WEEKLY PROGRESS REPORT
RTA1 REMEDIAL CONSTRUCTION

GOWANUS CANAL SUPERFUND SITE
BROOKLYN, NEW YORK

PERIOD: October 03 to October 07, 2022

Date of Report: October 17, 2022

Submitted by:
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Gowanus Canal Project Coordinator

WEEKLY PROGRESS REPORT

RTA1 – Gowanus Canal Superfund Site	Weekly Progress Report No. 112
USEPA Unilateral Administrative Orders	Period 10/03/2022 to 10/07//2022
Docket No. CERCLA-02-2019-2010	
Docket No. CERCLA-02-2020-2003	Submittal Date: October 17, 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:
    - Continued Phase 3 Dredging from Carroll Street to Union Street
  - 30-Ton Grove Barge
    - Assisted with other canal operations as needed
    - Installed anchor wale at 365 Bond Street
  - Dredging
    - Dredge Carroll Street to Union Street (bulk removal)
    - 1,700 CY dredged this week (56,616 CY dredged to date)
  - Union Street Bridge
    - Hellman electric continued installation of permanent submarine cables
  - Carroll Street Bridge
    - Maintained bridge closure and detour signs
  - DeGraw Street
    - No activity
  - 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 instrumentation for existing buildings, bulkheads, and their supports
  - 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**
  - 1,600 tons of sediments offloaded/processed
  - Approximately 76,236 tons of sediments offloaded/processed (by draft) to date
  - 135.71 tons of stabilizer used this past week (5,665.92 tons to-date)
  - 2,150 tons of sediment disposal this past week (71,157 tons of sediment disposed to-date)
  - 400 tons of debris recovered this past week (4,686 tons of debris recovered to date)
  - 400 tons of debris was disposed this past week (3,8299 tons of debris disposed to date)

- **595 Smith Street Staging Site**
  - Mobilize site development equipment
  - Remove debris/prepare site
  - Mobilize/install guard shack
  - Began site security coverage

- **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
    - Visual confirmation sampling of native alluvial sediments and in situ stabilized sediments.

- 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 5, 6, 8, 11, and 12 near active remediation. During these surveys, no occurrences of odors were recorded above a "1" on the odor scale.
  - On October 4, 2022 a Station 9A power outage resulted in approximately 6 hours of TVOC and PM10 monitoring instrument downtime. Batteries were replaced and active TVOC and PM10 monitoring resumed at approximately 7:15 am on October 4, 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 the Carroll Street Bridge and south of the Union Street Bridge, conduit installation at the Union Street Bridge, and prepping for the concrete cap installation at DeGraw Street West street end.
  - Non-project related activities conducted during the reporting period that could have influenced movement and vibration monitoring data Powerhouse project activities, Sackett Street and President Street properties redevelopment activities, 318 Nevins Street redevelopment activities, 420 Carroll Street redevelopment activities, and Fulton project activities.
  - AMTS2 was shut down from approximately 9:00 am until 1:00 pm on October 3, 2022, and from approximately 9:00 am until 2:00 pm on October 5, 2022 during lock out tag out operations at the Union Street Bridge while CDMC performed work causing 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; many easting alerts at locations UN-04, UN-12, and UN-21; several easting alerts at location UN-16C; a single easting alert at location UN-22; several northing alerts at location UN-09; multiple northing alerts at locations UN-10, UN-16C, and UN-26; a single northing alert at locations UN-04, UN-02, UN-33, UN-23, and UN-12; and a single elevation alert at location UN-12 greater than 0.25". These alerts, except for the alerts at UN-02, UN-26, and UN-33, were consistent with data trends observed at these locations. The alerts at UN-02, UN-26, and UN-33 were erroneous readings that subsequently returned to previous 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; a single easting alert at locations CA-45 and CA-46; several northing alerts at location CA-

05; multiple northing alerts at location CA-35A; and a single elevation alert at location CA-46 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 Engineer and the NYCDOT 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 many easting alerts at location 3RD-03; and several easting alerts at location 3RD-04 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" at various locations on the 3rd Street bridge.

- Received multiple combined easting and northing alerts at locations 479-03, 322-04A, 322-09, and 322-08; multiple combined easting and elevation alerts at location 479-03; several easting alerts at locations 524-01, 524-02, and 322-04A; multiple easting alerts at locations 322-01, 322-08, 479-03, and DEP-04; a single easting alert at locations DEP-05, DEP-06, 322-02, DEP-03, and DEP-01; many northing alerts at location 322-08; multiple northing alerts at locations 322-09, 479-01, and 479-03; a single northing alert at locations 322-07, DEP-05, 322-04A, and DEP-01; many elevation alerts at locations 322-06, 322-07, and 479-03; and a single elevation alert at location 322-03 greater than 0.25". These alerts were consistent with data trends observed at these locations.
- Received many easting alerts at location L17-56; multiple easting alerts at locations L15-52, L15-27, L16-00A, and L17-35; a single easting alert at locations R03-74D, R05-45A, R05-18A, R04-90, L03-64, R04-36, and R00-81; and several northing alerts at location L07-07 greater than 2". These alerts, except for the alerts at L03-64, R00-81, R03-74D, R04-36, R04-90, R05-18A, and R05-45A, were consistent with data trends observed at these locations. The alerts at L03-64, R00-81, R03-74D, R04-36, R04-90, R05-18A, and R05-45A were erroneous reading that subsequently returned to previous data trends observed at these locations.
- Changes were observed in crack gauges CA-02, CA-03, CA-05, CA-06, CA-07, CA-08, CA-09A, CA-11, CA-12, CA-14, CA-15, UN-03, UN-05, UN-07, 479-02, CM-03, and CM-05.
- A change from -2.5 degrees to -2.75 degrees was observed in inclinometer 479 IN-01 East. A change from 0 degrees to -0.25 degrees was observed in inclinometer 479 IN-01 South.
- 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 7, 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
  - 168,840 gallons water processed last week (5,028,564 gallons total to-date)
  - 146,217 gallons discharged last week (3,779,983gallons total to-date)
  - 9,500 gallons backwashed (552,564 gallons total to-date)

- **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 11, 2022

- 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
- Phase III dredging from Carroll Street to Union Street
- Continue installation of permanent cables and Union Street Bridge
- Continue Level 2 monitoring on the 390 Dredge Barge during Phase III dredging

- Conduct archeological review of debris at the Clean Earth facility
- **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
    - Transport concrete bin blocks

Health and Safety Update

- The western leaf of the 3rd St Bridge began to close from the open position while a mini-hopper and tug were passing underneath the bridge. The leaf contacted the mini-hopper before the leaf could re-open. There were no injuries and no property damage.

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 will submit a revised version of the CRMP for approval. 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 implementation of the modification to the remedial design at the RTA1 bridges is still ongoing. Please see preceding weekly reports for previously documented coordination regarding to the implementation of the modification to the remedial design at the RTA1 bridges. On October 3, 2022, the PRP Group provided EPA with responses to EPA comments on the draft modification to the remedial design and the revised remedial design to address EPA comments. On October 6, 2022, EPA approved the revised remedial design to address modifications at the RTA1 bridges and authorized implementation of the modifications.
- 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 4, 2022, the PRP Group informed EPA that the PRP Group was notified by NYCDOT that the 3rd St Bridge has experienced mechanical and electrical issues resulting in the bridge being unable to open or close safely. The NYCDOT plans to take the bridge out of service to conduct repairs. During the period of repairs, the bridge will not be able to open for vessel traffic which directly affects current operations of dredging north of the 3rd Street Bridge. The PRP Group informed EPA that the correspondence should be considered an initial notification of a delay in performance and that daily meetings with NYCDOT have been scheduled. EPA requested a call. The PRP Group later communicated a work around utilizing loaded barges and tides that will allow dredging to proceed.

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 next weekly report)*

Appendix A

Photographs

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

Photo No.	Date
001	10/03/2022

Description

Guard Shack with Lights and Power at the Smith Street Site

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

Photo No.	Date
002	10/8/2022

Description

Debris Removal at the Smith Street Site

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

Photo No.	Date
003	10/5/2022

Description

Stone Deliveries and Grading of the Smith Street Site

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

Photo No.	Date
004	10/6/2022

Description

Dredging on Wires North of the Carroll Street Bridge

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

Photo No.	Date
004	10/6/2022

Description

Fence Removal at the Smith Street Site

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

Photo No.	Date
004	10/7/2022

Description

Trimming Closure Sheets at the Carroll Street Bridge

Appendix B

RTA1 4-Week Construction Look Ahead Schedule

Four Week Rolling Schedule

Contractor : Cashman Dredging & Marine Contracting Co., LLC.

Data Date: 10/3/2022

Project : Gowanus Canal Remediation Target Area (RTA) 1 - Phase 2
3-Jan

Meeting Date: 10/3/2022

Administrator: *GZA Environmental, inc.*

Owner: Gowanus Environmental Remedial Trust Group (GERT)

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	26-Sep M	27-Sep T	28-Sep W	29-Sep Th	30-Sep F	1-Oct S	2-Oct Su	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
10/3/2022												M	T	W	Th	F	S	Su	M	T	W	Th	F	S	Su	M	T	W	Th	F	S	Su	M	T	W	Th	F	S	Su	M	T	W	Th	F	S	Su
			General Work Activities																																										
Construction		NA	Grade/compact subbase			12-Sep-22	16-Sep-22			0	100%																																			
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%				X	X																														
Construction		NA	DeGraw Street End - Receive /Install Cap Plate			11-Oct-22	17-Oct-22			14	0%															-	-	-	-			-														
Construction		NA	DeGraw Street - Receive/Install Handrail			17-Oct-22	21-Oct-22			18	0%																					-	-	-	-	-										
Construction		NA	DeGraw Street - Install guardrail			24-Oct-22	28-Oct-22			25	0%																													-	-	-	-	-		
Construction		NA	Carroll Street Tie-ins - Cut sheets to grade/remove sediment/place AquaBlok			14-Sep-22	11-Oct-22			8	70%	X	X	X	X	X			X	-	-	-	-				-																		
Construction		NA	Install Anchor Wale at 365 Bond Street			5-Oct-22	6-Oct-22			3	0%										-	-																								
			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			4	78%	X	X	X	X	X			X	-	-	-	-																							
Construction		OP	Place AquaBlok / reinstall attenuators			11-Oct-22	15-Oct-22			12	0%																-	-	-	-																
Construction		OP	Order/Receive/Install Steel Grating Platform			26-Sep-22	28-Oct-22			25	0%	X	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%	X																																		
Construction		CL	Strip cables / Install Abrasion-resistant Sleeves			27-Sep-22	28-Sep-22			0	100%		X	X																																
Construction		CL	Conduct capacitance and resistance tests on pulled cable conductors			28-Sep-22	30-Sep-22			0	100%			X	X	X																														
Construction		CL	Shutdown Power to Bridge for Control Cables			3-Oct-22	5-Oct-22			2	33%								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			1	0%									-																										
Construction		CL	Install new termination cabinets on far-leaf bridge pier			5-Oct-22	6-Oct-22			3	0%										-	-																								
Construction		CL	Connect new control cables to termination points			7-Oct-22	7-Oct-22			4	0%												-																							
Construction		CL	Shutdown Power to Bridge for Power Cables			11-Oct-22	17-Oct-22			14	0%															-	-	-	-			-														
Construction		CL	Remove temporary power cables/remove temporary pull boxes and cabinets			11-Oct-22	11-Oct-22			8	0%															-																				
Construction		CL	Connect new power cables to termination points			12-Oct-22	13-Oct-22			10	0%																-	-																		
Construction		CL	Conduct continuity and resistance testing			14-Oct-22	17-Oct-22			14	0%																		-			-														
Construction		CL	Conduct Bridge Function Testing			18-Oct-22	18-Oct-22			15	0%																			-																
Construction		CL	Reopen Bridge			19-Oct-22	19-Oct-22			16	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			11	48%	X	X	X	X	X			X	-	-	-	-				-	-	-	-																
Construction		NA	Change to Sheet Pile Bucket			17-Oct-22	17-Oct-22			14	0%																								-											
Construction		NA	Remove Material Along Sheet Piles			18-Oct-22	20-Oct-22			17	0%																									-	-	-								
Construction		NA	Change to TGS Bucket/Conduct Cleanup Pass			20-Oct-22	24-Oct-22			21	0%																											-	-							
Construction		OP	Remove Temporary Submarine Cables and Fender Guards			25-Oct-22	25-Oct-22			22	0%																														-						
Construction		OP	Conduct Dredging North of Union St Bridge			26-Oct-22	13-Dec-22			71	0%																															-	-	-			
			595 Smith Street Staging Site																																										
Construction		NA	Site Access Granted			20-Sep-22	20-Sep-22			0	100%		X																																	
Construction		NA	Perform Site Survey Existing Conditions/Develop Grading Plan			19-Sep-22	30-Sep-22			0	100%	X	X	X	X	X																														
Construction		NA	Conduct Engineering Analysis - Bulkhead Structure Offset/Fender System			26-Sep-22	14-Oct-22			11	39%	X	X	X	X	X			X	-	-	-	-				-	-	-	-																
Construction		NA	Mobilize Site Development Equipment / Remove Debris/Prepare Site			3-Oct-22	14-Oct-22			11	0%								X	-	-	-	-				-	-	-	-																
Construction		NA	Mobilize/Install Guard Shack			3-Oct-22	4-Oct-22			1	0%								X	-																										
Construction		NA	Install New Chain-Link Fence/Remove Existing Wood Construction Fence			11-Oct-22	21-Oct-22			18	0%																-	-	-	-				-	-	-	-	-								
Construction		NA	Pave Stockpile Areas			17-Oct-22	19-Oct-22			16	0%																								-	-	-									
Construction		NA	R&R Concrete Block and Steel Sheeting/Construct Material Storage Bins			20-Oct-22	1-Nov-22			29	0%																											-	-							
Construction		NA	Receive/Set up Pug Mill and Conveyor System			17-Oct-22	28-Oct-22			25	0%																								-	-	-	-	-			-	-	-	-	-	
Construction		NA	Install Site Lighting			31-Oct-22	10-Nov-22			38	0%																																			
Construction		NA	Mobilize New Site Trailers			24-Oct-22	4-Nov-22			32	0%																															-	-	-	-	-	
Construction		NA	Mobilize/Install Temporary Electric and Internet Services			4-Nov-22	10-Nov-22			38	0%																																			
Construction		NA	Mobilize/Install Sanitation			4-Nov-22	10-Nov-22			38	0%																																			
Construction		NA	Move/Set up office furnishings/computers			14-Nov-22	18-Nov-22			46	0%																																			
Construction		NA	Receive Capping Material (Sand/GAC/OC)/Conduct Material Mixing			31-Oct-22	16-Dec-22			74	0%																																			
Construction		NA	Sevenson Mobilize to Site			14-Nov-22	14-Nov-22			42	0%																																			
Construction		NA	Construct Transloading Area			12-Dec-22	23-Dec-22			81	0%																																			
Construction		NA	Install Fender Piles			19-Dec-22	23-Dec-22			81	0%																																			
Construction		NA	Mobilize Floating Dock			19-Dec-22	19-Dec-22			77	0%																																			

	CW	Prev Wk		WK 2	WK 3	
Management	13	13	13	13	13	
Craft Labor	20	20	20	20	20	
Sub-Contractor	3	3	3	3	3	
TOTAL	36	36	36	36	36	

Appendix C

Weekly Community Air Monitoring Report

Gowanus Canal Community Air Monitoring Program

Weekly Air Monitoring Summary Report #99

October 1, 2022 through
October 7, 2022

Gowanus Canal Remediation-Target Area 1

Prepared For:

Gowanus Environmental Remediation Trust #2

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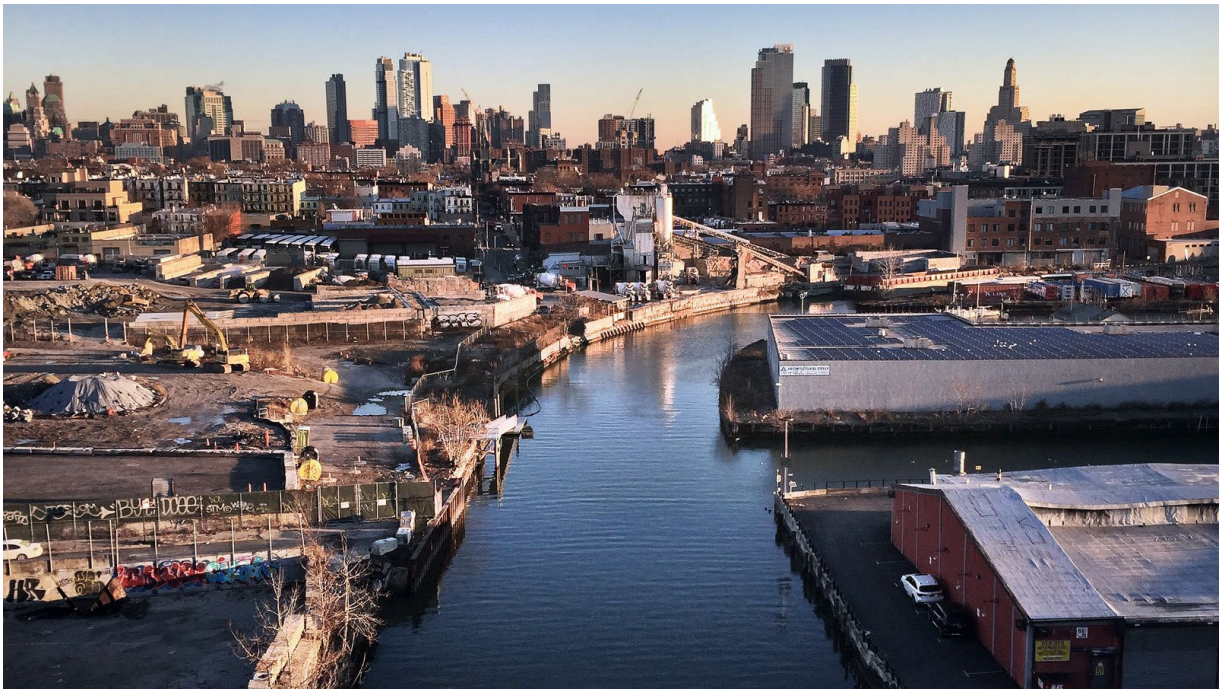


Executive Summary

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 99 monitoring period covering October 1st, 2022, through October 7th, 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 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 5, 6, 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 3 summarizes the daily averages of these parameters recorded on-site.

From Thursday through Friday, October 6th – October 7th 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 97 monitoring period. These data are compared to average concentrations from the background samples and are summarized in Table 4.

On Tuesday, October 4th a Station 9A power outage resulted in approximately 6 hours of TVOC and PM_{10} monitoring instrument downtime. Batteries were replaced and active TVOC and PM_{10} monitoring resumed at approximately 07:15 on October 4th. There were no additional periods of PM_{10} or TVOC monitoring instrument downtime during the Week 99 monitoring period.

Figure 1: Station Location Map

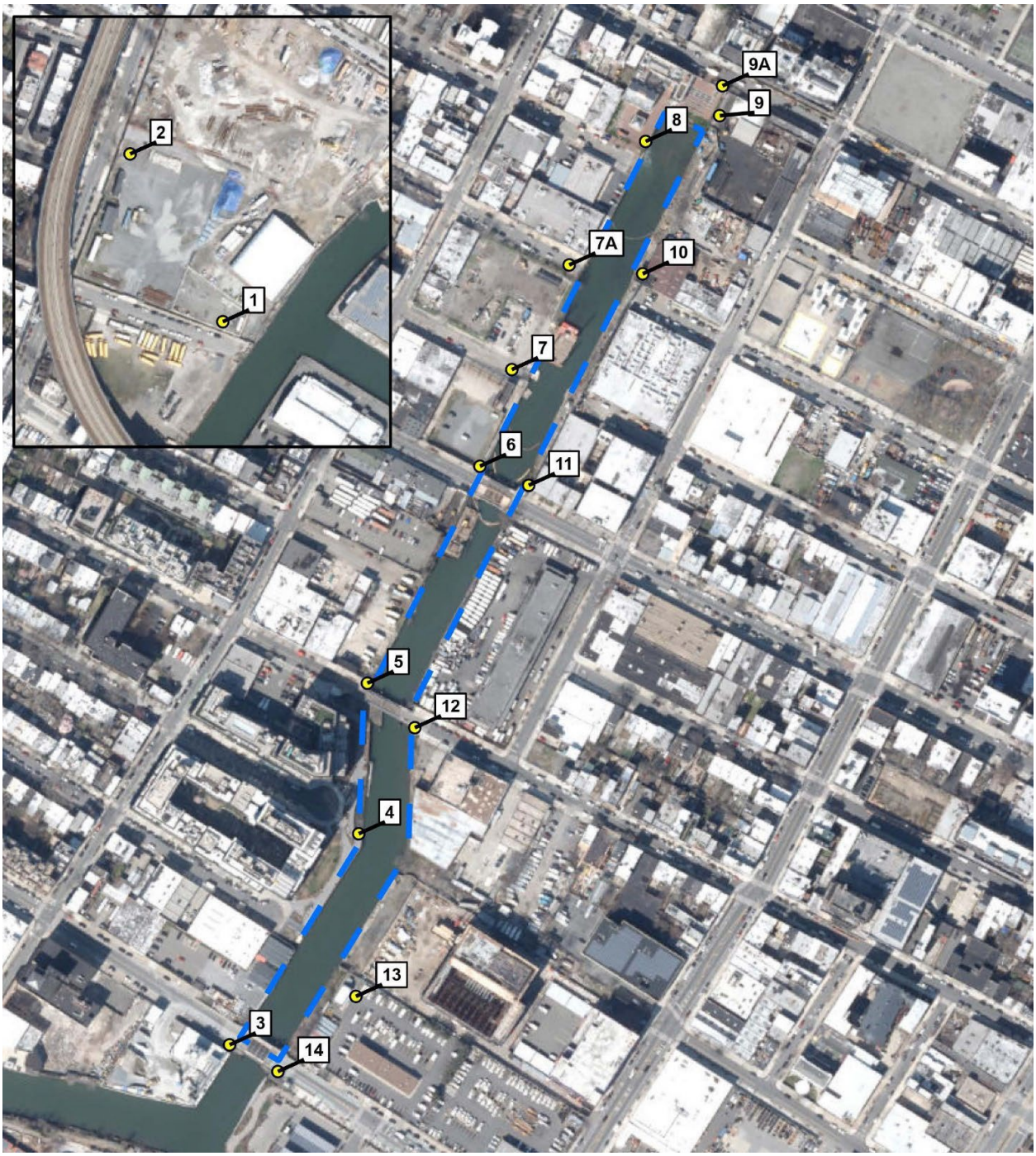


Table 1: Station Location Descriptions

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

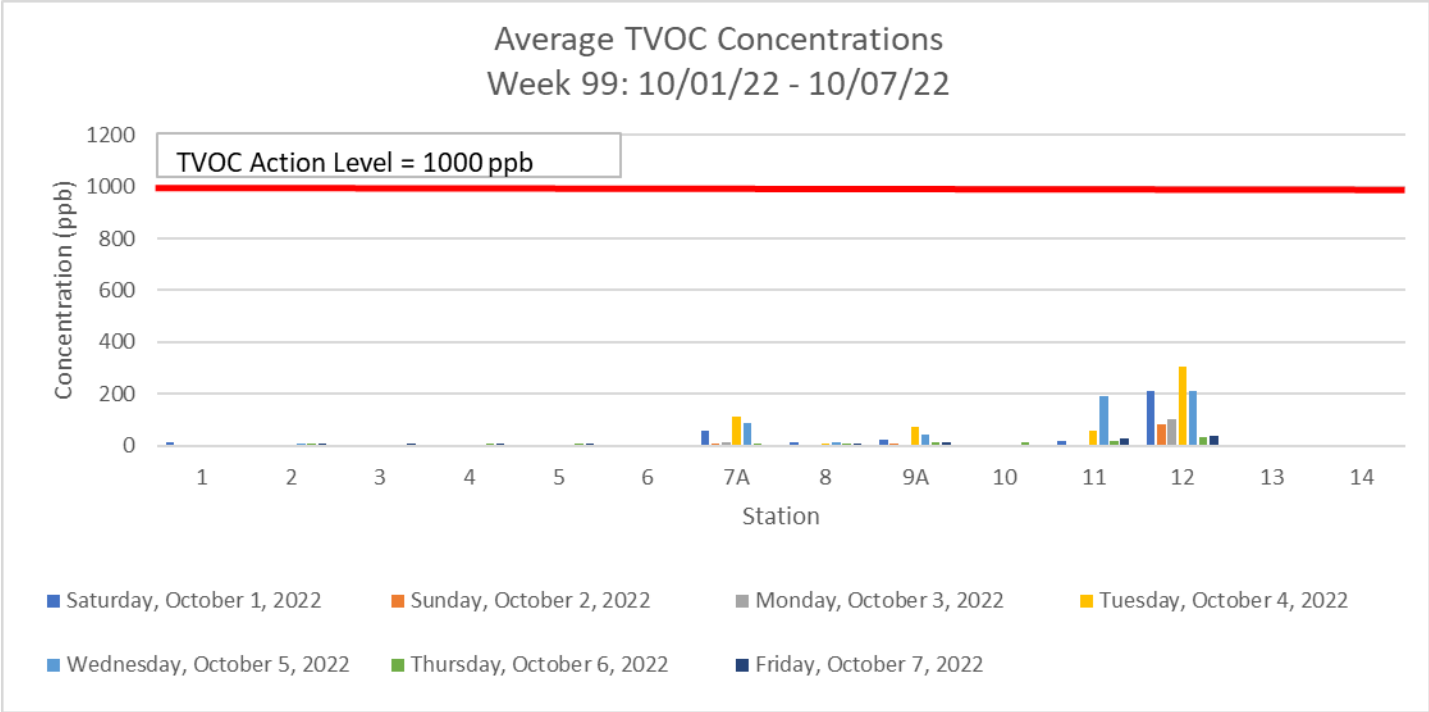


Figure 3: Maximum 15-Minute TVOC Concentrations

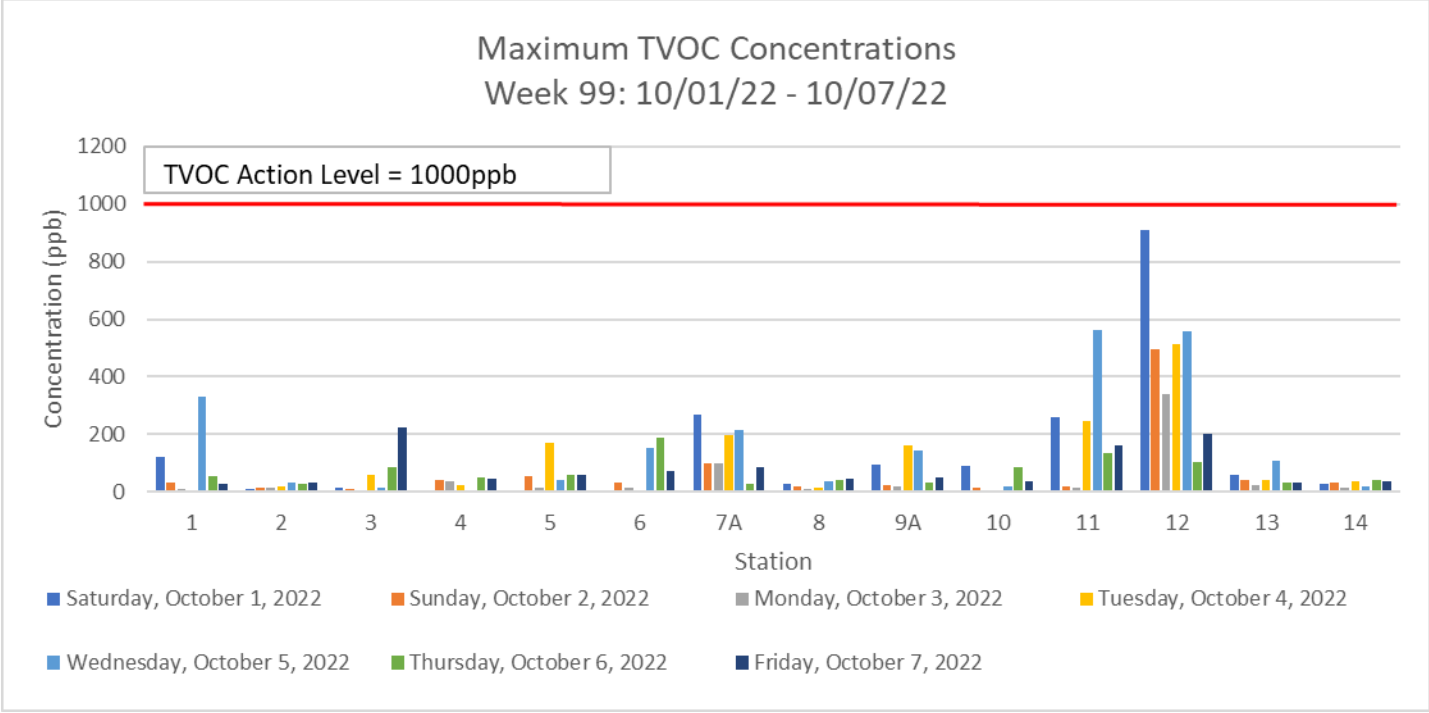


Figure 4: Average 15-Minute PM_{10} Concentrations

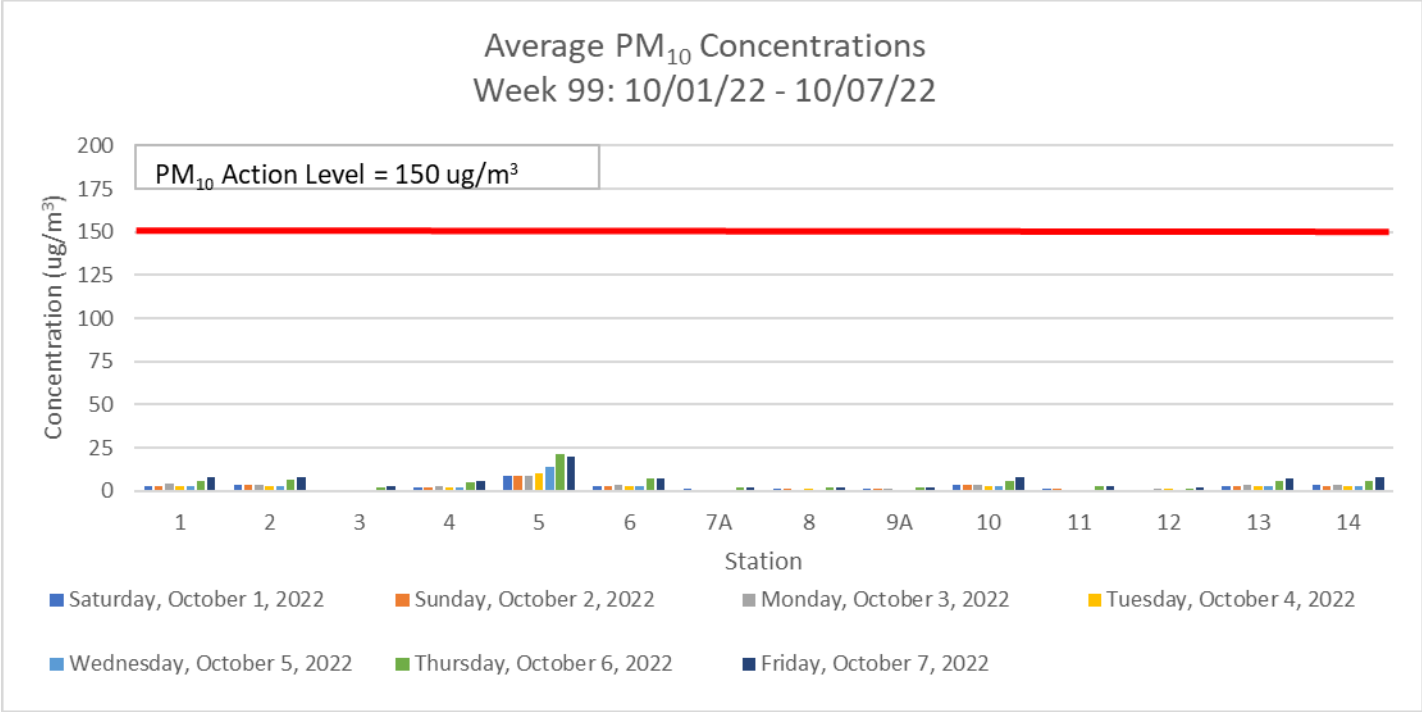


Figure 5: Maximum 15-Minute PM_{10} Concentrations

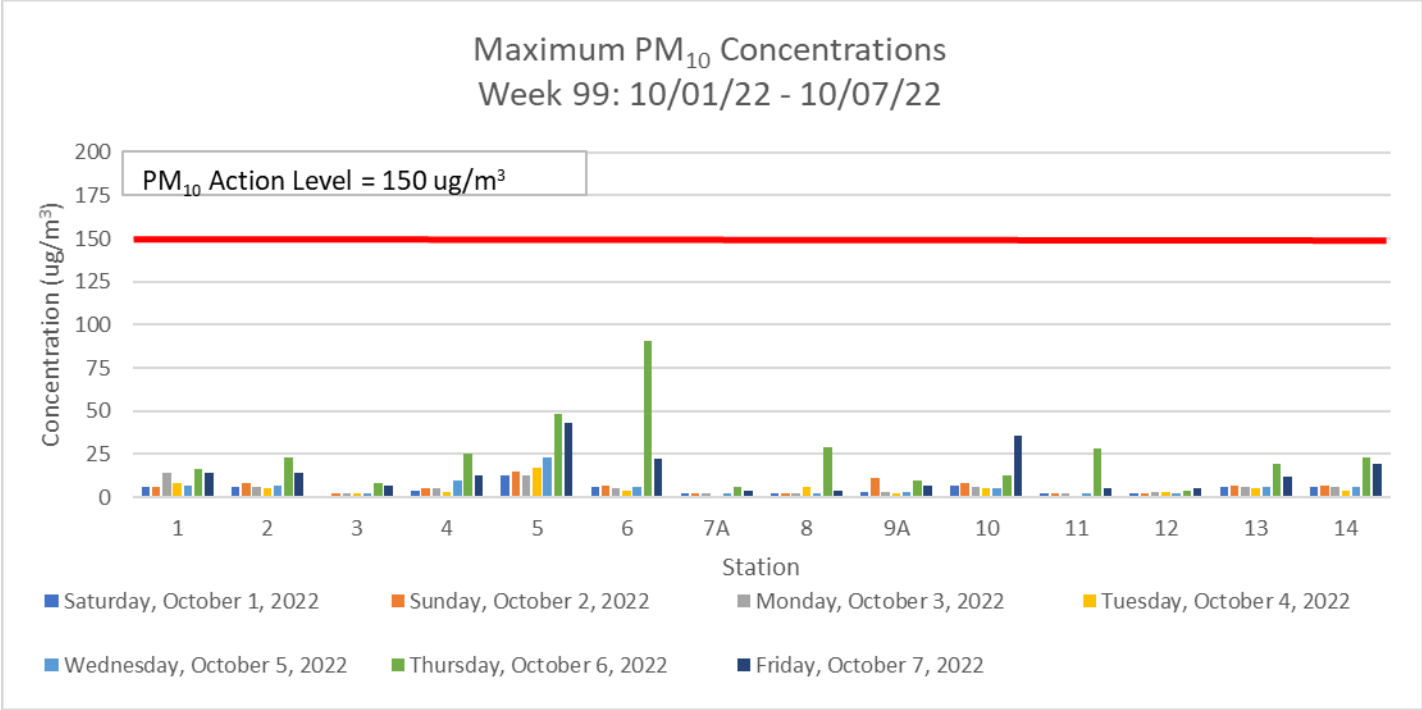


Table 2: Maximum Recorded Results from Odor Surveys & Periodic Sampling for Hydrogen Sulfide and Ammonia

Station #	Odor Scale[1]	Hydrogen Sulfide (ppb)[2]	Ammonia (ppb)[3]	Max Concentrations Measured[4]	
				Date	Time
1	1	< 3	< 10	10/6/22	12:00
2	0	< 3	< 10	None detected	
3	1	< 3	< 10	10/6/22	11:20
4	1	4	< 10	10/6/22	08:20
5	1	4	< 10	10/4/22	13:16
6	1	< 3	< 10	10/7/22	12:28
7A	0	4	< 10	10/6/22	12:50
8	1	6	< 10	10/7/22	11:00
9A	1	5	< 10	10/7/22	11:17
10	1	5	< 10	10/4/22	11:48
11	1	4	< 10	10/7/22	12:24
12	1	3	< 10	10/7/22	12:37
13	0	< 3	< 10	None detected	
14	1	4	< 10	10/6/22	11:00

[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 3: Summary of On-Site Meteorological Conditions

Meteorological Parameters	10/01/22	10/02/22	10/03/22	10/04/22	10/05/22	10/06/22	10/07/22
Wind Direction (from)	NE	NE	NNE	NNE	N	WNW	W
Wind Speed (mph)	10.2	11.0	9.9	10.3	6.8	2.6	4.2
Temperature (°F)	57.5	56.4	50.4	51.2	57.5	64.4	66.3
Humidity (%)	89.3	68.7	72.5	94.5	93.3	63.7	64.2
Barometric Pressure (inHg)	29.93	29.97	30.08	29.86	29.80	29.86	29.88

Table 4: Week 97 VOCs Results[5,6]

Laboratory ID	22I1762-01	22I1762-02	Average Concentrations from Background Monitoring[7]
Sample ID	ST-14-9/21/22	ST-13-9/21/22	
Sample Start Date/Time	9/21/2022 9:30	9/21/2022 9:50	
Sample End Date/Time	9/22/2022 10:40	9/22/2022 10:58	
Sampling Location	Station 13	Station 14	
Contaminants of Concern (TO-15)[8]			
Benzene	0.21	0.18	0.17
Chloroform	< 0.035	< 0.035	0.04
Ethylbenzene	0.12	0.081	0.05
Methylene Chloride	< 0.35	< 0.35	0.35
Naphthalene	0.11	0.047	0.04
Toluene	0.84	0.57	0.21
m&p-Xylene	0.44	0.28	0.14
o-Xylene	0.16	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 1, 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.	120	8	15	<5	<5	5	269	27	93	90	261	909	60	29
Average Conc.	15	<5	<5	<5	<5	<5	58	13	24	<5	18	213	<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.	6	6	1	4	13	6	2	2	3	7	2	2	6	6
Average Conc.	2.9	3.1	<1	2.0	8.4	2.9	1.0	1.0	1.0	3.1	1.0	<1	3.0	3.1
# 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
Sunday, October 2, 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.	31	14	9	42	57	33	97	17	26	17	18	494	43	33
Average Conc.	<5	<5	<5	<5	<5	<5	10	<5	7	<5	<5	83	<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.	6	8	2	5	15	7	2	2	11	8	2	2	7	7
Average Conc.	2.4	3.2	<1	1.9	8.5	2.9	<1	1.1	1.0	3.1	1.0	<1	2.9	2.9
# 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 3, 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.	9	15	<5	35	13	15	100	8	20	<5	14	341	24	13
Average Conc.	<5	<5	<5	<5	<5	<5	16	<5	5	<5	<5	101	<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.	14	6	2	5	13	5	2	2	3	6	2	3	6	6
Average Conc.	4.3	3.8	<1	2.4	8.3	3.4	<1	<1	1.2	3.7	<1	1.1	3.7	3.8
# 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
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 4, 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.	<5	20	61	24	169	<5	196	14	162	<5	246	512	40	35
Average Conc.	<5	<5	<5	<5	<5	<5	111	8	73	<5	59	305	<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.	8	5	2	3	17	4	1	6	2	5	1	3	5	4
Average Conc.	3.0	2.8	<1	1.8	10.5	2.5	<1	1.0	<1	2.6	<1	1.0	2.7	2.7
# 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

Notes:
*A Station 9A power outage resulted in approximately 6 hours of TVOC and PM_{10} monitoring instrument 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
Wednesday, October 5, 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.	332	33	15	<5	42	152	213	38	146	20	562	556	109	18
Average Conc.	<5	9	<5	<5	<5	<5	89	13	44	<5	190	212	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.	7	7	2	10	23	6	2	2	3	5	2	2	6	6
Average Conc.	2.9	2.7	<1	2.1	13.9	2.6	<1	<1	<1	2.8	<1	<1	2.9	3.0
# 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 6, 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	30	84	52	60	187	27	39	32	88	137	105	31	41
Average Conc.	<5	8	6	6	9	6	8	11	12	11	21	34	<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
PM_{10} (ug/m^3)														
Maximum Conc.	16	23	8	25	48	91	6	29	10	13	28	4	19	23
Average Conc.	6.0	6.4	1.8	5.1	21.3	6.9	1.9	2.2	2.1	5.9	2.5	1.4	5.5	5.8
# 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
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 7, 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.	26	32	224	46	60	74	85	48	51	36	161	204	30	39
Average Conc.	<5	7	8	9	11	<5	<5	8	13	6	29	37	<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.	14	14	7	13	43	22	4	4	7	36	5	5	12	19
Average Conc.	8.1	7.8	2.6	5.5	20.0	7.3	2.2	2.1	2.1	7.6	2.6	2.1	7.1	7.9
# 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: 9/25/2022 to 10/1/2022

Work Locations:
CDMC continued dredging north of the Carroll Street Bridge and south of the Union Street Bridge, conduit installation at the Union Street Bridge, and prepping for 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 from approximately 9 am until 1 pm on Monday, and from approximately 9 am until 2 pm on Wednesday during lock out tag out operations at the Union Street Bridge while CDMC performed work causing 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; many easting alerts at locations UN-04, UN-12, and UN-21; several easting alerts at location UN-16C; a single easting alert at location UN-22; several northing alerts at location UN-09; multiple northing alerts at locations UN-10, UN-16C, and UN-26; a single northing alert at locations UN-04, UN-02, UN-33, UN-23, and UN-12; and a single elevation alert at location UN-12 greater than 0.25". These alerts, except for the alerts at UN-02, UN-26, and UN-33, were consistent with data trends observed at these locations. The alerts at UN-02, UN-26, and UN-33 were erroneous readings that subsequently returned to previous 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; a single easting alert at locations CA-45 and CA-46; several northing alerts at location CA-05; multiple northing alerts at location CA-35A; and a single elevation alert at location CA-46 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 many easting alerts at location 3RD-03; and several easting alerts at location 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 479-03, 322-04A, 322-09, and 322-08; multiple combined easting and elevation alerts at location 479-03; several easting alerts at locations 524-01, 524-02, and 322-04A; multiple easting alerts at locations 322-01, 322-08, 479-03, and DEP-04; a single easting alert at locations DEP-05, DEP-06, 322-02, DEP-03, and DEP-01; many northing alerts at location 322-08; multiple northing alerts at locations 322-09, 479-01, and 479-03; a single northing alert at locations 322-07, DEP-05, 322-04A, and DEP-01; many elevation alerts at locations 322-06, 322-07, and 479-03; and a single elevation alert at location 322-03 greater than 0.25". These alerts were consistent with data trends observed at these locations.

Received many easting alerts at location L17-56; multiple easting alerts at locations L15-52, L15-27, L16-00A, and L17-35; a single easting alert at locations R03-74D, R05-45A, R05-18A, R04-90, L03-64, R04-36, and R00-81; and several northing alerts at location L07-07 greater than 2". These alerts, except for the alerts at L03-64, R00-81, R03-74D, R04-36, R04-90, R05-18A, and R05-45A, were consistent with data trends observed at these locations. The alerts at L03-64, R00-81, R03-74D, R04-36, R04-90, R05-18A, and R05-45A were erroneous reading that subsequently returned to previous data trends observed at these locations.

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 September 28th, 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:

- UN-02 (Union Street Bridge) slight northeast trend.
- UN-09 (Union Street Bridge) slight north trend.
- UN-10 (Union Street Bridge) slight northwest trend.
- UN-13 (Union Street Bridge) slight north trend with a west trend that has stabilized over the past week.
- UN-26 (Union Street Bridge) northwest trend.
- UN-32 (Union Street Bridge) slight west trend.
- UN-33 (Union Street Bride) slight northwest trend.
- 3RD-01 (3rd Street Bridge) southwest trend.
- 3RD-02 (3rd Street Bridge) south trend.
- 3RD-03 (3rd Street Bridge) northwest trend.
- 3RD-04 (3rd Street Bridge) northwest trend.
- CA-03A (Carroll Street Bridge) east trend.
- CA-05 (Carroll Street Bridge) east trend.
- CA-09 (Carroll Street Bridge) slight east trend.
- CA-10 (Carroll Street Bridge) slight east trend.
- CA-22A (Carroll Street Bridge) southeast trend.

- CA-35A (Carroll Street Bridge) slight east trend.
- 322-01 (Powerhouse) slight loss in elevation.
- 322-02 (Powerhouse) slight loss in elevation that has stabilized over the past week.
- 322-04A (Powerhouse) slight east trend with a loss in elevation that has stabilized over the past couple of weeks.
- L14-86 (420 Carroll Street) slight east trend.
- 479-01 (479 DeGraw Street) slight northwest trend.
- 479-02 (479 DeGraw Street) slight northwest trend.
- 479-03 (479 DeGraw Street) slight north trend.
- DEP-03 (DEP Butler Street) slight north trend.
- DEP-04 (DEP Butler Street) slight northwest trend.
- DEP-05 (DEP Butler Street) slight north trend.
- DEP-06 (DEP Butler Street) slight northwest trend.
- L08-33 (Sackett Street) slight northwest trend.
- L15-76A (420 Carroll Street) west trend that has stabilized over the past couple of weeks.
- 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 of westward deflection over the past month that has stabilized over the past week.
- L16-51A (420 Carroll Street) west trend with up to three-fourths of an inch of westward deflection over the past month that has stabilized over the past week.
- L16-76A (420 Carroll Street) west trend that has stabilized over the past couple of weeks.

History of Instrument Settings and Adjustments

Unit	Date	Action
AMTS 1 479 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 Union Street Bridge	12/04/20	Reset Unit
	02/19/21	Restarted after cleaning ice from unit
AMTS 3 363 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
AMTS 4 3rd Street Bridge	02/03/21	Reset Unit
	02/19/21	Restarted after cleaning ice from unit

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
		Added Prisms L00-63, L00-63-2, L01-29, L01-29-2, L01-52, L01-72,

AMTS 5 318 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 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 DEP Butler Street	10/19/2021	Installed Unit
	3/25/2022	Unit removed from building, will no longer monitor
AMTS8 DeGraw Street (east end)	11/17/2021	Installed Unit
	4/11/2022	Unit removed, will no longer monitor
AMTS9 3RD Street Bridge	5/11/2022	Installed Unit
	6/29/2022	Unit removed, will no longer monitor
AMTS10 3RD Street Bridge	5/11/2022	Installed Unit
	6/29/2022	Unit removed, will no longer monitor

Various	03/17/21	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-02, CA-03, CA-05, CA-06, CA-07, CA-08, CA-09A, CA-11, CA-12, CA-14, CA-15, UN-03, UN-05, UN-07, 479-02, 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.

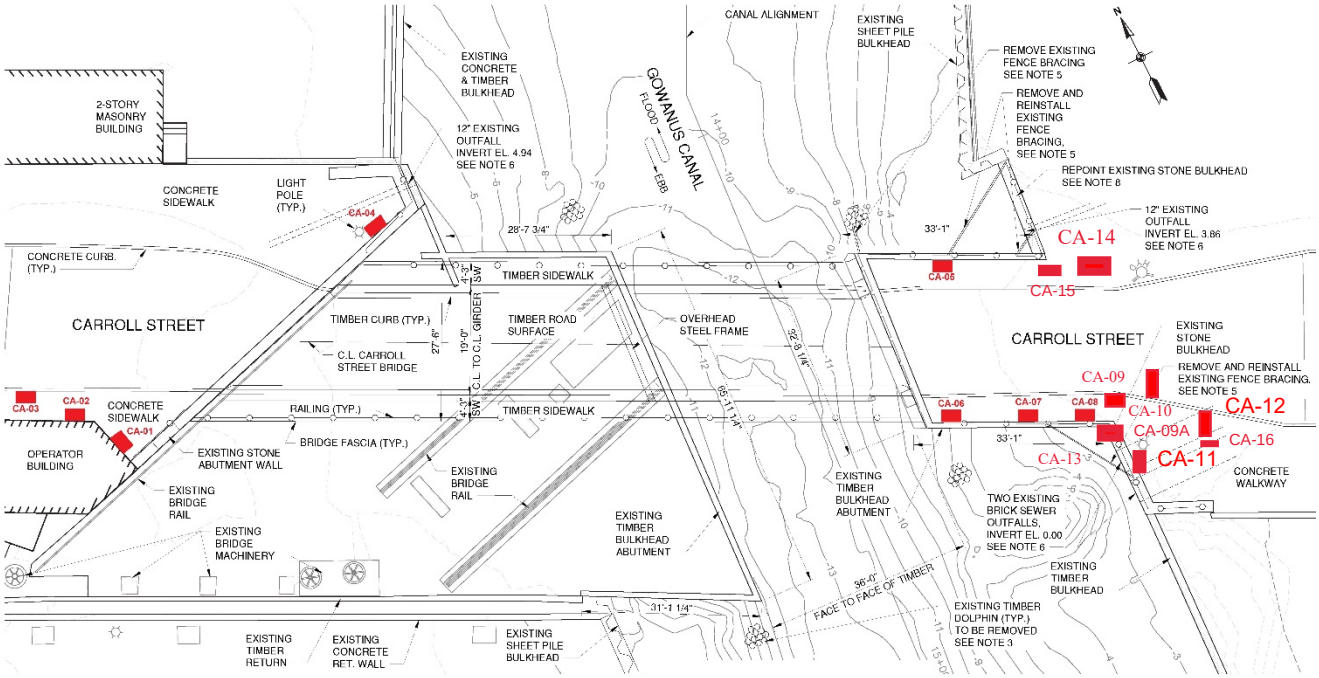
Inclinometer Readings

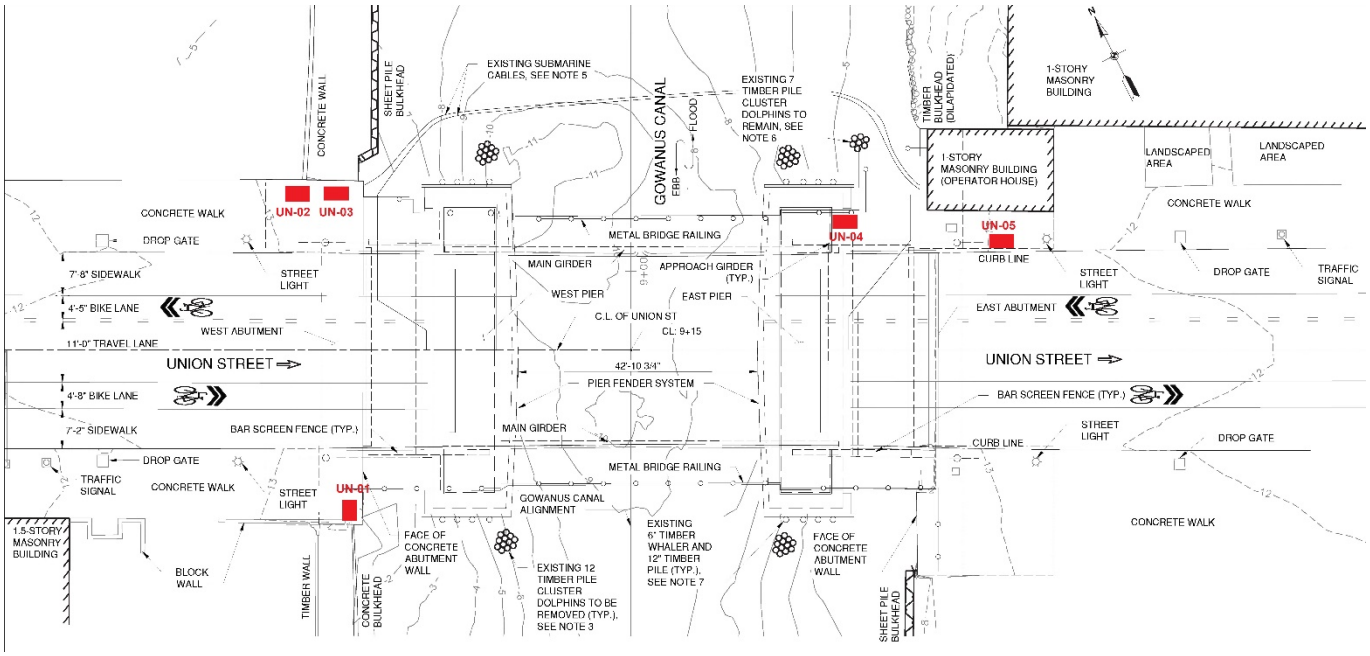
A change from -2.5 degrees to -2.75 degrees was observed in inclinometer 479 IN-01 East. A change from 0 degrees to -0.25 degrees was observed in inclinometer 479 IN-01 South.

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.

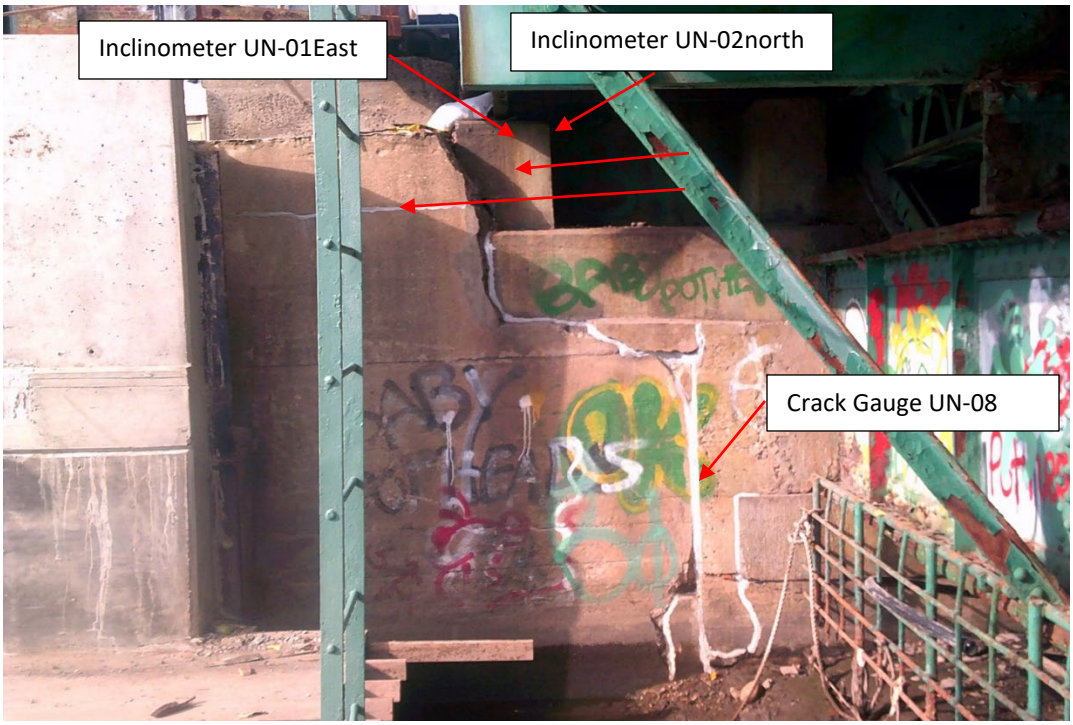
CARROLL UNION CRACK GUAGE LOCATIONS





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
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
		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
		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
		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
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
		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
		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
		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
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
		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
		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
		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
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
		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
		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
		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
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
		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
		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
		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
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
		Y at X=+20	0	0	NM	0	0	0	0	0	0	0	-0.25	0	0
		X at Y=-10	0	0	NM	-0.25	0	0	-0.25	0	0	0	-0.25	-0.25	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
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
		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
		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
		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
CA-08	Observation in millimeters	Y at X=-20	0	0	0	0	0	0	0.25	0	0	-0.25	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
		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
		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
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
		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
		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
		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
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
		Y at X=+20	1	1	NM	0	-0.25	0	-0.25	-0.25	0	0	0	0	0
		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
		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
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
		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
		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
		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
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
		Y at X=+20	0	0	0	0	0	0	0	0	0	0	0	0	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
		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
CA-13	Observation in millimeters	Y at X=-20	0	0	0	0	0	0	0.25	0	0	0	0	0	0
		Y at X=+20	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
		X at Y=+10	1	1	1	1	1	1	1	1	1	1	1	1	1
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
		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
		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
		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
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
		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
		X at Y=-10	6	6	6	6	6.25	6	6.25	6.5	6.5	6.75	7	7	7
		X at Y=+10	6	6	6	6	6.25	6	6.25	6.5	6.75	6.75	7	7	7
CA-16	Observation in millimeters	Y at X=-20	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
		X at Y=-10	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

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.

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
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
		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
		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
		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
UN-02	Observation in millimeters	Y at X=-20	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
		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
		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
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
		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
		X at Y=-10	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1	-1.25	-1	-1	-1	-1	-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
UN-04	Observation in millimeters	Y at X=-20	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
		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
		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
UN-05	Observation in millimeters	Y at X=-20	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
		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
		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
UN-06	Observation in millimeters	Y at X=-20	NM	NA	NA	NA	0	0	0	0	NM	0	0	0	0
		Y at X=+20	NM	NA	NA	NA	0	0	0	0	NM	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
		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
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
		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
		X at Y=-10	NM	NA	NA	NA	-0.25	-0.25	-0.25	-0.25	NM	-0.25	-0.25	0	0.25
		X at Y=+10	NM	NA	NA	NA	-2.5	-2.75	-2.75	-2.75	NM	-2.25	-2.5	-2	-2
UN-08	Observation in millimeters	Y at X=-20	NM	2	NM	NM	2	2	2.25	2	NM	2	2	NM	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
		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
		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

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

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
479-01	Observation in millimeters	Y at X=-20	2	2.25	NA	NA	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
		X at Y=-10	-0.25	0.25	NA	NA	-0.25	-0.25	0	-0.25	0	0	0	0	0
		X at Y=+10	-0.5	0.25	NA	NA	-0.25	-0.25	0	-0.25	0	0	0	0	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
		Y at X=+20	-0.5	NA	NA	NA	0	0	0	0	0	0	0	0	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
		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
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
		Y at X=+20	-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
		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
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
		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
		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
		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
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
		Y at X=+20	0	-0.25	NM	-0.25	-0.25	0	0	0	0	0	0	0	-0.25
		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

		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

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
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
UN IN-01 North	Degrees	NM	2	NM	NM	1.75	1.75	2	2	NM	2	2	NM	2
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
479 IN-01 South	Degrees	0.25	-0.5	0	0	0	0.25	0.25	0	0	0	0	0	-0.25

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
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
		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
		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
		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
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
		Y at X=+20	-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
		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
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
		Y at X=+20	-1	-1	-1	-1.25	-1.25	-1	-1	-1.25	-1	-1	-1	-1	-1
		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
		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
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
		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
		X at Y=-10	-1	-1	-1	-0.75	-1	-1	-0.75	-1	-1	-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
CA-05	Observation in millimeters	Y at X=-20	-2.75	-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
		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
		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
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
		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
		X at Y=-10	-2	-2	NM	-2.25	-2	-2	-2.25	-2	-2	-2	-2.25	-2.25	-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
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
		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
		X at Y=-10	-0.25	-0.25	NM	NM	-0.25	-0.25	0	0	-0.25	0	-0.25	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
CA-08	Observation in millimeters	Y at X=-20	0	0	0	0	0	0	0.25	0	0	-0.25	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
		X at Y=-10	-2	-2	-2	-2	-2.25	-2.25	-2.25	-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
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
		Y at X=+20	1.5	1.5	1.75	1.75	2	2	2	2	2	2	2	2	1.75
		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
		X at Y=+10	18	18	17	16.25	16	15.5	16.25	16.5	16.25	16.5	17	17	17.5
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
		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
		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
		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
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
		Y at X=+20	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
		X at Y=+10	2.5	2.5	2.5	3	3	3.75	4	4	4	4	4	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
		Y at X=+20	0	0	0	0	0	0	0	0	0	0	0	0	0
		X at Y=-10	0.75	0.75	1	1	1	0.75	0.75	1	1	1	1	1.25	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
CA-13	Observation in millimeters	Y at X=-20	0	0	0	0	0	0	0.25	0	0	0	0	0	0
		Y at X=+20	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
		X at Y=+10	1	1	1	1	1	1	1	1	1	1	1	1	1
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
		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
		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
		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
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
		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
		X at Y=-10	6	6	6	6	6.25	6	6.25	6.5	6.5	6.75	7	7	7
		X at Y=+10	6	6	6	6	6.25	6	6.25	6.5	6.75	6.75	7	7	7
CA-16	Observation in millimeters	Y at X=-20	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
		X at Y=-10	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

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.

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
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
		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
		X at Y=-10	0	0	0	0	0	0	0	-0.25	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
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
		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
		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
		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
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
		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
		X at Y=-10	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	0	-0.25	0	0	0	0	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
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
		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
		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
		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
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
		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
		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
		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
UN-06	Observation in millimeters	Y at X=-20	NM	NA	NA	NA	0	0	0	0	NM	0	0	0	0
		Y at X=+20	NM	NA	NA	NA	0	0	0	0	NM	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
		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
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
		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
		X at Y=-10	NM	NA	NA	NA	-0.25	-0.25	-0.25	-0.25	NM	-0.25	-0.25	0	0.25
		X at Y=+10	NM	NA	NA	NA	-2.5	-2.75	-2.75	-2.75	NM	-2.25	-2.5	-2	-2
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
		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
		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
		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

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

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
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
		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
		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
		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
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
		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
		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
		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
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
		Y at X=+20	-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
		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
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
		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
		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
		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
		Y at X=-20	0	0	NM	-0.5	-0.5	0	-0.25	0	0	-0.5	-0.75	-0.75	-1

CM-05	Observation in millimeters	Y at X=+20	0	-0.25	NM	-0.25	-0.25	0	0	0	0	0	0	0	-0.25
		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
		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

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
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
UN IN-01 North	Degrees	NM	2	NM	NM	1.75	1.75	2	2	NM	2	2	NM	2
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
479 IN-01 South	Degrees	0.25	-0.5	0	0	0	0.25	0.25	0	0	0	0	0	-0.25

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 3 – October 7, 2022

Date of Report: October 11, 2022

Report Contents

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

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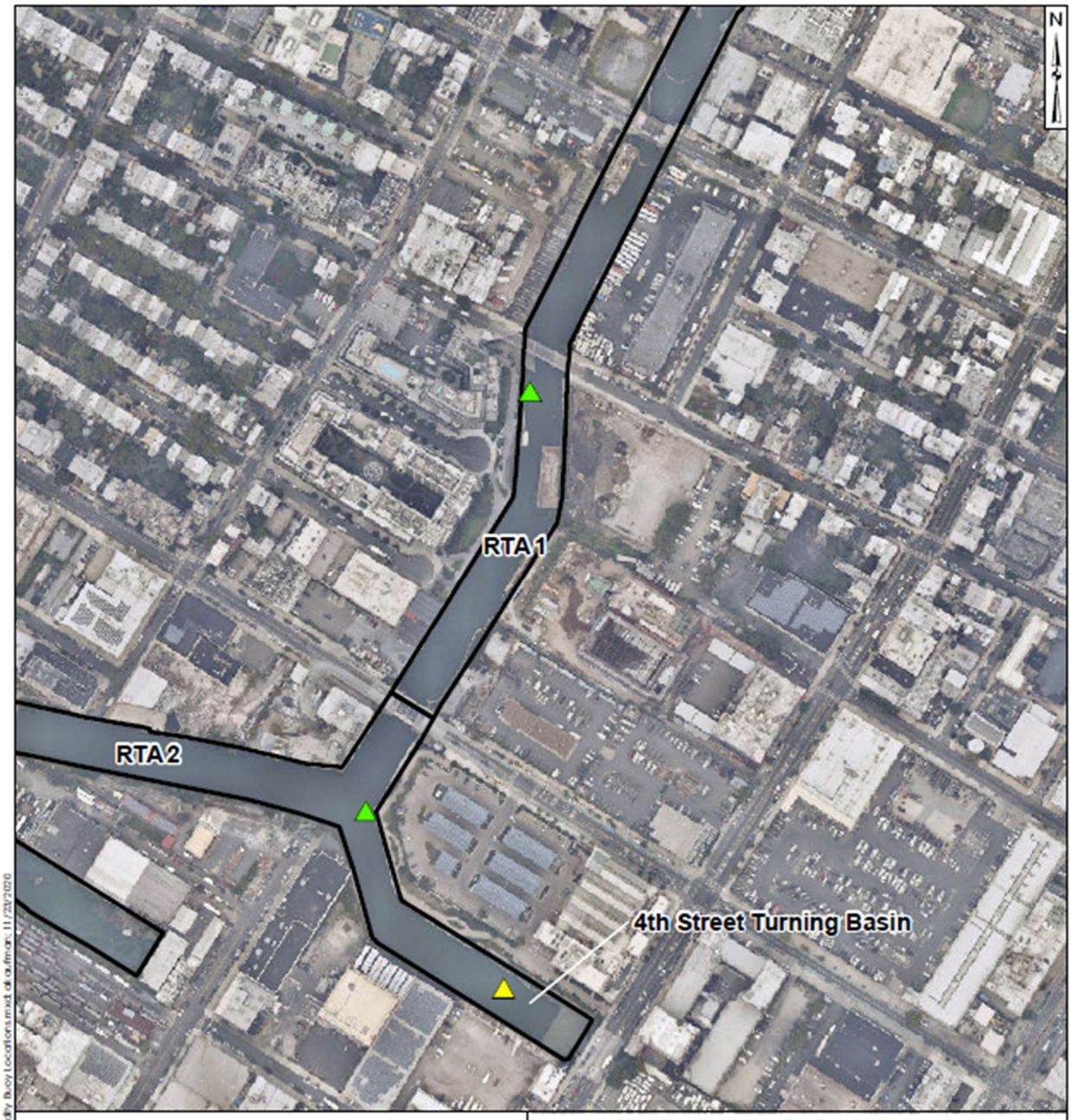
1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of October 3, 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 3 – October 7, 2022. No exceedances of the numerical trigger or action level criteria were met during the reporting period. Maintenance activities on the 3rd Street Sentinel Buoy remain ongoing as of Friday, October 7, 2022.

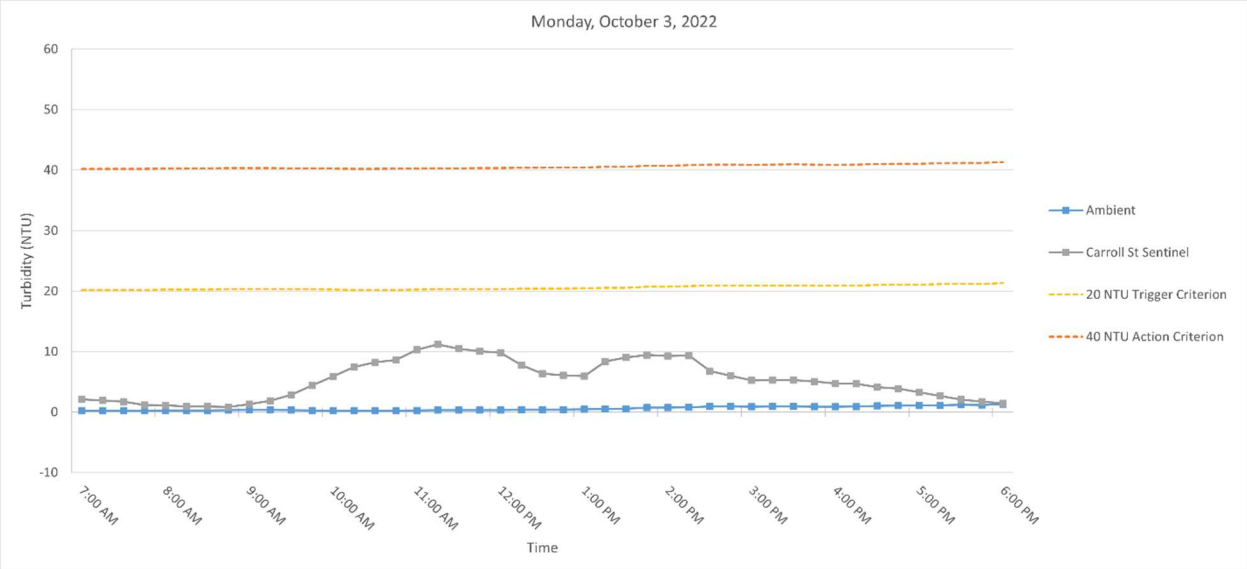
Table 1 below provides a summary of the turbidity data for the reporting period.

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 3, 2022	N/A	4.68	N/A	10.86
Tuesday, October 4, 2022	N/A	2.03	N/A	5.81
Wednesday, October 5, 2022	N/A	4.82	N/A	15.62
Thursday, October 6, 2022	N/A	5.68	N/A	16.17
Friday, October 7, 2022	N/A	5.74	N/A	13.08

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 Monday, October 3, 2022

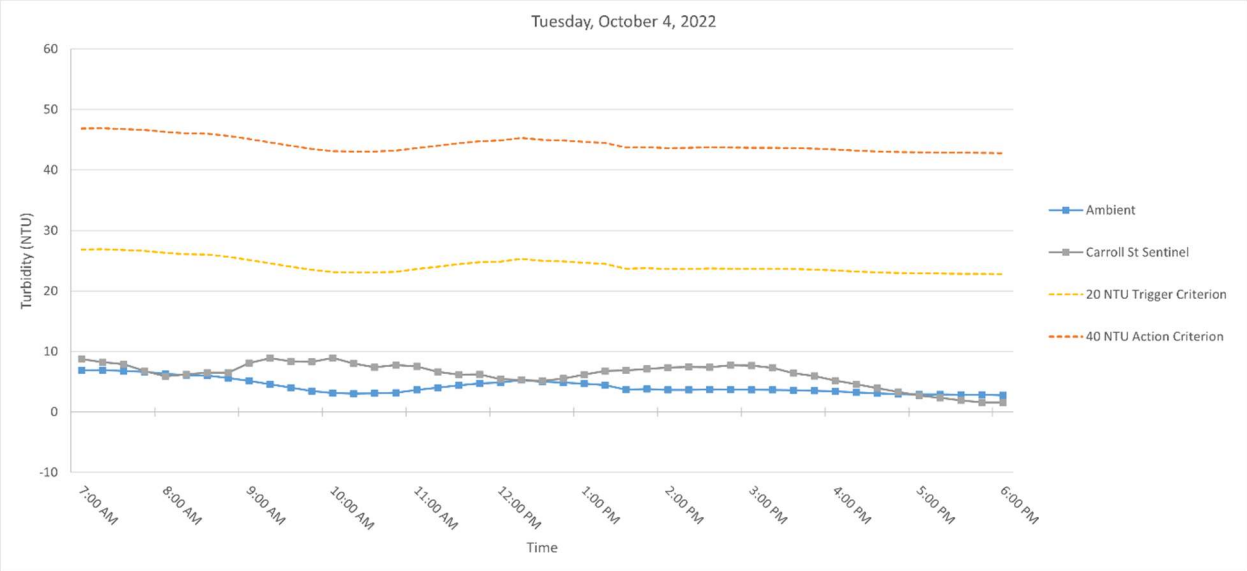
Figure 3. Hourly rolling average turbidity readings on Monday, October 3, 2022, from 7 AM to 6 PM.



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

3.1 Tuesday, October 4, 2022

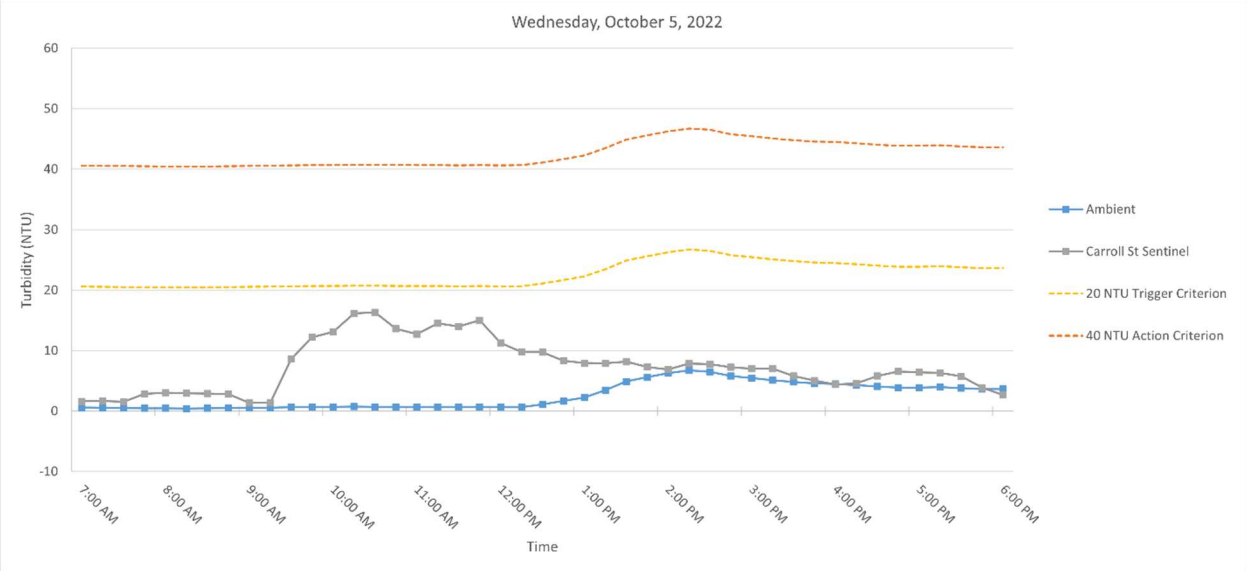
Figure 3. Hourly rolling average turbidity readings on Tuesday, October 4, 2022, from 7 AM to 6 PM.



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

3.2 Wednesday, October 5, 2022

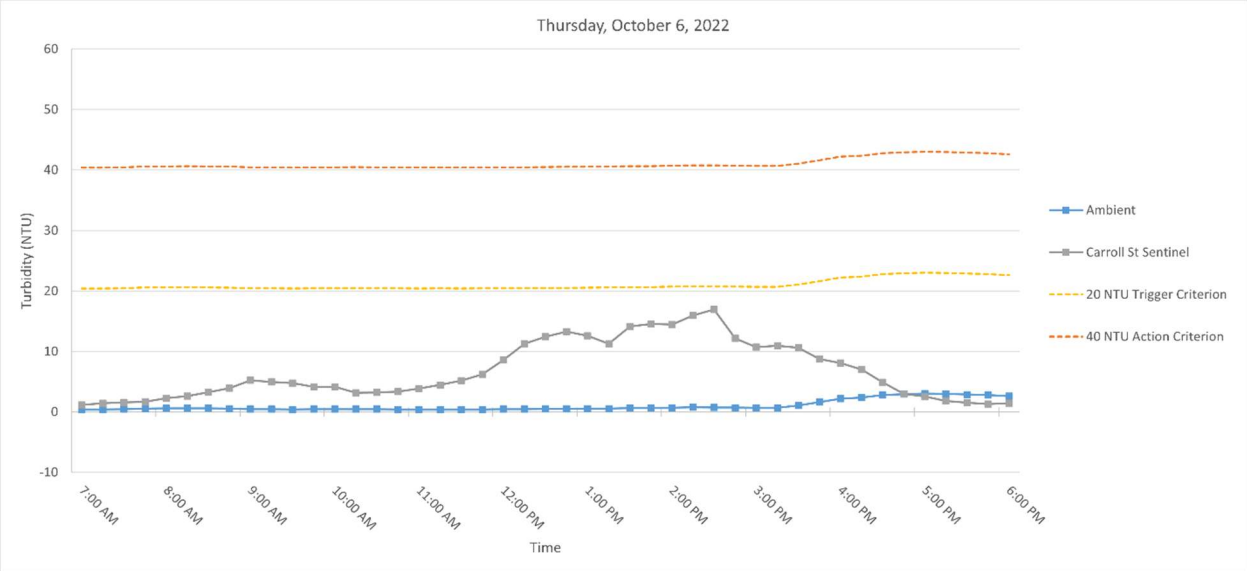
Figure 4. Hourly rolling average turbidity readings on Wednesday, October 5, 2022, from 7 AM to 6 PM.



Note: A turbidity reading from the Carroll Street Sentinel Buoy of 31.86 NTU at 11:15 PM was removed as an outlier in accordance with the water quality monitoring plan. The 3rd Street Sentinel Buoy was out of service.

3.3 Thursday, October 6, 2022

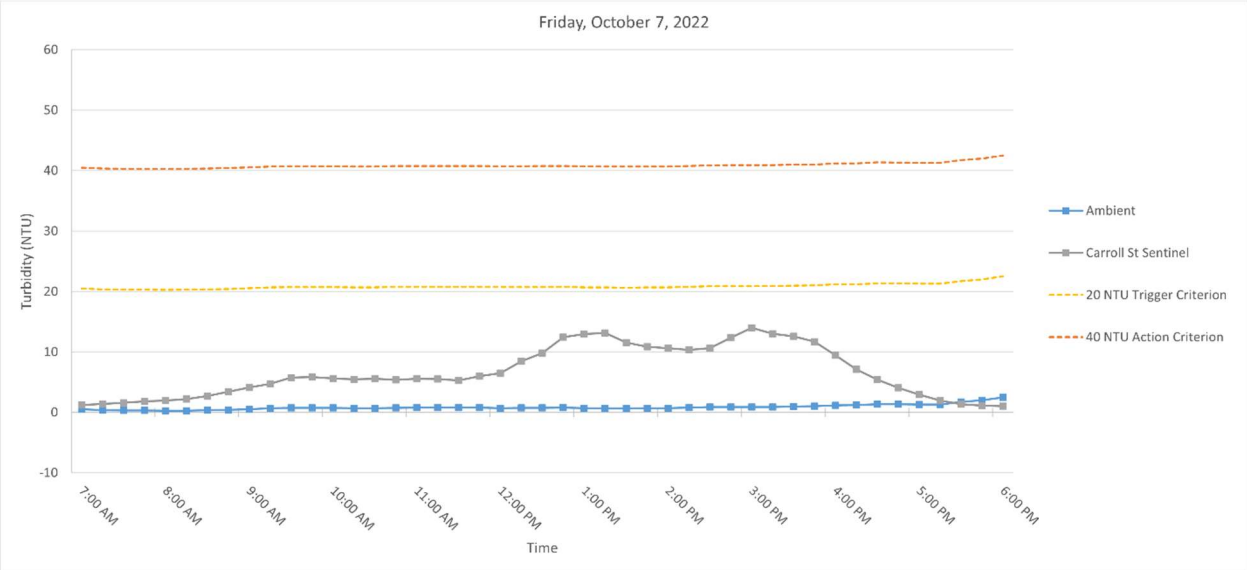
Figure 5. Hourly rolling average turbidity readings on Thursday, October 6, 2022, from 7 AM to 6 PM.



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

3.4 Friday, October 7, 2022

Figure 6. Hourly rolling average turbidity readings on Friday, October 7, 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.

At 7:40 AM on Monday, October 3, 2022, effluent discharge was observed entering RTA1 that appeared to be originating from the 420 Carroll Street redevelopment.

APPENDIX A
Turbidity Data Tables

Monday, October 3, 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	0.28	--	1.29	0.22	--	2.09	--	1.88
7:15:00	0.31	--	0.67	0.22	--	1.93	--	1.71
7:30:00	0.15	--	1.87	0.22	--	1.72	--	1.50
7:45:00	0.23	--	0.63	0.23	--	1.15	--	0.91
8:00:00	0.36	--	1.02	0.27	--	1.10	--	0.83
8:15:00	0.34	--	0.5	0.28	--	0.94	--	0.66
8:30:00	0.32	--	0.57	0.28	--	0.92	--	0.64
8:45:00	0.39	--	1.37	0.33	--	0.82	--	0.49
9:00:00	0.44	--	3.01	0.37	--	1.29	--	0.92
9:15:00	0.27	--	3.93	0.35	--	1.88	--	1.52
9:30:00	0.17	--	5.42	0.32	--	2.86	--	2.54
9:45:00	0.2	--	8.15	0.29	--	4.38	--	4.08
10:00:00	0.14	--	9.02	0.24	--	5.91	--	5.66
10:15:00	0.35	--	10.67	0.23	--	7.44	--	7.21
10:30:00	--	--	7.85	0.22	--	8.22	--	8.01
10:45:00	0.26	--	7.34	0.24	--	8.61	--	8.37
11:00:00	0.28	--	16.53	0.26	--	10.28	--	10.02
11:15:00	0.39	--	13.49	0.32	--	11.18	--	10.86
11:30:00	0.35	--	7.29	0.32	--	10.50	--	10.18
11:45:00	0.37	--	5.68	0.33	--	10.07	--	9.74
12:00:00	0.28	--	6.15	0.33	--	9.83	--	9.49
12:15:00	0.61	--	6.29	0.40	--	7.78	--	7.38
12:30:00	0.4	--	6.31	0.40	--	6.34	--	5.94
12:45:00	0.48	--	6.01	0.43	--	6.09	--	5.66
13:00:00	0.54	--	5.01	0.46	--	5.95	--	5.49
13:15:00	0.59	--	18.23	0.52	--	8.37	--	7.85
13:30:00	0.78	--	9.62	0.56	--	9.04	--	8.48
13:45:00	1.25	--	8.27	0.73	--	9.43	--	8.70
14:00:00	0.5	--	5.27	0.73	--	9.28	--	8.55
14:15:00	0.93	--	5.28	0.81	--	9.33	--	8.52
14:30:00	1.12	--	5.55	0.92	--	6.80	--	5.88
14:45:00	0.85	--	5.58	0.93	--	5.99	--	5.06
15:00:00	0.93	--	4.55	0.87	--	5.25	--	4.38
15:15:00	0.84	--	5.42	0.93	--	5.28	--	4.34
15:30:00	0.94	--	--	0.94	--	5.28	--	4.34
15:45:00	0.9	--	4.67	0.89	--	5.06	--	4.16
16:00:00	0.83	--	4.26	0.89	--	4.73	--	3.84
16:15:00	1.03	--	4.4	0.91	--	4.69	--	3.78
16:30:00	1.37	--	3.15	1.01	--	4.12	--	3.11
16:45:00	1.17	--	2.83	1.06	--	3.86	--	2.80
17:00:00	0.89	--	1.66	1.06	--	3.26	--	2.20
17:15:00	1.23	--	1.32	1.14	--	2.67	--	1.53
17:30:00	1.36	--	1.3	1.20	--	2.05	--	0.85
17:45:00	1.23	--	1.51	1.18	--	1.72	--	0.55
18:00:00	1.92	--	1.34	1.33	--	1.43	--	0.10

Tuesday, October 4, 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	6.93	--	7.7	6.85	--	8.74	--	1.89
7:15:00	6.15	--	6.48	6.92	--	8.21	--	1.30
7:30:00	6.77	--	7.53	6.76	--	7.91	--	1.15
7:45:00	5.87	--	3.89	6.63	--	6.77	--	0.13
8:00:00	5.8	--	3.96	6.30	--	5.91	--	-0.39
8:15:00	5.73	--	9.33	6.06	--	6.24	--	0.17
8:30:00	5.89	--	7.74	6.01	--	6.49	--	0.48
8:45:00	4.83	--	7.48	5.62	--	6.48	--	0.86
9:00:00	3.35	--	11.85	5.12	--	8.07	--	2.95
9:15:00	2.99	--	8.07	4.56	--	8.89	--	4.34
9:30:00	2.99	--	6.71	4.01	--	8.37	--	4.36
9:45:00	3.19	--	7.26	3.47	--	8.27	--	4.80
10:00:00	3.01	--	10.7	3.11	--	8.92	--	5.81
10:15:00	3.08	--	7.14	3.05	--	7.98	--	4.92
10:30:00	3.03	--	5.02	3.06	--	7.37	--	4.31
10:45:00	3.62	--	8.58	3.19	--	7.74	--	4.55
11:00:00	5.44	--	6.28	3.64	--	7.54	--	3.91
11:15:00	4.92	--	6.16	4.02	--	6.64	--	2.62
11:30:00	5.04	--	4.81	4.41	--	6.17	--	1.76
11:45:00	4.65	--	5.35	4.73	--	6.24	--	1.50
12:00:00	4.29	--	4.46	4.87	--	5.41	--	0.54
12:15:00	7.6	--	5.55	5.30	--	5.27	--	-0.03
12:30:00	3.42	--	5.58	5.00	--	5.15	--	0.15
12:45:00	4.44	--	6.69	4.88	--	5.53	--	0.65
13:00:00	3.51	--	8.62	4.65	--	6.18	--	1.53
13:15:00	3.32	--	7.55	4.46	--	6.80	--	2.34
13:30:00	3.82	--	5.9	3.70	--	6.87	--	3.17
13:45:00	3.81	--	6.7	3.78	--	7.09	--	3.31
14:00:00	3.72	--	7.85	3.64	--	7.32	--	3.69
14:15:00	3.59	--	9.23	3.65	--	7.45	--	3.79
14:30:00	3.77	--	7.37	3.74	--	7.41	--	3.67
14:45:00	3.6	--	7.51	3.70	--	7.73	--	4.03
15:00:00	3.65	--	6.43	3.67	--	7.68	--	4.01
15:15:00	3.68	--	5.9	3.66	--	7.29	--	3.63
15:30:00	3.36	--	4.79	3.61	--	6.40	--	2.79
15:45:00	3.29	--	5.1	3.52	--	5.95	--	2.43
16:00:00	2.96	--	3.65	3.39	--	5.17	--	1.79
16:15:00	2.83	--	3.45	3.22	--	4.58	--	1.35
16:30:00	2.93	--	2.72	3.07	--	3.94	--	0.87
16:45:00	2.8	--	1.71	2.96	--	3.33	--	0.36
17:00:00	3.02	--	2.04	2.91	--	2.71	--	-0.19
17:15:00	2.9	--	1.69	2.90	--	2.32	--	-0.57
17:30:00	2.63	--	1.4	2.86	--	1.91	--	-0.94
17:45:00	2.77	--	1.16	2.82	--	1.60	--	-1.22
18:00:00	2.54	--	1.54	2.77	--	1.57	--	-1.21

Wednesday, October 5, 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	0.62	--	1.79	0.58	--	1.61	--	1.03
7:15:00	0.46	--	1.34	0.54	--	1.68	--	1.14
7:30:00	0.35	--	1.67	0.52	--	1.55	--	1.03
7:45:00	0.35	--	8.1	0.47	--	2.86	--	2.39
8:00:00	0.52	--	2.22	0.46	--	3.02	--	2.56
8:15:00	0.47	--	1.3	0.43	--	2.93	--	2.50
8:30:00	0.52	--	1.24	0.44	--	2.91	--	2.46
8:45:00	0.64	--	1.2	0.50	--	2.81	--	2.31
9:00:00	0.61	--	0.88	0.55	--	1.37	--	0.82
9:15:00	0.61	--	2.26	0.57	--	1.38	--	0.81
9:30:00	0.76	--	37.61	0.63	--	8.64	--	8.01
9:45:00	0.76	--	19.16	0.68	--	12.22	--	11.55
10:00:00	0.69	--	5.61	0.69	--	13.10	--	12.42
10:15:00	0.86	--	16.08	0.74	--	16.14	--	15.41
10:30:00	0.5	--	3.21	0.71	--	16.33	--	15.62
10:45:00	0.7	--	24.06	0.70	--	13.62	--	12.92
11:00:00	0.59	--	14.63	0.67	--	12.72	--	12.05
11:15:00	0.74	--	--	0.68	--	14.50	--	13.82
11:30:00	0.72	--	13.97	0.65	--	13.97	--	13.32
11:45:00	0.62	--	7.42	0.67	--	15.02	--	14.35
12:00:00	0.5	--	9.08	0.63	--	11.28	--	10.64
12:15:00	0.71	--	8.69	0.66	--	9.79	--	9.13
12:30:00	2.95	--	9.53	1.10	--	9.74	--	8.64
12:45:00	3.49	--	6.97	1.65	--	8.34	--	6.68
13:00:00	3.62	--	5.36	2.25	--	7.93	--	5.67
13:15:00	6.57	--	8.95	3.47	--	7.90	--	4.43
13:30:00	7.79	--	9.99	4.88	--	8.16	--	3.28
13:45:00	6.56	--	5.12	5.61	--	7.28	--	1.67
14:00:00	6.76	--	5.05	6.26	--	6.89	--	0.63
14:15:00	6	--	10.25	6.74	--	7.87	--	1.14
14:30:00	5.44	--	8.34	6.51	--	7.75	--	1.24
14:45:00	4.12	--	7.51	5.78	--	7.25	--	1.48
15:00:00	5	--	3.88	5.46	--	7.01	--	1.54
15:15:00	4.85	--	5.05	5.08	--	7.01	--	1.92
15:30:00	4.67	--	4.15	4.82	--	5.79	--	0.97
15:45:00	4.14	--	4.75	4.56	--	5.07	--	0.51
16:00:00	3.83	--	4.13	4.50	--	4.39	--	-0.11
16:15:00	3.91	--	4.87	4.28	--	4.59	--	0.31
16:30:00	3.78	--	11.17	4.07	--	5.81	--	1.75
16:45:00	3.71	--	7.85	3.87	--	6.55	--	2.68
17:00:00	4.21	--	3.98	3.89	--	6.40	--	2.51
17:15:00	4.18	--	3.68	3.96	--	6.31	--	2.35
17:30:00	3.05	--	2.03	3.79	--	5.74	--	1.96
17:45:00	2.99	--	1.77	3.63	--	3.86	--	0.23
18:00:00	3.72	--	1.92	3.63	--	2.68	--	-0.95

Thursday, October 6, 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	0.42	--	1.46	0.41	--	1.18	--	0.77
7:15:00	0.51	--	1.61	0.41	--	1.42	--	1.01
7:30:00	0.5	--	2.25	0.45	--	1.57	--	1.12
7:45:00	0.93	--	1.61	0.57	--	1.69	--	1.12
8:00:00	0.59	--	4.34	0.59	--	2.25	--	1.66
8:15:00	0.53	--	3.19	0.61	--	2.60	--	1.99
8:30:00	0.39	--	4.93	0.59	--	3.26	--	2.68
8:45:00	0.37	--	5.47	0.56	--	3.91	--	3.35
9:00:00	0.37	--	8.14	0.45	--	5.21	--	4.76
9:15:00	0.54	--	2.95	0.44	--	4.94	--	4.50
9:30:00	0.41	--	2.2	0.42	--	4.74	--	4.32
9:45:00	0.49	--	2.07	0.44	--	4.17	--	3.73
10:00:00	0.4	--	5.39	0.44	--	4.15	--	3.71
10:15:00	0.49	--	--	0.47	--	3.15	--	2.69
10:30:00	0.37	--	3.22	0.43	--	3.22	--	2.79
10:45:00	0.38	--	2.79	0.43	--	3.37	--	2.94
11:00:00	0.45	--	4	0.42	--	3.85	--	3.43
11:15:00	0.42	--	7.81	0.42	--	4.46	--	4.03
11:30:00	0.46	--	8.03	0.42	--	5.17	--	4.75
11:45:00	0.4	--	8.38	0.42	--	6.20	--	5.78
12:00:00	0.5	--	14.76	0.45	--	8.60	--	8.15
12:15:00	0.39	--	17.4	0.43	--	11.28	--	10.84
12:30:00	0.7	--	13.53	0.49	--	12.42	--	11.93
12:45:00	0.57	--	12.4	0.51	--	13.29	--	12.78
13:00:00	0.52	--	4.88	0.54	--	12.59	--	12.06
13:15:00	0.65	--	8.23	0.57	--	11.29	--	10.72
13:30:00	0.68	--	31.48	0.62	--	14.10	--	13.48
13:45:00	0.77	--	15.64	0.64	--	14.53	--	13.89
14:00:00	0.91	--	12.13	0.71	--	14.47	--	13.77
14:15:00	0.8	--	12.27	0.76	--	15.95	--	15.19
14:30:00	0.57	--	13.07	0.75	--	16.92	--	16.17
14:45:00	0.5	--	7.78	0.71	--	12.18	--	11.47
15:00:00	--	--	8.34	0.70	--	10.72	--	10.02
15:15:00	0.78	--	13.21	0.66	--	10.93	--	10.27
15:30:00	2.4	--	10.77	1.06	--	10.63	--	9.57
15:45:00	2.78	--	3.51	1.62	--	8.72	--	7.11
16:00:00	2.86	--	4.61	2.21	--	8.09	--	5.88
16:15:00	3.03	--	2.84	2.37	--	6.99	--	4.62
16:30:00	2.85	--	2.76	2.78	--	4.90	--	2.11
16:45:00	3.08	--	1.25	2.92	--	2.99	--	0.07
17:00:00	3.22	--	1.22	3.01	--	2.54	--	-0.47
17:15:00	2.62	--	1.01	2.96	--	1.82	--	-1.14
17:30:00	2.55	--	1.4	2.86	--	1.53	--	-1.34
17:45:00	2.55	--	1.55	2.80	--	1.29	--	-1.52
18:00:00	2.05	--	1.89	2.60	--	1.41	--	-1.18

Friday, October 7, 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	0.36	--	1.14	0.51	--	1.21	--	0.70
7:15:00	0.21	--	1.94	0.37	--	1.40	--	1.04
7:30:00	0.3	--	2.17	0.31	--	1.59	--	1.27
7:45:00	0.29	--	2.06	0.31	--	1.81	--	1.50
8:00:00	0.25	--	2.56	0.28	--	1.97	--	1.69
8:15:00	0.39	--	2.13	0.29	--	2.17	--	1.88
8:30:00	0.58	--	4.49	0.36	--	2.68	--	2.32
8:45:00	0.59	--	5.9	0.42	--	3.43	--	3.01
9:00:00	0.82	--	5.43	0.53	--	4.10	--	3.58
9:15:00	1.02	--	5.69	0.68	--	4.73	--	4.05
9:30:00	0.59	--	7.14	0.72	--	5.73	--	5.01
9:45:00	0.65	--	5	0.73	--	5.83	--	5.10
10:00:00	0.62	--	4.7	0.74	--	5.59	--	4.85
10:15:00	0.59	--	4.81	0.69	--	5.47	--	4.77
10:30:00	0.93	--	6.11	0.68	--	5.55	--	4.88
10:45:00	1.01	--	6.25	0.76	--	5.37	--	4.61
11:00:00	0.71	--	5.99	0.77	--	5.57	--	4.80
11:15:00	0.66	--	4.48	0.78	--	5.53	--	4.75
11:30:00	0.59	--	3.59	0.78	--	5.28	--	4.50
11:45:00	0.86	--	9.68	0.77	--	6.00	--	5.23
12:00:00	0.74	--	8.82	0.71	--	6.51	--	5.80
12:15:00	0.84	--	15.85	0.74	--	8.48	--	7.75
12:30:00	0.73	--	11.13	0.75	--	9.81	--	9.06
12:45:00	0.77	--	16.84	0.79	--	12.46	--	11.68
13:00:00	0.45	--	12.19	0.71	--	12.97	--	12.26
13:15:00	0.55	--	9.62	0.67	--	13.13	--	12.46
13:30:00	0.79	--	8.06	0.66	--	11.57	--	10.91
13:45:00	0.85	--	7.56	0.68	--	10.85	--	10.17
14:00:00	0.84	--	15.57	0.70	--	10.60	--	9.90
14:15:00	0.83	--	10.8	0.77	--	10.32	--	9.55
14:30:00	1.07	--	11.09	0.88	--	10.62	--	9.74
14:45:00	0.87	--	16.84	0.89	--	12.37	--	11.48
15:00:00	0.85	--	15.58	0.89	--	13.98	--	13.08
15:15:00	0.89	--	10.76	0.90	--	13.01	--	12.11
15:30:00	1.22	--	8.69	0.98	--	12.59	--	11.61
15:45:00	1.2	--	6.54	1.01	--	11.68	--	10.68
16:00:00	1.74	--	5.75	1.18	--	9.46	--	8.28
16:15:00	0.97	--	3.72	1.20	--	7.09	--	5.89
16:30:00	1.64	--	2.46	1.35	--	5.43	--	4.08
16:45:00	1.14	--	1.91	1.34	--	4.08	--	2.74
17:00:00	1	--	0.82	1.30	--	2.93	--	1.63
17:15:00	1.73	--	0.77	1.30	--	1.94	--	0.64
17:30:00	3.14	--	0.88	1.73	--	1.37	--	-0.36
17:45:00	2.93	--	1.25	1.99	--	1.13	--	-0.86
18:00:00	3.65	--	1.33	2.49	--	1.01	--	-1.48

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
10/3/22	365 Bond St		0:00:00		
		End Time	Leq	Lmax / Time Period	Observer
Exceedance	No data collected due to rain				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/3/22	Union St Bridge		0:00:00		
		End Time	Leq	Lmax / Time Period	Observer
Exceedance	No data collected due to rain				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/4/22	365 Bond St		0:00:00		
		End Time	Leq	Lmax / Time Period	Observer
Exceedance	No data collected due to rain				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/4/22	Union St Bridge		0:00:00		
		End Time	Leq	Lmax / Time Period	Observer
Exceedance	No data collected due to rain				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/5/22	365 Bond St	9:22 AM	7:46:00	PCE-332A	59 deg F
		End Time	Leq	Lmax / Time Period	Observer
		5:08 PM	68.4	72.0 dBA / 09:00 - 10:00	Sean Lane
Exceedance	None				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/5/22	Union St Bridge	9:22 AM	7:47:00	PCE-323	59 deg F
		End Time	Leq	Lmax / Time Period	Observer
		5:09 PM	65.6	72.5 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
10/6/22	365 Bond St	7:40 AM	7:39:00	PCE-332A	74 deg F
		End Time	Leq	Lmax / Time Period	Observer
		3:19 PM	60.4	69.2 dBA / 07:00 - 08:00	Sean Lane
Exceedance	None				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/6/22	Union St Bridge	7:45 AM	7:47:00	PCE-323	74 deg F
		End Time	Leq	Lmax / Time Period	Observer
		3:32 PM	66.6	68.7 dBA / 07:00 - 08:00	Sean Lane
Exceedance	None				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/7/22	365 Bond St	8:11 AM	5:16:00	PCE-332A	76 dg F
		End Time	Leq	Lmax / Time Period	Observer
		1:27 PM	62.4	65.7 dBA / 13:00 - 14:00	Jake Whittles
Exceedance	None				
Action	N/A				

Date	Monitoring Location	Start Time	Sample Duration	Calibration Data	Weather
10/7/22	Union St Bridge	8:13 AM	5:12:00	PCE-323	76 deg F
		End Time	Leq	Lmax / Time Period	Observer
		1:25 PM	71.5	74.8 dBA / 08:00 - 09:00	Jake Whittles
Exceedance	None				
Action	N/A				