

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

**PERIOD: DECEMBER 21 TO DECEMBER 24, 2020**

**Date of Report: December 30, 2020**

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## 1. SCOPE OF MONITORING

The following report summarizes water quality monitoring data collected during the week of December 21, 2020. 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 3<sup>rd</sup> Street Bridge. One turbidity buoy was deployed just south of the 3<sup>rd</sup> Street Bridge outside of the air curtain and traditional turbidity curtain. This buoy is referred to as the 3<sup>rd</sup> 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. A map indicating the 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 December 21<sup>st</sup>. 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. The data provided in this summary report have not yet been validated and should be considered preliminary.



## 2. REPORT OF EXCEEDANCES

No exceedances of the action level criteria were met during the reporting period. On December 24, 2020 an exceedance of the numerical trigger level criterion was detected at the Carroll St Sentinel Buoy. Further information is provided in Section 2.1. Refer to the WQMP for further information regarding the Trigger and Action Criteria. Threshold criteria are summarized as follows:

- **Trigger criterion** – Any of the following:
  - The rolling average of the 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

A detailed description of responses to exceedances of the trigger and action level criteria is provided in Section 4.2 of the WQMP. 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.

There were no exceedances of the action level criterion. On December 24, 2020 from 9:15 AM to 9:45 AM, exceedances of the numerical trigger level criterion were detected in the vicinity of the Carroll Street Turbidity Buoy. Dredging stopped at 9:00 AM on December 24<sup>th</sup> and the exceedance to the trigger level criterion was likely a result of crew boats leaving the dredge barge at low tide. No exceedance downstream of engineering controls at the 3<sup>rd</sup> Street Bridge was detected.

### 3. TURBIDITY BUOY DATA

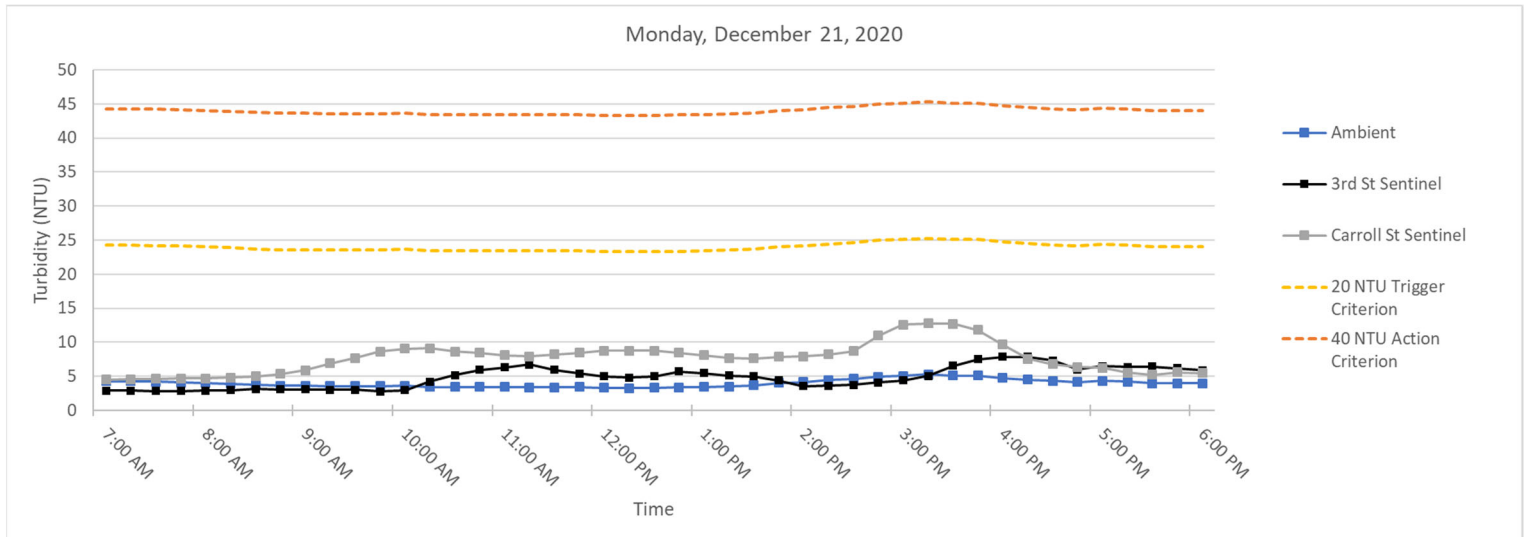
The following section provides turbidity data for the sentinel and ambient turbidity buoys from 7 AM to 6 PM from December 21 to December 24, 2020. Exceedances of the numerical trigger level criterion were detected on December 24<sup>th</sup> at the Carroll Street Sentinel Buoy. Section 2.1 contains further information on the exceedances. No exceedance to the numerical rolling average action criterion were observed during the reporting period. **Table 1** below provides a summary of the turbidity data for the reporting period.

**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

Date	Average Rolling Average Difference (NTU)		Maximum Rolling Average Difference (NTU)	
	3rd St - Ambient	Carroll St - Ambient	3rd St - Ambient	Carroll St - Ambient
Monday December 21, 2020	0.86	3.70	3.37	7.55
Tuesday December 22, 2020	0.33	N/A	2.08	N/A
Wednesday December 23, 2020	4.26	4.24	12.17	8.92
Thursday December 24, 2020	1.66	4.41	16.96	27.96

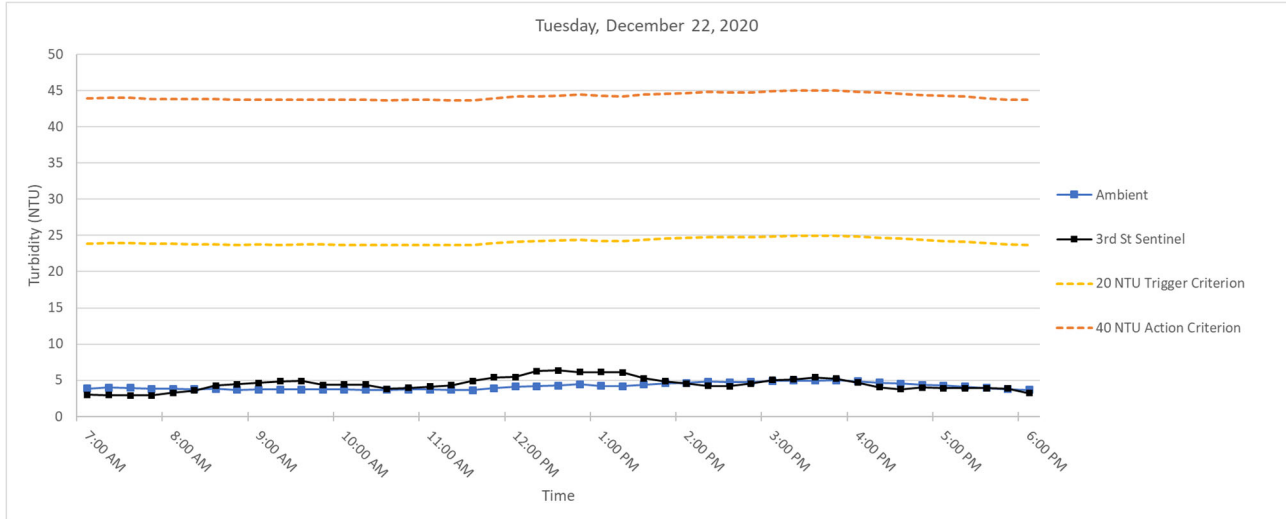
#### 3.1 Monday, December 21, 2020

**Figure 2.** Hourly rolling average turbidity readings on Monday, December 21, 2020 from 7 AM to 6 PM.



### 3.2 Tuesday, December 22, 2020

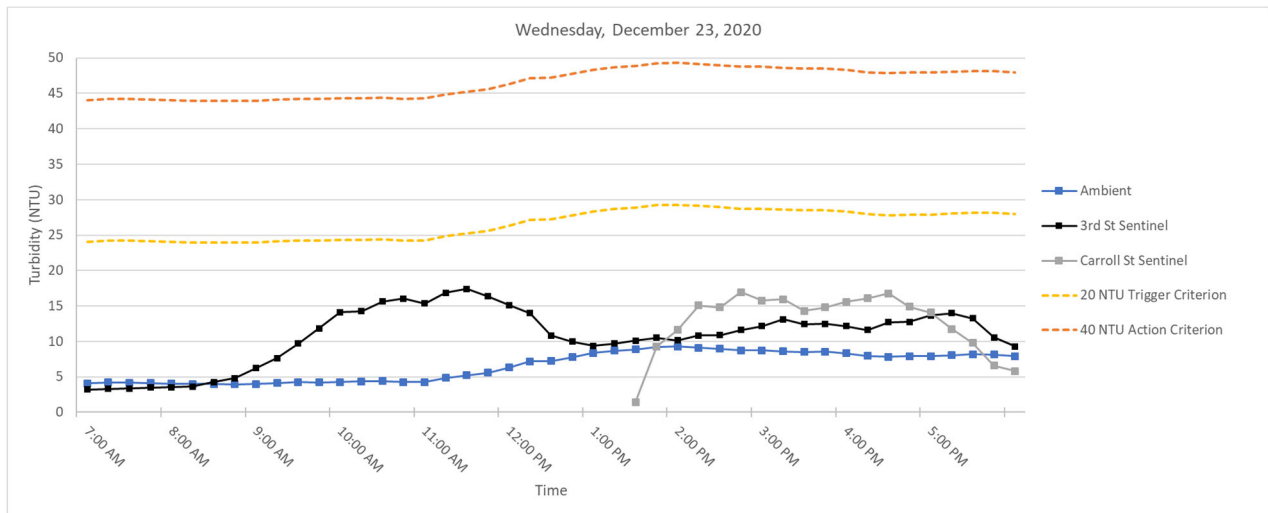
**Figure 3.** Hourly rolling average turbidity readings on Tuesday, December 22, 2020 from 7 AM to 6 PM.



**Note:** The Carroll Street Sentinel Buoy lost power due to a malfunctioning solar panel. No dredging was occurring on Tuesday, December 22.

### 3.3 Wednesday, December 23, 2020

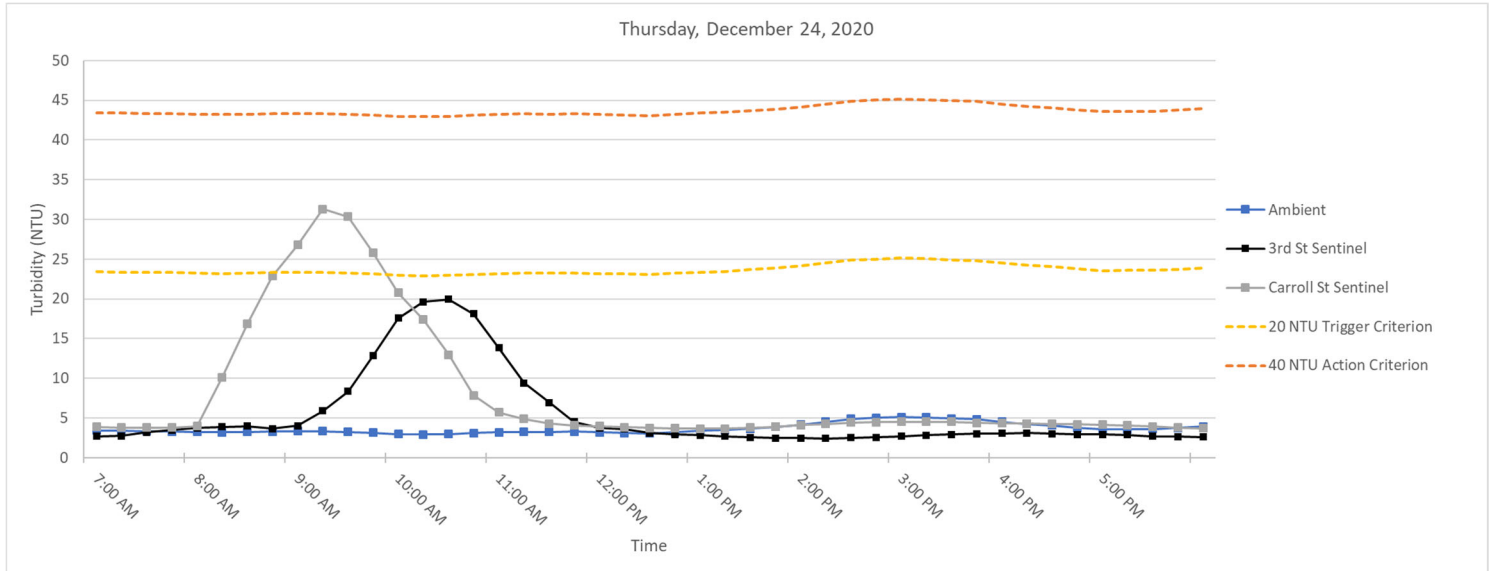
**Figure 4.** Hourly rolling average turbidity readings on Wednesday, December 23, 2020 from 7 AM to 6 PM.



**Note:** Power to the Carroll Street Sentinel Buoy was restored at 1:30 PM. Turbidity at the 3<sup>rd</sup> Street Sentinel Buoy remained below threshold criteria during this time period.

### 1.4 Thursday, December 24, 2020

**Figure 5.** Hourly rolling average turbidity readings on Thursday, December 24, 2020 from 7 AM to 6 PM.





## **SUMMARY OF VISUAL OBSERVATIONS**

During the Phase I dredging with the environmental clamshell bucket some sheen was observed during dredging. This sheen was localized in the area of dredging and did not migrate outside of RTA1.

**APPENDIX A**  
**Turbidity Data Tables**

## Monday, December 21, 2020

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	3.99	2.89	4.52	4.25	2.91	4.51	-1.35	0.26
7:15:00	4.51	2.92	4.75	4.30	2.91	4.60	-1.39	0.30
7:30:00	4	2.74	4.81	4.21	2.86	4.63	-1.35	0.42
7:45:00	4.01	2.88	5.05	4.13	2.85	4.73	-1.28	0.60
8:00:00	3.61	2.98	4.43	4.02	2.88	4.71	-1.14	0.69
8:15:00	3.49	3.27	5	3.92	2.96	4.81	-0.97	0.88
8:30:00	3.5	3.77	5.8	3.72	3.13	5.02	-0.59	1.30
8:45:00	3.4	2.63	6.6	3.60	3.11	5.38	-0.50	1.77
9:00:00	4.1	2.64	7.54	3.62	3.06	5.87	-0.56	2.25
9:15:00	3.41	2.83	9.75	3.58	3.03	6.94	-0.55	3.36
9:30:00	3.46	3.12	8.86	3.57	3.00	7.71	-0.58	4.14
9:45:00	3.6	2.86	10.36	3.59	2.82	8.62	-0.78	5.03
10:00:00	3.59	3.47	8.73	3.63	2.98	9.05	-0.65	5.42
10:15:00	3.21	8.78	7.93	3.45	4.21	9.13	0.76	5.67
10:30:00	3.24	7.6	7.45	3.42	5.17	8.67	1.75	5.25
10:45:00	3.59	6.95	7.95	3.45	5.93	8.48	2.49	5.04
11:00:00	3.67	4.91	8.47	3.46	6.34	8.11	2.88	4.65
11:15:00	3.23	5.44	7.79	3.39	6.74	7.92	3.35	4.53
11:30:00	3.25	4.9	9.41	3.40	5.96	8.21	2.56	4.82
11:45:00	3.35	4.8	8.65	3.42	5.40	8.45	1.98	5.04
12:00:00	3.09	5.05	9.55	3.32	5.02	8.77	1.70	5.46
12:15:00	3.56	3.9	8.4	3.30	4.82	8.76	1.52	5.46
12:30:00	3.43	6.22	7.93	3.34	4.97	8.79	1.64	5.45
12:45:00	3.38	8.61	7.76	3.36	5.72	8.46	2.35	5.10
13:00:00	3.73	3.7	6.81	3.44	5.50	8.09	2.06	4.65
13:15:00	3.45	3.14	7.53	3.51	5.11	7.69	1.60	4.18
13:30:00	4.43	3.21	8.1	3.68	4.98	7.63	1.29	3.94
13:45:00	5.09	3.24	9.21	4.02	4.38	7.88	0.36	3.87
14:00:00	4.03	4.49	8.13	4.15	3.56	7.96	-0.59	3.81
14:15:00	5.31	4.07	8.08	4.46	3.63	8.21	-0.83	3.75
14:30:00	4.33	3.74	10.16	4.64	3.75	8.74	-0.89	4.10
14:45:00	6.05	4.95	19.32	4.96	4.10	10.98	-0.86	6.02
15:00:00	5.66	4.77	17.15	5.08	4.40	12.57	-0.67	7.49
15:15:00	5.11	7.73	9.07	5.29	5.05	12.76	-0.24	7.46
15:30:00	4.52	11.45	7.73	5.13	6.53	12.69	1.39	7.55
15:45:00	4.15	8.55	5.72	5.10	7.49	11.80	2.39	6.70
16:00:00	4.36	6.81	8.61	4.76	7.86	9.66	3.10	4.90
16:15:00	4.46	4.89	6.71	4.52	7.89	7.57	3.37	3.05
16:30:00	4.08	5.05	5.27	4.31	7.35	6.81	3.04	2.49
16:45:00	3.74	4.87	5.61	4.16	6.03	6.38	1.88	2.23
17:00:00	5.12	10.8	5.03	4.35	6.48	6.25	2.13	1.89
17:15:00	3.76	6.4	5.05	4.23	6.40	5.53	2.17	1.30
17:30:00	3.27	5.16	5.13	3.99	6.46	5.22	2.46	1.22
17:45:00	4.11	3.7	7.11	4.00	6.19	5.59	2.19	1.59
18:00:00	3.77	3.47	5.19	4.01	5.91	5.50	1.90	1.50

## Tuesday, December 22, 2020

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	3.78	2.95	--	3.87	2.99	--	-0.88	-
7:15:00	3.84	2.77	--	3.98	2.93	--	-1.05	-
7:30:00	4.1	3	--	3.96	2.93	--	-1.03	-
7:45:00	3.55	2.94	--	3.83	2.93	--	-0.90	-
8:00:00	3.9	4.67	--	3.83	3.27	--	-0.57	-
8:15:00	3.56	4.46	--	3.79	3.57	--	-0.22	-
8:30:00	3.86	6.19	--	3.79	4.25	--	0.46	-
8:45:00	3.58	4.09	--	3.69	4.47	--	0.78	-
9:00:00	3.72	3.82	--	3.72	4.65	--	0.92	-
9:15:00	3.82	5.69	--	3.71	4.85	--	1.14	-
9:30:00	3.75	4.7	--	3.75	4.90	--	1.15	-
9:45:00	3.78	3.4	--	3.73	4.34	--	0.61	-
10:00:00	3.5	4.48	--	3.71	4.42	--	0.70	-
10:15:00	3.65	3.73	--	3.70	4.40	--	0.70	-
10:30:00	3.68	2.87	--	3.67	3.84	--	0.16	-
10:45:00	3.93	5.28	--	3.71	3.95	--	0.24	-
11:00:00	3.8	4.31	--	3.71	4.13	--	0.42	-
11:15:00	3.34	5.36	--	3.68	4.31	--	0.63	-
11:30:00	3.42	6.82	--	3.63	4.93	--	1.29	-
11:45:00	5.03	5.32	--	3.90	5.42	--	1.51	-
12:00:00	5.16	5.47	--	4.15	5.46	--	1.31	-
12:15:00	3.96	8.32	--	4.18	6.26	--	2.08	-
12:30:00	3.83	5.78	--	4.28	6.34	--	2.06	-
12:45:00	4.22	5.74	--	4.44	6.13	--	1.69	-
13:00:00	4.04	5.23	--	4.24	6.11	--	1.87	-
13:15:00	4.93	5.33	--	4.20	6.08	--	1.88	-
13:30:00	5.12	4.16	--	4.43	5.25	--	0.82	-
13:45:00	4.6	3.81	--	4.58	4.85	--	0.27	-
14:00:00	4.45	4.1	--	4.63	4.53	--	-0.10	-
14:15:00	4.89	3.72	--	4.80	4.22	--	-0.57	-
14:30:00	4.67	5.2	--	4.75	4.20	--	-0.55	-
14:45:00	5.2	5.9	--	4.76	4.55	--	-0.22	-
15:00:00	5.25	6.36	--	4.89	5.06	--	0.16	-
15:15:00	4.78	4.53	--	4.96	5.14	--	0.18	-
15:30:00	4.96	5.08	--	4.97	5.41	--	0.44	-
15:45:00	4.71	4.31	--	4.98	5.24	--	0.26	-
16:00:00	4.52	3.15	--	4.84	4.69	--	-0.16	-
16:15:00	4.47	3.06	--	4.69	4.03	--	-0.66	-
16:30:00	4.15	3.28	--	4.56	3.78	--	-0.79	-
16:45:00	4.01	6.12	--	4.37	3.98	--	-0.39	-
17:00:00	4.11	3.86	--	4.25	3.89	--	-0.36	-
17:15:00	3.96	3.24	--	4.14	3.91	--	-0.23	-
17:30:00	3.52	3	--	3.95	3.90	--	-0.05	-
17:45:00	3.25	3.07	--	3.77	3.86	--	0.09	-
18:00:00	3.59	2.97	--	3.69	3.23	--	-0.46	-

## Wednesday, December 23, 2020

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	4.09	3.19	--	4.08	3.20	--	-0.88	-
7:15:00	4.49	3.46	--	4.21	3.29	--	-0.93	-
7:30:00	4.12	3.74	--	4.19	3.34	--	-0.84	-
7:45:00	3.93	3.66	--	4.14	3.48	--	-0.66	-
8:00:00	3.59	3.71	--	4.04	3.55	--	-0.49	-
8:15:00	3.74	3.59	--	3.97	3.63	--	-0.34	-
8:30:00	4.49	6.57	--	3.97	4.25	--	0.28	-
8:45:00	3.92	6.58	--	3.93	4.82	--	0.89	-
9:00:00	4.17	10.66	--	3.98	6.22	--	2.24	-
9:15:00	4.24	10.76	--	4.11	7.63	--	3.52	-
9:30:00	4.49	13.81	--	4.26	9.68	--	5.41	-
9:45:00	4.3	17.34	--	4.22	11.83	--	7.61	-
10:00:00	4.21	17.97	--	4.28	14.11	--	9.83	-
10:15:00	4.42	11.45	--	4.33	14.27	--	9.93	-
10:30:00	4.58	17.64	--	4.40	15.64	--	11.24	-
10:45:00	3.77	15.88	--	4.26	16.06	--	11.80	-
11:00:00	4.39	13.76	--	4.27	15.34	--	11.07	-
11:15:00	7.12	25.6	--	4.86	16.87	--	12.01	-
11:30:00	6.28	14.12	--	5.23	17.40	--	12.17	-
11:45:00	6.33	12.45	--	5.58	16.36	--	10.78	-
12:00:00	7.46	9.73	--	6.32	15.13	--	8.82	-
12:15:00	8.66	8.05	--	7.17	13.99	--	6.82	-
12:30:00	7.39	9.89	--	7.22	10.85	--	3.62	-
12:45:00	9.05	9.76	--	7.78	9.98	--	2.20	-
13:00:00	9.27	9.54	--	8.37	9.39	--	1.03	-
13:15:00	8.98	11.14	--	8.67	9.68	--	1.01	-
13:30:00	9.59	10.18	1.45	8.86	10.10	1.45	1.25	-7.41
13:45:00	9.27	12.03	17.11	9.23	10.53	9.28	1.30	0.05
14:00:00	9.31	7.9	16.3	9.28	10.16	11.62	0.87	2.34
14:15:00	8.41	12.97	25.45	9.11	10.84	15.08	1.73	5.97
14:30:00	8.22	11.23	13.72	8.96	10.86	14.81	1.90	5.85
14:45:00	8.49	14.01	12.15	8.74	11.63	16.95	2.89	8.21
15:00:00	9.27	14.79	11.31	8.74	12.18	15.79	3.44	7.05
15:15:00	8.55	12.65	17.01	8.59	13.13	15.93	4.54	7.34
15:30:00	7.92	9.51	17.31	8.49	12.44	14.30	3.95	5.81
15:45:00	8.44	11.34	16.14	8.53	12.46	14.78	3.93	6.25
16:00:00	7.37	12.56	16.17	8.31	12.17	15.59	3.86	7.28
16:15:00	7.48	11.97	13.81	7.95	11.61	16.09	3.65	8.14
16:30:00	7.95	18.04	20.34	7.83	12.68	16.75	4.85	8.92
16:45:00	8.38	9.9	8.04	7.92	12.76	14.90	4.84	6.98
17:00:00	8.4	15.74	11.95	7.92	13.64	14.06	5.73	6.15
17:15:00	8.15	14.35	4.51	8.07	14.00	11.73	5.93	3.66
17:30:00	7.96	8.33	4.16	8.17	13.27	9.80	5.10	1.63
17:45:00	7.75	4.41	4.27	8.13	10.55	6.59	2.42	-1.54
18:00:00	7.4	3.5	4.13	7.93	9.27	5.80	1.33	-2.13

## Thursday, December 24, 2020

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	3.44	3.07	3.78	3.44	2.72	3.88	-0.72	0.44
7:15:00	3.27	2.69	3.76	3.37	2.74	3.82	-0.63	0.45
7:30:00	3.26	4.86	3.83	3.34	3.19	3.78	-0.15	0.45
7:45:00	3.26	4.1	3.97	3.30	3.48	3.81	0.18	0.51
8:00:00	2.93	4.02	4.56	3.23	3.75	3.98	0.52	0.75
8:15:00	3.21	3.88	34.5	3.19	3.91	10.12	0.72	6.94
8:30:00	3.53	3.03	37.66	3.24	3.98	16.90	0.74	13.67
8:45:00	3.57	3.35	33.56	3.30	3.68	22.85	0.38	19.55
9:00:00	3.39	5.79	23.6	3.33	4.01	26.78	0.69	23.45
9:15:00	2.93	13.52	27.11	3.33	5.91	31.29	2.59	27.96
9:30:00	2.8	16.06	29.89	3.24	8.35	30.36	5.11	27.12
9:45:00	3.02	25.33	14.94	3.14	12.81	25.82	9.67	22.68
10:00:00	2.85	27.2	8.18	3.00	17.58	20.74	14.58	17.75
10:15:00	3.05	16.1	6.8	2.93	19.64	17.38	16.71	14.45
10:30:00	3.11	14.93	4.98	2.97	19.92	12.96	16.96	9.99
10:45:00	3.5	7.01	4.28	3.11	18.11	7.84	15.01	4.73
11:00:00	3.45	3.85	4.32	3.19	13.82	5.71	10.63	2.52
11:15:00	3.26	5.1	4.08	3.27	9.40	4.89	6.12	1.62
11:30:00	3.02	3.79	3.91	3.27	6.94	4.31	3.67	1.05
11:45:00	3.19	2.94	3.8	3.28	4.54	4.08	1.25	0.79
12:00:00	3.04	3.05	3.81	3.19	3.75	3.98	0.55	0.79
12:15:00	3.11	3.24	3.62	3.12	3.62	3.84	0.50	0.72
12:30:00	3.09	2.63	3.74	3.09	3.13	3.78	0.04	0.69
12:45:00	3.61	2.7	3.56	3.21	2.91	3.71	-0.30	0.50
13:00:00	4.07	2.53	3.67	3.38	2.83	3.68	-0.55	0.30
13:15:00	3.43	2.48	3.81	3.46	2.72	3.68	-0.75	0.22
13:30:00	4.2	2.4	4.11	3.68	2.55	3.78	-1.13	0.10
13:45:00	4.21	2.35	4.36	3.90	2.49	3.90	-1.41	0.00
14:00:00	4.95	2.59	4.54	4.17	2.47	4.10	-1.70	-0.07
14:15:00	5.77	2.44	4.43	4.51	2.45	4.25	-2.06	-0.26
14:30:00	5.24	2.83	4.76	4.87	2.52	4.44	-2.35	-0.43
14:45:00	4.91	2.72	4.41	5.02	2.59	4.50	-2.43	-0.52
15:00:00	4.83	3.02	4.58	5.14	2.72	4.54	-2.42	-0.60
15:15:00	4.61	3.24	4.45	5.07	2.85	4.53	-2.22	-0.55
15:30:00	5.09	2.88	4.36	4.94	2.94	4.51	-2.00	-0.42
15:45:00	4.74	3.16	4.16	4.84	3.00	4.39	-1.83	-0.44
16:00:00	3.48	3.03	4.29	4.55	3.07	4.37	-1.48	-0.18
16:15:00	3.38	3.26	4.19	4.26	3.11	4.29	-1.15	0.03
16:30:00	3.62	2.75	4.26	4.06	3.02	4.25	-1.05	0.19
16:45:00	3.59	2.53	4.16	3.76	2.95	4.21	-0.82	0.45
17:00:00	3.76	2.98	3.9	3.57	2.91	4.16	-0.66	0.59
17:15:00	3.55	2.94	3.77	3.58	2.89	4.06	-0.69	0.48
17:30:00	3.46	2.42	3.66	3.60	2.72	3.95	-0.87	0.35
17:45:00	4.3	2.48	3.56	3.73	2.67	3.81	-1.06	0.08
18:00:00	4.5	2.33	3.63	3.91	2.63	3.70	-1.28	-0.21