

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

PERIOD: July 6 - July 9, 2021

Date of Report: July 14, 2021

Report Contents

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Prepared by

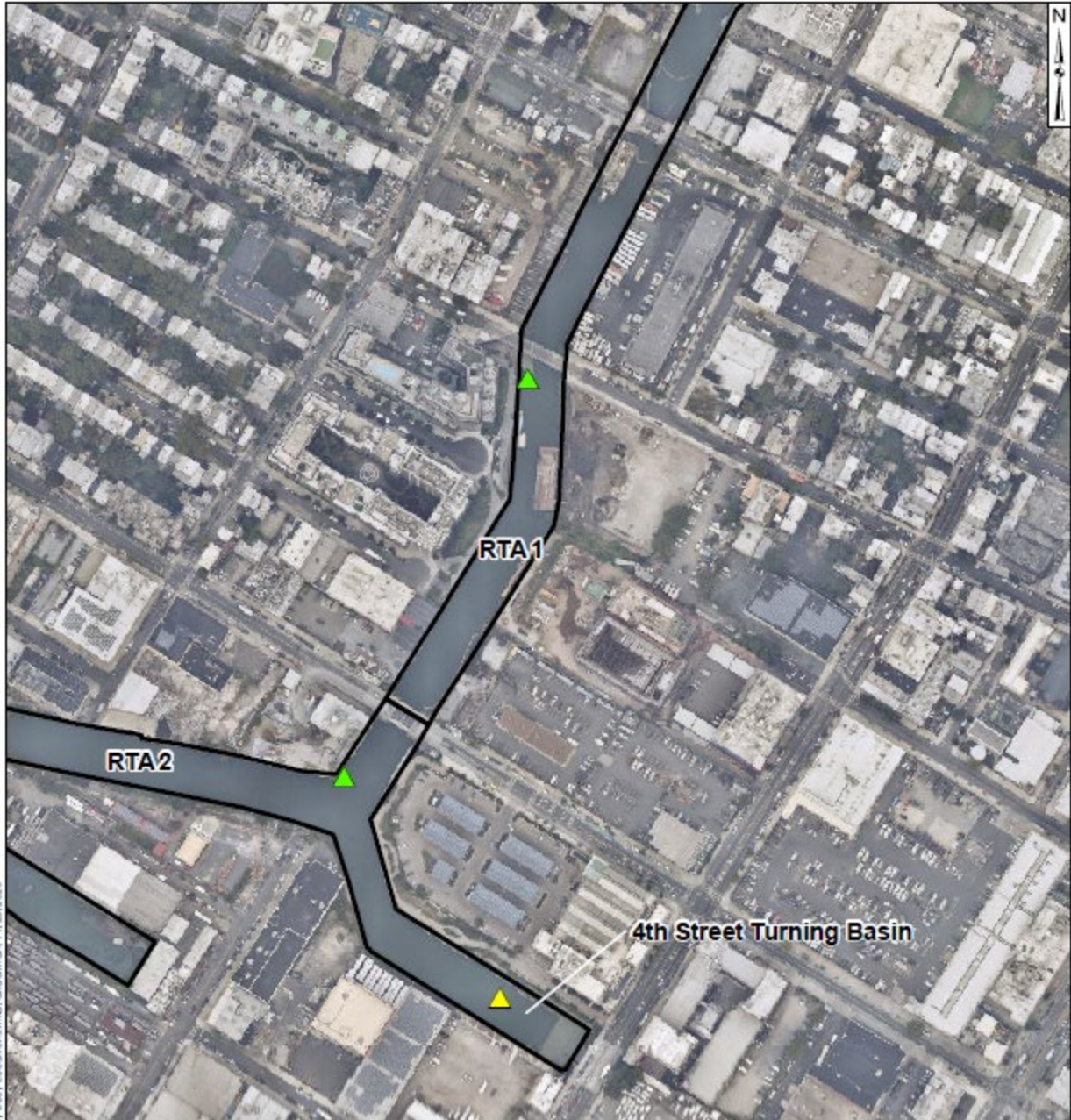
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1. SCOPE OF MONITORING

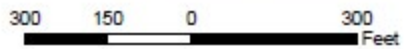
The following report summarizes water quality monitoring data collected during the week of July 5, 2021. In accordance with the Water Quality Monitoring Plan for In-waterway Construction Activities (WQMP) three turbidity buoys were deployed to monitor turbidity at the start of dredging between Carroll Street Bridge and 3rd Street Bridge. 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. A second turbidity buoy was deployed just south of the Carroll Street Bridge and is 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. Prior to dredging north of the Union Street Bridge, on January 22, 2021 a fourth turbidity buoy was deployed just south of the Union Street Bridge and is referred to as the Union Street Sentinel Buoy. This fourth turbidity buoy was removed prior to the start of pope pile installation. A map indicating the current approximate locations of the turbidity buoys is provided in **Figure 1**. 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. This report presents a summary of turbidity data collected from the ambient and sentinel buoys between 7 AM and 6 PM each day during the week of July 6. The reporting period does not include Monday, July 5th due to the holiday. Daily turbidity data tables are provided in **Appendix A**. No handheld measurements were collected during this reporting period. Visual observations of turbidity and sheen are summarized in Section 4.



J:\Users\erling_kurowski\OneDrive\OneDrive - B&B Engineers & Geologists of New York, P.C. - Desktop\Map 1 12/22/2020

Legend

- ▲ Ambient Buoy
- ▲ Sentinel Buoy
- RTA Boundary



Turbidity Buoy Locations

Gowanus Canal, Brooklyn, NY

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Kennesaw, GA

February 2021

Figure

1

2. REPORT OF EXCEEDANCES

No exceedances of the action criteria or trigger 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 the quantitative trigger or action level criteria were observed during this reporting period. No exceedances to the qualitative trigger or action criteria were observed during this 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 July 6 - July 9, 2021. No exceedances of the action or trigger level criteria occurred during this reporting period.

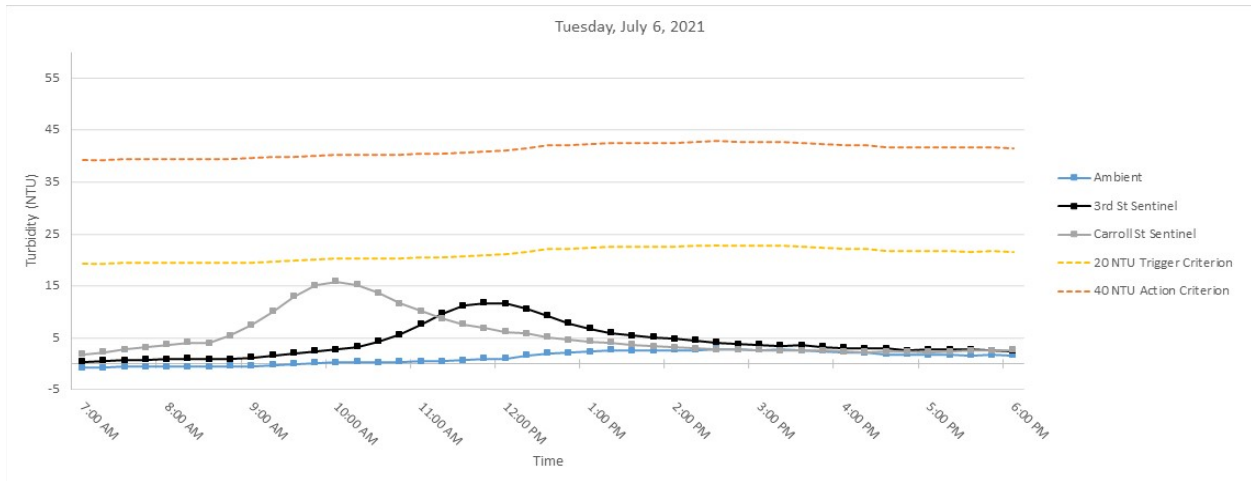
Section 2.1 contains further information on these exceedances. **Table 1** below provides a summary of the turbidity data for the reporting period.

Date	Average Rolling Average Difference (NTU)		Maximum Rolling Average Difference (NTU)	
	3rd St - Ambient	Carroll St - Ambient	3rd St - Ambient	Carroll St - Ambient
Tuesday, July 6, 2021	2.98	4.21	10.71	15.57
Wednesday, July 7, 2021	4.36	1.01	19.59	2.96
Thursday, July 8, 2021	1.54	1.27	5.42	2.82
Friday, July 9, 2021	0.82	0.65	5.11	2.54

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

3.1 Tuesday, July 6, 2021

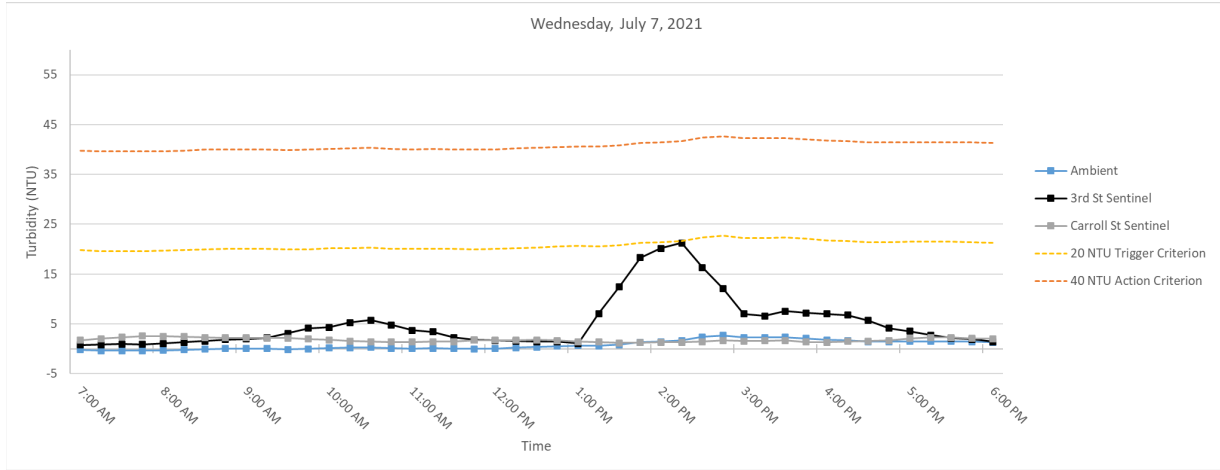
Figure 3. Hourly rolling average turbidity readings on Tuesday, July 6, 2021 from 7 AM to 6 PM.



Note: No spikes in turbidity were observed above 15 NTU.

3.2 Wednesday, July 7, 2021

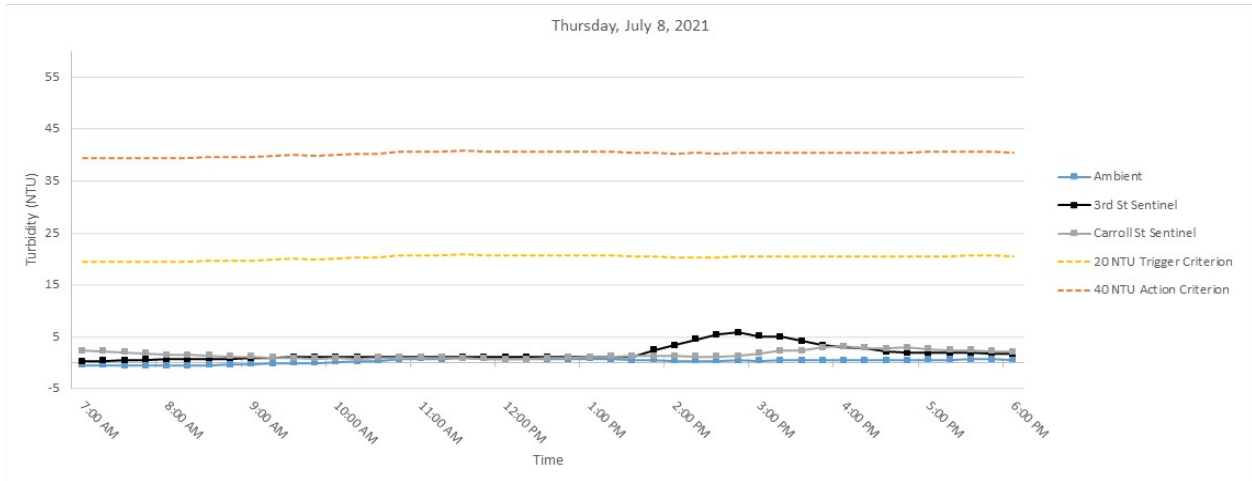
Figure 4. Hourly rolling average turbidity readings on Wednesday, July 7, 2021 from 7 AM to 6 PM.



Note: No spikes in turbidity were observed above 15 NTU.

3.3 Thursday, July 8, 2021

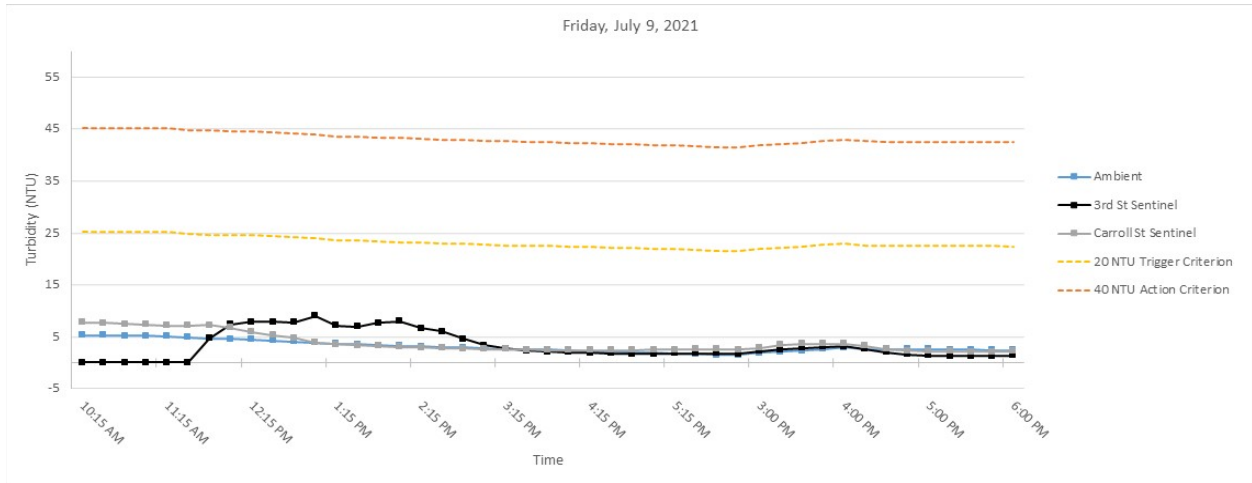
Figure 5. Hourly rolling average turbidity readings on Thursday, July 8, 2021 from 7 AM to 6 PM.



Note: A spike in turbidity at the Ambient Buoy of 102.99 NTU was eliminated as an outlier in accordance Section 2 and the WQMP.

3.4 Friday, July 9, 2021

Figure 6. Hourly rolling average turbidity readings on Friday, July 9, 2021 from 7 AM to 6 PM.



Note: No spikes in turbidity were observed above 15 NTU.

SUMMARY OF VISUAL OBSERVATIONS

No sheen above background conditions was observed during this reporting period.

APPENDIX A
Turbidity Data Tables

Tuesday, July 6, 2021

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	-0.81	0.44	1.74	-0.75	0.38	1.81	1.12	2.55
7:15:00	-0.92	1.16	3.55	-0.74	0.54	2.16	1.28	2.90
7:30:00	-0.34	0.91	4.35	-0.59	0.64	2.68	1.23	3.27
7:45:00	-0.38	0.94	4.55	-0.61	0.78	3.16	1.39	3.78
8:00:00	-0.61	0.86	4.1	-0.61	0.86	3.66	1.47	4.27
8:15:00	-0.61	0.92	3.72	-0.57	0.96	4.05	1.53	4.63
8:30:00	-0.74	0.74	3.11	-0.54	0.87	3.97	1.41	4.50
8:45:00	-0.07	0.99	11.33	-0.48	0.89	5.36	1.37	5.84
9:00:00	-0.29	2.21	14.78	-0.46	1.14	7.41	1.61	7.87
9:15:00	0.41	3.13	17.03	-0.26	1.60	9.99	1.86	10.25
9:30:00	0.25	2.96	18.36	-0.09	2.01	12.92	2.09	13.01
9:45:00	0.21	2.73	13.77	0.10	2.40	15.05	2.30	14.95
10:00:00	0.53	2.69	15.01	0.22	2.74	15.79	2.52	15.57
10:15:00	0.24	4.84	11.81	0.33	3.27	15.20	2.94	14.87
10:30:00	0.23	7.95	9.03	0.29	4.23	13.60	3.94	13.30
10:45:00	0.55	9.7	8.07	0.35	5.58	11.54	5.23	11.19
11:00:00	0.56	12.57	6.64	0.42	7.55	10.11	7.13	9.69
11:15:00	0.79	12.84	7.87	0.47	9.58	8.68	9.11	8.21
11:30:00	1.34	12.56	6.25	0.69	11.12	7.57	10.43	6.88
11:45:00	1.37	10.51	5.24	0.92	11.64	6.81	10.71	5.89
12:00:00	0.99	9.41	4.7	1.01	11.58	6.14	10.57	5.13
12:15:00	3.28	7.55	4.86	1.55	10.57	5.78	9.02	4.23
12:30:00	3.17	5.88	4.4	2.03	9.18	5.09	7.15	3.06
12:45:00	1.78	5.34	3.84	2.12	7.74	4.61	5.62	2.49
13:00:00	2.52	5.29	3.6	2.35	6.69	4.28	4.35	1.93
13:15:00	2.08	5.46	3.75	2.57	5.90	4.09	3.34	1.52
13:30:00	3.09	5.08	2.69	2.53	5.41	3.66	2.88	1.13
13:45:00	3	4.12	2.9	2.49	5.06	3.36	2.56	0.86
14:00:00	2.13	3.86	2.84	2.56	4.76	3.16	2.20	0.59
14:15:00	2.93	3.96	2.29	2.65	4.50	2.89	1.85	0.25
14:30:00	3.07	3.49	2.75	2.84	4.10	2.69	1.26	-0.15
14:45:00	2.88	3.48	2.7	2.80	3.78	2.70	0.98	-0.11
15:00:00	2.24	3.21	2.47	2.65	3.60	2.61	0.95	-0.04
15:15:00	2.88	2.83	2.35	2.80	3.39	2.51	0.59	-0.29
15:30:00	1.96	4.48	2.46	2.61	3.50	2.55	0.89	-0.06
15:45:00	1.95	2.26	2.55	2.38	3.25	2.51	0.87	0.12
16:00:00	1.75	2.47	1.75	2.16	3.05	2.32	0.89	0.16
16:15:00	1.94	2.52	1.75	2.10	2.91	2.17	0.82	0.08
16:30:00	1.18	2.86	2.83	1.76	2.92	2.27	1.16	0.51
16:45:00	1.91	2.55	2.42	1.75	2.53	2.26	0.79	0.51
17:00:00	1.73	2.98	2.11	1.70	2.68	2.17	0.97	0.47
17:15:00	1.56	2.43	2.28	1.66	2.67	2.28	1.00	0.61
17:30:00	1.57	2.51	2.8	1.59	2.67	2.49	1.08	0.90
17:45:00	1.69	2.25	2.9	1.69	2.54	2.50	0.85	0.81
18:00:00	1.25	2	3.11	1.56	2.43	2.64	0.87	1.08

Wednesday, July 7, 2021

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	-0.25	0.65	2.5	-0.19	0.78	1.73	0.97	1.92
7:15:00	-0.71	0.83	2.84	-0.36	0.83	2.03	1.19	2.39
7:30:00	-0.48	1.02	2.67	-0.36	0.93	2.31	1.29	2.67
7:45:00	-0.15	1.18	2.75	-0.40	0.91	2.57	1.31	2.96
8:00:00	-0.07	1.59	1.88	-0.33	1.05	2.53	1.39	2.86
8:15:00	0.45	1.94	2.05	-0.19	1.31	2.44	1.50	2.63
8:30:00	0.04	2	2.13	-0.04	1.55	2.30	1.59	2.34
8:45:00	-0.15	2.42	2.23	0.02	1.83	2.21	1.80	2.18
9:00:00	--	1.81	2.83	0.07	1.95	2.22	1.88	2.16
9:15:00	-0.2	2.84	1.48	0.04	2.20	2.14	2.17	2.11
9:30:00	--	6.6	2.07	-0.10	3.13	2.15	3.24	2.25
9:45:00	0.38	7.03	1.3	0.01	4.14	1.98	4.13	1.97
10:00:00	0.35	3.23	1.17	0.18	4.30	1.77	4.13	1.59
10:15:00	0.31	6.76	1.65	0.21	5.29	1.53	5.08	1.32
10:30:00	0.21	5.14	0.96	0.31	5.75	1.43	5.44	1.12
10:45:00	-0.59	1.79	1.64	0.13	4.79	1.34	4.66	1.21
11:00:00	0.07	1.69	1.45	0.07	3.72	1.37	3.65	1.30
11:15:00	0.49	1.56	1.52	0.10	3.39	1.44	3.29	1.35
11:30:00	0.04	1.24	1.71	0.04	2.28	1.46	2.24	1.41
11:45:00	-0.08	2.78	2.23	-0.01	1.81	1.71	1.83	1.72
12:00:00	-0.22	1.02	1.7	0.06	1.66	1.72	1.60	1.66
12:15:00	0.81	1.07	1.6	0.21	1.53	1.75	1.33	1.54
12:30:00	1.27	1.13	1.59	0.36	1.45	1.77	1.08	1.40
12:45:00	0.84	1.08	1.12	0.52	1.42	1.65	0.89	1.12
13:00:00	0.43	1.15	1.15	0.63	1.09	1.43	0.46	0.81
13:15:00	-0.35	31.01	1.48	0.60	7.09	1.39	6.49	0.79
13:30:00	1.84	27.96	0.71	0.81	12.47	1.21	11.66	0.40
13:45:00	3.71	30.25	1.75	1.29	18.29	1.24	17.00	-0.05
14:00:00	--	10.39	1.49	1.41	20.15	1.32	18.74	-0.09
14:15:00	1.52	6.74	1.22	1.68	21.27	1.33	19.59	-0.35
14:30:00	2.58	6.36	1.98	2.41	16.34	1.43	13.93	-0.98
14:45:00	2.95	6.43	1.9	2.69	12.03	1.67	9.34	-1.02
15:00:00	1.98	5.13	1.03	2.26	7.01	1.52	4.75	-0.73
15:15:00	2.34	8.32	1.78	2.27	6.60	1.58	4.32	-0.69
15:30:00	1.69	11.49	1.82	2.31	7.55	1.70	5.24	-0.61
15:45:00	1.51	4.66	0.28	2.09	7.21	1.36	5.11	-0.73
16:00:00	1.56	5.53	1.75	1.82	7.03	1.33	5.21	-0.48
16:15:00	1.19	4.01	1.8	1.66	6.80	1.49	5.14	-0.17
16:30:00	1.15	2.85	2.25	1.42	5.71	1.58	4.29	0.16
16:45:00	1.64	3.56	2.23	1.41	4.12	1.66	2.71	0.25
17:00:00	1.96	1.59	2.32	1.50	3.51	2.07	2.01	0.57
17:15:00	1.42	1.64	2.65	1.47	2.73	2.25	1.26	0.78
17:30:00	1.18	1.04	1.82	1.47	2.14	2.25	0.67	0.78
17:45:00	0.97	1.65	1.52	1.43	1.90	2.11	0.46	0.67
18:00:00	0.96	1.31	1.77	1.30	1.45	2.02	0.15	0.72

Thursday, July 8, 2021

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	-0.25	0.44	--	-0.52	0.26	2.31	0.78	2.82
7:15:00	-0.56	0.43	1.78	-0.51	0.30	2.18	0.80	2.68
7:30:00	-0.74	0.88	1.55	-0.54	0.47	1.98	1.01	2.52
7:45:00	-0.6	0.64	1.39	-0.56	0.57	1.82	1.13	2.38
8:00:00	-0.58	0.63	1.22	-0.55	0.60	1.49	1.15	2.03
8:15:00	-0.51	0.62	1.34	-0.60	0.64	1.46	1.24	2.05
8:30:00	0.25	1.06	1.28	-0.44	0.77	1.36	1.20	1.79
8:45:00	-0.33	0.94	0.62	-0.35	0.78	1.17	1.13	1.52
9:00:00	-0.32	0.99	1.4	-0.30	0.85	1.17	1.15	1.47
9:15:00	0	0.98	0.15	-0.18	0.92	0.96	1.10	1.14
9:30:00	0.31	1.27	1.06	-0.02	1.05	0.90	1.07	0.92
9:45:00	--	1.1	0.68	-0.09	1.06	0.78	1.14	0.87
10:00:00	0.57	1.01	0.83	0.14	1.07	0.82	0.93	0.68
10:15:00	--	1.02	0.89	0.29	1.08	0.72	0.78	0.43
10:30:00	0.17	1.09	1.35	0.35	1.10	0.96	0.75	0.61
10:45:00	1.07	1.11	1.25	0.60	1.07	1.00	0.46	0.40
11:00:00	1.18	1.15	0.74	0.75	1.08	1.01	0.33	0.26
11:15:00	0.24	0.99	0.51	0.67	1.07	0.95	0.41	0.28
11:30:00	1.44	1.07	0.54	0.82	1.08	0.88	0.26	0.06
11:45:00	-0.18	0.93	--	0.75	1.05	0.76	0.30	0.01
12:00:00	0.91	1.11	0.77	0.72	1.05	0.64	0.33	-0.08
12:15:00	1.26	1.13	0.79	0.73	1.05	0.65	0.31	-0.08
12:30:00	0.07	0.99	1.19	0.70	1.05	0.82	0.35	0.12
12:45:00	1.19	1.15	1.23	0.65	1.06	1.00	0.41	0.35
13:00:00	0.11	1.08	1.31	0.71	1.09	1.06	0.38	0.35
13:15:00	0.65	1.41	1.19	0.66	1.15	1.14	0.50	0.49
13:30:00	0.07	1.36	1.25	0.42	1.20	1.23	0.78	0.82
13:45:00	0.52	6.95	1.42	0.51	2.39	1.28	1.88	0.77
14:00:00	0.35	5.72	0.94	0.34	3.30	1.22	2.96	0.88
14:15:00	0.27	6.77	1.22	0.37	4.44	1.20	4.07	0.83
14:30:00	0.43	6.4	1.07	0.33	5.44	1.18	5.11	0.85
14:45:00	0.52	3.36	1.52	0.42	5.84	1.23	5.42	0.82
15:00:00	0.39	3.01	4.17	0.39	5.05	1.78	4.66	1.39
15:15:00	--	5.42	3.34	0.40	4.99	2.26	4.59	1.86
15:30:00	0.56	2.68	1.3	0.48	4.17	2.28	3.70	1.81
15:45:00	0.47	2.09	4.09	0.49	3.31	2.88	2.83	2.40
16:00:00	--	1.88	2.85	0.47	3.02	3.15	2.54	2.68
16:15:00	0.31	1.91	2.63	0.45	2.80	2.84	2.35	2.40
16:30:00	0.52	1.87	2.46	0.47	2.09	2.67	1.62	2.20
16:45:00	0.64	1.94	2.45	0.49	1.94	2.90	1.45	2.41
17:00:00	0.78	1.96	2.6	0.56	1.91	2.60	1.35	2.04
17:15:00	0.64	1.68	1.85	0.58	1.87	2.40	1.29	1.82
17:30:00	0.46	1.8	2.56	0.61	1.85	2.38	1.24	1.78
17:45:00	0.59	1.48	1.79	0.62	1.77	2.25	1.15	1.63
18:00:00	0.31	1.41	1.74	0.56	1.67	2.11	1.11	1.55

Friday, July 9, 2021

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
10:15:00	5.23	#VALUE!	6.22	5.30	--	7.71	--	2.42
10:30:00	5.17	#VALUE!	7.71	5.27	--	7.68	--	2.41
10:45:00	4.83	4.75	7.3	5.18	--	7.50	--	2.31
11:00:00	--	--	7.83	5.18	--	7.38	--	2.20
11:15:00	5.26	4.93	6.67	5.12	--	7.15	--	2.02
11:30:00	4.25	4.45	6.34	4.88	--	7.17	--	2.29
11:45:00	4.44	4.61	8.01	4.70	4.69	7.23	-0.01	2.54
12:00:00	4.48	15.42	4.59	4.61	7.35	6.69	2.75	2.08
12:15:00	4.12	10.09	3.99	4.51	7.90	5.92	3.39	1.41
12:30:00	4.23	4.78	3.61	4.30	7.87	5.31	3.57	1.00
12:45:00	3.16	4	3.56	4.09	7.78	4.75	3.69	0.67
13:00:00	3.4	10.67	3.39	3.88	8.99	3.83	5.11	-0.05
13:15:00	3.22	5.95	3.23	3.63	7.10	3.56	3.47	-0.07
13:30:00	3.44	9.44	3	3.49	6.97	3.36	3.48	-0.13
13:45:00	3.24	8.36	2.96	3.29	7.68	3.23	4.39	-0.06
14:00:00	2.93	5.31	2.72	3.25	7.95	3.06	4.70	-0.19
14:15:00	2.56	4.22	2.57	3.08	6.66	2.90	3.58	-0.18
14:30:00	2.67	2.74	2.65	2.97	6.01	2.78	3.05	-0.19
14:45:00	3.04	2.41	2.73	2.89	4.61	2.73	1.72	-0.16
15:00:00	2.53	2.05	2.4	2.75	3.35	2.61	0.60	-0.13
15:15:00	2.31	2.25	2.47	2.62	2.73	2.56	0.11	-0.06
15:30:00	2.16	2.3	2.38	2.54	2.35	2.53	-0.19	-0.02
15:45:00	2.38	1.6	2.18	2.48	2.12	2.43	-0.36	-0.05
16:00:00	2.2	1.72	2.5	2.32	1.98	2.39	-0.33	0.07
16:15:00	2.18	1.73	2.28	2.25	1.92	2.36	-0.33	0.12
16:30:00	1.9	1.77	2.47	2.16	1.82	2.36	-0.34	0.20
16:45:00	1.54	1.66	2.41	2.04	1.70	2.37	-0.34	0.33
17:00:00	1.61	1.64	2.64	1.89	1.70	2.46	-0.18	0.57
17:15:00	1.96	2.39	2.51	1.84	1.84	2.46	0.00	0.62
17:30:00	1.45	1.67	2.81	1.69	1.83	2.57	0.13	0.88
17:45:00	0.66	1.56	2.52	1.44	1.78	2.58	0.34	1.13
18:00:00	1.56	1.07	2.15	1.45	1.67	2.53	0.22	1.08
15:00:00	3.72	4.14	4.29	1.87	2.17	2.86	0.30	0.99
15:15:00	2.99	4.29	5.39	2.08	2.55	3.43	0.47	1.36
15:30:00	2.46	2.97	3.63	2.28	2.81	3.60	0.53	1.32
15:45:00	2.49	2.53	2.66	2.64	3.00	3.62	0.36	0.98
16:00:00	2.68	1.6	2.24	2.87	3.11	3.64	0.24	0.77
16:15:00	2.57	1.62	2.36	2.64	2.60	3.26	-0.04	0.62
16:30:00	2.66	1.18	2.28	2.57	1.98	2.63	-0.59	0.06
16:45:00	2.45	1.18	2.09	2.57	1.62	2.33	-0.95	-0.24
17:00:00	2.56	1.26	2	2.58	1.37	2.19	-1.22	-0.39
17:15:00	2.5	1.3	2.09	2.55	1.31	2.16	-1.24	-0.38
17:30:00	2.45	1.4	2.25	2.52	1.26	2.14	-1.26	-0.38
17:45:00	2.28	1.36	2.3	2.45	1.30	2.15	-1.15	-0.30
18:00:00	2.27	1.46	2.43	2.41	1.36	2.21	-1.06	-0.20