-22 | 19-Oct-22 | | | 9 | 0% | | | | | | | | | | | | | | - | - | - | | | | | | | | | | | | | | | | | | | |
| Construction | | OP | Place AquaBlok / reinstall attenuators | | | 20-Oct-22 | 21-Oct-22 | | | 11 | 0% | | | | | | | | | | | | | | | | | | - | - | | | | | | | | | | | | | | | | |
| Construction | | OP | Order/Receive/Install Steel Grating Platform | | | 26-Sep-22 | 4-Nov-22 | | | 25 | 0% | X | X | X | X | X | | | - | - | - | - | | | - | - | - | - | - | - | | | - | - | - | - | - | | | - | - | - | - | - | |
| | | | **Permanent Submarine Cable** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Install NEMA 4X Pull Boxes (3) at East Abutment | | | 15-Sep-22 | 16-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Install New Control/Power Cables into NEMA 4X Pull Boxes | | | 19-Sep-22 | 21-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Receive primary power cable | | | 22-Sep-22 | 23-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Vacate conduit / install primary power cable | | | 26-Sep-22 | 26-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Strip cables / Install Abrasion-resistant Sleeves | | | 27-Sep-22 | 28-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Conduct capacitance and resistance tests on pulled cable conductors | | | 28-Sep-22 | 30-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Shutdown Power to Bridge for Control Cables | | | 3-Oct-22 | 5-Oct-22 | | | 0 | 33% | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Secure Control Cables to Anchor Brackets | | | 3-Oct-22 | 3-Oct-22 | | | 0 | 100% | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Remove temporary control cables/remove temporary pull boxes and cabinets | | | 4-Oct-22 | 4-Oct-22 | | | 0 | 100% | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Install new termination cabinets on far-leaf bridge pier | | | 5-Oct-22 | 6-Oct-22 | | | 0 | 100% | | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Connect new control cables to termination points | | | 7-Oct-22 | 11-Oct-22 | | | 1 | 75% | | | | | X | | | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Shutdown Power to Bridge for Power Cables | | | 11-Oct-22 | 17-Oct-22 | | | 7 | 0% | | | | | | | | - | - | - | - | | | - | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Remove temporary power cables/remove temporary pull boxes and cabinets | | | 11-Oct-22 | 11-Oct-22 | | | 1 | 0% | | | | | | | | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Connect new power cables to termination points | | | 12-Oct-22 | 13-Oct-22 | | | 3 | 0% | | | | | | | | | - | - | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Conduct continuity and resistance testing | | | 14-Oct-22 | 17-Oct-22 | | | 7 | 0% | | | | | | | | | | | - | | | - | | | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Conduct Bridge Function Testing | | | 18-Oct-22 | 18-Oct-22 | | | 8 | 0% | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | | | | |
| Construction | | CL | Reopen Bridge | | | 19-Oct-22 | 19-Oct-22 | | | 9 | 0% | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | | | |
| | | | **Dredging** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Conduct 3rd Pass with TGS bucket in Carroll/3rd St Pool | | | 20-Sep-22 | 21-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Breakdown / move through Carroll St Bridge / Connect to anchor points | | | 22-Sep-22 | 23-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Dredge Carroll Street to Union Street (bulk removal) | | | 23-Sep-22 | 14-Oct-22 | | | 4 | 81% | X | X | X | X | X | | | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Change to Sheet Pile Bucket | | | 17-Oct-22 | 17-Oct-22 | | | 7 | 0% | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Remove Material Along Sheet Piles | | | 18-Oct-22 | 20-Oct-22 | | | 10 | 0% | | | | | | | | | | | | | | | | - | - | - | | | | | | | | | | | | | | | | |
| Construction | | NA | Change to TGS Bucket/Conduct Cleanup Pass | | | 20-Oct-22 | 24-Oct-22 | | | 14 | 0% | | | | | | | | | | | | | | | | | | | - | - | | | - | | | | | | | | | | | | |
| Construction | | OP | Remove Temporary Submarine Cables and Fender Guards | | | 25-Oct-22 | 25-Oct-22 | | | 15 | 0% | | | | | | | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | |
| Construction | | OP | Conduct Dredging North of Union St Bridge | | | 26-Oct-22 | 13-Dec-22 | | | 64 | 0% | | | | | | | | | | | | | | | | | | | | | | | | - | - | - | | | | | - | - | - | - | - | |
| | | | **595 Smith Street Staging Site** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Site Access Granted | | | 20-Sep-22 | 20-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Perform Site Survey Existing Conditions/Develop Grading Plan | | | 19-Sep-22 | 30-Sep-22 | | | 0 | 100% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Conduct Engineering Analysis - Bulkhead Structure Offset/Fender System | | | 26-Sep-22 | 21-Oct-22 | | | 11 | 56% | X | X | X | X | X | | | - | - | - | - | | | - | - | - | - | - | | | | | | | | | | | | | | | | | |
| Construction | | NA | Mobilize Site Development Equipment / Remove Debris/Prepare Site | | | 3-Oct-22 | 12-Oct-22 | | | 2 | 0% | X | X | X | X | X | | | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Mobilize/Install Guard Shack | | | 3-Oct-22 | 4-Oct-22 | | | 0 | 100% | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Install New Chain-Link Fence/Remove Existing Wood Construction Fence | | | 13-Oct-22 | 21-Oct-22 | | | 11 | 0% | | | | | | | | | | - | - | | | - | - | - | - | - | | | | | | | | | | | | | | | | | |
| Construction | | NA | Pave Stockpile Areas | | | 17-Oct-22 | 19-Oct-22 | | | 9 | 0% | | | | | | | | | | | | | | | - | - | - | | | | | | | | | | | | | | | | | |
| Construction | | NA | R&R Concrete Block and Steel Sheeting/Construct Material Storage Bins | | | 11-Oct-22 | 21-Oct-22 | | | 11 | 0% | | | | | | | | - | - | - | - | | | - | - | - | - | - | | | | | | | | | | | | | | | | | |
| Construction | | NA | Receive/Set up Pug Mill and Conveyor System | | | 17-Oct-22 | 28-Oct-22 | | | 18 | 0% | | | | | | | | | | | | | | | - | - | - | - | - | | | - | - | - | - | - | | | | | | | | |
| Construction | | NA | Install Site Lighting | | | 31-Oct-22 | 10-Nov-22 | | | 31 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - | - | - | |
| Construction | | NA | Mobilize New Site Trailers | | | 24-Oct-22 | 4-Nov-22 | | | 25 | 0% | | | | | | | | | | | | | | | | | | | | | - | - | - | - | - | | | | - | - | - | - | - | |
| Construction | | NA | Mobilize/Install Temporary Electric and Internet Services | | | 4-Nov-22 | 10-Nov-22 | | | 31 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | |
| Construction | | NA | Mobilize/Install Sanitation | | | 4-Nov-22 | 10-Nov-22 | | | 31 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | |
| Construction | | NA | Move/Set up office furnishings/computers | | | 14-Nov-22 | 18-Nov-22 | | | 39 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Receive Capping Material (Sand/GAC/OC)/Conduct Material Mixing | | | 31-Oct-22 | 16-Dec-22 | | | 67 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | - | - | - | - | - | |
| Construction | | NA | Severson Mobilize to Site | | | 14-Nov-22 | 14-Nov-22 | | | 35 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Construct Transloading Area | | | 12-Dec-22 | 23-Dec-22 | | | 74 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Install Fender Piles | | | 19-Dec-22 | 23-Dec-22 | | | 74 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction | | NA | Mobilize Floating Dock | | | 19-Dec-22 | 19-Dec-22 | | | 70 | 0% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | CW | Prev Wk | WK 1 | WK 2 | WK 3 | |
|---|---|---|---|---|---|---|
| Management | 15 | 15 | 15 | 15 | 15 | |
| Craft Labor | 20 | 20 | 20 | 20 | 20 | |
| Sub-Contractor | 8 | 8 | 8 | 8 | 8 | |
| TOTAL | 43 | 43 | 43 | 43 | 43 | |

# Appendix C

Weekly Community Air Monitoring Report

# Gowanus Canal Community Air Monitoring Program

## Weekly Air Monitoring Summary Report #100

October 8, 2022 through
October 14, 2022

## Gowanus Canal Remediation-Target Area 1

**Prepared For:**

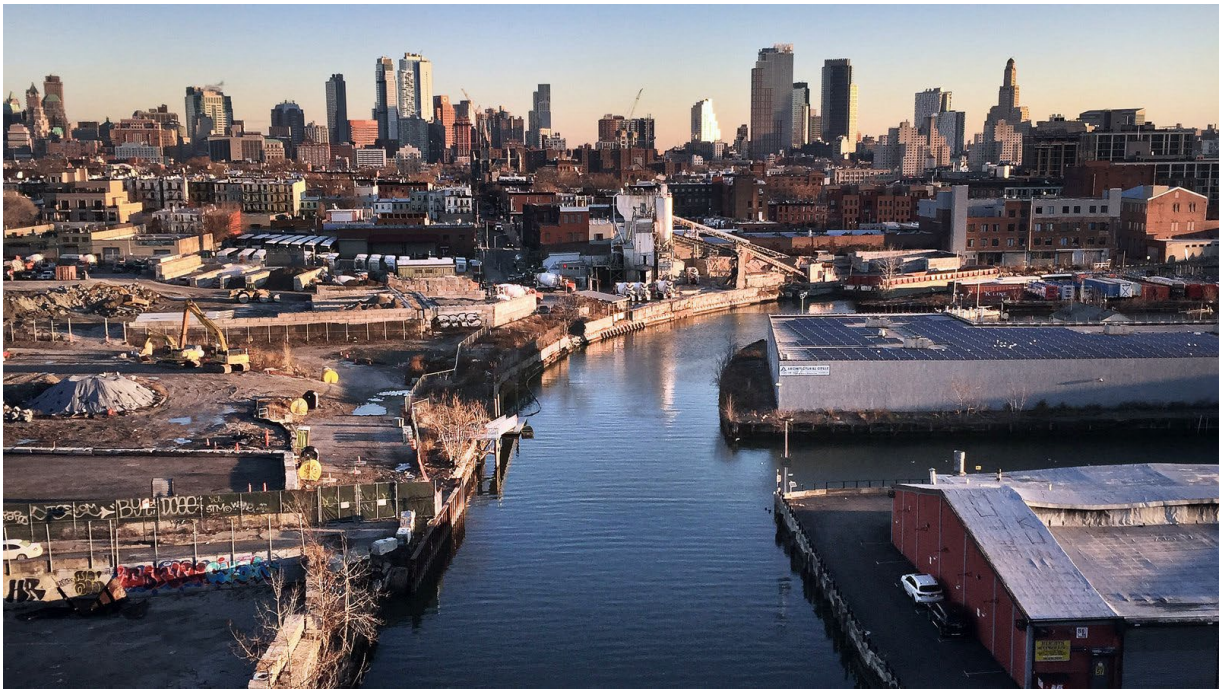
Gowanus Environmental Remediation Trust #2

**Prepared By:**

TRC
1430 Broadway, 10th Floor
New York, NY 10018

*Prepared by:* Dylan Keenan

*Reviewed and Approved by:* Melita Debaise



## Executive Summary

In accordance with the Final Gowanus Canal Air Monitoring Plan, February 2021 (Plan), TRC managed operations of the Community Air Monitoring Network surrounding remediation activities associated with Remedial Target Area 1 (RTA1) at the Gowanus Canal in Brooklyn, NY. The monitoring network is comprised of a meteorological tower and two (2) air monitoring stations within the Staging Area, located on Huntington Street, plus twelve (12) air monitoring stations surrounding RTA1 of the canal. Figure 1 depicts the locations of the monitoring stations, and Table 1 provides descriptions of each location. The following report summarizes site air monitoring activities for the Week 100 monitoring period covering October 8th, 2022, through October 14th, 2022.

TVOC and $PM_{10}$ were monitored continuously as fifteen-minute average concentrations. Average and maximum TVOC concentrations for the week are displayed in Figures 2 and 3, respectively, and average and maximum $PM_{10}$ concentrations are displayed in Figures 4 and 5, respectively. Additionally, odor surveys were conducted daily at all station locations while real-time measurements of hydrogen sulfide and ammonia were also recorded. The maximum values recorded for each of these parameters are shown in Table 3.

Additionally, TVOC and $PM_{10}$ were monitored during active work hours at 595 Smith Street Brooklyn, NY, while the site is being prepared for the upcoming move as the new Staging Area. Mobile Stations 15 and 16 have been deployed daily near active work areas, with 15 being located on the northern portion of the property and 16 to the south. There were no occurrences of $PM_{10}$ or TVOC concentrations above Action Levels (CAAL) during non-project or project related activities. The maximum weekly values recorded for each of these parameters are shown in Table 2.

There were no occurrences of $PM_{10}$ or TVOC concentrations above Action Levels (CAAL) during non-project or project related activities. Alert, Action Levels, and response actions are defined in the Plan.

Site odor surveys were conducted at least once daily at all monitoring stations during workdays this week, and at least twice daily at Stations 4, 5, 6, 7A, 8, 11, and 12 near active remediation. During these surveys no occurrences of odors were recorded above a “1” on the odor scale.

Daily Reports summarizing results of continuous $PM_{10}$ and TVOC monitoring, including maximum and average daily concentrations, are attached to this report.

Meteorological parameters including wind speed, wind direction, temperature and barometric pressure were recorded continuously. Table 4 summarizes the daily averages of these parameters recorded on-site.

From Wednesday through Thursday, October 12th – October 13th TRC conducted the weekly sampling for VOCs, in accordance with the Plan. The samples were shipped to Con-Test Analytical Laboratory; results and data validation are pending.

TRC has received laboratory data packages containing the analytical results of VOC canister samples collected during the Week 98 monitoring period. These data are compared to average concentrations from the background samples and are summarized in Table 5.

There were no periods of TVOC monitoring instrument downtime during the Week 100 monitoring period. However, on Saturday, October 8th a Station 10 instrument voltage malfunction resulted in approximately 2 hours of $PM_{10}$ monitoring downtime. Active Station 10 $PM_{10}$ monitoring resumed at

approximately 13:30 on October 8th. There were no additional periods of $PM_{10}$ or TVOC monitoring instrument downtime during the Week 100 monitoring period.

*Figure 1: Station Location Map*

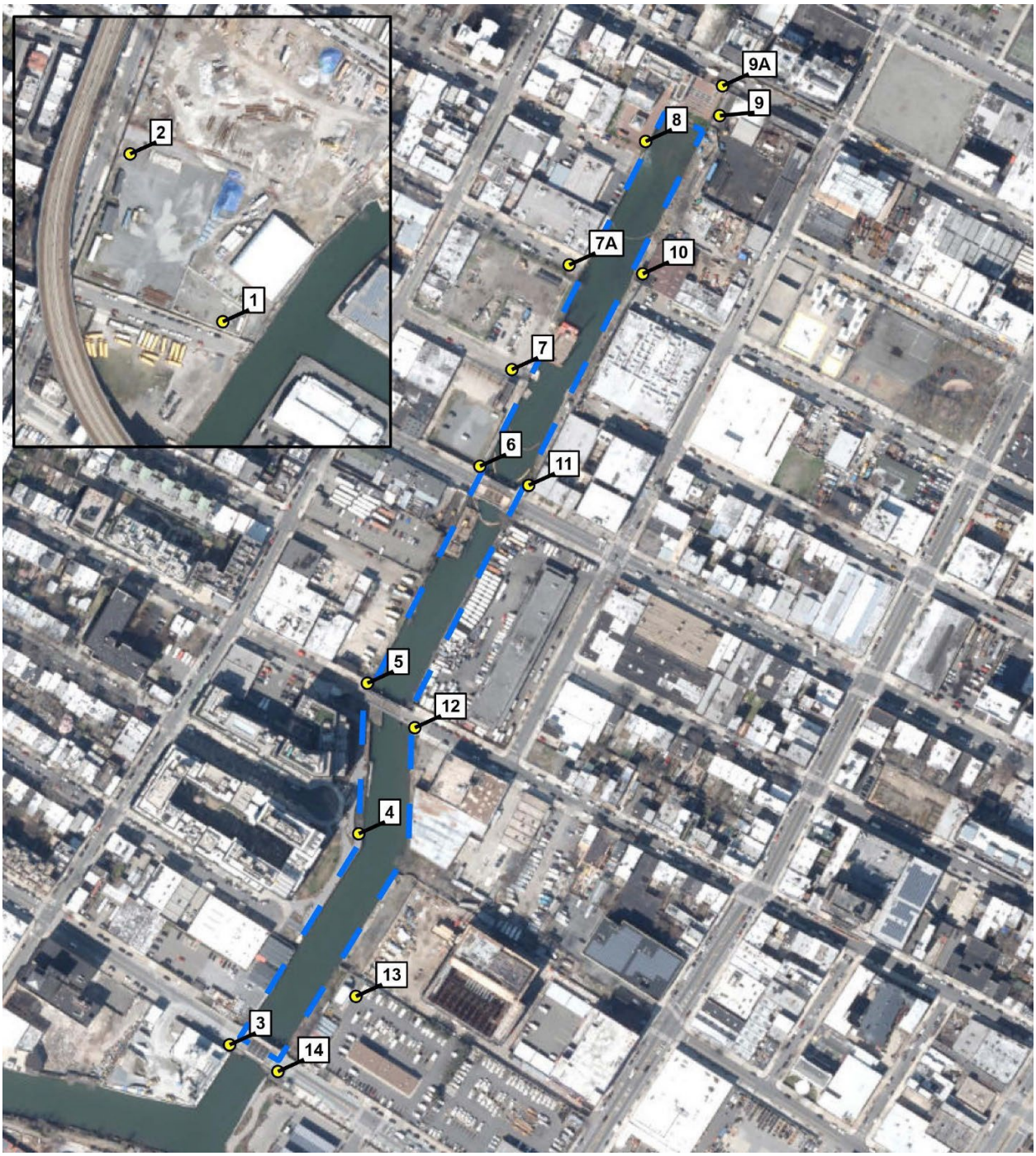


*Table 1: Station Location Descriptions*

| ***Station #*** | ***Location*** |
|---|---|
| 1 | Southeast corner of Staging Area |
| 2 | Northwest corner of Staging Area |
| 3 | Southwest side of 3rd Street Bridge |
| 4 | Bond Building promenade near 1st Street |
| 5 | Northwest side of Carroll Street Bridge |
| 6 | Northwest side of Union Street Bridge |
| 7 | Sackett Street (no longer in use) |
| 7A | Degraw Street (west end) |
| 8 | Douglass Street |
| 9 | Northeast of Flushing Tunnel (no longer in use) |
| 9A | Northeast of Flushing Tunnel on Butler Street |
| 10 | Degraw Street (east end) |
| 11 | Northeast side of Union Street Bridge |
| 12 | Southeast side of Carroll Street Bridge |
| 13 | Verizon property (153 2nd Street) |
| 14 | Southeast side of 3rd Street Bridge |

*Figure 2: Average 15-Minute TVOC Concentrations*

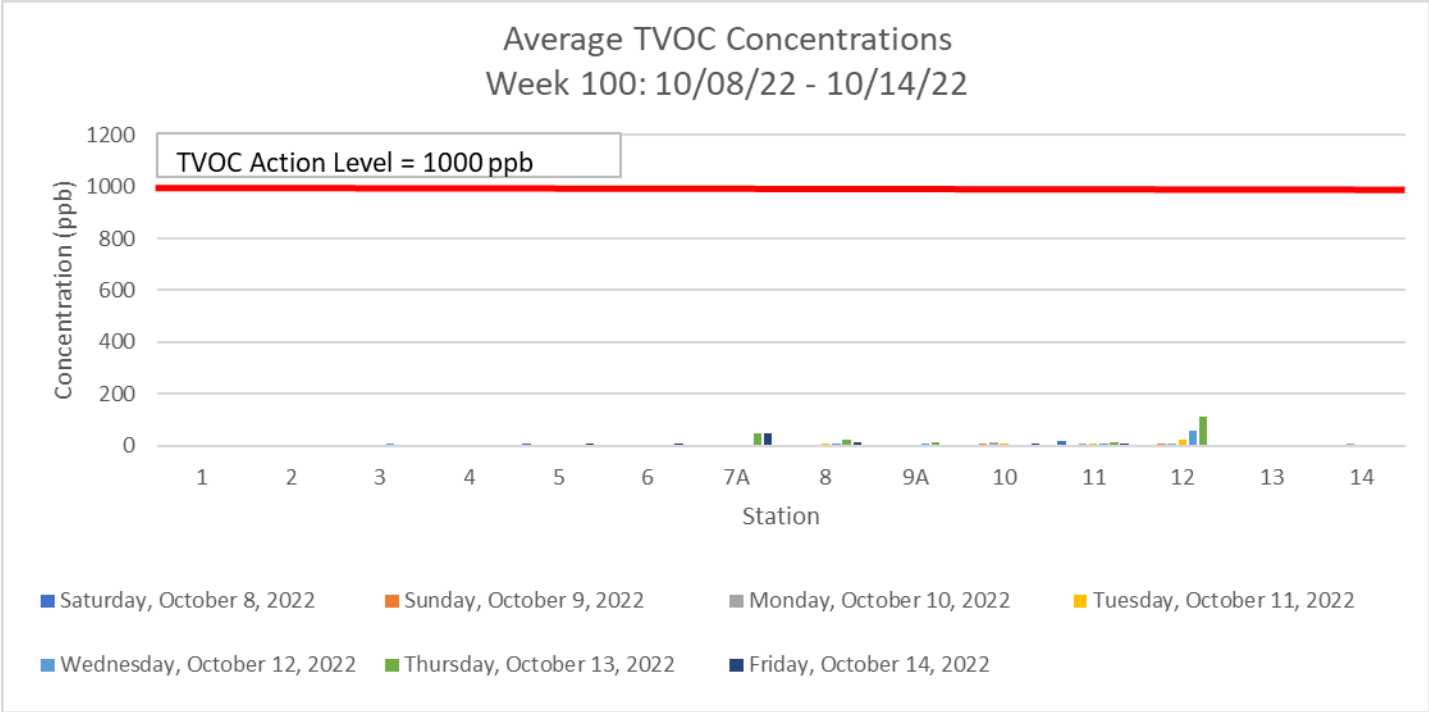



*Figure 3: Maximum 15-Minute TVOC Concentrations*

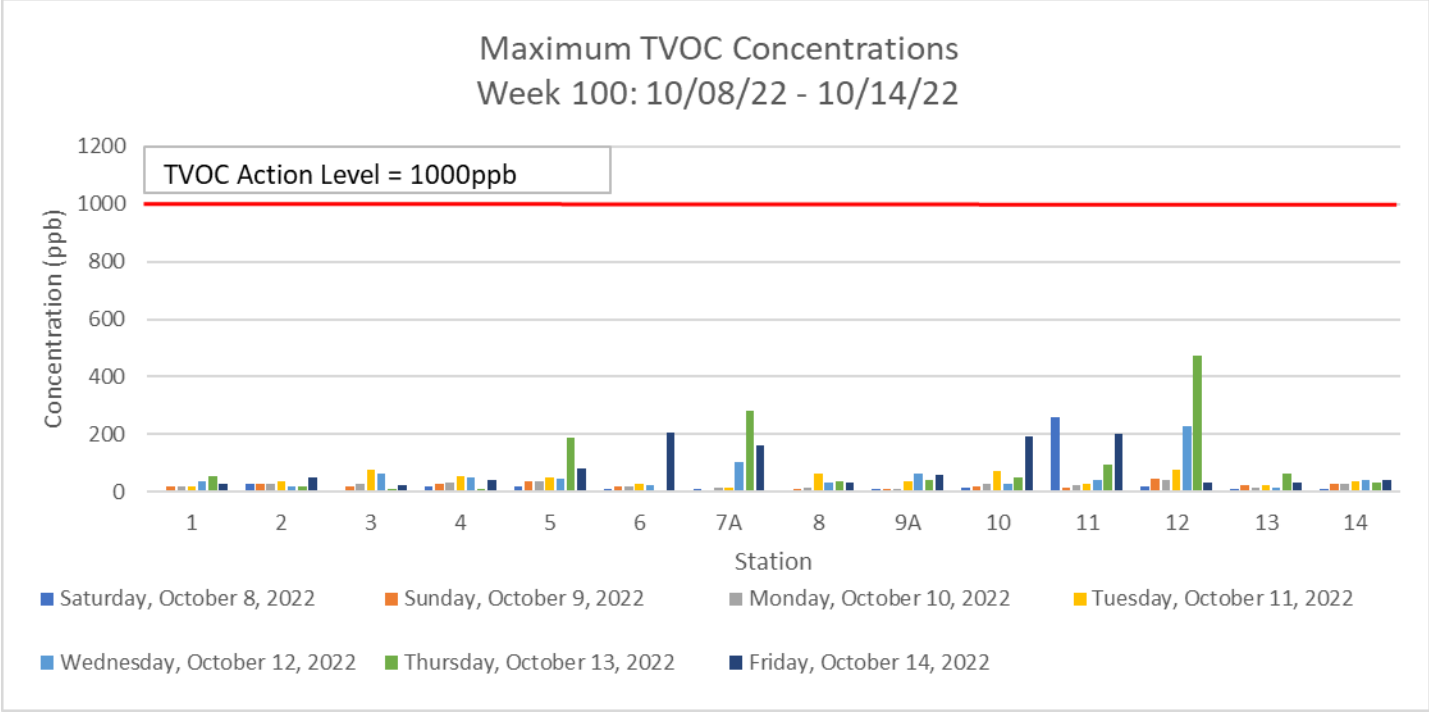


*Figure 4: Average 15-Minute $PM_{10}$ Concentrations*

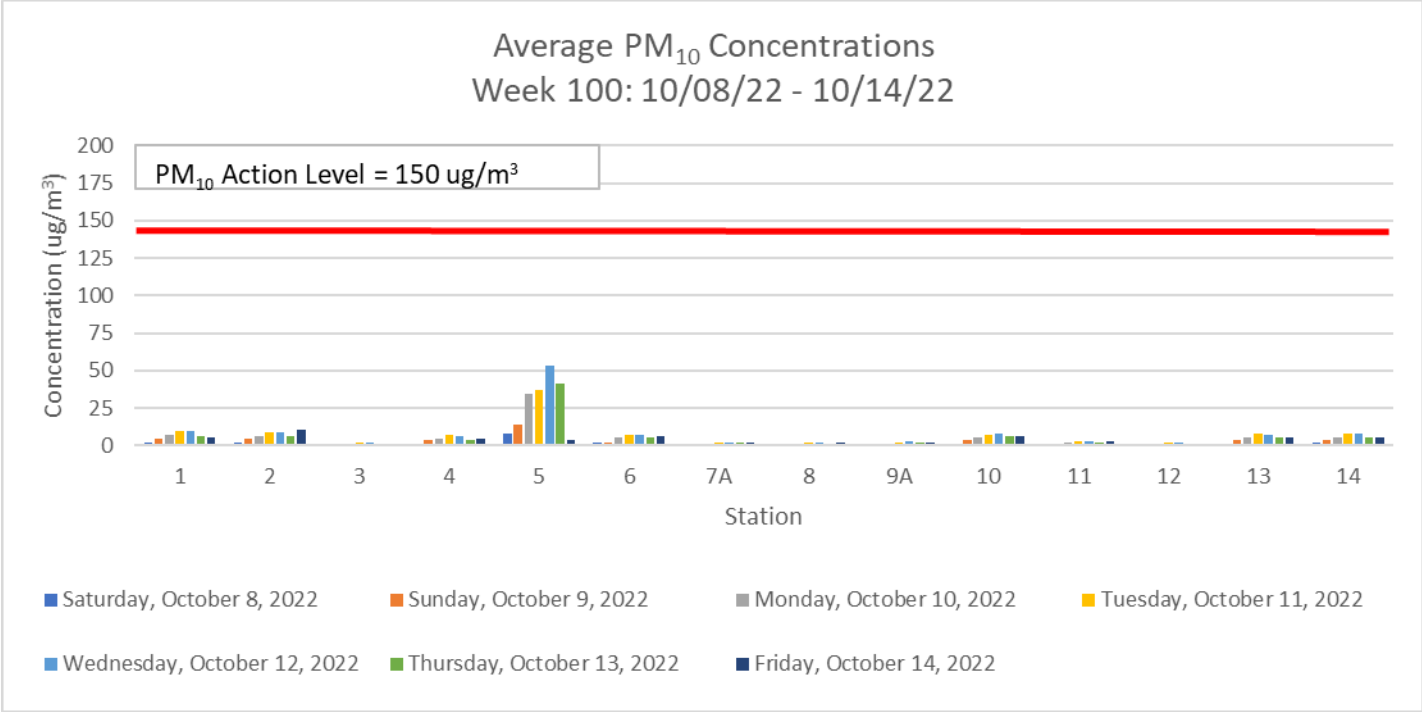



*Figure 5: Maximum 15-Minute $PM_{10}$ Concentrations*

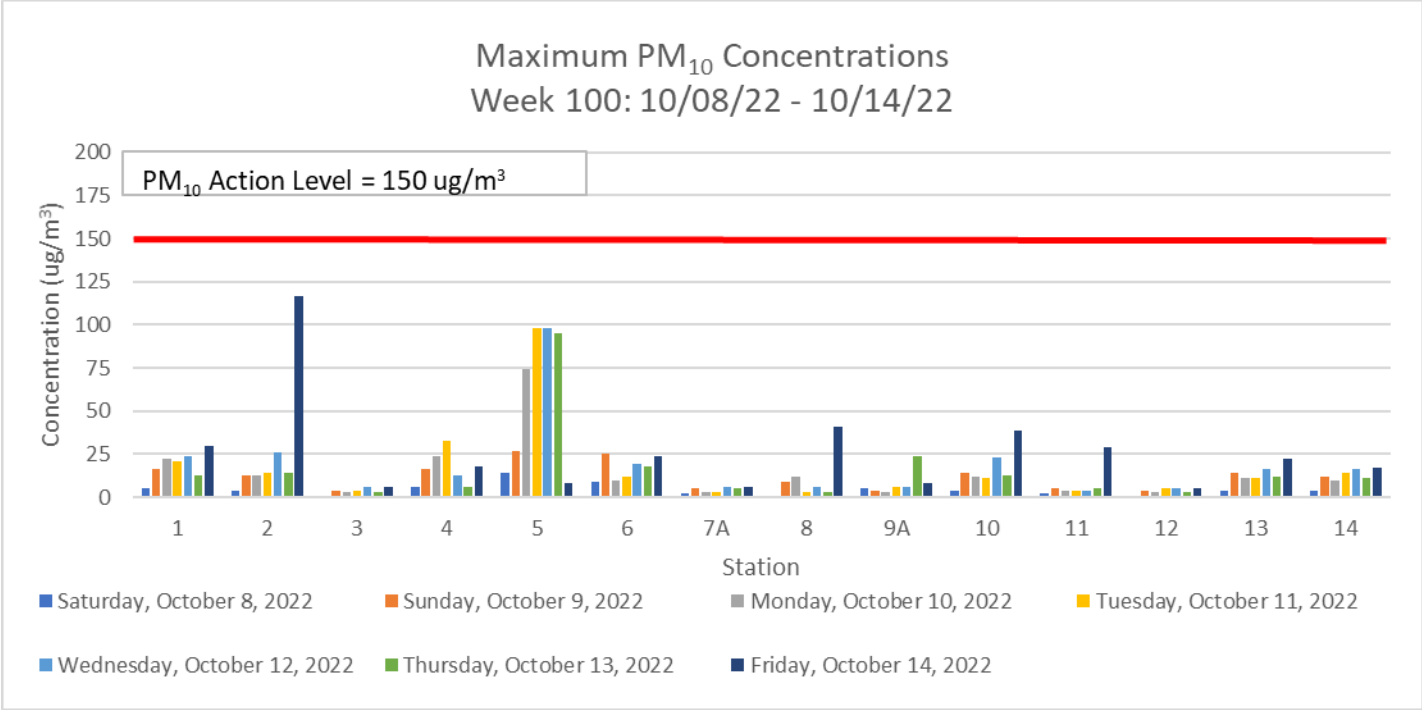


*Table 2: Weekly Average and Maximum $PM_{10}$ and TVOC Concentrations*

| ***Station Number*** | **AVG VOC (ppb)** | **MAX VOC (ppb)** | **$PM_{10}$ ($ug/m^3$)** | **$PM_{10}$ ($ug/m^3$)** |
|---|---|---|---|---|
| 15 | 9.1 | 169.6 | < 10 | < 10 |
| 16 | < 5 | 157.3 | < 10 | < 10 |

*Table 3: Maximum Recorded Results from Odor Surveys & Periodic Sampling for Hydrogen Sulfide and Ammonia*

| Station # | Odor Scale[1] | Hydrogen Sulfide (ppb)[2] | Ammonia (ppb)[3] | Max Concentrations Measured[4] | |
|---|---|---|---|---|---|
| | | | | Date | Time |
| 1 | 1 | 3 | < 10 | 10/14/22 | 10:01 |
| 2 | 0 | < 3 | < 10 | None detected | |
| 3 | 1 | < 3 | < 10 | 10/14/22 | 07:31 |
| 4 | 1 | < 3 | < 10 | 10/14/22 | 07:51 |
| 5 | 1 | < 3 | < 10 | 10/14/22 | 12:01 |
| 6 | 1 | 4 | < 10 | 10/14/22 | 12:21 |
| 7A | 1 | < 3 | < 10 | 10/14/22 | 12:50 |
| 8 | 1 | < 3 | < 10 | 10/14/22 | 12:16 |
| 9A | 1 | 5 | < 10 | 10/12/22 | 13:34 |
| 10 | 1 | < 3 | < 10 | 10/14/22 | 08:33 |
| 11 | 1 | 4 | < 10 | 10/11/22 | 11:34 |
| 12 | 1 | 3 | < 10 | 10/11/22 | 08:53 |
| 13 | 0 | < 3 | < 10 | None detected | |
| 14 | 0 | < 3 | < 10 | None detected | |

[1] Odor observations are classified following the odor classification scale defined in Section 5.5 of the Final Community Air Monitoring Plan. If odors are observed at a "2" or above on the scale, odor control measures will be implemented.
[2] The detection limit of the Jerome Meter, used to collect hydrogen sulfide data, is 3 ppb. Non-detected concentrations are shown as < 3.
[3] The detection limit of the ATO-SKY2000, used to collect ammonia data, is 10 ppb. Non-detected concentrations are shown as < 10.
[4] The date and time of maximum concentrations of hydrogen sulfide and or ammonia were detected. The odor observation included in this table is from the same time period.

*Table 4: Summary of On-Site Meteorological Conditions*

| Meteorological Parameters | 10/08/22 | 10/09/22 | 10/10/22 | 10/11/22 | 10/12/22 | 10/13/22 | 10/14/22 |
|---|---|---|---|---|---|---|---|
| ***Wind Direction (from)*** | NW | WSW | WSW | WSW | SSW | SSE | NW |
| ***Wind Speed (mph)*** | 5.9 | 3.5 | 3.1 | 2.8 | 4.3 | 7.8 | 4.3 |
| ***Temperature (°F)*** | 53.7 | 54.2 | 59 | 61.2 | 62.2 | 64.5 | 58.9 |
| ***Humidity (%)*** | 56.7 | 59.1 | 54.9 | 62.7 | 66 | 90 | 70.6 |
| ***Barometric Pressure (inHg)*** | 29.93 | 29.97 | 30.08 | 29.86 | 29.8 | 29.86 | 29.88 |

*Table 5: Week 98 VOCs Results*[5,6]

| **Laboratory ID** | 22J1015-01 | 22J1015-02 | Average Concentrations from Background Monitoring[7] |
|---|---|---|---|
| **Sample ID** | ST-11-9/29/22 | ST-12-9/29/22 | |
| **Sample Start Date/Time** | 9/29/2022 9:00 | 9/29/2022 9:18 | |
| **Sample End Date/Time** | 9/30/2022 09:33 | 9/30/2022 09:50 | |
| **Sampling Location** | Station 11 | Station 12 | |
| ***Contaminants of Concern (TO-15)***[8] | | | |
| *Benzene* | 0.62 | 0.16 | 0.17 |
| *Chloroform* | < 0.035 | < 0.035 | 0.04 |
| *Ethylbenzene* | 0.3 | 0.082 | 0.05 |
| *Methylene Chloride* | < 0.35 | < 0.35 | 0.35 |
| *Naphthalene* | 0.038 | 0.057 | 0.04 |
| *Toluene* | 1.5 | 0.38 | 0.21 |
| *m&p-Xylene* | 0.96 | 0.22 | 0.14 |
| *o-Xylene* | 0.38 | 0.10 | 0.07 |

[5] VOCs: Volatile Organic Compounds collected and analyzed in accordance with US EPA Method TO-15; Site Specific TVOC Action Level = 1,000 ppb

[6] Results for VOCs are expressed in units of parts per billion (ppb); non-detected results are reported as less than (<) the laboratory's analytical reporting limit.

[7] Non-detected results from background monitoring were included in average calculations, as the reporting limit value.

[8] Contaminants of Concern (COC), a subset of TO-15 VOCs, are defined in Section 5.4 of the Final Community Air Monitoring Plan for the Gowanus Canal Superfund Site Remedial Target Area 1 Brooklyn, NY, February 2021.

## Attachment A: Daily Reports

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Saturday, October 8, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | *Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 7 | 26 | 6 | 19 | 17 | 11 | 9 | 6 | 9 | 13 | 261 | 19 | 8 | 11 |
| **Average Conc.** | <5 | <5 | <5 | 5 | 6 | <5 | <5 | <5 | <5 | <5 | 18 | <5 | <5 | <5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***$PM_{10}$ ($ug/m^3$)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 5 | 4 | 1 | 6 | 14 | 9 | 2 | 1 | 5 | 4 | 2 | 1 | 4 | 4 |
| **Average Conc.** | 1.8 | 2.0 | <1 | 1.6 | 7.7 | 2.1 | <1 | <1 | <1 | 1.6 | <1 | <1 | 1.6 | 1.8 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
*A Station 10 instrument malfunction resulted in approximately 2 hours of $PM_{10}$ monitoring downtime
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
Average: The average of all recorded 15-min average concentrations each day
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
Action Levels:
TVOC = 1,000 ppb
$PM_{10}$ = 150 $ug/m^3$
The detection limits for $PM_{10}$ and TVOC are 1 $ug/m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 $ug/m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Sunday, October 9, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 20 | 29 | 17 | 27 | 37 | 20 | 7 | 11 | 12 | 19 | 15 | 47 | 23 | 29 |
| **Average Conc.** | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | 7 | <5 | 9 | <5 | <5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***$PM_{10}$ ($ug/m^3$)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 16 | 13 | 4 | 16 | 27 | 25 | 5 | 9 | 4 | 14 | 5 | 4 | 14 | 12 |
| **Average Conc.** | 4.6 | 4.4 | 1.2 | 3.6 | 13.8 | 2.1 | 1.3 | 1.4 | 1.2 | 3.9 | 1.4 | 1.2 | 4.0 | 4.2 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
Average: The average of all recorded 15-min average concentrations each day
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
Action Levels:

TVOC = 1,000 ppb
$PM_{10}$ = 150 $ug/m^3$

The detection limits for $PM_{10}$ and TVOC are 1 $ug/m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 $ug/m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Monday, October 10, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 18 | 28 | 28 | 32 | 37 | 19 | 14 | 14 | 12 | 29 | 22 | 40 | 15 | 26 |
| **Average Conc.** | 6 | <5 | <5 | <5 | 6 | <5 | <5 | 6 | 6 | 12 | 7 | 8 | <5 | 7 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***$PM_{10}$ ($ug/m^3$)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 22 | 13 | 3 | 24 | 74 | 10 | 3 | 12 | 3 | 12 | 4 | 3 | 11 | 10 |
| **Average Conc.** | 7.0 | 6.0 | 1.4 | 4.7 | 34.4 | 5.3 | 1.6 | 1.6 | 1.5 | 5.5 | 1.8 | 1.3 | 5.3 | 5.6 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
Average: The average of all recorded 15-min average concentrations each day
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
Action Levels:

TVOC = 1,000 ppb

$PM_{10}$ = 150 $ug/m^3$

The detection limits for $PM_{10}$ and TVOC are 1 $ug/m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 $ug/m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Tuesday, October 11, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 17 | 35 | 77 | 56 | 50 | 30 | 17 | 65 | 39 | 72 | 30 | 77 | 25 | 38 |
| **Average Conc.** | <5 | <5 | 6 | <5 | <5 | <5 | <5 | 8 | 5 | 11 | 11 | 22 | <5 | <5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***PM10 (ug/m3)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 21 | 14 | 4 | 33 | 98 | 12 | 3 | 3 | 6 | 11 | 4 | 5 | 11 | 14 |
| **Average Conc.** | 10.0 | 8.8 | 2.3 | 7.3 | 36.8 | 7.6 | 2.3 | 2.2 | 2.5 | 7.6 | 2.8 | 2.2 | 7.8 | 8.2 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
Average: The average of all recorded 15-min average concentrations each day
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
Action Levels:

TVOC = 1,000 ppb

$PM_{10}$ = 150 ug/$m^3$

The detection limits for $PM_{10}$ and TVOC are 1 ug/$m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 ug/$m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Wednesday, October 12, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 38 | 19 | 62 | 49 | 48 | 26 | 104 | 33 | 64 | 26 | 42 | 230 | 13 | 42 |
| **Average Conc.** | <5 | <5 | 7 | <5 | <5 | <5 | <5 | 10 | 6 | <5 | 8 | 56 | <5 | <5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***$PM_{10}$ ($ug/m^3$)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 24 | 26 | 6 | 13 | 98 | 19 | 6 | 6 | 6 | 23 | 4 | 5 | 16 | 16 |
| **Average Conc.** | 9.5 | 8.8 | 2.1 | 6.1 | 53.1 | 7.3 | 2.3 | 2.3 | 2.6 | 8.4 | 2.6 | 2.1 | 7.4 | 7.8 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
CAAL: The total number of recorded 15-min average concentrations above the Action Level
Action Levels:
TVOC = 1,000 ppb
$PM_{10}$ = 150 $ug/m^3$
The detection limits for $PM_{10}$ and TVOC are 1 $ug/m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 $ug/m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Thursday, October 13, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 54 | 19 | 10 | 9 | 190 | <5 | 282 | 36 | 40 | 49 | 96 | 474 | 65 | 31 |
| **Average Conc.** | <5 | 5 | <5 | <5 | <5 | <5 | 46 | 23 | 12 | <5 | 16 | 113 | <5 | <5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***$PM_{10}$ ($ug/m^3$)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 13 | 14 | 3 | 6 | 95 | 18 | 5 | 3 | 24 | 13 | 5 | 3 | 12 | 11 |
| **Average Conc.** | 6.0 | 6.0 | 1.4 | 3.6 | 41.2 | 5.8 | 1.7 | 1.7 | 2.3 | 6.8 | 2.1 | 1.7 | 5.4 | 5.6 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
Average: The average of all recorded 15-min average concentrations each day
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
Action Levels:
TVOC = 1,000 ppb
$PM_{10}$ = 150 $ug/m^3$
The detection limits for $PM_{10}$ and TVOC are 1 $ug/m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 $ug/m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

**Gowanus Canal RTA1 Community Air Monitoring Program - Brooklyn, New York**
**Daily Station Report - Summary of Continuous TVOC and $PM_{10}$ Concentrations**
**Friday, October 14, 2022**
**Data Collected 00:00 - 23:45**

| | Station 1 | Station 2 | Station 3 | Station 4 | Station 5 | Station 6 | Station 7A | Station 8 | Station 9A | Station 10 | Station 11 | Station 12 | Station 13 | Station 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***TVOC (ppb)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 29 | 49 | 24 | 43 | 80 | 207 | 160 | 33 | 57 | 194 | 200 | 33 | 33 | 43 |
| **Average Conc.** | <5 | <5 | <5 | <5 | 7 | 9 | 46 | 14 | <5 | 11 | 8 | 6 | <5 | <5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***$PM_{10}$ ($ug/m^3$)*** | | | | | | | | | | | | | | |
| **Maximum Conc.** | 30 | 117 | 6 | 18 | 8 | 24 | 6 | 41 | 8 | 39 | 29 | 5 | 22 | 17 |
| **Average Conc.** | 5.9 | 10.8 | 1.6 | 4.4 | 3.4 | 6.1 | 1.9 | 2.5 | 2.0 | 6.0 | 2.6 | 1.7 | 5.6 | 5.5 |
| **# of Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **# of Non-Project Related CAAL** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:
TVOC: Total Volatile Organic Compounds
$PM_{10}$: Particulate Matter < 10 um in diameter
Maximum: The highest daily recorded 15-min average concentration
Average: The average of all recorded 15-min average concentrations each day
CAAL: The total number of recorded 15-min average concentrations above the Action Level - after background correction
Action Levels:
TVOC = 1,000 ppb
$PM_{10}$ = 150 $ug/m^3$
The detection limits for $PM_{10}$ and TVOC are 1 $ug/m^3$ and 5 ppb, respectively.
Non-detected concentrations are shown as < 1 $ug/m^3$ for $PM_{10}$ and < 5 ppb for TVOC.

# Appendix D

Weekly Optical and Vibration Monitoring Report

# Weekly Instrument Monitoring Report

**Period of Monitoring:** 10/9/2022 to 10/15/2022

**Work Locations:**
CDMC continued dredging north of the Carroll Street Bridge and south of the Union Street Bridge and began cap installation at DeGraw Street W.

Upland activities by others at the Powerhouse Project, Sackett Street, President Street properties, 318 Nevins Street, 420 Carroll Street, and Fulton Street.

Carroll Street Bridge was opened by NYC DOT crews on June 21, 2021, to facilitate pipe pile installation and will remain open until NYC DOT determines that it may return to "normal service".

AMTS2 was shut down on 10/11/2022 at approximately 7:30 am and will continue to be shutdown for the remainder of the week. This instrument was shut down during lock out tag out operations while Hellman Electric performed work under the Union Street Bridge creating gaps in data collection at prisms read by this instrument.

**Optical Monitoring Results:**
Union Street Bridge: Received multiple combined easting and northing alerts at locations UN-12 and UN-21; a single combined easting and northing alert at location UN-01; many easting alerts at locations UN-04, UN-12, and UN-21; several easting alerts at locations UN-01 and UN-22; multiple northing alerts at locations UN-04 and UN-21; a single northing alert at locations UN-01 and UN-12; and multiple elevation alerts at locations UN-01 and UN-12 greater than 0.25". These alerts were consistent with data trends observed at these locations. The Owner and Engineer have been informed of the cumulative movement greater than 0.25". Subsequent readings at these remaining locations returned to previously observed data trends as noted below in "Trends Identified to Date".

Carroll Street Bridge: Received many easting alerts at location CA-13, and multiple northing alerts at location CA-35A greater than 0.25". These alerts were consistent with data trends observed at these locations. The Owner and Engineer have been informed of the cumulative movement greater than 0.25".

Displacement of greater than 0.25" occurred on the southeast side of the Carroll Street bridge because of pipe pile installation. Additionally, displacement of greater than 0.25" occurred on the southwest side and the northeast side of the bridge. The displacements greater than 0.25" included either elevation, northing, or easting at locations CA-02, CA-03A, CA-04-05, CA-06, CA-14, CA-15, CA-16, CA-22A, CA-32, CA-34, CA-35, and CA-40. Northing and/or easting readings of greater than 0.25" also occurred at monitoring locations CA-04, CA-04-05, CA-06, CA-14, CA-35A, CA-42, CA-45, CA-46, CA-47, and CA-48. Once the 0.25" displacement was identified, the Engineer and the NYC DOT were notified, and a visual inspection of the bridge occurred. These visual inspections then occurred daily during work activities including cycling of the bridge.

3RD Street Bridge: Received several easting alerts at locations 3RD-03 and 3RD-04 greater than 0.25". These alerts were consistent with data trends observed at these locations. The Owner and Engineer have been informed of the cumulative movement greater than 0.25" at various locations on the 3rd Street bridge.

Received multiple combined easting and northing alerts at locations 524-01, 524-02, 322-04A, 322-08, 322-09, and DEP-03; a single combined easting and northing alert at locations DEP-04 and DEP-05; multiple easting alerts at locations 322-01, 322-02, 524-01, 524-02, DEP-01, and 322-04A; a single easting alert at locations DEP-04, DEP-06, 322-08, and 322-09; several northing alerts at locations 322-08 and 322-09; a single northing alert at locations DEP-01, DEP-03, DEP-04, DEP-05, 524-01, and 524-02; many elevation alerts at location 322-07; several elevation alerts at location 322-06; and a single elevation alert at location DEP-02B greater than 0.25". These alerts, except for the easting and elevation alerts at DEP-02B, were consistent with data trends observed at these locations. The alerts at DEP-02B were erroneous readings that have subsequently returned to previous data trends observed at this location.

Received several easting alerts at location L17-56; multiple easting alerts at locations L16-00A, L15-49B, L15-52, and L15-27; a single easting alert at locations L10-00, L17-49, and R17-43; and a single northing alert at location L10-97 greater than 2". These alerts, expect for the alerts at L10-00 and L10-97, were consistent with data trends observed at these locations. The alerts at L10-00 and L10-97 were erroneous readings. These prisms appear to have been bumped on 10/13/2022 and will be reset.

Note: Alerts may be positive or negative. A negative northing alert meaning southern movement, a negative easting alert meaning western movement, etc. Some monitoring points are intermittently blocked by canal equipment creating gaps in data collection.

Current identified trends observed are listed below.

Weekly manual monitoring completed on October 12th, 2022. A comparative analysis of manual locations to adjacent optical monitoring locations showed the data sets are within the required 0.25-inch criteria.

**Trends Identified to Date:**

- 3RD-01 (3rd Street Bridge) southwest trend that has stabilized over the past couple of weeks.
- 3RD-02 (3rd Street Bridge) south trend that has stabilized over the past couple of weeks.
- 3RD-03 (3rd Street Bridge) northwest trend that has stabilized over the past couple of weeks.
- 3RD-04 (3rd Street Bridge) northwest trend that has stabilized over the past couple of weeks.
- CA-03A (Carroll Street Bridge) east trend that has stabilized over the past couple of weeks.
- CA-05 (Carroll Street Bridge) east trend that has stabilized over the past couple of weeks.
- CA-09 (Carroll Street Bridge) slight east trend that has stabilized over the past couple of weeks.
- CA-10 (Carroll Street Bridge) slight east trend that has stabilized over the past week.
- CA-35A (Carroll Street Bridge) slight east trend that has stabilized over the past couple of weeks.
- CA-43A (Carroll Street Bridge) slight east trend that has stabilized over the past week.
- L08-33 (Sackett Street) slight northwest trend that has stabilized over the past couple of weeks.
- L14-86 (420 Carroll Street) slight east trend that has stabilized over the past couple of weeks.
- L15-76A (420 Carroll Street) west trend that has stabilized over the past week.
- L16-00A (420 Carroll Street) west trend that has stabilized over the past week.
- L16-28 (420 Carroll Street) west trend with up to an inch and a half of westward deflection over the past month.
- L16-51A (420 Carroll Street) west trend with up to an inch of westward deflection over the past month.

- L16-76A (420 Carroll Street) west trend that has stabilized over the past week.

## History of Instrument Settings and Adjustments

| Unit | Date | Action |
|---|---|---|
| AMTS 1<br>479 DeGraw St | 11/30/20 | Adjusted error reading |
| | 01/07/21 | Reset Unit |
| | 02/19/21 | Restarted after cleaning ice from unit |
| | 08/18/21 | Reset Unit |
| | 11/01/2021 | Unit became out of level |
| | 11/02/2021 | Unit Releveled |
| | 11/03/2021 | Unit became out of level and was re-leveled |
| | 11/24/2021 | Unit became out of level and will not be re-leveled due to limited access to the property |
| | 01/12/2022 | Unit releveled |
| | 3/31/2022 | Replaced AMTS Unit |
| | 5/4/2022 | Unit releveled |
| | 6/28/2022 | Unit Replaced |
| AMTS 2<br>Union Street Bridge | 12/04/20 | Reset Unit |
| | 02/19/21 | Restarted after cleaning ice from unit |
| AMTS 3<br>363 Bond Street | 12/04/20 | Reset Unit |
| | 12/14/20 | Reset baseline for CA-07 and CA-08 |
| | 12/23/20 | Reset Unit |
| | 02/19/21 | Restarted after cleaning ice from unit |
| | 08/18/21 | Reset Unit |
| | 08/23/21 | Replaced AMTS Unit |
| | 08/26/21 | Replaced AMTS Unit |
| | 4/8/2022 | Reset Unit after storm caused it to shut down |
| | 4/19/2022 | Reset Unit |
| | 4/20/2022 | Replaced AMTS Unit |
| | 5/12/2022 | Reset Unit |
| | 5/13/2022 | Reset Unit |
| | 10/5/2022 | Replaced Unit |
| AMTS 4<br>3rd Street Bridge | 02/03/21 | Reset Unit |
| | 02/19/21 | Restarted after cleaning ice from unit |
| AMTS 5<br>318 Nevins St | 04/22/21 | Installed Unit |
| | 04/28/21 | Remounted Unit to side of building |
| | 09/29/21 | Removed from building, will no longer monitor |
| AMTS6<br>Under Carroll St. Bridge | 06/22/21 | Installed Unit |
| | 07/10/21 | Installed new AMTS unit |
| | 07/12/21 | Replaced AMTS Unit |
| | 08/26/21 | Replaced AMTS Unit |
| | 12/15/2021 | Removed unit from bridge, will no longer monitor |
| AMTS7<br>DEP Butler Street | 10/19/2021 | Installed Unit |
| | 3/25/2022 | Unit removed from building, will no longer monitor |
| AMTS8<br>DeGraw Street (east end) | 11/17/2021 | Installed Unit |
| | 4/11/2022 | Unit removed, will no longer monitor |
| AMTS9<br>3RD Street Bridge | 5/11/2022 | Installed Unit |
| | 6/29/2022 | Unit removed, will no longer monitor |
| AMTS10<br>3RD Street Bridge | 5/11/2022 | Installed Unit |
| | 6/29/2022 | Unit removed, will no longer monitor |

| Prisms | Date | Action/Reason |
|---|---|---|
| CA-04 | 11/09/20 | Repositioned CA-04 to read from AMTS 4 |
| Various | 12/10/20 | Replaced L15-12, L15-38, L15-63, L15-88, L16-13, and L16-88 |
| | | with L15-09, L15-35, L15-63, L15-88, L16-13, and L16-86 |
| | | due to prisms being knocked off by barge turning |
| UN-10 | 12/22/20 | Reset and realigned UN-10 - hit loose with snow shovel |
| Various | 12/22/20 | Realigned and reset prisms on 322 3rd Ave bulkhead - owners work on bulkhead is paused |
| CA-04 | 12/23/20 | Reset baseline CA-04 |
| CA-04 | 12/28/20 | Reset baseline CA-04 |
| Various | 01/05/21 | Reset prisms R12-11 and R12-36 due to prisms being bumped |
| Various | 1/14 & 1/19 | Reset prisms R13-08 and L18-84 due to prism being bumped |
| All Units | 1/30-2/1 | Significant Snowstorm (18" snow) |
| L00-00C | 02/04/21 | Reset prisms L00-00C due to prism being bumped |
| R03-69 | 02/11/21 | Reset prisms R03-69 due to prism being bumped |
| Various | 02/09/21 | Reset prisms L05-37, L05-60 due to being bumped |
| Various | 02/25/21 | Reset prisms L04-91, L08-40, and L08-62 due to being bumped |
| Various | 03/10/21 | Added Prism L00-23 |
| Various | 03/17/21 | Added Prisms L00-63, L00-63-2, L01-29, L01-29-2, L01-52, L01-72, L01-72-2, L01-94, L02-18-1, L01-18-2, L02-58, L02-77-1, L02-77-2, L02-98, L03-15, L03-16, L03-39, L03-61, and L03-85. |
| L15-09 | 03/25/21 | Reset Prism due to being bumped. |
| R14-68 | 04/02/21 | Adjusted/reset due to previous bump. |
| Various | 04/07/21 | Added Prisms L08-54, L08-33, L08-13, L07-93, L07-73, L07-47, L07-28, L07-07, and L06-85 |
| Various | 04/07/21 | Removed prisms R05-19, R05-41, R05-88, R06-20, R06-61, R06-86, R07-11, R07-36, R07-61, and R07-86 |
| Various | 04/09/21 | Re-established UN-11, and added UN-20 and UN-21 on Union St. Bridge |
| Various | 04/14/21 | Re-designated R14-58 and R14-68 to CA-11 and CA-12, respectively |
| L06-85 | 04/21/21 | Reset prism due to being bumped by upland work. |
| L02-77-2 & L03-15 | 04/22/21 | Removed prisms L02-77-2 and L03-15 due to interference with newly installed fence. L02-77-2 is monitored by L02-77-1 and L03-15 is monitored by L0-3-16. |
| Various | 05/05/21 | Added prisms CA-13, CA-14, CA-15, & CA-16 and reset prism L16-36. |
| L00-00C and L0-05 | 05/14/21 | Relocated prisms L00-00C and L0-05 due to being too close to each other. |

| | | |
|---|---|---|
| Manual Monitoring Prisms | 05/26/21 | Added Manual Monitoring Prisms for Carroll St. Bridge (east side) MMD-CA-02, MMD-CA-04, MMD-CA-06, MMD-CA-14, MMD-CA-16, MMD-CA-18, MMD-CA-19, MMD-L14-90, MMD-L15-09, MMD-L15-30, and MMD-L15-49 |
| L17-70A | 06/03/21 | Reset L17-70 after being bumped from work activities. Now reports as L17-70A |
| CA-03A and CA-04-05 | 06/10/21 | Added prisms CA-03A to replace broken CA-03 and CA-04-05 to read at location CA-04 but from AMTS 5. CA-04 is blocked by in canal equipment. |
| Various | 06/14/21 | Added prisms CA-23, CA-24, CA-25, CA-26, CA-27, and CA-28 to be read by AMTS3 |
| Various | 06/21/21 | Prisms CA-01, CA-10, CA-11, CA-23, CA-24, CA-25, CA-26 CA-27, and CA-28 are blocked by the Carroll Street bridge in the "Open" position |
| Various | 06/22/21 | Added AMTS6 and prisms CA-22, CA-29, CA-30, CA-31, CA-32, CA-33, CA-34, CA-35, CA-36, CA-37 CA-38, and CA-40 |
| Various | 07/19/21 | Power to AMTS2 shut off, monitors UN-02, UN-03, UN-05, UN-08 through UN-11, UN-13, UN-16A, and UN-23 through UN-27 not monitored |
| Various | 08/24/21 | Power to AMTS2 restored |
| CA-03A | 08/25/21 | Prism replaced after being dislodged during work activities |
| R11-37 and R11-12 | 08/26/21 | Reset prisms after being bumped by work activities. |
| CA-22A | 09/01/21 | Added prism CA-22A |
| Various | 10/13/21 | Prisms CA-31, CA-36, and CA-38 replaced after being dislodged on 10/6/21, prisms CA-32 and CA-41 relocated |
| Various | 10/19/21 | Prisms added to the DEP property, the end of Douglass Street, and the end of DeGraw Street |
| 479-02 and 479-03 | 10/27/2021 | Prisms 479-02 and 479-03 added to 479 DeGraw Street |
| DEP-01-2, DEP-02-2, DEP-06-2, 479-04 | 11/03/2021 | Prisms added to the DEP property and to AMTS1 base to be read by AMTS7 |
| CA-42, CA-43, CA-44, CA-45, CA-46, CA-47 | 11/10/2021 | Prisms added underneath Carroll Street Bridge to be read by AMTS2 and AMTS3 once AMTS6 is removed |
| Various | 11/16/2021 | Prisms added to the DEP property and to the bulkhead to replace L00-05A through L06-17 once AMTS1 is removed |
| CA-48 | 12/1/2021 | Prism added underneath Carroll Street Bridge to be read by AMTS2 once AMTS6 is removed |
| CA-35A and CA-43A | 12/8/2021 | Prism added underneath Carroll Street Bridge to be read by AMTS3 once AMTS6 is removed |
| Various | 12/22/2021 | Prisms added to the end of the Sackett Street bulkhead |
| 322-01, 322-02, 322-03, 322-04 | 12/29/2021 | Prisms added to the retaining wall on the Powerhouse property |
| 322-05 and L17-35 | 12/30/2021 | Prisms added to the pipe piles at TB-1 |
| 322-06, 322-07, 322-08, and 322-09 | 01/06/2022 | Prisms added to the Powerhouse |
| L17-49 | 01/10/2022 | Prism added to the return wall pipe pile at TB-1 |
| Various | 01/12/2022 | Prisms added to the bulkhead at 479 DeGraw Street |
| Various | 2/22/2022 | Prisms added to the bulkhead at 479 DeGraw Street, the bulkhead at DeGraw Street West, 479 DeGraw Street, the Union Street Bridge, and 420 Carroll Street |
| Various | 2/23/2022 | Prisms added to 175 3rd Street and the Nevins Street bulkhead |
| 322-05A | 3/2/2022 | Prism added to TB-1 |
| DEP-02B | 3/25/2022 | Prism DEP-02 replaced by DEP-02B |

| | | |
|---|---|---|
| Various | 4/13/2022 | Prisms on DeGraw Street W and 450 Union Street replaced |
| Various | 4/25/2022 | Installed and replaced prisms on 479 DeGraw Street and DeGraw Street W |
| Various | 5/11/2022 | Installed new prisms on 479 DeGraw Street, DeGraw Street W, and the 3rd Street Bridge |
| UN-32 and UN-33 | 6/15/2022 | Replaced prisms UN-25 and UN-24 with prisms UN-32 and UN-33 |
| Various | 6/29/2022 | Replaced various prisms along the 420 Carroll Street bulkhead |
| Various | 7/19/2022 | Replaced various prisms along the 479 DeGraw Street bulkhead |

**Crack Gauge Monitoring**

Changes were observed in crack gauges CA-03, CA-05, CA-07, CA-09A, CA-11, CA-12, CA-13, CA-14, CA-15, UN-02, UN-03, UN-07, 479-01, CM-02, CM-03, and CM-05.

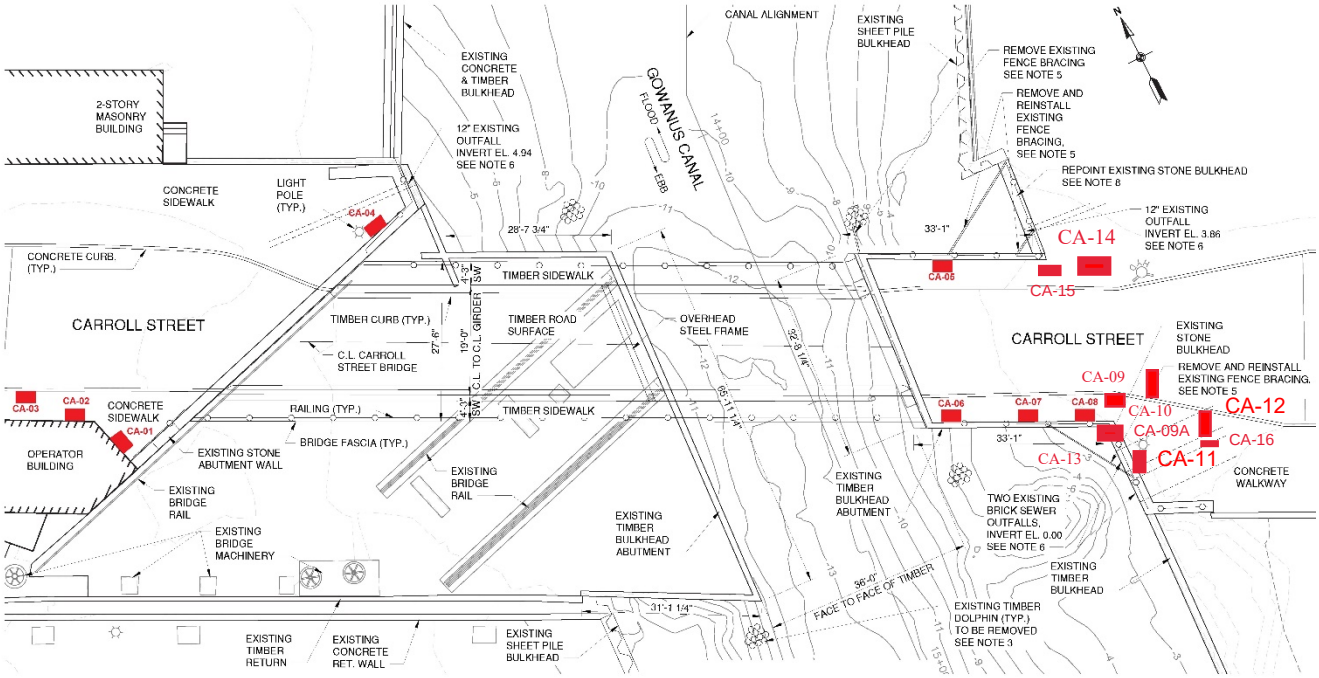
Both the individual and cumulative readings for each crack gauge have been included in this report. Readings are read in both the X and Y axis and have a negative or positive reading depending on the direction of change from the origin of each axis.

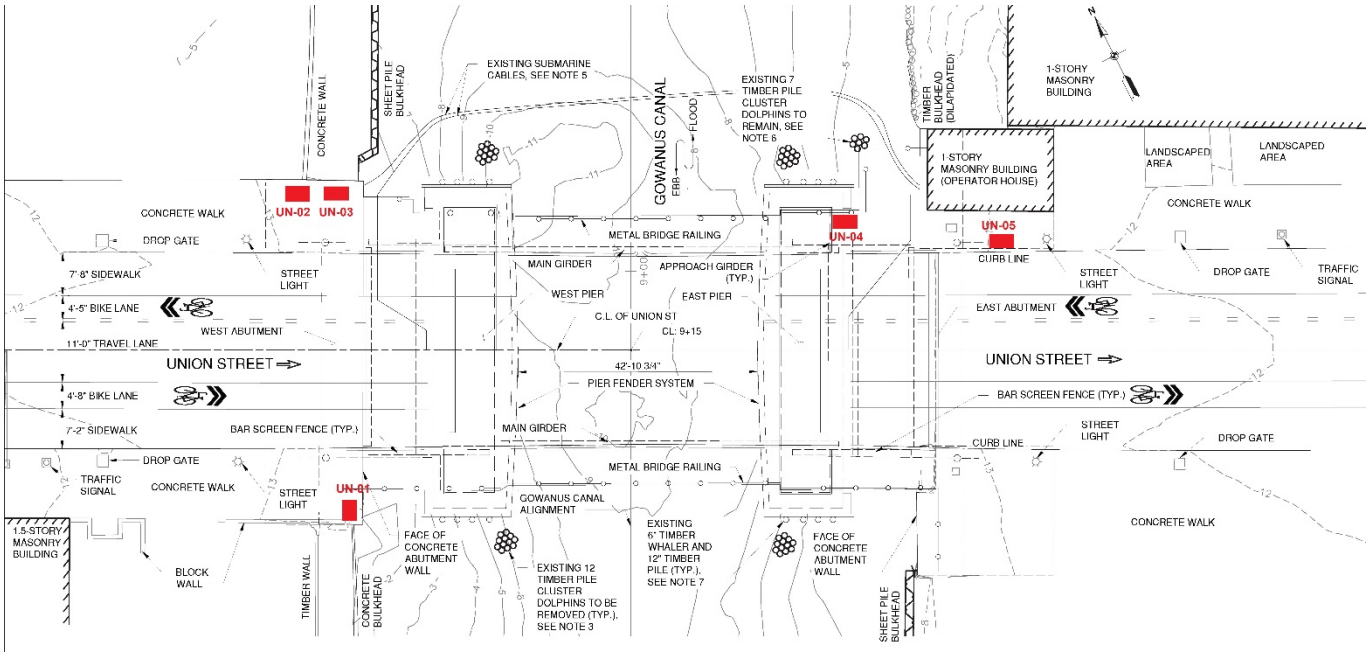
**Inclinometer Readings**

A change from -0.25 degrees to -0.5 degrees in inclinometer 479 IN-01 East.

Readings have a negative or positive reading depending on the direction of change from zero. A positive reading on an east facing inclinometer indicates movement towards the south, and a negative reading indicates movement towards the north. A positive reading on a south facing inclinometer indicates movement towards the west, and a negative reading indicates movement towards the east. A positive reading on a north facing inclinometer indicates movement towards the east, and a negative reading indicates movement towards the west.

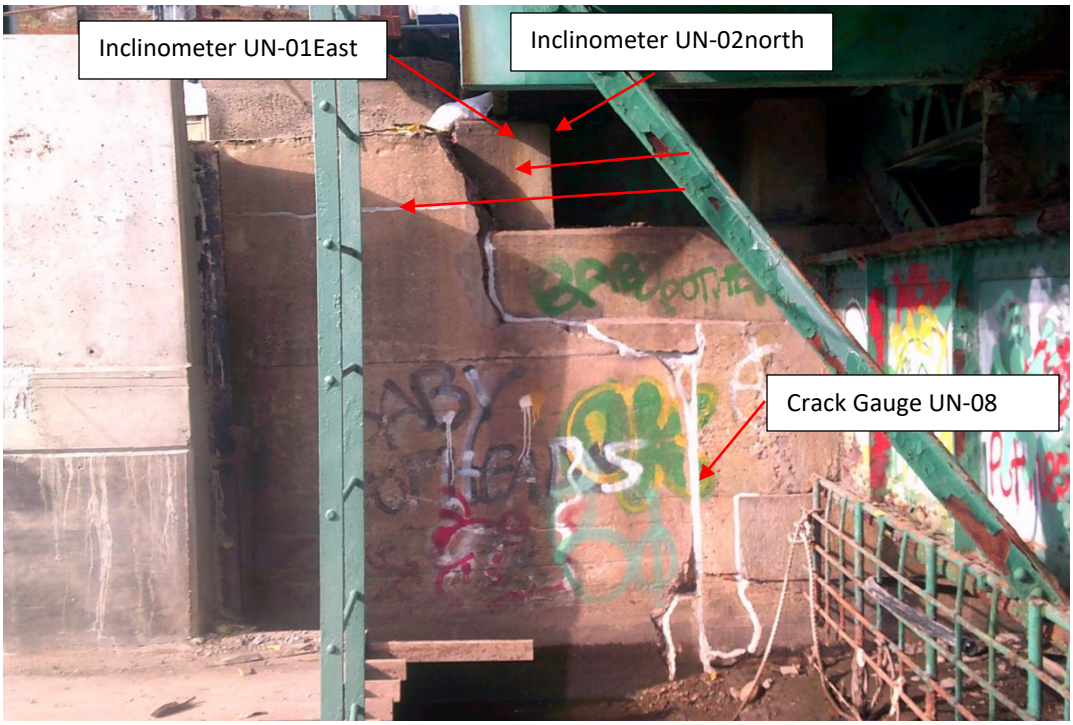
# CARROLL UNION CRACK GUAGE LOCATIONS



**Union Street Bridge Monitoring Northwest Abutment**


**Union Street Bridge Southwest Abutment**



**Individual Readings**

| Weekly Crack Monitoring | | | 7/6/22 | 7/13/22 | 7/22/22 | 7/28/22 | 8/3/22 | 8/10/22 | 8/17/22 | 8/24/22 | 8/31/22 | 9/7/22 | 9/14/22 | 9/21/22 | 9/28/22 | 10/5/22 | 10/12/22 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CA-01 | Observation in millimeters | Y at X=-20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | Y at X=+20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | X at Y=-10 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | X at Y=+10 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| CA-02 | Observation in millimeters | Y at X=-20 | 0.25 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 0.25 |
| | | Y at X=+20 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | X at Y=-10 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -1 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| | | X at Y=+10 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -1 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| CA-03 | Observation in millimeters | Y at X=-20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.75 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 | -0.25 | -0.25 |
| | | Y at X=+20 | -0.25 | -0.25 | -0.25 | -0.5 | -0.5 | -0.25 | -0.25 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 |
| | | X at Y=-10 | -0.5 | -0.75 | -0.75 | -0.5 | -0.5 | -0.75 | -0.5 | -0.5 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | 0.25 | -0.25 |
| | | X at Y=+10 | -0.75 | -0.75 | -0.75 | -0.5 | -0.5 | -0.75 | -0.5 | -0.75 | -0.75 | -0.5 | -0.25 | -0.25 | -0.5 | -0.5 | -0.25 |
| CA-04 | Observation in millimeters | Y at X=-20 | 0.5 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 0.5 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | Y at X=+20 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | X at Y=-10 | -0.75 | -0.75 | -0.75 | -0.5 | -0.75 | -0.75 | -0.5 | -0.75 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | X at Y=+10 | -0.25 | -0.5 | -0.5 | -0.25 | -0.5 | -0.5 | -0.25 | -0.5 | -0.25 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| CA-05 | Observation in millimeters | Y at X=-20 | -1 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 |
| | | Y at X=+20 | -1 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.5 | -1.5 |
| | | X at Y=-10 | 1 | 1.25 | 1.25 | 1.25 | 1.25 | 1 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.5 | 1.75 |
| | | X at Y=+10 | 1 | 1.25 | 1.25 | 1.25 | 1.25 | 1 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.25 | 1.5 |
| CA-06 | Observation in millimeters | Y at X=-20 | 0 | -0.25 | NM | 0 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | 0 | -0.25 | -0.25 | -0.25 | 0 | 0 |
| | | Y at X=+20 | 0 | 0 | NM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 0 | 0 | NM | -0.25 | 0 | 0 | -0.25 | 0 | 0 | 0 | -0.25 | -0.25 | 0 | 0 | 0 |
| | | X at Y=+10 | -0.25 | -0.25 | NM | -0.25 | 0 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | 0 |
| CA-07 | Observation in millimeters | Y at X=-20 | 0.5 | 0.5 | NM | NM | 0.75 | 0.75 | 0.5 | 0.5 | 0.25 | 0.75 | 0.25 | 0.25 | 0.5 | 0.25 | 0.25 |
| | | Y at X=+20 | 0 | 0.25 | NM | NM | 0.25 | 0.25 | 0.5 | 0.25 | 0.25 | 0.5 | 0.25 | 0.25 | 0.25 | 0.25 | 0 |
| | | X at Y=-10 | -0.75 | -0.75 | NM | NM | -0.75 | -0.75 | -0.5 | -0.5 | -0.75 | -0.5 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | X at Y=+10 | -0.5 | -0.5 | NM | NM | -0.5 | -0.5 | -0.25 | -0.25 | -0.5 | -0.25 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 |
| CA-08 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | 0 | 0 | -0.25 | -0.25 | -0.25 | 0 | 0 | 0 |
| | | X at Y=-10 | -0.25 | -0.25 | -0.25 | -0.25 | -0.5 | -0.5 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | X at Y=+10 | 0 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| CA-09A | Observation in millimeters | Y at X=-20 | 1.75 | 1.75 | 2.25 | 1.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0 | -0.25 |
| | | Y at X=+20 | 1.5 | 1.5 | 1.75 | 1.75 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0 | -0.25 |
| | | X at Y=-10 | 7 | 7 | 6 | 5.5 | -0.25 | -0.75 | 0 | 0.25 | 0 | 0.25 | 0.75 | 0.75 | 1.25 | 1.25 | 1.75 |
| | | X at Y=+10 | 7 | 7 | 6 | 5.25 | -0.25 | -0.75 | 0 | 0.25 | 0 | 0.25 | 0.75 | 0.75 | 1.25 | 1.25 | 1.75 |
| CA-10 | Observation in millimeters | Y at X=-20 | 1.25 | 1 | NM | 0.25 | -0.25 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NM |
| | | Y at X=+20 | 1 | 1 | NM | 0 | -0.25 | 0 | -0.25 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0 | NM |
| | | X at Y=-10 | -2.5 | -2.5 | NM | 0 | -0.25 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | NM |
| | | X at Y=+10 | -2.25 | -2.5 | NM | 0.25 | -0.25 | -0.5 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.5 | NM |
| CA-11 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0.25 | 0.25 | 0 | 0.25 | 0 | 0.25 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0 |
| | | Y at X=+20 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | X at Y=-10 | 0.75 | 0.75 | 0.75 | 1.25 | 1.25 | 1 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.25 | 1.5 |
| | | X at Y=+10 | 0.75 | 0.75 | 0.75 | 1.25 | 1.25 | 1 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.25 | 1.5 |
| CA-12 | Observation in millimeters | Y at X=-20 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 |
| | | X at Y=-10 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.5 | 0.75 | 0.75 | 0.5 | 0.75 |
| | | X at Y=+10 | 0.25 | 0.25 | 0.25 | 0.5 | 0.5 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.75 | 0.5 | 0.75 |
| CA-13 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.25 |
| | | X at Y=+10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.25 |
| CA-14 | Observation in millimeters | Y at X=-20 | 2.5 | 2.75 | 2.25 | 2.5 | 2.5 | 2.25 | 2.5 | 2.75 | 2.25 | 2.5 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| | | Y at X=+20 | 2.25 | 2.25 | 2 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2 |
| | | X at Y=-10 | 0.75 | 0.25 | -0.5 | -0.25 | -0.5 | -1.75 | -1.25 | -1 | -1.5 | -1.25 | -1.25 | -1.5 | -1.75 | -2.5 | -1.75 |
| | | X at Y=+10 | 0.75 | 0.25 | -0.25 | -0.25 | -0.5 | -1.75 | -1.25 | -1 | -1.25 | -1.25 | -1.25 | -1.25 | -1.5 | -2.5 | -1.75 |
| CA-15 | Observation in millimeters | Y at X=-20 | 1.5 | 1.75 | 1.75 | 1.75 | 1.75 | 1.5 | 1.75 | 1.75 | 1.75 | 2 | 2.25 | 2 | 2.25 | 2 | 2.25 |
| | | Y at X=+20 | 1.25 | 1.5 | 1.5 | 1.5 | 1.75 | 1.25 | 1.75 | 1.75 | 1.75 | 2 | 2 | 2 | 2 | 2 | 2.25 |
| | | X at Y=-10 | 6 | 6 | 6 | 6 | 6.25 | 6 | 6.25 | 6.5 | 6.5 | 6.75 | 7 | 7 | 7 | 6.25 | 7 |
| | | X at Y=+10 | 6 | 6 | 6 | 6 | 6.25 | 6 | 6.25 | 6.5 | 6.75 | 6.75 | 7 | 7 | 7 | 6.25 | 7 |
| CA-16 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=+10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Needed to re-epoxy edge of Monitor CA-01 which caused reading to recalibrate to 11/23/20 readings.
Needed to re-epoxy edge of Monitor CA-06 which caused reading to recalibrate to 12/14/20 readings.
Readings for CA-01 on 11/23 and 11/30 were mistated on the 11/23 and 11/30 reports as .07 and .05 but were actualy .7 and .5 respectively.
Needed to replace monitors CA-02, CA-03, CA-06, and CA-08 on 12/22/20 after damage due to snow removal.
Found monitors CA-06 and CA-08 damaged. New monitors to be replaced 1/4/2021
Found Monitors CA-03, Ca-06, and CA-07 damaged from snow storm. Replaced and/or repaired, These are new baseline readings.
Found Monitor CA-07 Broken. Could not repair due to weather
CA-03, CA-07, and CA-08 repaired or replaced 2/23/2021 = initial readings.
Repaired and reset CA-03
Repaired and Reset CA-07 on 3/22/2021
Replaced CA-03 4/14/21 - new baseline.
Replaced CA-07 and CA-08 5/18/2021 = initial readings
Monitor CA-01 has been read in error, true Y axis readings are negative. There has been no change in movement.
Replaced CA-04 on 7/20/2021 these are initial readings.
CA-06 and CA-10 replaced 7-28-2021 initial readings
Installed Crack Gauges CA-09A and CA-14 on 8/3/2021 with initial readings of 0. CA-09A replaces CA-09 that was damaged on 8/6/2021.
Replaced CA-06 and CA-12 on 8/18/2021 these are initial readings
Installed Crack Gauges CA-15 and CA-16 on 8/18/2021 with initial readings of 0.
Replaced CA-09A on 9-10-2021 with initial readings of 0.
Replaced CA-05 on 9/16/2021 with initial readings of 0.
Replaced CA-03 on 10/13/2021 with initial readings of 0.
Replaced CA-11 on 11/22/21 with initial readings of 0.
CA-03 was found broken on 3/2/2022 and replaced on 3/3/2022 with initial readings of 0
CA-10 was found broken on 7/27/2022 and replaced with initial readings of 0.

CA-09A and CA-10 were found broken on 8/2/2022 and replaced with initial readings of 0.
CA-16 was found broken on 10/5/2022 and replaced with initial readings of 0.

| Weekly Crack Monitoring | | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UN-01 | Observation in millimeters | Y at X=-20 | 0 | 0.25 | 0.25 | 0 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 0.25 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -1 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| | | X at Y=+10 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -1 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| UN-02 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 0 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | -0.25 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 |
| | | X at Y=+10 | 0 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 |
| UN-03 | Observation in millimeters | Y at X=-20 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.25 | 1.25 | 1.5 | 1.25 | 1.5 |
| | | Y at X=+20 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.75 | 1.5 | 1.25 | 1.5 | 1.25 | 1.5 |
| | | X at Y=-10 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1 | -1.25 | -1 | -1 | -1 | -1 | -1 | -0.75 | -1 |
| | | X at Y=+10 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1.25 | -1 | -1.25 | -1 | -1 | -1 | -1 | -1 | -0.75 | -1 |
| UN-04 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0.25 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | X at Y=+10 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| UN-05 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 0 | 0 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | -0.25 | -0.25 |
| | | X at Y=+10 | 0 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | -0.25 | -0.25 |
| UN-06 | Observation in millimeters | Y at X=-20 | NM | NA | NA | NA | 0 | 0 | 0 | 0 | NM | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | NM | NA | NA | NA | 0 | 0 | 0 | 0 | NM | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | NM | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | X at Y=+10 | NM | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| UN-07 | Observation in millimeters | Y at X=-20 | NM | NA | NA | NA | -3.75 | -3.75 | -3.75 | -3.75 | NM | -3.75 | -3.75 | -3.75 | -4 | -4 | -3.75 |
| | | Y at X=+20 | NM | NA | NA | NA | 0.5 | 0.75 | 0.75 | 0.5 | NM | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.5 |
| | | X at Y=-10 | NM | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | 0 | 0.25 | 0 | 0 |
| | | X at Y=+10 | NM | NA | NA | NA | -2.5 | -2.75 | -2.75 | -2.75 | NM | -2.25 | -2.5 | -2 | -2 | -2.25 | -2.25 |
| UN-08 | Observation in millimeters | Y at X=-20 | NM | 2 | NM | NM | 2 | 2 | 2.25 | 2 | NM | 2 | 2 | NM | N/A | N/A | N/A |
| | | Y at X=+20 | NM | 1.5 | NM | NM | 1.5 | 1.5 | 1.75 | 1.5 | NM | 1.75 | 1.75 | NM | N/A | N/A | N/A |
| | | X at Y=-10 | NM | -0.25 | NM | NM | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | NM | N/A | N/A | N/A |
| | | X at Y=+10 | NM | -0.5 | NM | NM | -0.5 | -0.5 | -0.5 | -0.5 | NM | -0.5 | -0.5 | NM | N/A | N/A | N/A |

Note: Needed to replace monitor UN-01 and repair UN-05 after damage due to snow removal. UN-05 repair caused reading to recalibrate to 12/22/2020 readings.
UN-07 and UN-08 initial readings baseline 1/11/21
Found Monitors UN-01 and UN-05 damaged from snow storm. Replaced and/or repaired, These are new baseline readings.
Found Monitors UN-01 and UN-05 damaged/missing from snow storm. Could not replace due to weather.
Replaced UN-01, UN-04, and UN-05 2/23/2021 = Initial Readings
Replaced UN-01, UN-04, and UN-05 on 2/23/2021 = initial readings.
Repaired & Reset UN-04
Reset UN-05 on 3/16/2021.
Replaced UN-04 4/14/21 - new baseline.
Replaced UN-01 and UN-02 4/21/21 - new baseline
NM - Not monitored
UN-03 was found broken. Replaced new readings
Monitor UN-08 has been read in error, true Y axis readings are positive.
Secured UN-05 with epoxy on 10/13/2021, readings did not change.
UN-04 was found broken on 2/2/22 and replaced on 2/8/2022 with initial readings of 0
UN-04 was found broken on 2/23/22 and replaced on 2/24/2022 with initial readings of 0
UN-01 was found broken on 3/2/2022 and replaced on 3/3/2022 with initial readings of 0
UN-01 was found broken on 3/7/2022 and replaced with initial readings of 0
UN-02 was found removed on 5/11/2022
UN-02 and UN-04 were replaced on 5/17/2022 with initial readings of 0
UN-05 was replaced on 6/8/2022 with initial readings of 0.
UN-08 was found broken on 9/28/2022
UN-04 was found broken on 10/5/2022 was replaced with initial readings of 0.

| Weekly Crack Monitoring | | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 479-01 | Observation in millimeters | Y at X=-20 | 2 | 2.25 | NA | NA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | 2.5 | 2.25 | NA | NA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | -0.25 | 0.25 | NA | NA | -0.25 | -0.25 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 |
| | | X at Y=+10 | -0.5 | 0.25 | NA | NA | -0.25 | -0.25 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 |
| 479-02 | Observation in millimeters | Y at X=-20 | -0.25 | NA | NA | NA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | Y at X=+20 | -0.5 | NA | NA | NA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0.25 | 0.25 |
| | | X at Y=-10 | 0.5 | NA | NA | NA | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | X at Y=+10 | 0.5 | NA | NA | NA | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| CM-02 | Observation in millimeters | Y at X=-20 | -3.5 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.5 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 |
| | | Y at X=+20 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 |
| | | X at Y=-10 | 6 | 6 | 6 | 6 | 6 | 6 | 6.25 | 6 | 6 | 6.25 | 6.25 | 6.25 | 6.25 | 5.75 | 6.25 |
| | | X at Y=+10 | 6 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6 | 6.25 |
| CM-03 | Observation in millimeters | Y at X=-20 | 5.75 | 5.5 | 5.5 | 5.5 | 5.75 | 5.5 | 5.75 | 5.75 | 5.5 | 5.75 | 5.75 | 5.75 | 6 | 6.25 | 6 |
| | | Y at X=+20 | 5.75 | 5.5 | 5.5 | 5.5 | 5.75 | 5.5 | 5.75 | 5.75 | 5.5 | 5.75 | 5.75 | 5.75 | 6 | 6.25 | 6 |
| | | X at Y=-10 | 13.25 | 13 | 12.75 | 12.75 | 12.75 | 12.75 | 13 | 13 | 12.75 | 13.25 | 13.25 | 13.25 | 13.75 | 14.25 | 14 |
| | | X at Y=+10 | 13.25 | 13 | 12.75 | 12.75 | 12.75 | 12.75 | 13 | 13 | 12.75 | 13.25 | 13.25 | 13.25 | 13.75 | 14.25 | 14 |
| CM-05 | Observation in millimeters | Y at X=-20 | 0.25 | 0.25 | NM | -0.25 | -0.25 | 0.25 | 0 | 0.25 | 0.25 | -0.25 | -0.5 | -0.5 | -0.75 | 0 | 0.25 |
| | | Y at X=+20 | 0 | -0.25 | NM | -0.25 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 | 0 |
| | | X at Y=-10 | 7.25 | 7.25 | NM | 7.5 | 7.25 | 7.25 | 7.25 | 7.25 | 7.25 | 7.5 | 7.25 | 7.5 | 7.25 | 7.25 | 7.5 |
| | | X at Y=+10 | 7.25 | 7.25 | NM | 7.5 | 7.25 | 7.25 | 7.25 | 7.25 | 7.25 | 7.5 | 7.25 | 7.5 | 7.25 | 7.25 | 7.5 |

Note: NM = not monitored
Crack Gauges 479-01, 479-02, and 479-03 installed on 10/21/2021 with initial readings of 0.
Crack Gauges cM-01 through CM-13 previously installed on 9/16/21 by CM Ashland, APTIM began monitoring on 10/22/2021.
Crack Gauge CM-12 found broken 11/4/21
Gauges on this property were not read from 11/10/2021 to 01/11/2022 due to safety concerns.
CM-04 covered by strap used to secure building, will no longer be monitored
Crack Gauges CM-14 through CM-22 installed between 11/08/2022 and 01/11/2022
CM-18 was replaced on 3/10/2022
CM-14 was replaced on 3/14/2022

CM-19 was replaced on 4/8/2022
CM-18 was replaced on 4/28/2022
CM-05 through CM-10 and CM-13 were replaced on 5/23/2022 with initial readgins of 0.
479-02 and CM-17 were found broken on 7/13/2022
479-01 was found removed on 7/22/2022
CM-06 through CM-23, and 479-03 will no longer be monitored.
479-01 and 479-02 were replaced on 7/28/2022 with initial readings of 0.

| Weekly Inclinometer Readings | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UN IN-01 East | Degrees | NM | 0.5 | NM | NM | 0.25 | 0.75 | 0.75 | 0.75 | NM | 0.75 | 0.25 | NM | 0.25 | 0.5 | 0.5 |
| UN IN-01 North | Degrees | NM | 2 | NM | NM | 1.75 | 1.75 | 2 | 2 | NM | 2 | 2 | NM | 2 | 2 | NM |
| 479 IN-01 East | Degrees | -2 | -2.75 | -2.5 | -2.5 | -2 | -2.25 | -2.5 | -2.75 | -2.5 | -2.5 | -2.5 | -2.5 | -2.75 | -2.5 | -2.5 |
| 479 IN-01 South | Degrees | 0.25 | -0.5 | 0 | 0 | 0 | 0.25 | 0.25 | 0 | 0 | 0 | 0 | 0 | -0.25 | -0.25 | -0.5 |

Note: UN IN-01 initial readings 1/11/21
NM - Not monitored
479 IN-01 East and 479 IN-01 South installed on 10/06/21 with initial readings of 0, these readings are represented here by the date 10/05/21
Inclinometers 479 IN-01 East and 479 IN-01 South were not read from 11/10/2021 to 01/11/2022 due to safety concerns

**Cumulative Readings**

| Weekly Crack Monitoring | | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CA-01 | Observation in millimeters | Y at X=-20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | Y at X=+20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | X at Y=-10 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | X at Y=+10 | 0.25 | 0.25 | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| CA-02 | Observation in millimeters | Y at X=-20 | -0.75 | -1 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -1 | -0.75 | -0.75 | -0.75 | -1 | -0.75 | -0.75 | -0.75 |
| | | Y at X=+20 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 | -1 |
| | | X at Y=-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=+10 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.25 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| CA-03 | Observation in millimeters | Y at X=-20 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.25 | 3.25 | 3.5 | 3.5 | 3.5 | 3.5 | 3.75 | 3.75 |
| | | Y at X=+20 | -1 | -1 | -1 | -1.25 | -1.25 | -1 | -1 | -1.25 | -1 | -1 | -1 | -1 | -1 | -1 | -0.75 |
| | | X at Y=-10 | -5.25 | -5.5 | -5.5 | -5.25 | -5.25 | -5.5 | -5.25 | -5.25 | -5.25 | -5 | -5 | -5 | -5 | -5 | -5.5 |
| | | X at Y=+10 | -5.25 | -5.25 | -5.25 | -5 | -5 | -5.25 | -5 | -5.25 | -5.25 | -5 | -4.75 | -4.75 | -5 | -5 | -4.75 |
| CA-04 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | Y at X=+20 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| | | X at Y=-10 | -1 | -1 | -1 | -0.75 | -1 | -1 | -0.75 | -1 | -1 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| | | X at Y=+10 | -1 | -1.25 | -1.25 | -1 | -1.25 | -1.25 | -1 | -1.25 | -1 | -1.25 | -1 | -1 | -1 | -1 | -1 |
| CA-05 | Observation in millimeters | Y at X=-20 | -2.75 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 |
| | | Y at X=+20 | -3 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.25 | -3.5 | -3.5 |
| | | X at Y=-10 | 2.25 | 2.5 | 2.5 | 2.5 | 2.5 | 2.25 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.75 | 2.75 | 3 |
| | | X at Y=+10 | 2.25 | 2.5 | 2.5 | 2.5 | 2.5 | 2.25 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.75 | 2.5 | 2.75 |
| CA-06 | Observation in millimeters | Y at X=-20 | 0 | -0.25 | NM | 0 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | 0 | -0.25 | -0.25 | -0.25 | 0 | 0 |
| | | Y at X=+20 | 0.6 | 0.6 | NM | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.35 | 0.6 | 0.6 | 0.6 | 0.6 |
| | | X at Y=-10 | -2 | -2 | NM | -2.25 | -2 | -2 | -2.25 | -2 | -2 | -2 | -2.25 | -2.25 | -2 | -2 | -2 |
| | | X at Y=+10 | -2.75 | -2.75 | NM | -2.75 | -2.5 | -2.75 | -2.75 | -2.75 | -2.75 | -2.75 | -2.75 | -2.75 | -2.75 | -2.5 | -2.5 |
| CA-07 | Observation in millimeters | Y at X=-20 | 1.25 | 1.25 | NM | NM | 1.5 | 1.5 | 1.25 | 1.25 | 1 | 1.5 | 1 | 1 | 1.25 | 1 | 1 |
| | | Y at X=+20 | -1 | -0.5 | NM | NM | -0.5 | -0.5 | -0.25 | -0.5 | -0.5 | -0.25 | -0.5 | -0.5 | -0.5 | -0.5 | -0.75 |
| | | X at Y=-10 | -0.25 | -0.25 | NM | NM | -0.25 | -0.25 | 0 | 0 | -0.25 | 0 | -0.25 | 0 | 0 | 0 | 0 |
| | | X at Y=+10 | -0.75 | -0.75 | NM | NM | -0.75 | -0.75 | -0.5 | -0.5 | -0.75 | -0.5 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 |
| CA-08 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.25 | -0.5 | -0.25 | -0.25 | -0.5 | -0.5 | -0.5 | -0.25 | -0.25 | -0.25 |
| | | X at Y=-10 | -2 | -2 | -2 | -2 | -2.25 | -2.25 | -2.25 | -2 | -2 | -2 | -2 | -2 | -2 | -2 | -2 |
| | | X at Y=+10 | -1.5 | -1.75 | -1.75 | -1.75 | -1.75 | -1.75 | -2 | -1.75 | -1.75 | -1.75 | -1.75 | -1.75 | -1.75 | -1.75 | -1.75 |
| CA-09A | Observation in millimeters | Y at X=-20 | 4.25 | 4.25 | 4.75 | 3.75 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3.75 | 3.75 | 3.5 |
| | | Y at X=+20 | 1.5 | 1.5 | 1.75 | 1.75 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1.75 | 1.75 | 1.5 |
| | | X at Y=-10 | 18 | 18 | 17 | 16.5 | 16.25 | 15.75 | 16.5 | 16.75 | 16.5 | 16.75 | 17.25 | 17.25 | 17.75 | 17.75 | 18.25 |
| | | X at Y=+10 | 18 | 18 | 17 | 16.25 | 16 | 15.5 | 16.25 | 16.5 | 16.25 | 16.5 | 17 | 17 | 17.5 | 17.5 | 18 |
| CA-10 | Observation in millimeters | Y at X=-20 | 2.25 | 2 | NM | 2.25 | 2 | 2.25 | 2 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | NM |
| | | Y at X=+20 | 0.75 | 0.75 | NM | 0.75 | 0.5 | 0.75 | 0.5 | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | NM |
| | | X at Y=-10 | -3.5 | -3.5 | NM | -3.5 | -3.75 | -4 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | NM |
| | | X at Y=+10 | -3.25 | -3.5 | NM | -3.25 | -3.5 | -3.75 | -3.5 | -3.5 | -3.5 | -3.5 | -3.5 | -3.5 | -3.5 | -3.75 | NM |
| CA-11 | Observation in millimeters | Y at X=-20 | 2.25 | 2.25 | 2.25 | 2.5 | 2.5 | 2.25 | 2.5 | 2.25 | 2.5 | 2.25 | 2.5 | 2.25 | 2.5 | 2.5 | 2.25 |
| | | Y at X=+20 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | X at Y=-10 | 2 | 2 | 2 | 2.5 | 2.5 | 2.25 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.75 | 2.5 | 2.75 |
| | | X at Y=+10 | 2.5 | 2.5 | 2.5 | 3 | 3 | 3.75 | 4 | 4 | 4 | 4 | 4 | 4 | 4.25 | 4 | 4.25 |
| CA-12 | Observation in millimeters | Y at X=-20 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 |
| | | X at Y=-10 | 0.75 | 0.75 | 1 | 1 | 1 | 0.75 | 0.75 | 1 | 1 | 1 | 1 | 1.25 | 1.25 | 1 | 1.25 |
| | | X at Y=+10 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.5 | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 1 | 0.75 | 1 |
| CA-13 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.25 |
| | | X at Y=+10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.25 |
| CA-14 | Observation in millimeters | Y at X=-20 | 2.5 | 2.75 | 2.25 | 2.5 | 2.5 | 2.25 | 2.5 | 2.75 | 2.25 | 2.5 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| | | Y at X=+20 | 2.25 | 2.25 | 2 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2 |
| | | X at Y=-10 | 0.75 | 0.25 | -0.5 | -0.25 | -0.5 | -1.75 | -1.25 | -1 | -1.5 | -1.25 | -1.25 | -1.5 | -1.75 | -2.5 | -1.75 |
| | | X at Y=+10 | 0.75 | 0.25 | -0.25 | -0.25 | -0.5 | -1.75 | -1.25 | -1 | -1.25 | -1.25 | -1.25 | -1.25 | -1.5 | -2.5 | -1.75 |
| CA-15 | Observation in millimeters | Y at X=-20 | 1.5 | 1.75 | 1.75 | 1.75 | 1.75 | 1.5 | 1.75 | 1.75 | 1.75 | 2 | 2.25 | 2 | 2.25 | 2 | 2.25 |
| | | Y at X=+20 | 1.25 | 1.5 | 1.5 | 1.5 | 1.75 | 1.25 | 1.75 | 1.75 | 1.75 | 2 | 2 | 2 | 2 | 2 | 2.25 |
| | | X at Y=-10 | 6 | 6 | 6 | 6 | 6.25 | 6 | 6.25 | 6.5 | 6.5 | 6.75 | 7 | 7 | 7 | 6.25 | 7 |
| | | X at Y=+10 | 6 | 6 | 6 | 6 | 6.25 | 6 | 6.25 | 6.5 | 6.75 | 6.75 | 7 | 7 | 7 | 6.25 | 7 |
| CA-16 | Observation in millimeters | Y at X=-20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=+10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Notes:

Needed to re-epoxy edge of Monitor CA-01 which caused reading to recalibrate to 11/23/20 readings.

Needed to re-epoxy edge of Monitor CA-06 which caused reading to recalibrate to 12/14/20 readings.

Readings for CA-01 on 11/23 and 11/30 were mistated on the 11/23 and 11/30 reports as .07 and .05 but were actualy .7 and .5 respectively.

Needed to replace monitors CA-02, CA-03, CA-06, and CA-08 on 12/22/20 after damage due to snow removal.

Found monitors CA-06 and CA-08 damaged. New monitors to be replaced 1/4/2021

Found Monitors CA-03, Ca-06, and CA-07 damaged from snow storm. Replaced and/or repaired, These are new baseline readings.

Found Monitor CA-07 Broken. Could not repair due to weather

CA-03, CA-07, and CA-08 repaired or replaced 2/23/2021 = initial readings.

Repaired and reset CA-03

Repaired and Reset CA-07 on 3/22/2021

Replaced CA-03 4/14/21 - new baseline.

Replaced CA-07 and CA-08 5/18/2021 = initial readings

Monitor CA-01 has been read in error, true Y axis readings are negative. There has been no change in movement.

Replaced CA-04 on 7/20/2021 these are initial readings.

CA-06 and CA-10 replaced 7-28-2021 initial readings

Installed Crack Gauges CA-09A and CA-14 on 8/3/2021 with initial readings of 0. CA-09A replaces CA-09 that was damaged on 8/6/2021.

Replaced CA-06 and CA-12 on 8/18/2021 these are initial readings

Installed Crack Gauges CA-15 and CA-16 on 8/18/2021 with initial readings of 0.

Replaced CA-09A on 9-10-2021 with initial readings of 0.

Replaced CA-05 on 9/16/2021 with initial readings of 0.

Replaced CA-03 on 10/13/2021 with initial readings of 0.

Replaced CA-11 on 11/22/21 with initial readings of 0.

CA-03 was found broken on 3/2/2022 and replaced on 3/3/2022 with initial readings of 0
CA-10 was found broken on 7/27/2022 and replaced with initial readings of 0.
CA-09A and CA-10 were found broken on 8/2/2022 and replaced with initial readings of 0.
CA-16 was found broken on 10/5/2022 and replaced with initial readings of 0.

| Weekly Crack Monitoring | | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UN-01 | Observation in millimeters | Y at X=-20 | 1 | 1.25 | 1.25 | 1 | 1 | 1.25 | 1 | 1.25 | 1.25 | 1 | 1 | 1 | 1 | 1 | 1 |
| | | Y at X=+20 | 0.25 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.25 | 1.5 | 1.5 | 1.5 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| | | X at Y=-10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=+10 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.75 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| UN-02 | Observation in millimeters | Y at X=-20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | Y at X=+20 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 |
| | | X at Y=-10 | 0.5 | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.25 | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.5 | 0.75 |
| | | X at Y=+10 | 0.5 | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.5 | 0.75 |
| UN-03 | Observation in millimeters | Y at X=-20 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.25 | 1.25 | 1.5 | 1.25 | 1.5 |
| | | Y at X=+20 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 1 | 0.75 | 0.5 | 0.75 | 0.5 | 0.75 |
| | | X at Y=-10 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 |
| | | X at Y=+10 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 |
| UN-04 | Observation in millimeters | Y at X=-20 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.55 | 2.55 |
| | | Y at X=+20 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 | 2.75 |
| | | X at Y=-10 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 | -0.55 |
| | | X at Y=+10 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 | -0.75 |
| UN-05 | Observation in millimeters | Y at X=-20 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| | | Y at X=+20 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| | | X at Y=-10 | -2.25 | -2.25 | -2.5 | -2.5 | -2.5 | -2.5 | -2.5 | -2.25 | -2.5 | -2.5 | -2.5 | -2.25 | -2.5 | -2.5 | -2.5 |
| | | X at Y=+10 | -2.15 | -2.4 | -2.4 | -2.4 | -2.4 | -2.4 | -2.4 | -2.15 | -2.4 | -2.4 | -2.4 | -2.15 | -2.4 | -2.4 | -2.4 |
| UN-06 | Observation in millimeters | Y at X=-20 | NM | NA | NA | NA | 0 | 0 | 0 | 0 | NM | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | NM | NA | NA | NA | 0 | 0 | 0 | 0 | NM | 0 | 0 | 0 | 0 | 0 | 0 |
| | | X at Y=-10 | NM | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| | | X at Y=+10 | NM | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 |
| UN-07 | Observation in millimeters | Y at X=-20 | NM | NA | NA | NA | -3.75 | -3.75 | -3.75 | -3.75 | NM | -3.75 | -3.75 | -3.75 | -4 | -4 | -3.75 |
| | | Y at X=+20 | NM | NA | NA | NA | 0.5 | 0.75 | 0.75 | 0.5 | NM | 0.5 | 0.5 | 0.5 | 0.25 | 0.25 | 0.5 |
| | | X at Y=-10 | NM | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | NM | -0.25 | -0.25 | 0 | 0.25 | 0 | 0 |
| | | X at Y=+10 | NM | NA | NA | NA | -2.5 | -2.75 | -2.75 | -2.75 | NM | -2.25 | -2.5 | -2 | -2 | -2.25 | -2.25 |
| UN-08 | Observation in millimeters | Y at X=-20 | NM | 1.75 | NM | NM | 1.75 | 1.75 | 2 | 1.75 | NM | 1.75 | 1.75 | NM | N/A | N/A | N/A |
| | | Y at X=+20 | NM | 2.25 | NM | NM | 2.25 | 2.25 | 2.5 | 2.25 | NM | 2.5 | 2.5 | NM | N/A | N/A | N/A |
| | | X at Y=-10 | NM | -0.75 | NM | NM | -0.75 | -0.75 | -0.75 | -0.75 | NM | -0.75 | -0.75 | NM | N/A | N/A | N/A |
| | | X at Y=+10 | NM | -1.25 | NM | NM | -1.25 | -1.25 | -1.25 | -1.25 | NM | -1.25 | -1.25 | NM | N/A | N/A | N/A |

Notes:
Needed to replace monitor UN-01 and repair UN-05 after damage due to snow removal. UN-05 repair caused reading to recalibrate to 12/22/2020 readings.
UN-07 and UN-08 initial readings baseline 1/11/21
Found Monitors UN-01 and UN-05 damaged from snow storm. Replaced and/or repaired, These are new baseline readings.
Found Monitors UN-01 and UN-05 damaged/missing from snow storm. Could not replace due to weather.
Replaced UN-01, UN-04, and UN-05 2/23/2021 = Initial Readings
Replaced UN-01, UN-04, and UN-05 on 2/23/2021 = initial readings.
Repaired & Reset UN-04
Reset UN-05 on 3/16/2021.
Replaced UN-04 4/14/21 - new baseline.
Replaced UN-01 and UN-02 4/21/21 - new baseline
NM - Not monitored
UN-03 was found broken. Replaced new readings
Monitor UN-08 has been read in error, true Y axis readings are positive.
Secured UN-05 with epoxy on 10/13/2021, readings did not change.
UN-04 was found broken on 2/2/22 and replaced on 2/8/2022 with initial readings of 0
UN-04 was found broken on 2/23/22 and replaced on 2/24/2022 with initial readings of 0
UN-01 was found broken on 3/2/2022 and replaced on 3/3/2022 with initial readings of 0
UN-01 was found broken on 3/7/2022 and replaced with initial readings of 0
UN-02 was found removed on 5/11/2022
UN-02 and UN-04 were replacd on 5/17/2022 with initial readings of 0
UN-05 was replaced on 6/8/2022 with initial readings of 0.
UN-08 was found broken on 9/28/2022
UN-04 was found broken on 10/5/2022 and replaced with initial readings of 0.

| Weekly Crack Monitoring | | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 479-01 | Observation in millimeters | Y at X=-20 | 2 | 2.25 | NA | NA | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| | | Y at X=+20 | 2.5 | 2.25 | NA | NA | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 | 2.25 |
| | | X at Y=-10 | -0.25 | 0.25 | NA | NA | 0 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 |
| | | X at Y=+10 | -0.5 | 0.25 | NA | NA | 0 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0 | 0.25 |
| 479-02 | Observation in millimeters | Y at X=-20 | -0.25 | NA | NA | NA | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | -0.25 | 0 | 0 | 0 | 0 |
| | | Y at X=+20 | -0.5 | NA | NA | NA | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.5 | -0.25 | -0.25 | -0.25 |
| | | X at Y=-10 | 0.5 | NA | NA | NA | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| | | X at Y=+10 | 0.5 | NA | NA | NA | 0.5 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| CM-02 | Observation in millimeters | Y at X=-20 | -3.5 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.5 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 | -3.75 |
| | | Y at X=+20 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 | -4 |
| | | X at Y=-10 | 6 | 6 | 6 | 6 | 6 | 6 | 6.25 | 6 | 6 | 6.25 | 6.25 | 6.25 | 6.25 | 5.75 | 6.25 |
| | | X at Y=+10 | 6 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6.25 | 6 | 6.25 |
| CM-03 | Observation in millimeters | Y at X=-20 | 5.75 | 5.5 | 5.5 | 5.5 | 5.75 | 5.5 | 5.75 | 5.75 | 5.5 | 5.75 | 5.75 | 5.75 | 6 | 6.25 | 6 |
| | | Y at X=+20 | 5.75 | 5.5 | 5.5 | 5.5 | 5.75 | 5.5 | 5.75 | 5.75 | 5.5 | 5.75 | 5.75 | 5.75 | 6 | 6.25 | 6 |
| | | X at Y=-10 | 13.25 | 13 | 12.75 | 12.75 | 12.75 | 12.75 | 13 | 13 | 12.75 | 13.25 | 13.25 | 13.25 | 13.75 | 14.25 | 14 |
| | | X at Y=+10 | 13.25 | 13 | 12.75 | 12.75 | 12.75 | 12.75 | 13 | 13 | 12.75 | 13.25 | 13.25 | 13.25 | 13.75 | 14.25 | 14 |
| CM-05 | Observation in millimeters | Y at X=-20 | 0 | 0 | NM | -0.5 | -0.5 | 0 | -0.25 | 0 | 0 | -0.5 | -0.75 | -0.75 | -1 | -0.25 | 0 |
| | | Y at X=+20 | 0 | -0.25 | NM | -0.25 | -0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -0.25 | 0.5 | 0.5 |
| | | X at Y=-10 | 9.75 | 9.75 | NM | 10 | 9.75 | 9.75 | 9.75 | 9.75 | 9.75 | 10 | 9.75 | 10 | 9.75 | 9.75 | 10 |
| | | X at Y=+10 | 9.5 | 9.5 | NM | 9.75 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.75 | 9.5 | 9.75 | 9.5 | 9.5 | 9.75 |

Note:
NM = not monitored
Crack Gauges 479-01, 479-02, and 479-03 installed on 10/21/2021 with initial readings of 0.
Crack Gauges cM-01 through CM-13 previously installed on 9/16/21 by CM Ashland, APTIM began monitoring on 10/22/2021.

Crack Gauge CM-12 found broken 11/4/21
Gauges on this property were not read from 11/10/2021 to 01/11/2022 due to safety concerns.
CM-04 covered by strap used to secure building, will no longer be monitored
Crack Gauges CM-14 through CM-22 installed between 11/08/2022 and 01/11/2022
CM-18 was replaced on 3/10/2022
CM-14 was replaced on 3/14/2022
CM-19 was replaced on 4/8/2022
CM-18 was replaced on 4/28/2022
CM-05 through CM-10 and CM-13 were replaced on 5/23/2022 with initial readgins of 0.
479-02 and CM-17 were found broken on 7/13/2022
479-01 was found broken on 7/22/2022
CM-06 through CM-23, and 479-03 will no longer be monitored
479-01 and 479-02 were replaced on 7/28/2022 with initial readings of 0.

| Weekly Inclinometer Readings | | 7/6/2022 | 7/13/2022 | 7/22/2022 | 7/28/2022 | 8/3/2022 | 8/10/2022 | 8/17/2022 | 8/24/2022 | 8/31/2022 | 9/7/2022 | 9/14/2022 | 9/21/2022 | 9/28/2022 | 10/5/2022 | 10/12/2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UN IN-01 East | Degrees | NM | 0.5 | NM | NM | 0.25 | 0.75 | 0.75 | 0.75 | NM | 0.75 | 0.25 | NM | 0.25 | 0.5 | 0.5 |
| UN IN-01 North | Degrees | NM | 2 | NM | NM | 1.75 | 1.75 | 2 | 2 | NM | 2 | 2 | NM | 2 | 2 | NM |
| 479 IN-01 East | Degrees | -2 | -2.75 | -2.5 | -2.5 | -2 | -2.25 | -2.5 | -2.75 | -2.5 | -2.5 | -2.5 | -2.5 | -2.75 | -2.5 | -2.5 |
| 479 IN-01 South | Degrees | 0.25 | -0.5 | 0 | 0 | 0 | 0.25 | 0.25 | 0 | 0 | 0 | 0 | 0 | -0.25 | -0.25 | -0.5 |

Notes:
UN IN-01 initial readings 1/11/21
NM - Not monitored
479 IN-01 East and 479 IN-01 South installed on 10/06/21 with initial readings of 0, these readings are represented here by the date 10/05/21
Inclinometers 479 IN-01 East and 479 IN-01 South have not been read since 11/03/2021 due to safety concerns

# Appendix E

Weekly Water Quality Monitoring Summary Report

**GOWANUS CANAL SUPERFUND SITE**
**RTA1 REMEDIAL CONSTRUCTION**
**Water Quality Monitoring Weekly Data Summary**

**PERIOD: October 11 – October 14, 2022**

**Date of Report: October 18, 2022**

# Report Contents

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

*Prepared by*

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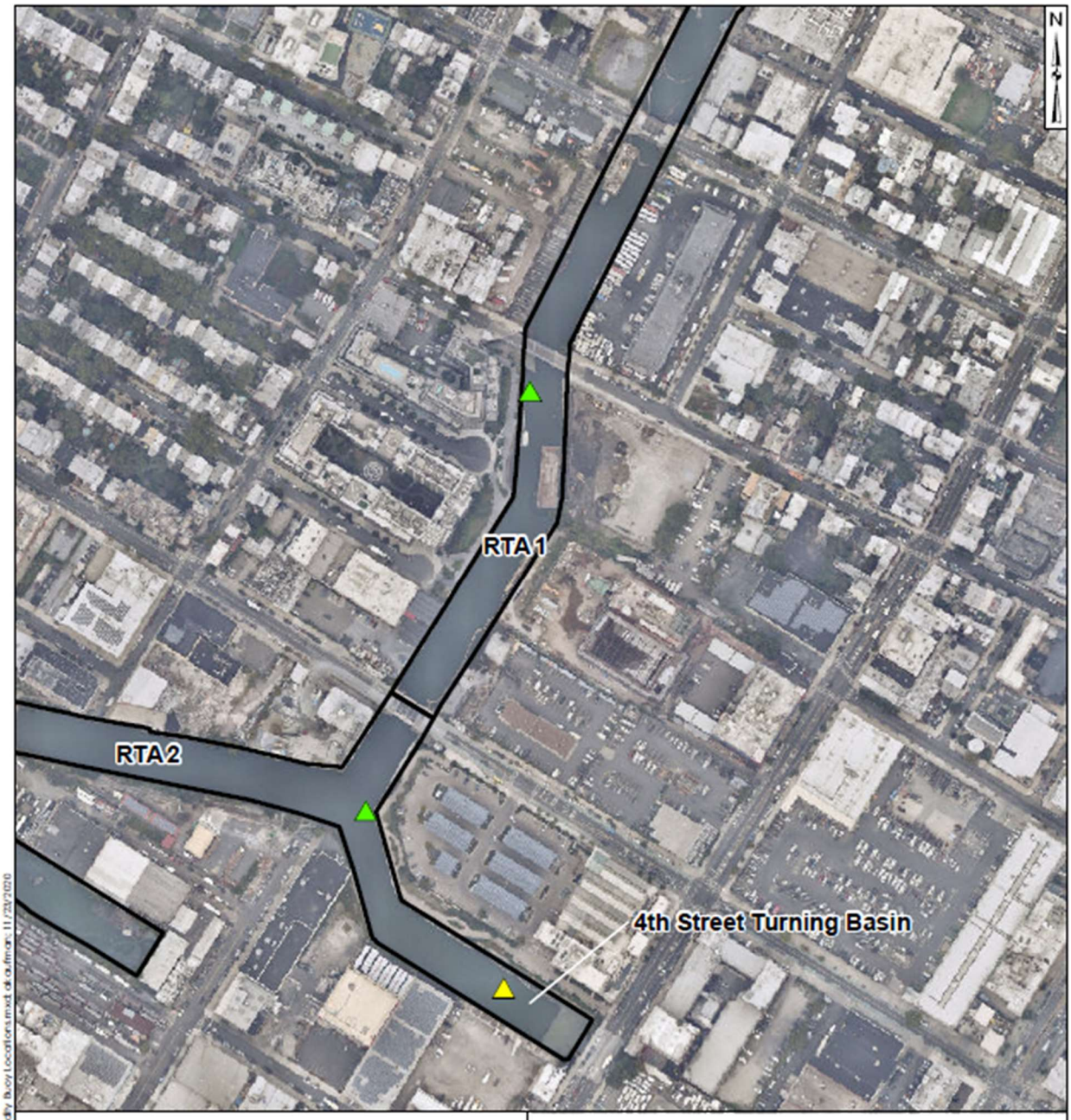
Project Number JR0289A

## 1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of October 11, 2022. In accordance with the Water Quality Monitoring Plan for In-waterway Construction Activities (WQMP) one turbidity buoy was deployed to monitor turbidity at the start of dredging between 3rd Street Bridge and the head of the canal. One turbidity buoy was deployed just south of the 3rd Street Bridge outside of the air curtain and traditional turbidity curtain. This buoy is referred to as the 3rd Street Sentinel Buoy and is currently undergoing maintenance. A second turbidity buoy is usually deployed just south of the Union Street Bridge and referred to as the Union Street Sentinel Buoy, however this buoy was moved at 12:00 PM on September 12, 2022 to replace the 3rd Street Sentinel Buoy, which was removed from the canal for maintenance. This buoy was moved again on September 22, 2022 to a location south of Carroll St Bridge to better monitor dredging activities north of Carroll Street Bridge. This buoy will hereby be referred to as the Carroll Street Sentinel Buoy. The third turbidity buoy was deployed in the Fourth Street Turning Basin in order to monitor background turbidity unaffected by in-water construction activities. This turbidity buoy is referred to as the Ambient Buoy. On July 14, 2022, the Union Street Buoy was removed from the canal for servicing before being re-deployed on July 21, 2022. On January 22, 2021, prior to dredging north of the Union Street Bridge, a fourth turbidity buoy was deployed just south of the Union Street Bridge and was referred to as the Union Street Sentinel Buoy. This fourth turbidity buoy was removed prior to the start of pipe pile installation. On Wednesday, September 22, 2021, the Carroll Street Sentinel Buoy was relocated to the west side of the canal where Degraw Street intersects the canal to monitor cofferdam removal activities conducted in the vicinity of the Flushing Tunnel. This buoy was renamed the Degraw Street Sentinel Buoy during cofferdam removal activities. On October 14, 2021, the Degraw Street Sentinel Buoy was removed from the canal for servicing. On October 20, 2021, the Degraw Street Sentinel Buoy was redeployed to its position south of the Carroll Street Bridge and was renamed to the Carroll Street Sentinel Buoy. On November 15, 2021, the Carroll Street Sentinel Buoy was moved to the Union Street Bridge and renamed the Union Street Sentinel Buoy. On December 3, 2021, the Union Street Buoy was removed from the canal for servicing and re-deployed at 3rd Street Bridge in preparation for the resumption of ISS operations. On December 8, 2021, a third sentinel buoy was deployed just south of the Carroll Street Bridge. On April 21, 2022, the buoy deployed at the Carroll Street Bridge was relocated to the Union Street Bridge. Each turbidity buoy was equipped with a YSI EXO3 water quality meter with optical turbidity sensor. The buoys were field calibrated and programmed such that readings were collected every 15 minutes. After each measurement, the turbidity data were transmitted to a File Transfer Portal (FTP) site via telemetry. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4.




**Legend**

- Ambient Buoy
- Sentinel Buoy
- RTA Boundary

300 150 0 300 Feet

## Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

B&B Engineers & Geologists of new york, p.c.

an affiliate of Geosyntec Consultants

Kennesaw, GA | September 2022

Figure 1

\\fileserver\g\Gowanus\PRJCTL_GIS\mxd\Canal_Wide\Turbidity Buoy Locations.mxd dkaufman 11/23/2020

## 2. REPORT OF EXCEEDANCES

No exceedances to trigger or action criteria were observed during the reporting period.

- **Trigger criterion** – Any of the following:
  - The rolling average of the relevant 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 and in-waterway construction activities cannot be immediately excluded as the source following consultation with EPA; or
  - Either an oil sheen or a turbidity plume is visually observed at the relevant sentinel buoy and in-waterway construction activities are readily identified as the source.
- **Action criterion** – Any of the following:
  - The rolling average of the turbidity measurements of the sentinel buoy outside of RTA1 over a one-hour period exceeds the rolling average of the ambient buoy turbidity measurements by 40 NTU excluding any eliminated outlier measurements and in-waterway construction activities cannot be immediately excluded as the source following consultation with EPA; or
  - Either an oil sheen or a turbidity plume is visually observed outside of RTA1 and any deployed engineering controls and in-waterway construction activities are readily identified as the source.

An outlier is defined as a reading that is outside the range of 50 to 200 percent of the average of the three previous readings. In addition, to be considered an outlier, the subsequent reading must return to a range of 75 to 133 percent of the average of the three readings preceding the outlier.

### 2.1 Response to Criteria Exceedances

The trigger level criterion serves to provide early notification to the contractor of construction activities that may lead to an exceedance of the action level criterion. In the event of an exceedance to the trigger criterion, the contractor will not be stopped, and the contractor will be directed to investigate the source of the exceedance and evaluate Best Management Practices (BMPs). In the event of an exceedance to the action level criterion, in-waterway construction activities may be slowed or temporarily suspended as necessary while the contractor investigates the source of the exceedance and appropriate mitigation and corrective measures are determined. A more detailed description of responses to exceedances of the trigger and action level criteria is provided in Section 4.2 of the WQMP.

No exceedances to trigger or action criteria were observed during the reporting period.

## 3. TURBIDITY BUOY DATA

The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 6 PM from October 11 – October 14, 2022. No exceedances of the numerical trigger or action level criteria were met during the reporting period. No construction activities occurred in the Canal on October 10, 2022. Maintenance activities on the 3rd Street Sentinel Buoy remain ongoing as of Friday, October 14, 2022.

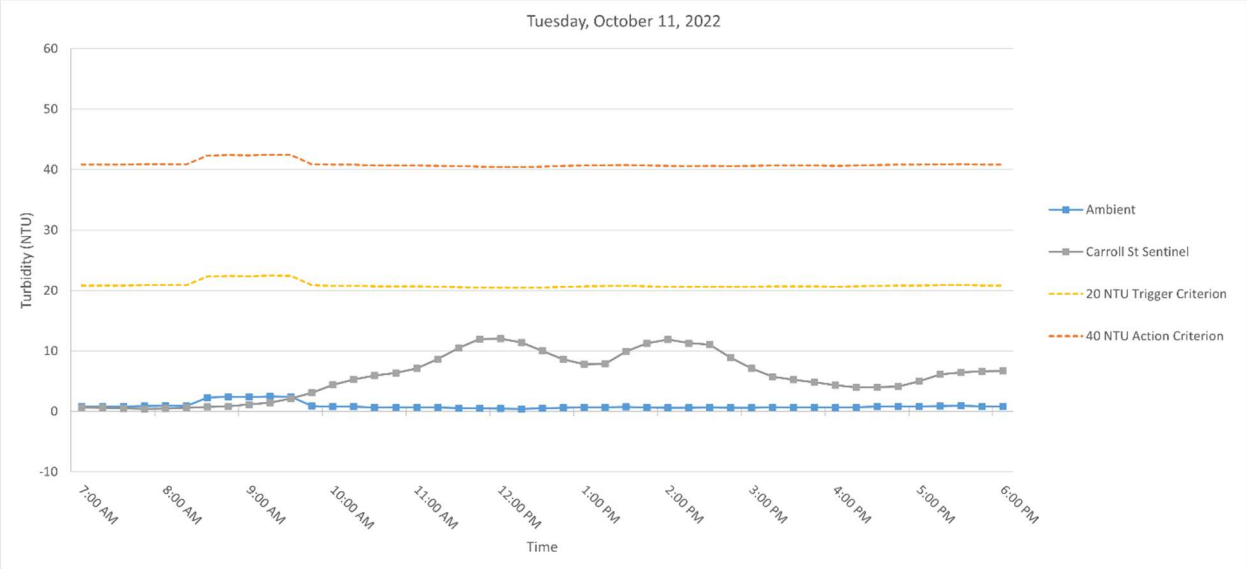
**Table 1** below provides a summary of the turbidity data for the reporting period.

| Date | Average Rolling Average Difference (NTU) | | Maximum Rolling Average Difference (NTU) | |
|---|---|---|---|---|
| | 3rd St - Ambient | Carroll St - Ambient | 3rd St - Ambient | Carroll St - Ambient |
| Monday, October 10, 2022 | N/A | N/A | N/A | N/A |
| Tuesday, October 11, 2022 | N/A | 4.99 | N/A | 11.55 |
| Wednesday, October 12, 2022 | N/A | 4.55 | N/A | 9.69 |
| Thursday, October 13, 2022 | N/A | 3.72 | N/A | 12.25 |
| Friday, October 14, 2022 | N/A | 0.76 | N/A | 3.32 |

**Table 1.** Daily average and maximum differences between the rolling average turbidity readings from RTA1 sentinel buoys and the ambient buoy between 7 AM and 6 PM.

### 3.1 Tuesday, October 11, 2022

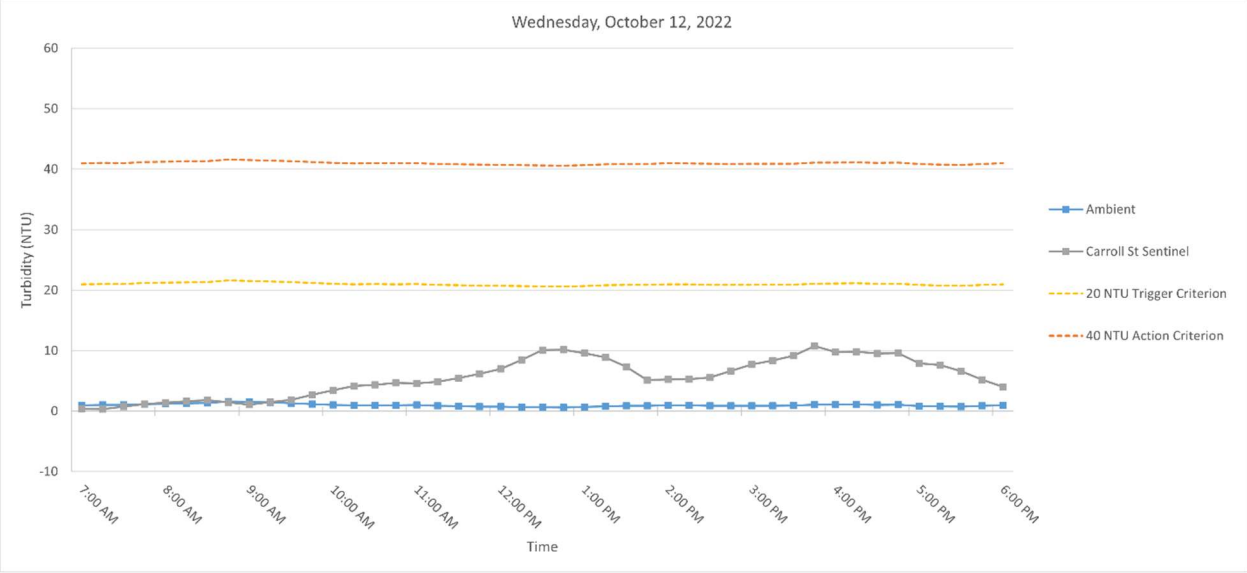
**Figure 3.** Hourly rolling average turbidity readings on Tuesday, October 11, 2022, from 7 AM to 6 PM.




**Note:** No outlier turbidity readings above 20 NTU were detected. The 3rd Street Sentinel Buoy was out of service.

## 3.2 Wednesday, October 12, 2022

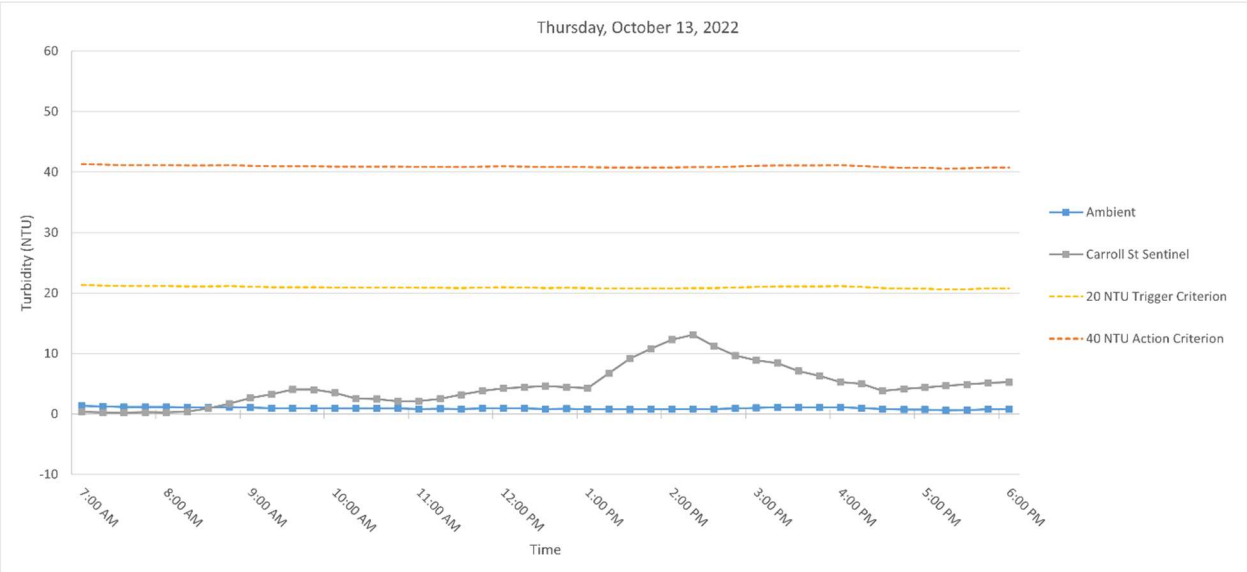
**Figure 4.** Hourly rolling average turbidity readings on Wednesday, October 12, 2022, from 7 AM to 6 PM.




**Note:** No outlier turbidity readings above 20 NTU were detected. The 3rd Street Sentinel Buoy was out of service.

## 3.3 Thursday, October 13, 2022

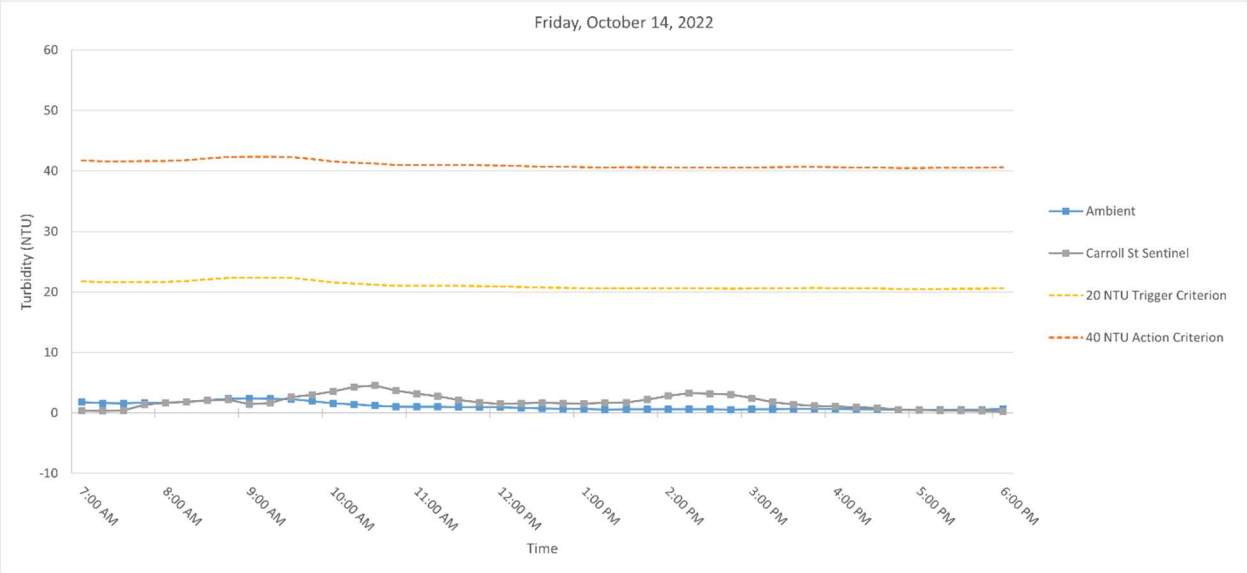
**Figure 5.** Hourly rolling average turbidity readings on Thursday, October 13, 2022, from 7 AM to 6 PM.




**Note:** No outlier turbidity readings above 20 NTU were detected. The 3rd Street Sentinel Buoy was out of service.

## 3.4 Friday, October 14, 2022

**Figure 6.** Hourly rolling average turbidity readings on Friday, October 14, 2022, from 7 AM to 6 PM.




**Note:** No outlier turbidity readings above 20 NTU were detected. The 3rd Street Sentinel Buoy was out of service.

## SUMMARY OF VISUAL OBSERVATIONS

Sheen was observed above background conditions during work operations. These sheens were contained within RTA1 by the air curtain deployed south of the 3rd Street Bridge. Absorbent booms were also deployed south of dredging activities to contain sheens north of the Carroll Street Bridge.

# APPENDIX A
# Turbidity Data Tables

# Tuesday, October 11, 2022

| Time | Turbidity (NTU) | | | Rolling Average Turbidity (NTU) | | | Difference (NTU) | |
|---|---|---|---|---|---|---|---|---|
| | Ambient | 3rd Street | Carroll Street | Ambient | 3rd Street | Carroll Street | 3rd St - Ambient | Carroll St - Ambient |
| 7:00:00 | 1.04 | -- | 0.28 | 0.83 | -- | 0.65 | -- | -0.18 |
| 7:15:00 | 1.17 | -- | 0.3 | 0.81 | -- | 0.59 | -- | -0.22 |
| 7:30:00 | 0.76 | -- | 0.59 | 0.81 | -- | 0.48 | -- | -0.33 |
| 7:45:00 | 0.9 | -- | 0.32 | 0.89 | -- | 0.42 | -- | -0.47 |
| 8:00:00 | 0.77 | -- | 0.83 | 0.93 | -- | 0.46 | -- | -0.46 |
| 8:15:00 | 0.77 | -- | 0.93 | 0.87 | -- | 0.59 | -- | -0.28 |
| 8:30:00 | 8.33 | -- | 0.97 | 2.31 | -- | 0.73 | -- | -1.58 |
| 8:45:00 | 1.24 | -- | 1.11 | 2.40 | -- | 0.83 | -- | -1.57 |
| 9:00:00 | 0.72 | -- | 1.85 | 2.37 | -- | 1.14 | -- | -1.23 |
| 9:15:00 | 1.23 | -- | 2.44 | 2.46 | -- | 1.46 | -- | -1.00 |
| 9:30:00 | 0.5 | -- | 4.38 | 2.40 | -- | 2.15 | -- | -0.25 |
| 9:45:00 | 0.66 | -- | 5.69 | 0.87 | -- | 3.09 | -- | 2.22 |
| 10:00:00 | 0.86 | -- | 7.5 | 0.79 | -- | 4.37 | -- | 3.58 |
| 10:15:00 | 0.73 | -- | 6.47 | 0.80 | -- | 5.30 | -- | 4.50 |
| 10:30:00 | 0.56 | -- | 5.65 | 0.66 | -- | 5.94 | -- | 5.28 |
| 10:45:00 | 0.64 | -- | 6.47 | 0.69 | -- | 6.36 | -- | 5.67 |
| 11:00:00 | 0.63 | -- | 9.5 | 0.68 | -- | 7.12 | -- | 6.43 |
| 11:15:00 | 0.59 | -- | 15.1 | 0.63 | -- | 8.64 | -- | 8.01 |
| 11:30:00 | 0.38 | -- | 15.62 | 0.56 | -- | 10.47 | -- | 9.91 |
| 11:45:00 | 0.29 | -- | 13.28 | 0.51 | -- | 11.99 | -- | 11.49 |
| 12:00:00 | 0.37 | -- | 6.53 | 0.45 | -- | 12.01 | -- | 11.55 |
| 12:15:00 | 0.52 | -- | 6.48 | 0.43 | -- | 11.40 | -- | 10.97 |
| 12:30:00 | 0.98 | -- | 8.04 | 0.51 | -- | 9.99 | -- | 9.48 |
| 12:45:00 | 0.88 | -- | 8.59 | 0.61 | -- | 8.58 | -- | 7.98 |
| 13:00:00 | 0.73 | -- | 9.47 | 0.70 | -- | 7.82 | -- | 7.13 |
| 13:15:00 | 0.43 | -- | 6.77 | 0.71 | -- | 7.87 | -- | 7.16 |
| 13:30:00 | 0.78 | -- | 16.77 | 0.76 | -- | 9.93 | -- | 9.17 |
| 13:45:00 | 0.5 | -- | 14.81 | 0.66 | -- | 11.28 | -- | 10.62 |
| 14:00:00 | 0.64 | -- | 11.57 | 0.62 | -- | 11.88 | -- | 11.26 |
| 14:15:00 | -- | -- | 6.57 | 0.59 | -- | 11.30 | -- | 10.71 |
| 14:30:00 | 0.58 | -- | 5.38 | 0.63 | -- | 11.02 | -- | 10.40 |
| 14:45:00 | 0.67 | -- | 6.11 | 0.60 | -- | 8.89 | -- | 8.29 |
| 15:00:00 | 0.57 | -- | 5.99 | 0.62 | -- | 7.12 | -- | 6.51 |
| 15:15:00 | 0.89 | -- | 4.69 | 0.68 | -- | 5.75 | -- | 5.07 |
| 15:30:00 | 0.6 | -- | 3.92 | 0.66 | -- | 5.22 | -- | 4.56 |
| 15:45:00 | 0.67 | -- | 3.41 | 0.68 | -- | 4.82 | -- | 4.14 |
| 16:00:00 | 0.39 | -- | 3.67 | 0.62 | -- | 4.34 | -- | 3.71 |
| 16:15:00 | 0.86 | -- | 4.21 | 0.68 | -- | 3.98 | -- | 3.30 |
| 16:30:00 | 1.31 | -- | 4.98 | 0.77 | -- | 4.04 | -- | 3.27 |
| 16:45:00 | 0.87 | -- | 4.18 | 0.82 | -- | 4.09 | -- | 3.27 |
| 17:00:00 | 0.73 | -- | 7.86 | 0.83 | -- | 4.98 | -- | 4.15 |
| 17:15:00 | 0.65 | -- | 9.48 | 0.88 | -- | 6.14 | -- | 5.26 |
| 17:30:00 | 1.01 | -- | 5.69 | 0.91 | -- | 6.44 | -- | 5.52 |
| 17:45:00 | 0.86 | -- | 5.88 | 0.82 | -- | 6.62 | -- | 5.79 |
| 18:00:00 | -- | -- | 4.5 | 0.81 | -- | 6.68 | -- | 5.87 |

# Wednesday, October 12, 2022

| Time | Turbidity (NTU) | | | Rolling Average Turbidity (NTU) | | | Difference (NTU) | |
|---|---|---|---|---|---|---|---|---|
| | Ambient | 3rd Street | Carroll Street | Ambient | 3rd Street | Carroll Street | 3rd St - Ambient | Carroll St - Ambient |
| 7:00:00 | 0.97 | -- | 0.3 | 0.97 | -- | 0.38 | -- | -0.59 |
| 7:15:00 | 1.3 | -- | 0.01 | 1.03 | -- | 0.32 | -- | -0.70 |
| 7:30:00 | 0.93 | -- | 2.95 | 1.00 | -- | 0.75 | -- | -0.25 |
| 7:45:00 | 1.61 | -- | 2.27 | 1.18 | -- | 1.14 | -- | -0.03 |
| 8:00:00 | 1.34 | -- | -- | 1.23 | -- | 1.38 | -- | 0.15 |
| 8:15:00 | 1.39 | -- | 1.27 | 1.31 | -- | 1.63 | -- | 0.31 |
| 8:30:00 | 1.39 | -- | 0.83 | 1.33 | -- | 1.83 | -- | 0.50 |
| 8:45:00 | 2.28 | -- | 1.36 | 1.60 | -- | 1.43 | -- | -0.17 |
| 9:00:00 | 1.27 | -- | 0.78 | 1.53 | -- | 1.06 | -- | -0.47 |
| 9:15:00 | 0.79 | -- | 3.18 | 1.42 | -- | 1.48 | -- | 0.06 |
| 9:30:00 | 0.85 | -- | 3.22 | 1.32 | -- | 1.87 | -- | 0.56 |
| 9:45:00 | 0.72 | -- | 5.07 | 1.18 | -- | 2.72 | -- | 1.54 |
| 10:00:00 | 1.57 | -- | 5.04 | 1.04 | -- | 3.46 | -- | 2.42 |
| 10:15:00 | 0.89 | -- | 4.35 | 0.96 | -- | 4.17 | -- | 3.21 |
| 10:30:00 | 0.93 | -- | 4.07 | 0.99 | -- | 4.35 | -- | 3.36 |
| 10:45:00 | 0.79 | -- | 4.86 | 0.98 | -- | 4.68 | -- | 3.70 |
| 11:00:00 | 0.92 | -- | 4.49 | 1.02 | -- | 4.56 | -- | 3.54 |
| 11:15:00 | 0.79 | -- | 6.64 | 0.86 | -- | 4.88 | -- | 4.02 |
| 11:30:00 | 0.74 | -- | 7.22 | 0.83 | -- | 5.46 | -- | 4.62 |
| 11:45:00 | 0.48 | -- | 7.69 | 0.74 | -- | 6.18 | -- | 5.44 |
| 12:00:00 | 0.69 | -- | 8.8 | 0.72 | -- | 6.97 | -- | 6.24 |
| 12:15:00 | 0.64 | -- | 11.86 | 0.67 | -- | 8.44 | -- | 7.77 |
| 12:30:00 | -- | -- | 14.93 | 0.64 | -- | 10.10 | -- | 9.46 |
| 12:45:00 | 0.55 | -- | 7.36 | 0.59 | -- | 10.13 | -- | 9.54 |
| 13:00:00 | 0.87 | -- | 5.02 | 0.69 | -- | 9.59 | -- | 8.91 |
| 13:15:00 | 1.17 | -- | 5.22 | 0.81 | -- | 8.88 | -- | 8.07 |
| 13:30:00 | 0.94 | -- | 4.17 | 0.88 | -- | 7.34 | -- | 6.46 |
| 13:45:00 | -- | -- | 3.82 | 0.88 | -- | 5.12 | -- | 4.24 |
| 14:00:00 | 0.96 | -- | 7.98 | 0.99 | -- | 5.24 | -- | 4.26 |
| 14:15:00 | 0.78 | -- | 5.18 | 0.96 | -- | 5.27 | -- | 4.31 |
| 14:30:00 | 0.86 | -- | 6.59 | 0.89 | -- | 5.55 | -- | 4.66 |
| 14:45:00 | 0.84 | -- | 9.7 | 0.86 | -- | 6.65 | -- | 5.79 |
| 15:00:00 | 1.02 | -- | 9.08 | 0.89 | -- | 7.71 | -- | 6.81 |
| 15:15:00 | 1.01 | -- | 11.32 | 0.90 | -- | 8.37 | -- | 7.47 |
| 15:30:00 | 0.89 | -- | -- | 0.92 | -- | 9.17 | -- | 8.25 |
| 15:45:00 | 1.63 | -- | 12.98 | 1.08 | -- | 10.77 | -- | 9.69 |
| 16:00:00 | 0.89 | -- | 5.77 | 1.09 | -- | 9.79 | -- | 8.70 |
| 16:15:00 | 1.26 | -- | 9.14 | 1.14 | -- | 9.80 | -- | 8.67 |
| 16:30:00 | 0.53 | -- | 10.34 | 1.04 | -- | 9.56 | -- | 8.52 |
| 16:45:00 | -- | -- | 9.65 | 1.08 | -- | 9.58 | -- | 8.50 |
| 17:00:00 | 0.73 | -- | 4.72 | 0.85 | -- | 7.92 | -- | 7.07 |
| 17:15:00 | 0.64 | -- | 4.25 | 0.79 | -- | 7.62 | -- | 6.83 |
| 17:30:00 | 1.03 | -- | 4.03 | 0.73 | -- | 6.60 | -- | 5.87 |
| 17:45:00 | 1.12 | -- | 3.35 | 0.88 | -- | 5.20 | -- | 4.32 |
| 18:00:00 | 1.39 | -- | 3.7 | 0.98 | -- | 4.01 | -- | 3.03 |

# Thursday, October 13, 2022

| Time | Turbidity (NTU) | | | Rolling Average Turbidity (NTU) | | | Difference (NTU) | |
|---|---|---|---|---|---|---|---|---|
| | Ambient | 3rd Street | Carroll Street | Ambient | 3rd Street | Carroll Street | 3rd St - Ambient | Carroll St - Ambient |
| 7:00:00 | 1.16 | -- | 0.19 | 1.33 | -- | 0.34 | -- | -0.98 |
| 7:15:00 | 1.08 | -- | 0.15 | 1.23 | -- | 0.27 | -- | -0.96 |
| 7:30:00 | 0.97 | -- | 0.23 | 1.16 | -- | 0.23 | -- | -0.93 |
| 7:45:00 | 1.31 | -- | 0.51 | 1.15 | -- | 0.29 | -- | -0.86 |
| 8:00:00 | 1.17 | -- | 0.27 | 1.14 | -- | 0.27 | -- | -0.87 |
| 8:15:00 | 0.98 | -- | 0.94 | 1.10 | -- | 0.42 | -- | -0.68 |
| 8:30:00 | -- | -- | 2.67 | 1.11 | -- | 0.92 | -- | -0.18 |
| 8:45:00 | 1.11 | -- | 4.12 | 1.14 | -- | 1.70 | -- | 0.56 |
| 9:00:00 | 0.99 | -- | 5.23 | 1.06 | -- | 2.65 | -- | 1.58 |
| 9:15:00 | 0.77 | -- | -- | 0.96 | -- | 3.24 | -- | 2.28 |
| 9:30:00 | 0.9 | -- | 4.25 | 0.94 | -- | 4.07 | -- | 3.13 |
| 9:45:00 | 0.98 | -- | 2.54 | 0.95 | -- | 4.04 | -- | 3.09 |
| 10:00:00 | -- | -- | 1.89 | 0.91 | -- | 3.48 | -- | 2.57 |
| 10:15:00 | 1.05 | -- | 1.64 | 0.93 | -- | 2.58 | -- | 1.66 |
| 10:30:00 | 0.76 | -- | 2.08 | 0.92 | -- | 2.48 | -- | 1.56 |
| 10:45:00 | 0.83 | -- | 2.23 | 0.91 | -- | 2.08 | -- | 1.17 |
| 11:00:00 | 0.74 | -- | 2.91 | 0.85 | -- | 2.15 | -- | 1.31 |
| 11:15:00 | 0.96 | -- | 3.62 | 0.87 | -- | 2.50 | -- | 1.63 |
| 11:30:00 | 0.84 | -- | 5.11 | 0.83 | -- | 3.19 | -- | 2.36 |
| 11:45:00 | 1.25 | -- | 5.22 | 0.92 | -- | 3.82 | -- | 2.89 |
| 12:00:00 | 0.97 | -- | 4.39 | 0.95 | -- | 4.25 | -- | 3.30 |
| 12:15:00 | 0.49 | -- | 3.85 | 0.90 | -- | 4.44 | -- | 3.54 |
| 12:30:00 | 0.53 | -- | 4.62 | 0.82 | -- | 4.64 | -- | 3.82 |
| 12:45:00 | 1.07 | -- | 4.19 | 0.86 | -- | 4.45 | -- | 3.59 |
| 13:00:00 | 0.93 | -- | 4.46 | 0.80 | -- | 4.30 | -- | 3.50 |
| 13:15:00 | 0.81 | -- | 16.51 | 0.77 | -- | 6.73 | -- | 5.96 |
| 13:30:00 | 0.44 | -- | 16.04 | 0.76 | -- | 9.16 | -- | 8.41 |
| 13:45:00 | 0.64 | -- | 12.9 | 0.78 | -- | 10.82 | -- | 10.04 |
| 14:00:00 | 1.02 | -- | 11.65 | 0.77 | -- | 12.31 | -- | 11.54 |
| 14:15:00 | 1.21 | -- | 8.27 | 0.82 | -- | 13.07 | -- | 12.25 |
| 14:30:00 | 0.82 | -- | 7.24 | 0.83 | -- | 11.22 | -- | 10.39 |
| 14:45:00 | 0.88 | -- | 8.3 | 0.91 | -- | 9.67 | -- | 8.76 |
| 15:00:00 | 1.21 | -- | -- | 1.03 | -- | 8.87 | -- | 7.84 |
| 15:15:00 | 1.32 | -- | 9.89 | 1.09 | -- | 8.43 | -- | 7.34 |
| 15:30:00 | 1.22 | -- | 3.05 | 1.09 | -- | 7.12 | -- | 6.03 |
| 15:45:00 | 0.8 | -- | 3.99 | 1.09 | -- | 6.31 | -- | 5.22 |
| 16:00:00 | 1.09 | -- | 4.24 | 1.13 | -- | 5.29 | -- | 4.16 |
| 16:15:00 | 0.51 | -- | 3.79 | 0.99 | -- | 4.99 | -- | 4.00 |
| 16:30:00 | 0.4 | -- | 4.1 | 0.80 | -- | 3.83 | -- | 3.03 |
| 16:45:00 | 0.81 | -- | 4.67 | 0.72 | -- | 4.16 | -- | 3.44 |
| 17:00:00 | 0.78 | -- | 5.07 | 0.72 | -- | 4.37 | -- | 3.66 |
| 17:15:00 | 0.4 | -- | 5.67 | 0.58 | -- | 4.66 | -- | 4.08 |
| 17:30:00 | 0.78 | -- | 4.87 | 0.63 | -- | 4.88 | -- | 4.24 |
| 17:45:00 | 1.09 | -- | 5.43 | 0.77 | -- | 5.14 | -- | 4.37 |
| 18:00:00 | 0.84 | -- | 5.22 | 0.78 | -- | 5.25 | -- | 4.47 |

# Friday, October 14, 2022

| Time | Turbidity (NTU) | | | Rolling Average Turbidity (NTU) | | | Difference (NTU) | |
|---|---|---|---|---|---|---|---|---|
| | Ambient | 3rd Street | Carroll Street | Ambient | 3rd Street | Carroll Street | 3rd St - Ambient | Carroll St - Ambient |
| 7:00:00 | 1.52 | -- | 0.35 | 1.77 | -- | 0.38 | -- | -1.39 |
| 7:15:00 | 1.33 | -- | 0.17 | 1.61 | -- | 0.31 | -- | -1.29 |
| 7:30:00 | 1.65 | -- | 0.74 | 1.60 | -- | 0.42 | -- | -1.18 |
| 7:45:00 | 1.87 | -- | 5.05 | 1.68 | -- | 1.36 | -- | -0.32 |
| 8:00:00 | 1.9 | -- | 2.08 | 1.65 | -- | 1.68 | -- | 0.02 |
| 8:15:00 | 2.24 | -- | 1.14 | 1.80 | -- | 1.84 | -- | 0.04 |
| 8:30:00 | 2.75 | -- | 1.19 | 2.08 | -- | 2.04 | -- | -0.04 |
| 8:45:00 | 2.86 | -- | 1.41 | 2.32 | -- | 2.17 | -- | -0.15 |
| 9:00:00 | 2.14 | -- | 1.49 | 2.38 | -- | 1.46 | -- | -0.92 |
| 9:15:00 | 1.75 | -- | 2.9 | 2.35 | -- | 1.63 | -- | -0.72 |
| 9:30:00 | 2 | -- | 6.12 | 2.30 | -- | 2.62 | -- | 0.32 |
| 9:45:00 | 1.11 | -- | -- | 1.97 | -- | 2.98 | -- | 1.01 |
| 10:00:00 | 0.93 | -- | 3.62 | 1.59 | -- | 3.53 | -- | 1.95 |
| 10:15:00 | 1.12 | -- | 4.62 | 1.38 | -- | 4.32 | -- | 2.93 |
| 10:30:00 | 0.92 | -- | 3.78 | 1.22 | -- | 4.54 | -- | 3.32 |
| 10:45:00 | 1.04 | -- | 2.7 | 1.02 | -- | 3.68 | -- | 2.66 |
| 11:00:00 | 1.11 | -- | 1.18 | 1.02 | -- | 3.18 | -- | 2.16 |
| 11:15:00 | 0.91 | -- | 1.45 | 1.02 | -- | 2.75 | -- | 1.73 |
| 11:30:00 | -- | -- | 1.53 | 1.00 | -- | 2.13 | -- | 1.13 |
| 11:45:00 | 0.74 | -- | 1.73 | 0.95 | -- | 1.72 | -- | 0.77 |
| 12:00:00 | 0.94 | -- | 1.47 | 0.93 | -- | 1.47 | -- | 0.55 |
| 12:15:00 | 0.65 | -- | 1.63 | 0.81 | -- | 1.56 | -- | 0.75 |
| 12:30:00 | 0.56 | -- | 1.9 | 0.72 | -- | 1.65 | -- | 0.93 |
| 12:45:00 | 0.61 | -- | 1.24 | 0.70 | -- | 1.59 | -- | 0.89 |
| 13:00:00 | 0.49 | -- | 1.36 | 0.65 | -- | 1.52 | -- | 0.87 |
| 13:15:00 | 0.56 | -- | 2.3 | 0.57 | -- | 1.69 | -- | 1.11 |
| 13:30:00 | 0.83 | -- | 1.91 | 0.61 | -- | 1.74 | -- | 1.13 |
| 13:45:00 | 0.56 | -- | 4.16 | 0.61 | -- | 2.19 | -- | 1.58 |
| 14:00:00 | 0.48 | -- | 4.36 | 0.58 | -- | 2.82 | -- | 2.23 |
| 14:15:00 | 0.56 | -- | 3.65 | 0.60 | -- | 3.28 | -- | 2.68 |
| 14:30:00 | 0.49 | -- | 1.85 | 0.58 | -- | 3.19 | -- | 2.60 |
| 14:45:00 | 0.67 | -- | 1.25 | 0.55 | -- | 3.05 | -- | 2.50 |
| 15:00:00 | 0.69 | -- | 1.13 | 0.58 | -- | 2.45 | -- | 1.87 |
| 15:15:00 | 0.62 | -- | 1.05 | 0.61 | -- | 1.79 | -- | 1.18 |
| 15:30:00 | 0.79 | -- | 1.67 | 0.65 | -- | 1.39 | -- | 0.74 |
| 15:45:00 | 0.6 | -- | 0.77 | 0.67 | -- | 1.17 | -- | 0.50 |
| 16:00:00 | 0.43 | -- | 0.69 | 0.63 | -- | 1.06 | -- | 0.44 |
| 16:15:00 | 0.54 | -- | 0.52 | 0.60 | -- | 0.94 | -- | 0.34 |
| 16:30:00 | 0.62 | -- | 0.51 | 0.60 | -- | 0.83 | -- | 0.24 |
| 16:45:00 | 0.34 | -- | 0.35 | 0.51 | -- | 0.57 | -- | 0.06 |
| 17:00:00 | 0.41 | -- | 0.34 | 0.47 | -- | 0.48 | -- | 0.01 |
| 17:15:00 | 0.67 | -- | 0.45 | 0.52 | -- | 0.43 | -- | -0.08 |
| 17:30:00 | 0.65 | -- | 0.24 | 0.54 | -- | 0.38 | -- | -0.16 |
| 17:45:00 | 0.61 | -- | 0.14 | 0.54 | -- | 0.30 | -- | -0.23 |
| 18:00:00 | 0.84 | -- | 0.09 | 0.64 | -- | 0.25 | -- | -0.38 |

# Appendix F

Weekly Noise Monitoring Report

CASHMAN DREDGING

# NOISE MONITORING FORM
Gowanus Canal Superfund Site - RTA1
Brooklyn, New York

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/11/22 | 365 Bond St | 9:13 AM | 7:10:00 | PCE-332A | 70 deg F |
| | | End Time | Leq | Lmax / Time Period | Observer |
| | | 4:23 PM | 70.9 | 75.9 dBA / 10:00 - 11:00 | Sean Lane |
| Exceedance | None | | | | |
| Action | N/A | | | | |

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/11/22 | 365 Bond St | 9:15 AM | 7:12:00 | | 70 deg F |
| | | End Time | Leq | Lmax / Time Period | Observer |
| | | 4:27 PM | 62.2 | 65.1 dBA / 11:00 - 12:00 | Sean Lane |
| Exceedance | None | | | | |
| Action | N/A | | | | |

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/12/22 | 365 Bond St | 7:59 AM | 9:05:00 | PCE-332A | 70 deg F |
| | | End Time | Leq | Lmax / Time Period | Observer |
| | | 5:04 PM | 61.0 | 73.4 dBA / 07:00 - 08:00 | Sean Lane |
| Exceedance | None | | | | |
| Action | N/A | | | | |

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/12/22 | Union St Bridge | 8:19 AM | 9:05:00 | | 70 deg F |
| | | End Time | Leq | Lmax / Time Period | Observer |
| | | 5:24 PM | 66.8 | 72.6 dBA / 09:00 - 10:00 | Sean Lane |
| Exceedance | None | | | | |
| Action | N/A | | | | |

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/13/22 | 365 Bond St | 8:59 AM | 9:05:00 | PCE-332A | 69 deg F |
| | | End Time | Leq | Lmax / Time Period | Observer |
| | | 6:04 PM | 61.0 | 71.2 dBA / 16:00 - 17:00 | Sean Lane |
| Exceedance | None | | | | |
| Action | N/A | | | | |

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/13/22 | Union St Bridge | 8:22 AM | 7:52:00 | PCE-323 | 69 deg F |
| | | End Time | Leq | Lmax / Time Period | Observer |
| | | 4:14 PM | 71.4 | 77.1 dBA / 09:00 - 10:00 | Sean Lane |
| Exceedance | None | | | | |
| Action | N/A | | | | |

CASHMAN DREDGING

# NOISE MONITORING FORM

Gowanus Canal Superfund Site - RTA1
Brooklyn, New York

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/14/22 | 365 Bond St | 7:55 AM | 6:40:00 | PCE-332A | 67 deg F |
| | | **End Time** | **Leq** | **Lmax / Time Period** | **Observer** |
| | | 2:35 PM | 63.8 | 65.8 dBA / 09:00 - 10:00 | Sean Lane |
| **Exceedance** | None | | | | |
| **Action** | N/A | | | | |

| Date | Monitoring Location | Start Time | Sample Duration | Calibration Data | Weather |
|---|---|---|---|---|---|
| 10/14/22 | Union St Bridge | 8:01 AM | 6:35:00 | PCE-323 | 67 deg F |
| | | **End Time** | **Leq** | **Lmax / Time Period** | **Observer** |
| | | 2:36 PM | 71.0 | 73.9 dBA / 10:00 - 11:00 | Sean Lane |
| **Exceedance** | None | | | | |
| **Action** | N/A | | | | |

# Appendix G

Cultural Resources Debris Memo

# Appendix H
# Dredge Water Treatment Analytical Results

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-266446-1
Client Project/Site: Gowanus Canal RTA1

For:
Aptim Environmental & Infrastructure Inc
200 Horizon Center Blvd
Trenton, New Jersey 08691-1904

Attn: John Waechter

*Authorized for release by:*
*10/12/2022 3:14:08 PM*

Jill Miller, Senior Project Manager
(484)685-0871
Jill.Miller@et.eurofinsus.com

## Job ID: 460-266446-1

**Laboratory: Eurofins Edison**

**Narrative**

# CASE NARRATIVE

## Client: Aptim Environmental & Infrastructure Inc

## Project: Gowanus Canal RTA1

## Report Number: 460-266446-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

**RECEIPT**
The samples were received on 09/28/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.0 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

**SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) - SELECTED ION MODE (SIM)**
Sample DWTS EFF (460-266446-1) was analyzed for Semivolatile Organic Compounds (GC/MS) - Selected Ion Mode (SIM) in accordance with EPA SW-846 Method 8270E SIM. The samples were prepared on 09/30/2022 and analyzed on 10/01/2022.

The continuing calibration verification (CCV) analyzed in batch 460-869593 was outside the method criteria for the following analyte(s): Pentachlorophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

No difficulties were encountered during the Semivolatiles SIM analysis.

All quality control parameters were within the acceptance limits.

**ORGANOCHLORINE PESTICIDES AND POLYCHLORINATED BIPHENYLS BY GAS CHROMATOGRAPHY**
Sample DWTS EFF (460-266446-1) was analyzed for Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography in accordance with 608.3. The samples were prepared on 09/29/2022 and analyzed on 10/04/2022.

No difficulties were encountered during the Pesticides/PCBs analysis.

All quality control parameters were within the acceptance limits.

**TOTAL RECOVERABLE METALS**

## Job ID: 460-266446-1 (Continued)

### Laboratory: Eurofins Edison (Continued)

Sample DWTS EFF (460-266446-1) was analyzed for total recoverable metals in accordance with EPA Method 200.8 (ICP/MS). The samples were prepared on 10/03/2022 and analyzed on 10/06/2022.

The following samples for metals were received unpreserved and were preserved upon receipt to the laboratory: DWTS EFF (460-266446-1). Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion. The sample was preserved on 9/30/22 at 19:00 PM with concentrated nitric acid.

As a standard practice all non-potable samples and related QC samples (i.e., MB, LCS, Dup, MS, SD) are diluted 5X prior to analysis. Further dilutions may be required dependent upon analyte levels in the samples. Refer to the analytical results forms for dilutions.

No other difficulties were encountered during the metals analysis.

All other quality control parameters were within the acceptance limits.

**SILICA GEL TREATED (SGT/PETROLEUM HYDROCARBON) AND N-HEXANE EXTRACTABLE MATERIAL (HEM/OIL&GREASE)**

Sample DWTS EFF (460-266446-1) was analyzed for Silica Gel Treated (SGT/Petroleum Hydrocarbon) and N-Hexane Extractable Material (HEM/Oil&Grease) in accordance with EPA SW-846 Method 1664A. The samples were analyzed on 10/04/2022.

Analysis for Hexane Extractable Material (HEM) was performed for the following sample: (460-266278-A-3). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

No difficulties were encountered during the SGT-HEM/HEM analysis.

All quality control parameters were within the acceptance limits.

**TOTAL SUSPENDED SOLIDS**

Sample DWTS EFF (460-266446-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 10/04/2022.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

**BIOCHEMICAL OXYGEN DEMAND 5 DAY**

Sample DWTS EFF (460-266446-1) was analyzed for Biochemical Oxygen Demand 5 Day in accordance with SM 5210B. The samples were analyzed on 10/07/2022.

The following sample was analyzed outside of analytical holding time due to internal tracking error.DWTS EFF (460-266446-1).

No difficulties were encountered during the BOD5 analysis.

All quality control parameters were within the acceptance limits.

# Sample Summary

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266446-1
Project/Site: Gowanus Canal RTA1

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 460-266446-1 | DWTS EFF | Water | 09/28/22 12:15 | 09/28/22 18:30 |

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266446-1
Project/Site: Gowanus Canal RTA1

## Client Sample ID: DWTS EFF
**Lab Sample ID: 460-266446-1**
**Date Collected: 09/28/22 12:15**
**Matrix: Water**
**Date Received: 09/28/22 18:30**

### Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[a]pyrene | 0.022 | U | 0.050 | 0.022 | ug/L | | 10/01/22 01:08 | 1 | YAH |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Analyzed* | *Dil Fac* | *Analyst* |
|---|---|---|---|---|---|---|
| *Nitrobenzene-d5* | *84* | | *43 - 150* | *10/01/22 01:08* | *1* | *YAH* |

### Method: 608.3 - Organochlorine Pesticides/PCBs in Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 140 | U | 1000 | 140 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1221 | 140 | U | 1000 | 140 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1232 | 140 | U | 1000 | 140 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1242 | 140 | U | 1000 | 140 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1248 | 140 | U | 1000 | 140 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1254 | 69 | U | 1000 | 69 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1260 | 69 | U | 1000 | 69 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1262 | 69 | U | 1000 | 69 | ng/L | | 10/04/22 07:04 | 1 | FAM |
| Aroclor 1268 | 69 | U | 1000 | 69 | ng/L | | 10/04/22 07:04 | 1 | FAM |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Analyzed* | *Dil Fac* | *Analyst* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *68* | | *10 - 150* | *10/04/22 07:04* | *1* | *FAM* |
| *DCB Decachlorobiphenyl* | *53* | | *10 - 150* | *10/04/22 07:04* | *1* | *FAM* |

### Method: 200.8 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| **Copper** | **5.0** | | 4.0 | 1.1 | ug/L | | 10/06/22 15:01 | 1 | MDC |
| Lead | 0.53 | U | 1.2 | 0.53 | ug/L | | 10/06/22 15:01 | 1 | MDC |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Oil & Grease (HEM) | 5.0 | U | 5.0 | 5.0 | mg/L | | 10/04/22 15:25 | 1 | PXP |
| **Total Suspended Solids** | **28.4** | | 10.0 | 10.0 | mg/L | | 10/04/22 08:39 | 1 | AAP |
| **Biochemical Oxygen Demand** | **4.0** | **H** | 1.0 | 1.0 | mg/L | | 10/07/22 13:20 | 1 | AAP |

# Accreditation/Certification and Definitions Summary

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266446-1
Project/Site: Gowanus Canal RTA1

## Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Connecticut | State | PH-0200 | 11-10-22 |
| DE Haz. Subst. Cleanup Act (HSCA) | State | N/A | 01-01-23 |
| Massachusetts | State | M-NJ312 | 06-30-23 |
| New Jersey | NELAP | 12028 | 06-30-23 |
| New York | NELAP | 11452 | 04-01-23 |
| Pennsylvania | NELAP | 68-00522 | 02-28-23 |
| Rhode Island | State | LAO00376 | 12-31-22 |
| USDA | US Federal Programs | P330-20-00244 | 11-03-23 |

## Qualifiers

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| H | Sample was prepped or analyzed beyond the specified holding time |
| U | Indicates the analyte was analyzed for but not detected. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| 1C | Result is from the primary column on a dual-column method. |
| 2C | Result is from the confirmation column on a dual-column method. |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |

## Glossary (Continued)

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Method Summary

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266446-1
Project/Site: Gowanus Canal RTA1

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8270E SIM | Semivolatile Organic Compounds (GC/MS SIM) | SW846 | EET EDI |
| 608.3 | Organochlorine Pesticides/PCBs in Water | 40CFR136A | EET EDI |
| 200.8 | Metals (ICP/MS) | EPA | EET EDI |
| 1664A | HEM and SGT-HEM | 1664A | EET EDI |
| SM 2540D | Solids, Total Suspended (TSS) | SM | EET EDI |
| SM 5210B | BOD, 5-Day | SM | EET EDI |
| 200.8 | Preparation, Total Recoverable Metals | EPA | EET EDI |
| 3510C | Liquid-Liquid Extraction (Separatory Funnel) | SW846 | EET EDI |
| 608 | Liquid-Liquid Extraction (Separatory Funnel) | 40CFR136A | EET EDI |

**Protocol References:**

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Chain of Custody Record

628922

eurofins | Environment Testing America

266446

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

| Client Contact | Project Manager: JOHN WAECHTER | Site Contact: JOHN WAECHTER | Date: 9/28/22 | COC No: |
|---|---|---|---|---|
| Company Name: APTIM | Tel/Email: 518-328-3679 | Lab Contact: JILL MILLER | Carrier: LAB | 1 of 1 COCs |
| Address: 245 HUNTINGTON STREET | Analysis Turnaround Time | | | Sampler: |
| City/State/Zip: BROOKLYN, NY | ☐ CALENDAR DAYS ☐ WORKING DAYS | | | For Lab Use Only: |
| Phone: 518-328-3679 | TAT if different from Below _____ | | | Walk-in Client: |
| Fax: | ☐ 2 weeks | | | Lab Sampling: |
| Project Name: GOWANUS | ☐ 1 week | | | |
| Site: | ☐ 2 days | | | Job / SDG No.: |
| P O # 0521 7004 | ☐ 1 day | | | |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS / MSD (Y/N) | TSS | BOD5 | BEN20@ PYRENE | COPPER/LEAD | PCB's | Oil & GREASE | Sample Specific Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DWTS EFF | 9/28/22 | 12:15PM | G | H2O | 9 | | | X | X | X | X | X | X | |

SHORT HOLD

460-266446 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

**Possible Hazard Identification:**
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

**Special Instructions/QC Requirements & Comments:**

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |
|---|---|---|---|---|---|
| MARVIN P | APTIM | 9/28/22 14:00 | | | 9/28/22 14:20 |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: |
| | | | | | 9/28/22 1700 |
| Relinquished by: | Company: | Date/Time: | Received in Laboratory by: | Company: | Date/Time: |
| | | 9/28/22 1830 | | | 9/28/22 1830 |

20ZR9 30 ZR9

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10/12/2022

# Eurofins TestAmerica Edison
## Receipt Temperature and pH Log

Job Number: 266446

Number of Coolers: 1 IR Gun # 9

### Cooler Temperatures

| | RAW | CORRECTED | | RAW | CORRECTED | | RAW | CORRECTED |
|---|---|---|---|---|---|---|---|---|
| Cooler #1: | 30 °C | 3C °C | Cooler #4: | °C | °C | Cooler #7: | °C | °C |
| Cooler #2: | °C | °C | Cooler #5: | °C | °C | Cooler #8: | °C | °C |
| Cooler #3: | °C | °C | Cooler #6: | °C | °C | Cooler #9: | °C | °C |

| TALS Sample Number | Ammonia (pH<2) | COD (pH<2) | Nitrate Nitrite (pH<2) | Metals* (pH<2) | Hardness (pH<2) | Pest (pH 5-9) | EPH or QAM (pH<2) | Phenols (pH<2) | Sulfide (pH>9) | TKN (pH<2) | TOC (pH<2) | Total Cyanide (pH>12) | Total Phos (pH<2) | Other | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | 42 | | | | | | | | | | | |
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**If pH adjustments are required record the information below:**

**Sample No(s). adjusted:** _____

**Preservative Name/Conc.:** _____ Volume of Preservative used (ml): _____

**Lot # of Preservative(s):** _____ Expiration Date: _____

*The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.*

* *Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

**Initials:** _____ **Date:** 9 28 22



10/12/2022

eurofins | Environment Testing America

# ANALYTICAL REPORT

Eurofins Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-266875-1
Client Project/Site: Gowanus Canal

For:
Aptim Environmental & Infrastructure Inc
200 Horizon Center Blvd
Trenton, New Jersey 08691-1904

Attn: John Waechter

*Authorized for release by:*
*10/12/2022 2:57:57 PM*

Jill Miller, Senior Project Manager
(484)685-0871
Jill.Miller@et.eurofinsus.com

## Job ID: 460-266875-1

**Laboratory: Eurofins Edison**

**Narrative**

# CASE NARRATIVE

## Client: Aptim Environmental & Infrastructure Inc

## Project: Gowanus Canal

## Report Number: 460-266875-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) as a result of a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes or interferences which exceed the calibration range of the instrument.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

**RECEIPT**
The samples were received on 10/05/2022; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.6 C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

**SEMIVOLATILE ORGANIC COMPOUNDS (GC/MS) - SELECTED ION MODE (SIM)**
Sample DWTS EFF (460-266875-1) was analyzed for Semivolatile Organic Compounds (GC/MS) - Selected Ion Mode (SIM) in accordance with EPA SW-846 Method 8270E SIM. The samples were prepared on 10/07/2022 and analyzed on 10/08/2022.

No difficulties were encountered during the Semivolatiles SIM analysis.

All quality control parameters were within the acceptance limits.

**ORGANOCHLORINE PESTICIDES AND POLYCHLORINATED BIPHENYLS BY GAS CHROMATOGRAPHY**
Sample DWTS EFF (460-266875-1) was analyzed for Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography in accordance with 608.3. The samples were prepared on 10/06/2022 and analyzed on 10/07/2022.

Spike compounds were inadvertently omitted during the extraction process for the matrix spike/matrix spike duplicate (MS/MSD); therefore, matrix spike recoveries are unavailable for preparation batch 460-870227 and analytical batch 460-870400. The associated laboratory control sample (LCS) met acceptance criteria.

No difficulties were encountered during the Pesticides/PCBs analysis.

All quality control parameters were within the acceptance limits.

**TOTAL RECOVERABLE METALS**
Sample DWTS EFF (460-266875-1) was analyzed for total recoverable metals in accordance with EPA Method 200.8 (ICP/MS). The

## Job ID: 460-266875-1 (Continued)

### Laboratory: Eurofins Edison (Continued)

samples were prepared on 10/07/2022 and analyzed on 10/10/2022.

As a standard practice all non-potable samples and related QC samples (i.e., MB, LCS, Dup, MS, SD) are diluted 5X prior to analysis. Further dilutions may be required dependent upon analyte levels in the samples. Refer to the analytical results forms for dilutions.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

**SILICA GEL TREATED (SGT/PETROLEUM HYDROCARBON) AND N-HEXANE EXTRACTABLE MATERIAL (HEM/OIL&GREASE)**
Sample DWTS EFF (460-266875-1) was analyzed for Silica Gel Treated (SGT/Petroleum Hydrocarbon) and N-Hexane Extractable Material (HEM/Oil&Grease) in accordance with EPA SW-846 Method 1664A. The samples were analyzed on 10/10/2022.

Analysis for Hexane Extractable Material (HEM) was performed for the following sample: (460-266737-B-1). Since the HEM result(s) was below the reporting limit (RL), the result(s) for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

No difficulties were encountered during the SGT-HEM/HEM analysis.

All quality control parameters were within the acceptance limits.

**TOTAL SUSPENDED SOLIDS**
Sample DWTS EFF (460-266875-1) was analyzed for total suspended solids in accordance with SM 2540D. The samples were analyzed on 10/11/2022.

No difficulties were encountered during the TSS analysis.

All quality control parameters were within the acceptance limits.

**BIOCHEMICAL OXYGEN DEMAND 5 DAY**
Sample DWTS EFF (460-266875-1) was analyzed for Biochemical Oxygen Demand 5 Day in accordance with SM 5210B. The samples were analyzed on 10/07/2022.

No difficulties were encountered during the BOD5 analysis.

All quality control parameters were within the acceptance limits.

**AMMONIA**
Sample DWTS EFF (460-266875-1) was analyzed for ammonia in accordance with SM 4500 NH3 H. The samples were analyzed on 10/07/2022.

No difficulties were encountered during the ammonia analysis.

All quality control parameters were within the acceptance limits.

# Sample Summary

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266875-1
Project/Site: Gowanus Canal

| Lab Sample ID | Client Sample ID | Matrix | Collected | Received |
|---|---|---|---|---|
| 460-266875-1 | DWTS EFF | Water | 10/05/22 10:00 | 10/05/22 18:10 |

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266875-1
Project/Site: Gowanus Canal

## Client Sample ID: DWTS EFF
**Lab Sample ID: 460-266875-1**
**Date Collected: 10/05/22 10:00**
**Matrix: Water**
**Date Received: 10/05/22 18:10**

### Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Benzo[a]pyrene | 0.022 | U | 0.050 | 0.022 | ug/L | | 10/08/22 04:00 | 1 | YAH |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Analyzed* | *Dil Fac* | *Analyst* |
|---|---|---|---|---|---|---|
| *Nitrobenzene-d5* | *95* | | *43 - 150* | *10/08/22 04:00* | *1* | *YAH* |

### Method: 608.3 - Organochlorine Pesticides/PCBs in Water

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | 140 | U | 1000 | 140 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1221 | 140 | U | 1000 | 140 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1232 | 140 | U | 1000 | 140 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1242 | 140 | U | 1000 | 140 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1248 | 140 | U | 1000 | 140 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1254 | 69 | U | 1000 | 69 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1260 | 69 | U | 1000 | 69 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1262 | 69 | U | 1000 | 69 | ng/L | | 10/07/22 09:03 | 1 | SAK |
| Aroclor 1268 | 69 | U | 1000 | 69 | ng/L | | 10/07/22 09:03 | 1 | SAK |

| *Surrogate* | *%Recovery* | *Qualifier* | *Limits* | *Analyzed* | *Dil Fac* | *Analyst* |
|---|---|---|---|---|---|---|
| *Tetrachloro-m-xylene* | *92* | | *10 - 150* | *10/07/22 09:03* | *1* | *SAK* |
| *DCB Decachlorobiphenyl* | *51* | | *10 - 150* | *10/07/22 09:03* | *1* | *SAK* |

### Method: 200.8 - Metals (ICP/MS) - Total Recoverable

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| **Copper** | **1.2** | **J** | 4.0 | 1.1 | ug/L | | 10/10/22 20:43 | 1 | MDC |
| Lead | 0.53 | U | 1.2 | 0.53 | ug/L | | 10/10/22 20:43 | 1 | MDC |

### General Chemistry

| Analyte | Result | Qualifier | RL | MDL | Unit | D | Analyzed | Dil Fac | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Oil & Grease (HEM) | 5.0 | U | 5.0 | 5.0 | mg/L | | 10/10/22 10:02 | 1 | PXP |
| **Ammonia (as N)** | **15.2** | | 0.10 | 0.050 | mg/L | | 10/07/22 15:06 | 1 | AXP |
| **Total Suspended Solids** | **10.0** | | 10.0 | 10.0 | mg/L | | 10/11/22 08:20 | 1 | AAP |
| **Biochemical Oxygen Demand** | **62.6** | | 1.0 | 1.0 | mg/L | | 10/07/22 09:30 | 1 | AAP |

# Accreditation/Certification and Definitions Summary

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266875-1
Project/Site: Gowanus Canal

## Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

| Authority | Program | Identification Number | Expiration Date |
|---|---|---|---|
| Connecticut | State | PH-0200 | 11-10-22 |
| DE Haz. Subst. Cleanup Act (HSCA) | State | N/A | 01-01-23 |
| Massachusetts | State | M-NJ312 | 06-30-23 |
| New Jersey | NELAP | 12028 | 06-30-23 |
| New York | NELAP | 11452 | 04-01-23 |
| Pennsylvania | NELAP | 68-00522 | 02-28-23 |
| Rhode Island | State | LAO00376 | 12-31-22 |
| USDA | US Federal Programs | P330-20-00244 | 11-03-23 |

## Qualifiers

### GC/MS Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

### GC Semi VOA

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

### Metals

| Qualifier | Qualifier Description |
|---|---|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| U | Indicates the analyte was analyzed for but not detected. |

### General Chemistry

| Qualifier | Qualifier Description |
|---|---|
| U | Indicates the analyte was analyzed for but not detected. |

## Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| ¤ | Listed under the "D" column to designate that the result is reported on a dry weight basis |
| %R | Percent Recovery |
| 1C | Result is from the primary column on a dual-column method. |
| 2C | Result is from the confirmation column on a dual-column method. |
| CFL | Contains Free Liquid |
| CFU | Colony Forming Unit |
| CNF | Contains No Free Liquid |
| DER | Duplicate Error Ratio (normalized absolute difference) |
| Dil Fac | Dilution Factor |
| DL | Detection Limit (DoD/DOE) |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC | Decision Level Concentration (Radiochemistry) |
| EDL | Estimated Detection Limit (Dioxin) |
| LOD | Limit of Detection (DoD/DOE) |
| LOQ | Limit of Quantitation (DoD/DOE) |
| MCL | EPA recommended "Maximum Contaminant Level" |
| MDA | Minimum Detectable Activity (Radiochemistry) |
| MDC | Minimum Detectable Concentration (Radiochemistry) |
| MDL | Method Detection Limit |
| ML | Minimum Level (Dioxin) |

## Glossary (Continued)

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|---|---|
| MPN | Most Probable Number |
| MQL | Method Quantitation Limit |
| NC | Not Calculated |
| ND | Not Detected at the reporting limit (or MDL or EDL if shown) |
| NEG | Negative / Absent |
| POS | Positive / Present |
| PQL | Practical Quantitation Limit |
| PRES | Presumptive |
| QC | Quality Control |
| RER | Relative Error Ratio (Radiochemistry) |
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
| TEF | Toxicity Equivalent Factor (Dioxin) |
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
| TNTC | Too Numerous To Count |

# Method Summary

Client: Aptim Environmental & Infrastructure Inc
Job ID: 460-266875-1
Project/Site: Gowanus Canal

| Method | Method Description | Protocol | Laboratory |
|---|---|---|---|
| 8270E SIM | Semivolatile Organic Compounds (GC/MS SIM) | SW846 | EET EDI |
| 608.3 | Organochlorine Pesticides/PCBs in Water | 40CFR136A | EET EDI |
| 200.8 | Metals (ICP/MS) | EPA | EET EDI |
| 1664A | HEM and SGT-HEM | 1664A | EET EDI |
| 4500 NH3 H | Ammonia | SM | EET EDI |
| SM 2540D | Solids, Total Suspended (TSS) | SM | EET EDI |
| SM 5210B | BOD, 5-Day | SM | EET EDI |
| 200.8 | Preparation, Total Recoverable Metals | EPA | EET EDI |
| 3510C | Liquid-Liquid Extraction (Separatory Funnel) | SW846 | EET EDI |
| 608 | Liquid-Liquid Extraction (Separatory Funnel) | 40CFR136A | EET EDI |

**Protocol References:**

1664A = EPA-821-98-002

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Chain of Custody Record

628923

eurofins | Environment Testing America

266875

TAL-8210

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

| Client Contact | Project Manager: JOHN WAECHTER | Site Contact: JOHN WAECHTER | Date: 10/5/22 | COC No: |
|---|---|---|---|---|
| Company Name: APTIM | Tel/Email: 518-328-3679 | Lab Contact: Jill Miller | Carrier: LAB | 1 of 2 COCs |
| Address: 215 HUNTINGTON STREET | Analysis Turnaround Time | | | Sampler: |
| City/State/Zip: BROOKLYN, NY | ☐ CALENDAR DAYS ☐ WORKING DAYS | | | For Lab Use Only: |
| Phone: 518-328-3679 | TAT if different from Below _____ | | | Walk-in Client: |
| Fax: | ☐ 2 weeks | | | Lab Sampling: |
| Project Name: GOWANUS | ☐ 1 week | | | Job / SDG No.: |
| Site: | ☐ 2 days | | | |
| P O # 0521 7004 | ☐ 1 day | | | |

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=Grab) | Matrix | # of Cont. | Filtered Sample (Y/N) | Perform MS / MSD (Y/N) | TSS | BOD5 | Benzo(a)Pyrene | Copper/Lead | PCB's | Oil & Grease | Ammonia | Sample Specific Notes: |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DWTS EFF | 10/5/22 | 10AM | G | H2O | 10 | | | X | X | X | X | X | X | X | 1 |

NYC 22 22

SHORT HOLD

460-266875 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

**Possible Hazard Identification:**
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

**Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)**

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

**Special Instructions/QC Requirements & Comments:**

| Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____ |
|---|---|---|---|
| Relinquished by: MARVIN P | Company: APTIM | Date/Time: 10/5/22 | Received by: | Company: | Date/Time: 10/5/22 |
| Relinquished by: | Company: | Date/Time: | Received by: | Company: | Date/Time: 1054 |
| Relinquished by: | Company: | Date/Time: 10/5/22 1800 | Received in Laboratory by: | Company: TAL | Date/Time: 10/5/22 1810 |

26 29 26 29

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10/12/2022

7 6 5 4 3 2 1

**Eurofins TestAmerica Edison**
**Receipt Temperature and pH Log**



Job Number: 266815

Number of Coolers: 1 IR Gun # 9

## Cooler Temperatures

| | RAW | CORRECTED | | RAW | CORRECTED | | RAW | CORRECTED |
|---|---|---|---|---|---|---|---|---|
| Cooler #1: | 26 °C | 26 °C | Cooler #4: | °C | °C | Cooler #7: | °C | °C |
| Cooler #2: | °C | °C | Cooler #5: | °C | °C | Cooler #8: | °C | °C |
| Cooler #3: | °C | °C | Cooler #6: | °C | °C | Cooler #9: | °C | °C |

| TALS Sample Number | Ammonia (pH<2) | COD (pH<2) | Nitrate Nitrite (pH<2) | Metals* (pH<2) | Hardness (pH<2) | Pest (pH 5-9) | EPH or QAM (pH<2) | Phenols (pH<2) | Sulfide (pH>9) | TKN (pH<2) | TOC (pH<2) | Total Cyanide (pH>12) | Total Phos (pH<2) | Other | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | <2 | | | <2 | | | | | | | | | | | |
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**If pH adjustments are required record the information below:**

**Sample No(s). adjusted:** _____

**Preservative Name/Conc.:** _____ Volume of Preservative used (ml): _____

**Lot # of Preservative(s):** _____ Expiration Date: _____

*The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.*

* *Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

**Initials:** _____ **Date:** 10/5/22