



MEMORANDUM

Proactive by Design	To:	Joseph Martella, RIDEM
	From:	Dave Rusczyk, GZA
	Cc:	Kenneth Lento, Rhode Island Energy
	Date:	September 22, 2022
GEOTECHNICAL ENVIRONMENTAL ECOLOGICAL WATER CONSTRUCTION MANAGEMENT	Re:	Site Response Action Report Period August 21, 2022 through September 3, 2022 Former Tidewater Facility Pawtucket, Rhode Island RIDEM Case No. 95-022 / Site Remediation File No. SR-26-0934

SITE ACTIVITIES PERFORMED

- As of the date of this Site Response Action Report, the source area excavations have been completed, the containment wall has been installed, and the engineered caps have been installed through-out the majority of the Site with the exception of two discrete areas: 1) in areas along Tidewater Street where the existing combined sewer outfall (CSO) is actively being relocated by the Narragansett Bay Commission (NBC); and 2) the central portion of the Site in the vicinity of the existing brick electrical substation control house building and the surrounding paved parking areas and driveways. Completion of the engineered cap in the first area is dependent on completion of the new NBC diversion structure and related activities, which is currently ongoing and anticipated to be completed in December 2022. The engineered cap in the vicinity of the second area is dependent upon the moving of the electrical equipment from the existing brick substation control house building adjacent to this area and then the demolition of the brick building. The installation of electrical equipment into the newly constructed control house is currently ongoing but will not be completed until spring of 2023. The demolition of the brick building is not likely to occur until late summer/early fall of 2023.
- Perimeter air monitoring was performed between August 21, 2022 and September 2, 2022 with 9 air monitoring stations (4 solar powered units located proximate to the river and 5 electrically powered units). On August 30, 2022, the Rhode Island Department of Environmental Management (RIDEM) approved the reduction of the number of air monitoring stations from 9 to 4 since installation of the engineered controls has been completed across the majority of the Site and impacted soil disturbance activities were limited currently to the northwestern portion of the Site proximate to NBC's CSO upgrade activities. The remaining 4 electrically powered air monitoring stations are located in the northwestern portion of the Site proximate to NBC's work area.

The stations measured and recorded respirable dust and total volatile organic compounds (TVOC) concentrations continuously 24 hours per day/7 days per week with the following exceptions:

- The battery in Station 4 failed in the afternoon of August 22, 2022. The battery was replaced the next day (August 23, 2022).
- The calibration gas within Station 1 ran out on Sunday, August 28, 2022. The calibration gas was replaced on Monday, August 29, 2022.



Communication between the air monitoring stations and the control system was shutdown on mid-day on September 2, 2022 to complete software upgrades. Site work was completed mid-day on September 2, 2022 in advance of the Labor Day weekend.

As indicated in the attached weekly perimeter air monitoring graphs, no exceedances of the total volatile organic compound (0.5 ppmv) and respirable dust (150 μ g/m³) perimeter threshold levels were observed during the monitoring period covered by this report with the exception of the following:

- An isolated elevated total volatile organic compound (TVOC) concentration above the 15-minute sustained perimeter threshold level was observed at Station 10 on August 22, 2022 at 6:15 am. The isolated elevated TVOC level was attributed to the start-up of a piece of equipment staged proximate to the station.
- Repeated isolated elevated spikes in TVOC concentrations above the 15-minute sustained perimeter threshold level were observed at Station 10 on August 30, August 31, and September 3, 2022. These TVOC concentration spikes were detected between 10 and 12 pm. No work was being performed at these times and the source of the isolated elevated TVOC concentration is unclear.
- GZA collected ambient air samples from upwind and downwind locations on August 25, 2022 and September 2, 2022 for laboratory analysis for benzene, toluene, ethylbenzene, xylenes, and naphthalene. The analytical results from these samples indicated there were no exceedances of the project action levels. The analytical results were posted to the project website and the bulletin boards at the ends of Tidewater Street and Bowles Court and are also attached to this report.

ANTICIPATED SITE ACTIVITIES TO BE PERFORMED WITHIN NEXT 2 WEEKS

- Completion of the plantings within the 25-foot buffer.
- Completion of the installation of fencing and railing system on the balance of the containment wall.

Please contact Kenneth Lento at 781-907-3655 if you have any questions or comments.

Attachments:

Weekly Perimeter Air Monitoring Results Air Monitoring Station Locations Weekly Ambient Air Sampling Results

Prepared by Rhode Island Energy for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Respirable Dust



Prepared by Rhode Island Energy for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Respirable Dust



Prepared by Rhode Island Energy for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Total Volatile Organic Compounds



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Prepared for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Respirable Dust



Prepared for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Respirable Dust



Prepared for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Total Volatile Organic Compounds



Prepared for the Businesses and Residents Located Near the Former Tidewater Facility Air Quality Monitoring - Total Volatile Organic Compounds





Sample Date	Compounds					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	
	(ppb v/v)					
12-3-20 UP STREAM	0.13	0.22	0.079	0.054	< 0.5	
12-3-20 DOWN STREAM	0.13	0.2	0.073	0.05	< 0.5	
12-10-20 UP STREAM	0.25	0.23	< 0.2	0.14	< 0.5	
12-10-20 DOWN STREAM	0.17	0.2	< 0.2	< 0.7	< 0.5	
12-16-20 UP STREAM	0.19	0.2	0.083	0.12	< 0.5	
12-16-20 DOWN STREAM	0.13	0.16	0.078	0.094	< 0.5	
12-23-20 UP STREAM	0.15	0.16	< 0.2	0.1	< 0.5	
12-23-20 DOWN STREAM	0.13	0.11	< 0.2	< 0.7	< 0.5	
12-30-20 UP STREAM	0.21	0.22	< 0.2	< 0.7	< 0.5	
12-30-20 DOWN STREAM	0.089	< 0.2	< 0.2	< 0.7	< 0.5	
1/7/21 UP STREAM	0.29	1.5	0.22	2.1	< 0.5	
1/7/21 DOWN STREAM	0.16	0.27	0.086	0.42	< 0.5	
1/14/21 UP STREAM	0.43	0.44	< 0.2	0.23	< 0.5	
1/14/21 DOWN STREAM	0.4	0.52	0.076	0.3	< 0.5	
1-21-21 UPSTREAM	0.15	0.28	0.1	< 0.7	0.24	
1-21-21 DOWNSTREAM	0.18	0.23	0.11	0.1	< 0.5	
1-28-21 UPSTREAM	0.21	0.19	< 0.2	< 0.7	< 0.5	
1-28-21 DOWNSTREAM	0.21	0.17	< 0.2	< 0.7	< 0.5	
2-4-21 UPSTREAM	0.2	1.1	0.23	1.4	0.18	
2-4-21 DOWNSTREAM	0.23	0.29	0.26	0.29	< 1.1	
2-11-21 LIPSTREAM	0.19	0.12	< 0.2	< 0.7	< 0.5	
2-11-21 DOWNSTRFAM	0.13	< 0.2	< 0.2	< 0.7	< 0.5	
2-18-21 LIPSTREAM	0.46	2.8	0.11	0.25	< 0.5	
2-18-21 DOW/NSTRFAM	0.40	0.42	0.13	0.25	< 0.5	
2-25-21 LIPSTREAM	< 0.2	0.42	< 0.2	0.45	< 0.5	
2-25-21 DOWNSTREAM	0.13	< 0.2	0.081	0.10	< 0.5	
3-4-21 UPSTRFAM	0.15	0.21	< 0.2	0.18	0.27	
3-4-21 DOWNSTREAM	0.15	0.12	< 0.2	0.16	< 0.5	
3-11-21 LIPSTREAM	0.15	0.12	< 0.2	0.23	0.3	
3-11-21 DOW/NSTREAM	0.18	0.22	0.2	1.0	< 0.5	
3-18-21 DOWNSTREAM	0.10	1.6	0.25	0.67	< 0.5	
3-25-21 LIPSTREAM	0.44	0.32	0.15	0:07 // 1	0.53	
3-25-21 DOW/NSTREAM	0.17	0.52	0.85	0.57	0.55	
7-1-21 LIPSTREAM	0.33	0.07	6.10	< 0.7	< 0.27	
	0.22	0.11	< 0.2	< 0.7	< 0.5	
4-8-21 LIDSTREAM	0.12	0.11	1.5	8.0	< 0.5	
4-8-21 DOW/NSTREAM	0.030	0.12	0.086	0.38	0.9	
	0.000	0.14	0.000	0.30	< 0.5	
4-15-21 OF STREAM	0.85	0.37	0.1	1 20	< 0.5	
4-22-21 LIDSTREAM	0.11	< 0.2	< 0.2	< 0.7	< 0.5	
	0.11	0.16	< 0.2	< 0.7	< 0.5	
	0.11	0.10	0.2	0.22	0.5	
	0.14	0.34	0.11	0.32	0.20	
	0.19	0.35	0.11 < 0.2	0.37	0.27	
	0.080	0.15	0.2	0.60	0.56	
	1.0	0.4	0.21	0.09	0.3	
	< 0.2	0.30	< 0.2	0.19	0.34	
	0.12	<u> </u>	< 0.2	< 0.7	< 0.5	
	0.36	2.5	<u>\U.2</u>	1 40	< 0.5	
Drojost Action Louds	6.10	0.50	0.5	1.40	× 0.5	
Project Action Levels	0.2	80	230	25	20	

Sample Date	Compounds					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	
			(ppb v/v)			
5-27-21 UPSTREAM	0.095	0.12	0.45	2.10	0.4	
5-27-21 DOWNSTREAM	0.075	0.094	< 0.2	< 0.7	< 0.5	
6-3-21 UPSTREAM	< 0.2	0.16	< 0.2	< 0.7	< 0.5	
6-3-21 DOWNSTREAM	0.075	0.11	< 0.2	< 0.7	< 0.5	
6-10-21 UPSTREAM	< 0.2	< 0.2	< 0.2	< 0.7	< 0.5	
6-10-21 DOWNSTREAM	< 0.2	< 0.2	< 0.2	< 0.7	< 0.5	
6-17-21 UPSTREAM	0.64	0.6	0.48	0.66	0.64	
6-17-21 DOWNSTREAM	0.12	0.12	0.16	< 0.7	< 0.5	
6-24-21 UPSTREAM	< 0.2	0.17	< 0.2	< 0.7	< 0.5	
	< 0.2	0.45	0.19	0.82	< 0.5	
	1.10	7.9	0.12	0.39	< 0.7	
	0.13	0.74	< 0.2	0.29	0.7	
7-8-21 OPSTREAM	< 0.2	0.29	< 0.2	0.38	0.29	
7-15-21 LIDSTREAM	0.2	0.2	< 0.2	0.32	< 0.5	
7-15-21 DOM/NSTREAM	0.10	0.28	0.2	1.5	< 0.5	
7-13-21 DOWNSTREAM	0.14	0.37	< 0.2	< 0.7	< 0.5	
7-22-21 DOW/NSTREAM	0.27	0.3	< 0.2	< 0.7	< 0.5	
7-29-21 UPSTRFAM	0.30	0.35	0.1	0.56	0.19	
7-29-21 DOWNSTREAM	0.099	0.20	< 0.2	< 0.7	< 0.5	
8-5-21 UPSTRFAM	0.70	1.2	< 0.2	0.17	< 0.5	
8-5-21 DOWNSTREAM	0.310	0.53	< 0.25	< 0.88	< 0.63	
8-12-21 UPSTREAM	0.19	0.18	< 0.2	< 0.7	0.2	
8-12-21 DOWNSTREAM	1.2	0.7	< 0.2	0.31	< 0.5	
8-19-21 UPSTREAM	0.66	6.2	1.2	3.50	< 1.6	
8-19-21 DOWNSTREAM	0.21	0.24	< 0.2	0.11	< 0.5	
8-26-21 UPSTREAM	0.34	0.73	0.22	0.90	0.18	
8-26-21 DOWNSTREAM	0.34	0.63	0.24	0.87	0.31	
9-1-21 UPSTREAM	0.17	0.34	< 0.2	< 0.7	< 0.5	
9-1-21 DOWNSTREAM	0.18	0.35	< 0.2	0.19	< 0.5	
9-9-21 UPSTREAM	0.12	0.22	< 0.2	0.28	< 0.5	
9-9-21 DOWNSTREAM	< 0.2	0.89	< 0.2	< 0.7	0.42	
9-16-21 UPSTREAM	0.14	0.26	0.11	0.31	0.3	
9-16-21 DOWNSTREAM	0.11	0.26	< 0.2	0.28	< 0.5	
9-23-21 UPSTREAM	< 0.2	0.12	< 0.2	< 0.7	< 0.5	
9-23-21 DOWNSTREAM	< 0.2	0.12	< 0.2	< 0.7	< 0.5	
9-30-21 UPSTREAM	0.17	0.37	0.23	0.66	< 0.51	
9-30-21 DOWNSTREAM	0.086	0.21	< 0.2	< 0.7	< 0.5	
10-7-21 UPSTREAM	0.24	0.55	0.14	0.41	< 0.5	
10-7-21 DOWNSTREAM	< 0.2	0.42	0.11	0.16	< 0.5	
10-14-21 UPSTREAM	0.19	0.40	< 0.2	< 0.7	< 0.5	
10-14-21 DOWNSTREAM	0.34	0.89	0.23	0.75	< 0.5	
10-22-21 UPWIND	0.14	0.32	< 0.2	< 0.7	< 0.5	
10-22-21 DOWNWIND	0.13	0.39	< 0.2	0.43	< 0.5	
10-28-21 UPWIND	0.41	0.14	0.46	0.10	< 0.5	
10-28-21 DOWNWIND	0.18	0.43	< 0.2	< 0.70	< 0.5	
11-4-2021 OPWIND	0.20	0.31	< 0.2	< 0.70	< 0.5	
	0.14	0.23	0.2	0.7	< U.5 0.25	
	0.23	0.43	0.17	0.51	0.55	
11-18-21 DOWNWIND	0.31	0.09	<0.10 <0.2	< 0.50	< 0.5	
11-18-2021 LIP\//IND	0.14	0.23	0.2	0.26	21	
11-23-21 DOW/NW/IND	0.23	0.34	<pre>0.32</pre>	0.20	2.4	
11-23-21 LIPW/IND	0.13	10	<0.2	0.33	0.3	
12-02-21 DOWNWIND	0.27	0.82	0.22	1.0	0.95	
12-02-21 UPWIND	0.36	0.67	< 0.2	0.42	< 0.5	
12-9-21 DOWNWIND	0.17	0.27	< 0.2	< 0.7	< 0.5	
12-9-21 UPWIND	0.18	0.39	0.13	0.43	< 0.5	
Project Action Levels	6.2	80	230	23	20	

Sample Date	Compounds					
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	
			(ppb v/v)			
12-16-21 DOWNWIND	0.15	0.21	< 0.2	0.38	0.89	
12-16-21 UPWIND	0.13	0.16	< 0.2	< 0.7	< 0.5	
12-22-21 DOWNWIND	0.27	0.39	< 0.2	< 0.7	< 0.5	
12-22-21 UPWIND	0.29	0.47	0.12	< 0.5	< 0.5	
12-29-21 DOW/NW/IND	0.19	0.28	0.19	1.0	< 0.5	
01-05-2022 LIPWIND	0.20	0.35	0.15	0.38	0.2	
01-05-2022 DOWNWIND	0.20	1.10	0.14	0.5	0.71	
1-13-22 UPWIND	0.49	0.91	0.15	0.59	< 0.5	
1-13-22 DOWNWIND	0.83	1.40	0.19	0.79	< 0.5	
1-20-22 DOWNWIND	0.18	0.32	0.11	0.34	0.17	
1-20-22 UPWIND	0.14	1.40	< 0.2	< 0.7	<0.5	
UPWIND 012722	0.24	0.26	< 0.2	< 0.7	< 0.5	
DOWNWIND 012722	0.30	1.0	< 0.2	0.4	< 0.5	
2/3/22 UPWIND	0.27	0.50	0.1	0.28	< 0.5	
2/3/22 DOWNWIND	0.30	0.49	0.12	0.46	0.22	
2-10-22 UPWIND	0.17	0.27	< 0.2	< 0.7	< 0.5	
2-10-22 DOWNWIND	0.19	0.22	< 0.2	< 0.7	< 0.5	
2-17-22 UPWIND	< 0.2	0.11	< 0.2	< 0.7	< 0.5	
2-17-22 DOWNWIND	0.18	0.66	0.26	1.5	1.1	
2-24-22 UPWIND	< 0.2	0.11	< 0.2	< 0.7	0.17	
2-24-22 DOWNWIND	< 0.2 0.11	< 0.2	< 0.2	< 0.7	< 0.5	
2-02-22 DOWNWIND	0.11	< 0.2	< 0.2	< 0.7	< 0.5	
3-10-22 LIDWIND	0.14	0.31	0.13	0.7	0.5	
3-10-22 DOWNWIND	0.10	0.18	< 0.2	< 0.7	< 0.5	
3-17-22 UPWIND	0.22	0.61	0.14	0.49	< 0.5	
3-17-22 DOWNWIND	0.19	0.25	< 0.2	0.12	< 0.5	
3-24-22 UPWIND	0.18	< 0.3	< 0.3	< 1.1	< 0.75	
3-24-22 DOWNWIND	< 0.2	< 0.2	< 0.2	< 0.7	< 0.5	
3-31-22 UPWIND	0.14	0.22	< 0.2	< 0.7	< 0.5	
3-31-22 DOWNWIND	0.17	0.37	0.12	0.40	< 0.5	
4-7-22 UPWIND	0.11	0.16	< 0.2	< 0.7	< 0.5	
4-7-22 DOWNWIND	0.15	0.24	< 0.2	< 0.7	< 0.5	
4-15-22 UPWIND	0.13	0.29	< 0.2	0.095	< 0.5	
4-15-22 DOWNWIND	0.095	0.19	0.1	< 0.7	< 0.5	
4-20-22 UPWIND	0.19	0.22	0.13	0.42	< 0.5	
4-20-22 DOWNWIND	0.13	0.14	< 0.2	< 0.7	0.18	
4-26-22 UPWIND	< 0.2	< 0.2	< 0.2	< 0.7	< 0.5	
	0.22	0.13	< 0.2	< 0.7	< 0.5	
5-4-22 OP WIND	0.11	0.22	< 0.5	< 0.7	< 0.5	
5-12-22 UPWIND	<0.11	0.24	<0.5	< 0.7	< 0.5	
5-12-22 DOWNWIND	< 0.21	0.10	< 0.21	< 0.75	< 0.54	
5-19-22 UPWIND	0.13	0.63	< 0.2	< 0.7	0.18	
5-19-22 DOWNWIND	0.15	0.30	< 0.2	< 0.7	< 0.5	
5-26-22 UPWIND	0.14	0.14	< 0.2	< 0.7	< 0.5	
5-26-22 DOWNWIND	< 0.2	0.12	< 0.2	< 0.7	< 0.5	
6/2/22 DOWNWIND	0.074	0.17	< 0.2	< 0.7	0.26	
6/2/22 UPWIND	< 0.2	0.14	< 0.2	< 0.7	< 0.5	
6-10-22 UPWIND	0.17	0.31	< 0.2	< 0.7	< 0.5	
6-10-22 DOWNWIND	0.25	0.61	< 0.2	< 0.7	< 0.5	
6-16-22 UPWIND	0.43	1.20	< 0.2	< 0.7	< 0.5	
6-16-22 DOWNWIND	< 0.2	0.13	< 0.2	< 0.7	< 0.5	
6-23-22 UPSTREAM	< 0.2	< 0.2	< 0.2	< 0.7	0.19	
6-23-22 DUWNSTREAM	0.16	0.72	< 0.2	0.31	< 0.5	
	< U.Z	0.17	< 0.2	< 0.7	0.2	
	0.12	0.24	< 0.2	< 0.7	< 0.5	
7-7-22 DOWIND	0.077	0.29	<0.2	0.7	< 0.5	
Project Action Levels	6.2	80	230	23	20	

Sample Date	Compounds				
	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene
	(ppb v/v)				
7-14-22 UPWIND	< 0.2	0.35	< 0.2	< 0.7	< 0.5
7-14-22 DOWNWIND	0.10	0.22	< 0.2	< 0.7	< 0.5
7-21-22 UPWIND	0.14	0.21	< 0.2	< 0.7	0.33
7-21-22 DOWNWIND	1.0	2.5	0.48	1.9	< 0.3
7-28-22 UPWIND	0.087	0.15	< 0.2	< 0.7	< 0.5
7-28-22 DOWNWIND	0.13	0.23	< 0.2	< 0.7	< 0.5
8-4-22 UPWIND	0.13	0.31	< 0.2	< 0.7	< 0.5
8-4-22 DOWNWIND	0.17	0.26	0.13	< 0.7	0.3
8-11-22 UPWIND	0.22	0.33	0.10	0.34	< 0.5
8-11-22 DOWNWIND	0.37	0.30	0.11	0.17	< 0.5
8-19-22 UPWIND	< 0.20	0.22	< 0.20	0.36	< 0.5
8-19-22 DOWNWIND	0.11	0.45	< 0.20	0.29	< 0.5
8-25-22 Downwind	0.09	0.44	< 0.2	< 0.7	< 0.5
8-25-22 Upwind	0.29	0.47	< 0.2	< 0.7	< 0.5
9-2-22 Upwind	< 0.2	0.15	< 0.2	< 0.7	< 0.5
9-2-22 Downwind	0.35	0.34	< 0.2	< 0.7	< 0.5
Project Action Levels	6.2	80	230	23	20

Notes:

1. The Project Action Levels are consistent with the Air Quality Monitoring Plan developed for the Site.

2. Air samples are collected in stainless steel summa canisters over an approximately 8-hour period.

3. Air samples are analyzed by EuroFins TestAmerica of Burlington, VT.

4. Results and action levels are listed in parts per billion volume/volume (ppb v/v).

5. An upstream ambient air sample was not collected on March 18, 2021 due to a problem with the sampling equipment.