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

PERIOD: January 30 – February 3, 2023

Date of Report: February 7, 2023

Report Contents

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

Prepared by

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

an affiliate of Geosyntec Consultants

1255 Roberts Blvd, Suite 200 Kennesaw, GA 30144 Project Number JR0289A

1. SCOPE OF MONITORING

1.1 Current Buoy Locations

The following report summarizes water quality monitoring data collected during the week of January 30, 2023. In accordance with the Water Quality Monitoring Plan for In-waterway Construction Activities (WQMP) three turbidity buoys were deployed to monitor turbidity related to dredging activities. One turbidity buoy was deployed just south of the 3rd Street Bridge outside of the air curtain and traditional turbidity curtain and is referred to as the 3rd Street Sentinel Buoy. A second turbidity buoy was deployed just south of Carroll St Bridge to monitor dredging activities north of 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 and is referred to as the Ambient Buoy.

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.

1.2 **Previous Buoy Locations**

- 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 sentinel buoy was re-deployed just south of the Carroll Street Bridge.
- Since December 8, 2021, the sentinel buoy deployed at the northern-most portion of the canal has alternated positioning between the Union Street Bridge and Carroll Street Bridge locations based on the in-canal construction activities being conducted at any given time.

•	On January 9, 2023, the Carroll Street Sentinel Buoy was moved to the Third Street Bridge location and renamed the Third Street Sentinel Buoy. Additionally, the former Third Street Sentinel Buoy was removed from the canal for servicing.



2. REPORT OF EXCEEDANCES

No exceedances to the quantitative 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
- o 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 inwaterway 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 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 January 30 – February 3, 2023. No exceedances to the quantitative trigger or action criteria were observed during the reporting period.

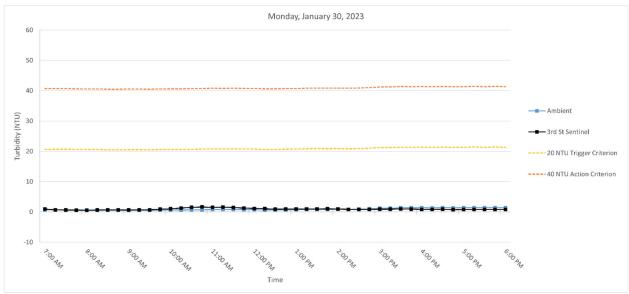
Table 1 below provides a summary of the turbidity data for the reporting period.

	Average Rolling Aver	rage Difference (NTU)	Maximum Rolling Average Difference (NTU)		
Date	3rd St - Ambient	Carroll St - Ambient	3rd St - Ambient	Carroll St - Ambient	
Monday, January 30, 2023	0.05		0.92		
Tuesday, January 31, 2023	-0.09		1.52		
Wednesday, February 1, 2023	0.66		2.67		
Thursday, February 2, 2023	1.94		4.88		
Friday, February 3, 2023	2.83		5.49		

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, January 30, 2023**

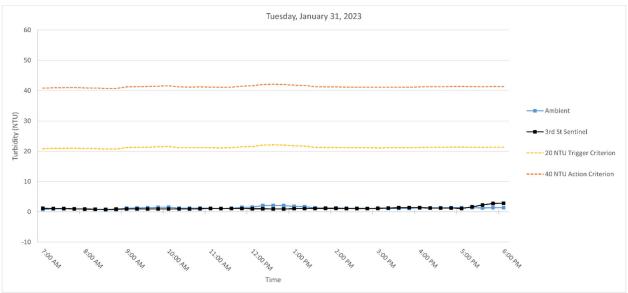
Figure 3. Hourly rolling average turbidity readings on Monday, January 30, 2023, from 7 AM to 6 PM.



Note: No outlier turbidity readings above 20 NTU were detected.

3.2 <u>Tuesday, January 31, 2023</u>

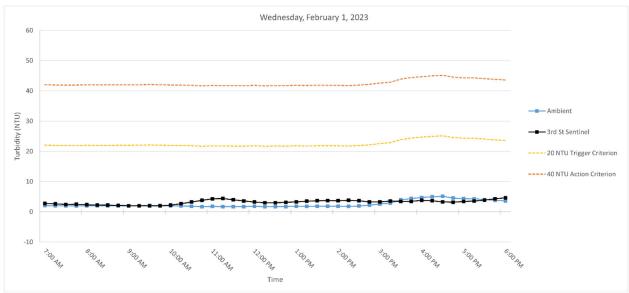
Figure 3. Hourly rolling average turbidity readings on Tuesday, January 31, 2023, from 7 AM to 6 PM.



Note: No outlier turbidity readings above 20 NTU were detected.

3.3 Wednesday, February 1, 2023

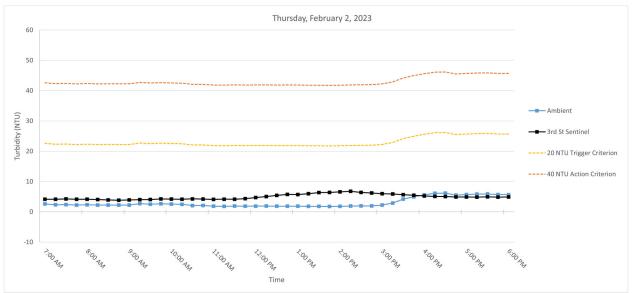
Figure 4. Hourly rolling average turbidity readings on Wednesday, February 1, 2023, from 7 AM to 6 PM.



Note: No outlier turbidity readings above 20 NTU were detected.

3.4 Thursday, February 2, 2023

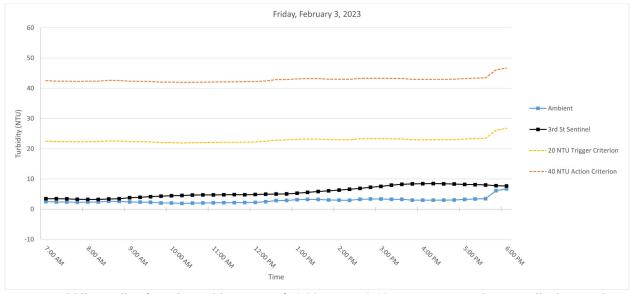
Figure 5. Hourly rolling average turbidity readings on Thursday, February 2, 2023, from 7 AM to 6 PM.



Note: No outlier turbidity readings above 20 NTU were detected.

3.5 **Friday, February 3, 2023**

Figure 6. Hourly rolling average turbidity readings on Friday, February 3, 2023, from 7 AM to 6 PM.



Note: A turbidity reading from the Ambient Buoy of 73.88 NTU at 2:00 PM was removed as an outlier in accordance with the water quality monitoring plan.

SUMMARY OF VISUAL OBSERVATIONS

No sheens were observed above background conditions and no discharges were observed from storm water outfalls during the reporting period.

On January 30, 2023, discharge into the canal unrelated to remedial construction activities was observed coming from the Salt Lot (located in RTA2 at the northern end of 2nd Avenue) due to dewatering activities from behind the cofferdam.



Figure 7. Discharge into the canal unrelated to remedial construction activities was observed from the Salt Lot due to dewatering activities from behind the cofferdam on January 30, 2023.

APPENDIX A Turbidity Data Tables

Monday, January 30, 2023

Time		Turbidity (NTU)		Ro	olling Average Turbidity (Difference (NTU)		
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	0.66	0.55		0.66	0.92		0.26	
7:15:00	0.73	0.29		0.68	0.70		0.02	
7:30:00	0.56	0.76		0.68	0.62	**	-0.06	
7:45:00	0.48	0.47		0.65	0.58	••	-0.07	
8:00:00	0.56	0.55		0.60	0.52		-0.07	
8:15:00	0.62	0.98		0.59	0.61	**	0.02	
8:30:00	0.32	0.69		0.51	0.69	**	0.18	
8:45:00		0.48		0.50	0.63		0.14	
9:00:00	0.6	0.4		0.53	0.62	**	0.10	
9:15:00	0.66	1.03		0.55	0.72		0.17	
9:30:00	0.42	0.86		0.50	0.69	**	0.19	
9:45:00	0.67	1.75		0.59	0.90		0.32	
10:00:00	0.79	1.05		0.63	1.02		0.39	
10:15:00	0.55	1.64		0.62	1.27		0.65	
10:30:00	0.88	2.13		0.66	1.49	**	0.82	
10:45:00	0.69	1.63		0.72	1.64		0.92	
11:00:00	1.11	1.01		0.80	1.49	**	0.69	
11:15:00	0.66	1.62		0.78	1.61		0.83	
11:30:00	0.71	0.78		0.81	1.43		0.62	
11:45:00	0.64	1.33		0.76	1.27		0.51	
12:00:00	0.56	0.97		0.74	1.14		0.41	
12:15:00	0.51	0.67		0.62	1.07		0.46	
12:30:00	0.76	0.58		0.64	0.87		0.23	
12:45:00	0.88	1.08		0.67	0.93		0.26	
13:00:00	0.97	1.37		0.74	0.93		0.20	
13:15:00	1.03	0.86		0.83	0.91		0.08	
13:30:00	0.62	1.04		0.85	0.99		0.13	
13:45:00	0.73	0.69		0.85	1.01		0.16	
14:00:00	0.97	0.96		0.86	0.98		0.12	
14:15:00	0.82	0.6		0.83	0.83		0.00	
14:30:00	1.34	0.95		0.90	0.85		-0.05	
14:45:00	1.26	1.03		1.02	0.85		-0.18	
15:00:00	1.75	0.86		1.23	0.88		-0.35	
15:15:00	0.96	0.91		1.23	0.87		-0.36	
15:30:00	1.49	1.06		1.36	0.96		-0.40	
15:45:00	1.32	0.68		1.36	0.91		-0.45	
16:00:00	1.32	0.79		1.37	0.86		-0.51	
16:15:00	1.53	0.85		1.32	0.86		-0.47	
16:30:00	1.26	0.99		1.38	0.87		-0.51	
16:45:00	1.22	0.51		1.33	0.76		-0.57	
17:00:00	1.35	0.87		1.34	0.80		-0.53	
17:15:00	1.72	0.98		1.42	0.84		-0.58	
17:30:00	1.19	0.73		1.35	0.82		-0.53	
17:45:00	1.64	0.79		1.42	0.78		-0.65	
18:00:00	0.81	0.83		1.34	0.84		-0.50	

Tuesday, January 31, 2023

Time		Turbidity (NTU)		Ro	olling Average Turbidity (Difference (NTU)		
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	0.76	1.14		0.80	1.15		0.34	
7:15:00	1.62	0.88		0.97	1.10		0.13	
7:30:00	0.75	1.05		0.97	1.11		0.14	
7:45:00	0.62	0.67		1.01	0.97		-0.03	
8:00:00	0.76	0.78		0.90	0.90		0.00	
8:15:00	0.63	0.79		0.88	0.83		-0.04	
8:30:00	0.79	0.69		0.71	0.80		0.09	
8:45:00	0.82	1.5		0.72	0.89		0.16	
9:00:00	3.16	0.93		1.23	0.94		-0.29	
9:15:00	1.11	0.86		1.30	0.95		-0.35	
9:30:00	0.89	0.78		1.35	0.95		-0.40	
9:45:00	1.36	0.84		1.47	0.98		-0.49	
10:00:00	1.42	1.51		1.59	0.98		-0.60	
10:15:00	1.32	0.92		1.22	0.98		-0.24	
10:30:00	0.97	0.69		1.19	0.95		-0.24	
10:45:00	1	1.23		1.21	1.04		-0.18	
11:00:00	1.14	1.21		1.17	1.11		-0.06	
11:15:00	1.03	1.31		1.09	1.07		-0.02	-
11:30:00	1.68	1.05		1.16	1.10		-0.07	
11:45:00	2.54	0.76		1.48	1.11		-0.37	
12:00:00	1.58	0.84		1.59	1.03	**	-0.56	
12:15:00	3.4	1.12		2.05	1.02		-1.03	
12:30:00	1.47	0.99		2.13	0.95		-1.18	
12:45:00	1.2	1.02		2.04	0.95		-1.09	
13:00:00	1.39	1.29		1.81	1.05		-0.76	
13:15:00	1.21	1.26		1.73	1.14		-0.60	
13:30:00	1.16	1.13		1.29	1.14		-0.15	
13:45:00	1.17	1.16		1.23	1.17		-0.05	
14:00:00	1.19	0.98		1.22	1.16	**	-0.06	
14:15:00	1.11	0.93		1.17	1.09		-0.08	
14:30:00	1.15	1.18		1.16	1.08		-0.08	
14:45:00	1.07	1.11		1.14	1.07		-0.07	
15:00:00	1.1	1.63		1.12	1.17		0.04	
15:15:00	1.26	1.34		1.14	1.24		0.10	
15:30:00	1.22	1.4		1.16	1.33		0.17	
15:45:00	1.16	1.6		1.16	1.42		0.25	
16:00:00	1.45	1.07	**	1.24	1.41		0.17	
16:15:00	1.53	0.84		1.32	1.25		-0.07	
16:30:00	1.16	1.43		1.30	1.27		-0.04	
16:45:00	1.54			1.37	1.24		-0.13	
17:00:00	1.23	1.07		1.38	1.10		-0.28	
17:15:00	1.22	3.09		1.34	1.61		0.27	
17:30:00		3.5		1.29	2.27		0.99	
17:45:00	1.42	3.34		1.35	2.75		1.40	
18:00:00	1.46	3.28		1.33	2.86		1.52	

Wednesday, February 1, 2023

Time		Turbidity (NTU)		Ro	lling Average Turbidity (N	Difference (NTU)		
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	1.99	2.33		2.05	2.77		0.73	
7:15:00	1.89	2.24		1.96	2.60		0.64	
7:30:00	2.04	2.32		1.95	2.45		0.50	
7:45:00	1.86	2.81		1.92	2.49		0.57	
8:00:00	2.11	2		1.98	2.34		0.36	
8:15:00	1.91	1.86		1.96	2.25		0.28	
8:30:00	1.93	1.95		1.97	2.19		0.22	
8:45:00	2.08	1.76		1.98	2.08		0.10	
9:00:00	1.92	2.39		1.99	1.99		0.00	
9:15:00	2.28	2.04		2.02	2.00		-0.02	
9:30:00	2.42	1.72		2.13	1.97		-0.15	
9:45:00	1.47	1.96		2.03	1.97		-0.06	
10:00:00	1.7	2.77		1.96	2.18		0.22	
10:15:00	1.79	4.73		1.93	2.64		0.71	
10:30:00	1.82	4.84		1.84	3.20		1.36	
10:45:00	1.61	4.51		1.68	3.76		2.08	
11:00:00	2.04	4.56		1.79	4.28		2.49	
11:15:00	1.46	3.43		1.74	4.41		2.67	
11:30:00		2.53		1.73	3.97		2.24	
11:45:00	1.71	2.9		1.71	3.59		1.88	
12:00:00	2.14	2.58		1.84	3.20		1.36	
12:15:00	1.38	3.6		1.67	3.01		1.34	
12:30:00	1.72	3.28		1.74	2.98		1.24	
12:45:00	1.73	3.26		1.74	3.12		1.39	
13:00:00	2.31	3.53		1.86	3.25		1.39	
13:15:00	1.75	3.91		1.78	3.52		1.74	
13:30:00	1.85	4.26		1.87	3.65		1.78	
13:45:00	1.6	3.5		1.85	3.69		1.84	
14:00:00	1.71	2.98		1.84	3.64		1.79	
14:15:00	1.93	4.27		1.77	3.78		2.02	
14:30:00	2.5	3.14		1.92	3.63		1.71	
14:45:00	3.11	2.41		2.17	3.26		1.09	
15:00:00	3.6	3.54		2.57	3.27		0.70	
15:15:00	3.28	4.45		2.88	3.56		0.68	
15:30:00	7.06	3.43		3.91	3.39		-0.52	
15:45:00	4.96	3.55		4.40	3.48		-0.93	
16:00:00	4.63	3.84		4.71	3.76		-0.94	
16:15:00	4.86	2.87		4.96	3.63		-1.33	
16:30:00	4.24	2.62		5.15	3.26		-1.89	
16:45:00	4.08	2.93		4.55	3.16		-1.39	
17:00:00	3.93	4.81		4.35	3.41		-0.93	
17:15:00	4.48	4.41	**	4.32	3.53		-0.79	
17:30:00	3.47	4.68		4.04	3.89		-0.15	
17:45:00	2.98	4.66		3.79	4.30		0.51	
18:00:00	3.21	4.64		3.61	4.64		1.03	

Thursday, February 2, 2023

Time		Turbidity (NTU)		Ro	lling Average Turbidity (Difference (NTU)		
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	3.39	4.35		2.61	4.17		1.56	
7:15:00	2.14	4.17		2.33	4.17		1.84	
7:30:00	2.45	4.59		2.37	4.25		1.88	
7:45:00	1.95	3.78		2.23	4.15		1.93	
8:00:00	1.76	3.87		2.34	4.15		1.81	
8:15:00	2.76	3.94		2.21	4.07		1.86	
8:30:00	2.34	3.39		2.25	3.91		1.66	
8:45:00	2.42	4.06		2.25	3.81		1.56	
9:00:00	1.94	4.26		2.24	3.90		1.66	
9:15:00	3.98	4.34		2.69	4.00		1.31	
9:30:00	1.94	4.3		2.52	4.07		1.55	
9:45:00	2.93	4.27		2.64	4.25		1.60	
10:00:00	1.98	3.89		2.55	4.21		1.66	
10:15:00	1.45	3.9		2.46	4.14		1.68	
10:30:00	2.04	4.98		2.07	4.27		2.20	
10:45:00	1.96	4.05		2.07	4.22		2.15	
11:00:00	1.77	3.64		1.84	4.09		2.25	
11:15:00	1.9	4.3		1.82	4.17		2.35	
11:30:00	1.79	3.76		1.89	4.15		2.25	
11:45:00	1.88	5.97		1.86	4.34		2.48	
12:00:00	2.06	5.97		1.88	4.73		2.85	
12:15:00	1.83	5.16		1.89	5.03		3.14	
12:30:00	1.69	6.14		1.85	5.40		3.55	
12:45:00	1.9	5.49		1.87	5.75		3.87	
13:00:00	1.72	5.62		1.84	5.68		3.84	
13:15:00	1.8	7.57		1.79	6.00		4.21	
13:30:00	1.85	6.83		1.79	6.33		4.54	
13:45:00	1.58	6.57		1.77	6.42		4.65	
14:00:00	2.15	6.24		1.82	6.57		4.75	
14:15:00	2.03	6.58		1.88	6.76		4.88	
14:30:00	2.06	5.84		1.93	6.41		4.48	
14:45:00	2.04	5.82		1.97	6.21		4.24	
15:00:00	2.88	5.49		2.23	5.99		3.76	
15:15:00	5.42	5.61		2.89	5.87		2.98	
15:30:00	8.49	5.52		4.18	5.66		1.48	
15:45:00	5.97	4.88		4.96	5.46		0.50	
16:00:00	5.29	4.69		5.61	5.24		-0.37	
16:15:00	5.42	4.72		6.12	5.08		-1.03	
16:30:00	5.61	5.3		6.16	5.02		-1.13	
16:45:00	5.17	4.99		5.49	4.92		-0.58	
17:00:00	6.92	4.72		5.68	4.88		-0.80	
17:15:00	5.97	4.56		5.82	4.86		-0.96	
17:30:00	5.69	5.12		5.87	4.94		-0.93	
17:45:00	4.67	4.87		5.68	4.85		-0.83	
18:00:00	5.11	5.14		5.67	4.88		-0.79	

Friday, February 3, 2023

Time		Turbidity (NTU)		Ro	lling Average Turbidity (N	Difference (NTU)		
	Ambient	3rd Street	Carroll Street	Ambient	3rd Street	Carroll Street	3rd St - Ambient	Carroll St - Ambient
7:00:00	1.97	3.35		2.52	3.46		0.93	
7:15:00	1.9	3.3		2.37	3.44		1.07	
7:30:00	2.13	3.24		2.36	3.43		1.07	
7:45:00	3.62	2.88		2.28	3.27		0.99	
8:00:00	2.07	3.36		2.34	3.23		0.89	
8:15:00	2.11	3.38		2.37	3.23		0.87	
8:30:00	3.18	3.92		2.62	3.36		0.73	
8:45:00	1.91	3.84		2.58	3.48		0.90	
9:00:00	2.61	4.34		2.38	3.77		1.39	
9:15:00	1.78	4.03		2.32	3.90		1.58	
9:30:00	1.91	4.54		2.28	4.13		1.86	
9:45:00	1.97	4.64		2.04	4.28		2.24	
10:00:00	2.02	4.72		2.06	4.45		2.40	
10:15:00	-	4.68		1.92	4.52		2.60	
10:30:00	2.03	4.8		1.98	4.68		2.69	
10:45:00	2.17	4.72		2.05	4.71		2.66	
11:00:00	2.12	4.57		2.09	4.70		2.61	
11:15:00	2.27	5.08		2.15	4.77		2.62	
11:30:00		4.92		2.15	4.82		2.67	
11:45:00	2.23	4.63		2.20	4.78		2.59	
12:00:00	2.26	5.09		2.22	4.86		2.64	
12:15:00	3.09	5		2.46	4.94		2.48	
12:30:00	3.84	5.32		2.86	4.99		2.14	
12:45:00	3.15	5.27		2.91	5.06		2.15	
13:00:00	3.27	5.8		3.12	5.30		2.17	
13:15:00	2.71	6.37		3.21	5.55		2.34	
13:30:00	3.1	6.53		3.21	5.86		2.64	
13:45:00	2.91	6.47		3.03	6.09		3.06	
14:00:00		6.42		3.00	6.32		3.32	
14:15:00	3.09	7.12		2.95	6.58		3.63	
14:30:00	4.03	7.72		3.28	6.85		3.57	
14:45:00	3.35	8.46		3.35	7.24		3.89	
15:00:00	2.99	8		3.37	7.54		4.18	
15:15:00	2.86	8.43		3.26	7.95		4.68	
15:30:00	3.06	8.45		3.26	8.21		4.95	
15:45:00	2.65	8.47		2.98	8.36		5.38	
16:00:00	3.32	8.65		2.98	8.40		5.42	
16:15:00	2.94	8.3		2.97	8.46		5.49	
16:30:00	2.89	8.1		2.97	8.39		5.42	
16:45:00	3.38	8.19		3.04	8.34		5.31	
17:00:00	3.52	7.72		3.21	8.19		4.98	
17:15:00	4.18	8.26		3.38	8.11		4.73	
17:30:00	3.23	7.83		3.44	8.02		4.58	
17:45:00	16.2	6.89		6.10	7.78		1.68	
18:00:00	6.44			6.71	7.68		0.96	