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Chelsea, Massachusetts
Weston & Sampson Project No. ENG22-0433

December 29, 2022

Todd J. Borci, SEW
Office of Environmental Stewardship
U.S. EPA New England
5 Post Office Square
Suite 100 (OES 04-4)
Boston, Massachusetts 02109-3912

Re: Chelsea, Massachusetts (Docket No. 09-008) – 2022 Stormwater Outfall Monitoring

Dear Mr. Borci,

On behalf of the City of Chelsea, Massachusetts, Weston & Sampson is submitting this letter report to summarize work completed under the Environmental Protection Agency's (EPA's) above referenced Administrative Order (AO). In accordance with the AO, work includes inspecting and, where applicable, sampling known city-owned stormwater outfalls and inter-municipal connections during one dry-weather period and one wet-weather period between June 1st and September 1st. Due to weather and tide conditions in 2022, the wet-weather sampling was not able to be completed prior to the September 1st deadline. An extension was requested by the City on August 31, 2022, via email and formally granted by EPA on August 31, 2022, via email.

Outfall Monitoring

A total of 24[1,2] outfalls owned or operated by the City of Chelsea were included in the 2022 outfall monitoring program. All these outfalls have been previously located in the field. A current map of the outfall locations is included at the end of this report. The 2022 monitoring consisted of locating and photographing each outfall (assuming they could be accessed), and, if the outfall was found to be flowing, documenting the estimated quantity of flow (gallons per minute) and visual characteristics of the flow (presence or absence of odor, color, turbidity, floatables and solids). For each outfall observed to be flowing, samples were collected by Weston & Sampson and City staff and analyzed by a contract laboratory for Ammonia-Nitrogen, Escherichia Coliform (E. coli), Enterococcus, and Surfactants. In 2022, samples were also analyzed onsite for temperature, salinity, and conductance with an Oakton PCTSTestr 50 Waterproof Pocket pH/Cond/TDS/Salinity Tester, and total chlorine was determined using and a Hach Colorimeter rented from Palms Environmental. Samples were collected/analyzed in accordance with EPA-approved methods (40 CFR 136).

Dry Weather
The 2022 round of dry-weather monitoring was completed by Weston & Sampson on August 2, 2022. No measurable precipitation was recorded during the 48 hours prior to the work[3]. A total of 20[2] outfalls (or upstream manholes) were successfully monitored during the dry-weather round. A total

[1] Beacham & Market (IE-3) and Beacham & Market (IE-5) (2 of these 24 outfalls) were recently abandoned as part of the *City of Chelsea, Massachusetts, Beacham Street and Williams Street Utility and Roadway Improvements* and these were not included in the wet-weather monitoring this year and will not be included for monitoring in continuing years.
[2] Though recently abandoned, Beacham & Market (IE-3) and Beacham & Market (IE-5) outfalls were sampled by mistake during dry-weather, their results are included in this report.
[3] Precipitation data collected from www.wunderground.com

dry-weather and showed slightly elevated counts for bacteria parameters. This year (2022) it could not be accessed.

- Four of the 22 outfalls have shown concentrations of ammonia, bacteria, and/or surfactants above the benchmark criteria during some dry- and wet-weather sampling rounds (Clark Avenue, Locke Street 24-inch, Locke Street 12-inch and Route 1 Ramp)
- 16 of the 22 outfalls have shown concentrations of ammonia, bacteria, or surfactants above the benchmark criteria during virtually all dry- and wet-weather sampling rounds completed to date.

Based on prior years of outfall monitoring, Chelsea developed and implemented an Illicit Discharge Detection and Elimination (IDDE) Program to address the outfalls with concentrations exceeding benchmark criteria. The status of on-going IDDE investigation efforts is summarized in Table 4, included at the end of this report.

Inter-municipal Connections

As required by the EPA, in 2009 the City of Chelsea began including connections between their drainage system and that of other municipalities in its outfall monitoring program. Five connection points have been identified and confirmed in the field, all of which are discharges from the City of Everett to the City of Chelsea. During the 2022 monitoring rounds, all five connections were observed and sampled. Data are presented in Table 5, included at the end of this report.

A review of inter-municipal connection sampling results from 2009 through 2022 was also completed and is presented in Table 6. Data since 2009 indicate that stormwater being discharged to the Chelsea drainage system from Everett had concentrations of ammonia-nitrogen, bacteria, and/or surfactants in excess of benchmarks at five out of five locations.

Chelsea is committed to improving the water quality in the Mystic River Watershed and, in turn, to the identification, investigation and remediation of pollutant sources to the extent practicable. Should you have questions regarding Chelsea's continued efforts, or this report, please do not hesitate to contact me at 978-532-1900 or toscanol@wseinc.com.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Laurie Toscano

Laurie Toscano
Team Leader

Tables 1 through 6

Appendix A: Dry-Weather Inspection & Laboratory Reports
Appendix B: Wet-Weather Inspection & Laboratory Reports
Outfall Map

cc via email: Susannah King, Massachusetts Department of Environmental Protection
Cate Fox-Lent, Department of Public Works Commissioner
Shavaun Callahan, D3 Primary Drinking Water Operator/Assistant WSD Superintendent (Compliance and Asset Management)

of four outfalls could not be monitored (three outfalls in proximity to one another were not monitored due to the inability for the team to access the area due to a locked fence; one other outfall (Route 1 ramp) also could not be accessed because no police detail was available). Discharges were observed and sampled at 14 of the 20 accessed outfalls. Results of the dry-weather monitoring are summarized in Table 1, located at the end of this report. Individual outfall inspection reports and laboratory reports for the dry-weather round are provided in Appendix A. Sampling results are discussed in detail below.

Wet Weather

The 2022 round of wet-weather monitoring was completed by Weston & Sampson on October 14, 2022. A total of 0.45 inches of rain was recorded that morning[3], and there were no snow impacts. A total of 18 outfalls (or upstream manholes) were successfully monitored during the wet-weather round. As with the dry-weather round, four outfalls could not be accessed (Fenno & Columbus SW, Fenno & Columbus 12", Fenno & Columbus 6", and Route 1 Ramp). The two Beacham & Market outfalls (IE-3 and IE-5) were not monitored during wet-weather due to recent abandonment. Discharges were observed and sampled at 15 of the 18 outfalls that could be accessed for monitoring. The remaining three outfalls were not sampled due to submerged outfall conditions. The results of the wet-weather monitoring are summarized in Table 2, located at the end of this report. Individual outfall inspection reports and laboratory reports for the wet-weather round are provided in Appendix B. Sampling results are discussed below.

Summary of Results

Based on information supplied by the EPA for this project, the following criteria were used to evaluate the results of the sampling:

Parameter	Detection Limit	Benchmark
Ammonia-Nitrogen	0.10 mg/L	0.5 mg/L
Escherichia Coliform	10 cfu/100mL	235 cfu/100mL
Enterococcus	10 MPN/100mL	104 cfu/100mL
Surfactants	0.1 mg/L	0.25 mg/L
Temperature	1 ^{o}F	Report
Total Chlorine	0.01 mg/L	Report

These "benchmark" criteria are used to assess whether a contaminant concentration is above Federal or State Water Quality standards or, in the absence of a regulatory standard, industry-accepted concentrations based on typical characteristics of surface water and wastewater. High concentrations of ammonia are typically found in wastewater, and abnormal chlorine, temperature, or specific conductance also indicates the potential influence of wastewater. Escherichia Coliform and Enterococcus are indicators of contamination from the excrement of humans, with Enterococcus primarily used for salt waters. High concentrations of surfactants generally indicate the presence of detergents, such as from clothing or car washing.

Discussion regarding the results of sampling is presented below.

2022 Dry-Weather: A total of 14 out of 24 municipal outfalls (including the two on Beacham that were recently abandoned) had flow and were sampled in the 2022 dry-weather round. Based on a comparison of the dry-weather sampling results (Table 1) with the benchmark criteria discussed above, the following was observed:

- Four (4) outfalls were not inspected due to inaccessibility.

- Six (6) outfalls were either submerged, had insufficient or no flow present during dry-weather monitoring.
- Eleven (11) outfalls showed E.coli concentrations in excess of the benchmark criteria.
- Seven (7) outfalls showed Enterococcus was present in excess of the benchmark value during dry-weather monitoring.
- One (1) outfall showed surfactant concentrations in excess of the benchmark criteria.
- Zero (0) outfalls showed ammonia concentrations in excess of the benchmark criteria.

2022 Wet-Weather: A total of 16 out of 22 municipal outfalls (excluding the two on Beacham that were recently abandoned) had flow and were sampled during the 2022 wet-weather round. Based on a comparison of the wet-weather sampling results (Table 2) with the benchmark criteria discussed above, the following was observed:

- Four (4) outfalls were not observed due to inaccessibility.
- Three (3) outfalls had insufficient or no flow present during wet-weather monitoring.
- Fifteen (15) outfalls showed E. coli concentrations in excess of the benchmark criteria.
- Fifteen (15) outfalls showed Enterococcus was present in excess of the benchmark value during wet-weather monitoring.
- One (1) outfall showed a surfactant concentration in excess of the benchmark criteria.
- Zero (0) outfalls showed ammonia concentrations in excess of the benchmark criteria.

A cumulative review of all sample results from 2006 through 2022 was also completed and is presented in Table 3, located at the end of this report. The number and accessibility of outfalls has varied since 2006 as noted.

2006 - 2022 Dry Weather:

- One of the 22 outfalls has exceeded benchmark criteria for ammonia, bacteria, and/or surfactants no more than two times (Crescent Avenue).
- 19 of the 22 outfalls have shown concentrations of ammonia, bacteria, and/or surfactants above the benchmark criteria during multiple dry-weather sampling rounds.

2006 - 2022 Wet Weather:

- One of the 22 outfalls has shown concentrations of ammonia, bacteria, and/or surfactants above the benchmark criteria no more than two times (Fenno/Columbus 12-inch). The Fenno & Columbus 12-inch outfall was unable to be sampled in either dry-weather or wet-weather events for three years prior and could not be accessed again this year (2022).
- 20 of the 22 outfalls have shown concentrations of ammonia, bacteria, and/or surfactants above the benchmark criteria during multiple wet-weather sampling rounds.

2006 - 2022 General:

- One of the (remaining) 22 outfalls has not had flow during any sampling rounds completed at the outfall to date (Fenno/Columbus 6-inch). Additionally, the Fenno/Columbus 6-inch outfall was unable to be sampled in either dry-weather or wet-weather events for four years and was could not be accessed this year (2022).
- One of the 22 outfalls has shown concentrations of ammonia, bacteria, or surfactants above the benchmark criteria during primarily wet-weather rounds completed to date (Fenno/Columbus SW). However, Fenno/Columbus SW was unable to be sampled in either dry-weather and wet-weather for three years prior. Last year (2021) it was only flowing during

dry-weather and showed slightly elevated counts for bacteria parameters. This year (2022) it could not be accessed.

- Four of the 22 outfalls have shown concentrations of ammonia, bacteria, and/or surfactants above the benchmark criteria during some dry- and wet-weather sampling rounds (Clark Avenue, Locke Street 24-inch, Locke Street 12-inch and Route 1 Ramp)
- 16 of the 22 outfalls have shown concentrations of ammonia, bacteria, or surfactants above the benchmark criteria during virtually all dry- and wet-weather sampling rounds completed to date.

Based on prior years of outfall monitoring, Chelsea developed and implemented an Illicit Discharge Detection and Elimination (IDDE) Program to address the outfalls with concentrations exceeding benchmark criteria. The status of on-going IDDE investigation efforts is summarized in Table 4, included at the end of this report.

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As required by the EPA, in 2009 the City of Chelsea began including connections between their drainage system and that of other municipalities in its outfall monitoring program. Five connection points have been identified and confirmed in the field, all of which are discharges from the City of Everett to the City of Chelsea. During the 2022 monitoring rounds, all five connections were observed and sampled. Data are presented in Table 5, included at the end of this report.

A review of inter-municipal connection sampling results from 2009 through 2022 was also completed and is presented in Table 6. Data since 2009 indicate that stormwater being discharged to the Chelsea drainage system from Everett had concentrations of ammonia-nitrogen, bacteria, and/or surfactants in excess of benchmarks at five out of five locations.

Chelsea is committed to improving the water quality in the Mystic River Watershed and, in turn, to the identification, investigation and remediation of pollutant sources to the extent practicable. Should you have questions regarding Chelsea's continued efforts, or this report, please do not hesitate to contact me at 978-532-1900 or toscanol@wseinc.com.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.

Laurie Toscano

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cc via email: Susannah King, Massachusetts Department of Environmental Protection
Cate Fox-Lent, Department of Public Works Commissioner
Shavaun Callahan, D3 Primary Drinking Water Operator/Assistant WSD Superintendent (Compliance and Asset Management)

Table 1
Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Date of Sampling: 8/2/2022
Time of Low Tide: 9:09 AM
Date/Amount of Last Precipitation: 8/1/2022 0.01 in

Outfall Information				Inspection Information									Sampling Information									
Location	Dia. (in)	Pipe Mat.	Description of Outfall Location	Inspectors/ Samplers	Time Inspected	Inspection Observations	Flow (gpm)	Odor	Color	Turbidity	Floatables	Solids	Time Sampled	Time Analyzed	Temp (°F)	Chlorine (mg/l)	Ecoli (cfu/ 100ml)	Entero. (MPN/ 100mL)	Ammonia-Nitrogen (mg/l)	Surfact. (mg/l)	Conductivity (mS/cm)	Salinity (ppt)
Beacham & Market (IE-3)	12	CMP	IE-3 is on west bank beside large culverts (left side when facing outfalls).	RLM	8:20 AM	None	3	None	None	None	None	None	8:20 AM	8:23 AM	73.2	0.00	**1300**	31	0.10	<0.05	OR**	OR**
Beacham & Market (IE-5)	12	CMP	IE-5 is on east bank beside large culverts (right side when facing outfalls).	RLM	8:25 AM	None	5	None	None	None	None	None	8:25 AM	8:28 AM	73.0	0.00	**579**	<10	0.10	0.06	OR**	OR**
Broadway CHE002	30	RCP	Discharges in NW wall of Chelsea Yacht Club; below green CSO sign.	RLM	10:16 AM	None	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Broadway & Mill Creek	18	RCP	Off side of bridge; downstream side.	CLR	9:54 AM	Bubbles at the bottom of flow from outfall; possible soap	<1	None	None	None	None	None	9:54 AM	9:57 AM	81.3	**0.33**	**1414**	**183**	0.31	0.11	OR**	OR**
CHE-008	48	RCP	Access through Gulf Oil. Must be sampled at dead low tide.	RLM	9:13 AM	White milky color	10	None	White-ish	None	None	None	9:13 AM	9:16 AM	72.0	0.00	**1046**	**203**	**1.92**	0.09	6.65	3.60
Clark Ave	15	CPE	Behind Walgreens.	CLR	8:22 AM	None	<1	None	None	None	None	None	8:22 AM	8:25 AM	72.8	**0.09**	**1553**	**1660**	0.45	0.12	OR**	OR**
Commandant's Way	84	RCP	At Yatch Club; in large concrete vault; 2-60" tidegates.	RLM	9:53 AM	Too little flow to sample	2	None	None	None	None	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crescent Ave	12	RCP	Thru housing authority.	CLR	8:38 AM	None	2-3	None	None	None	None	None	8:38 AM	8:41 AM	69.1	**0.15**	<1	<10	0.15	<0.10	2.31	1.30
Eastern & Central	24	RCP	Thru fenced grass lot north of bridge.	RLM	8:45 AM	None	2	None	None	None	None	None	8:45 AM	8:48 AM	73.4	0.00	168	**410**	**0.58**	0.05	OR**	OR**
Fenno & Columbus SW	36	CMP	Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall SW is left large pipe.	CLR	9:10 AM	Could not access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fenno & Columbus 12"	8	CMP	Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, smaller pipe on left.	CLR	9:10 AM	Could not access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fenno & Columbus 6"	6	VC	Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, 6-inch is on far right.	CLR	9:10 AM	Could not access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Giloolly Rd.	24	RCP	In wooded area off end of Gillooly Rd.	CLR	8:42 AM	Gray growth on pipe	3-4	None	None	None	None	None	8:42 AM	8:45 AM	68.7	**0.09**	**980**	**1140**	**2.42**	0.15	14.56	9.3
Giloolly Rd. North	10	RCP	~ 100 ft upstream of private Giloolly outfall.	CLR	10:31 AM	White/gray growth on downstream rocks.	3-5	Sewer Smell	Cloudy/Gray	None	Rags	None	10:31 AM	10:34 AM	71.6	**0.09**	**649**	30	**8.84**	**0.46**	3.33	1.90
Griffin Way	18	DI	Off end of seawall in bus parking lot. Outfall now has hole behind wood pier, so can no longer access to sample. Sampling from DMH btw guardrail + outfall. No pick holes; need shovel to open.	RLM	11:20 AM	None	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Guam Rd.	48	RCP	Outfall always submerged; sampling upstream DMH behind Chelsea Housing Authority.	RLM	11:35 AM	None	None	N/A	N/A	N/A	N/A	N/A	9:35 AM	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Highland Street	36	RCP	Across from Highland St. in riprap slope.	RLM	10:30 AM	None	3	None	None	None	None	None	10:30 AM	10:33 AM	74.0	**0.02**	**1300**	52	0.06	<0.10	OR**	OR**
Locke Street (24")	24	RCP	At back corner of Home Depot; behind fence.	CLR	10:50 AM	None	2-3	None	None	None	None	None	10:50 AM	10:53 AM	74.0	**0.04**	50	41	0.23	<0.05	2.99	1.7
Locke Street (12")	12	RCP	At back corner of Home Depot; behind fence.	CLR	10:50 AM	None	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Marginal & Eastern	18	DI	In block wall downstream (SW) of Chelsea Street Bridge.	RLM	11:00 AM	None	3	None	None	None	None	None	11:00 AM	11:05 AM	73.6	0.07	**>2420**	20	0.12	0.09	OR**	OR**
Rt 1 Ramp	18	RCP	Outfall invert always surcharged; inspection now performed at upstream DMH in parking lot of Chelsea Housing Authority.	RLM	9:20 AM	Could not locate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washburn Street	8	PVC	At Naturalization Club.	CLR	9:22 AM	Sump discharging beside outfall	<1	None	None	None	None	None	9:22 AM	9:25 AM	71.7	0.01	**1553**	**1860**	0.13	<0.05	0.81	0.4
Webster @ RBP	4' x 5'	RCP	Adjacent to RBP near Webster in grass strip.	CLR	11:11 AM	Homelss Camp	2-3	None	None	None	None	None	11:11 AM	11:14 AM	73.8	**0.05**	**>2420**	**504**	0.47	0.06	1.57	0.90
Winnisimmet Street (CHE-003)	30	RCP	Recent demolition on site made outfall accessible; sample now from outfall, not up stream DMH.	RLM	10:05 AM	None	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by Nelson Analytical (analysis date, time, & analyst on lab report).
Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l; chlorine >0.01mg/l.
** OR indicates "Over Range" the value exceeds the value to equipment can read

Table 2
Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Date of Sampling: 10/14/2022
Time of Low Tide: 8:49 AM
Date/Amount of Last Precipitation: 10/14/2022 0.45in

Outfall Information				Inspection Information								Sampling Information							
Location	Dia. (in)	Pipe Mat.	Description of Outfall Location	Inspectors/ Samplers	Time Inspected	Inspection Observations	Flow (gpm)	Odor	Color	Floatables	Solids	Time Sampled	Time Analyzed	Temp (°F)	Chlorine (mg/l)	Ecoli (cfu/ 100ml)	Entero. (MPN/ 100mL)	Ammonia-Nitrogen (mg/l)	Surfact. (mg/l)
Beacham & Market (IE-3)	12	CMP	IE-3 is on west bank beside large culverts (left side when facing outfalls).	N/A	N/A	Outfalls Abandoned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beacham & Market (IE-5)	12	CMP	IE-5 is on east bank beside large culverts (right side when facing outfalls).	N/A	N/A	Outfalls Abandoned	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Broadway CHE002	30	RCP	Discharges in NW wall of Chelsea Yacht Club; below green CSO sign.	CLR	8:25 AM	None	8-10	None	None	None	None	8:25 AM	8:28 AM	65.2	0.00	**>2420**	**1010**	<0.2	0.19
Broadway & Mill Creek	18	RCP	Off side of bridge; downstream side.	LO	9:10 AM	None	10-15	None	Cloudy	None	None	9:10 AM	9:13 AM	63.5	**0.02**	**>2420**	**>2420**	<0.20	0.09
CHE-008	48	RCP	Access through Gulf Oil. Must be sampled at dead low tide.	CLR	9:20 AM	Grey/Black Water	5-8	None	None	None	None	9:20 AM	9:23 AM	64.1	0.00	**>2420**	**>2420**	<0.20	0.06
Clark Ave	15	CPE	Behind Walgreens.	LO	7:50 AM	None	0-3	None	Clear	None	None	7:50 AM	7:53 AM	65	0.00	**>2420**	**>2420**	<0.20	0.12
Commandant's Way	84	RCP	At Yatch Club; in large concrete vault; 2-60" tidegates.	CLR	8:12 AM	Water level too high to sample	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crescent Ave	12	RCP	Through housing authority.	LO	8:28 AM	None	0-3	None	None	None	None	8:28 AM	8:31 AM	63.6	0.00	**1200**	**>2420**	<0.20	<0.05
Eastern & Central	24	RCP	Thru fenced grass lot north of bridge.	CLR	10:06 AM	None	10-20	None	None	None	None	10:06 AM	10:09 AM	64.8	**0.13**	**>2420**	**1010**	<0.20	0.11
Fenno & Columbus SW	36	CMP	Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall SW is left large pipe.	LO	10:42	Cannot Access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fenno & Columbus 12"	8	CMP	Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, smaller pipe on left.	LO	10:42	Cannot Access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fenno & Columbus 6"	6	VC	Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, 6-inch is on far right.	LO	10:42	Cannot Access	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Giloolly Rd.	24	RCP	In wooded area off end of Gillooly Rd.	LO	9:40 AM	None	15	None	Cloudy-gray	None	None	9:40 AM	9:43 AM	64.0	0.00	**>2420**	**>2420**	<0.20	<0.05
Giloolly Rd. North	10	RCP	~ 100 ft upstream of private Giloolly outfall.	LO	10:09 AM	White growth on pipe; pipe 50% submerged	10	None	Slightly Cloudy	None	None	10:09 AM	10:12 AM	64.5	0.00	**>2420**	**>2420**	<0.20	<0.05
Griffin Way	18	DI	Off end of seawall in bus parking lot.	CLR	10:29 AM	None	10-20	None	None	None	None	10:29 AM	10:33 AM	64.9	**0.06**	**>2420**	**>2420**	<0.20	<0.05
Guam Rd.	48	RCP	Outfall always submerged; sampling upstream DMH behind Chelsea Housing Authority.	CLR	10:58 AM	None	20-30	None	None	None	None	10:58 AM	11:03 AM	64.6	0.01	**>2420**	**>2420**	<0.20	<0.05
Highland Street	36	RCP	Across from Highland St. in riprap slope.	CLR	9:38 AM	None	20-30	None	Gray/Black	None	None	9:38 AM	9:41 AM	64.4	0.00	**>2420**	**>2420**	<0.20	<0.05
Locke Street (24")	24	RCP	At back corner of Home Depot; behind fence.	LO	10:30 AM	Pipe submerged	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Locke Street (12")	12	RCP	At back corner of Home Depot; behind fence.	LO	10:30 AM	Grey growth on pipe	5	None	Slightly Discolored	None	None	10:30 AM	10:33 AM	65.0	0.00	**>2420**	**691**	<0.20	0.10
Marginal & Eastern	18	DI	In block wall downstream (SW) of Chelsea Street Bridge.	CLR	9:54 AM	None	20-30	None	None	None	None	9:54 AM	9:57 AM	64.8	0.00	**>2420**	**>2420**	<0.20	<0.05
Rt 1 Ramp	18	RCP	Outfall invert always surcharged; inspection now performed at upstream DMH in parking lot of Chelsea Housing Authority.	CLR	10:48 AM	None	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Washburn Street	8	PVC	At Naturalization Club.	LO	8:48 AM	None	10-15	None	Clear	None	None	8:48 AM	8:51 AM	64.0	**0.03**	**>2420**	**>2420**	<0.095	0.22
Webster @ RBP	4' x 5'	RCP	Adjacent to RBP near Webster in grass strip.	LO	10:50 AM	Pipe submerged	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Winnisimmet Street (CHE-003)	30	RCP	Recent demolition on site made outfall accessible; sample now from outfall, not upstream DMH.	CLR	8:50 AM	None	8-10	None	None	None	None	8:50 AM	8:53 AM	64.0	0.00	**>2420**	**>2420**	<0.20	**0.26**

*Temperature analyses done on site with laboratory-grade thermometer; chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by ChemServe (analysis date, time, & analyst on lab report).
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight.
Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l; chlorine >0.01mg/l.

Table 3
Chelsea, Massachusetts
2022 Stormwater Outfall Monitoring Summary - Comparison of 2006 - 2022 Results

Location	2006								2007									
	Dry				Wet				Dry					Wet				
	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)
Beacham & Market IE-3	5	5	**1.0**	0.4	**1700**	130	**0.7**	0.4	10	<10	**290**	**0.9**	0.4	**3700**	**1100**	**4800**	**0.7**	0.5
Beacham & Market IE-5	8	8	**0.7**	**4.9**	**1200**	**270**	**0.5**	**2.0**	**400**	110	**690**	**0.3**	<0.10	**2200**	100	**9800**	**4.3**	**1.9**
Broadway (CHE-002)	Outfall not yet identified				Outfall not yet identified				Outfall not yet identified					Outfall not yet identified				
Broadway @ Mill Creek	8	4	**0.9**	0.8	**800**	**600**	**0.3**	0.4	110	80	**260**	**0.4**	<0.10	**88000**	**28000**	**>24000**	**3.7**	0.7
CHE-008 Outfall (Gulf)	1	11	**0.4**	0.3	10	<10	**0.8**	0.1	**2100**	**1200**	**650**	**0.5**	<0.10	No flow; petroleum spill treatment				
Clark Ave.	No flow				No flow				No flow					No flow				
Commandant's Way	42	17	0.2	0.3	Submerged				**1200**	**930**	**>2400**	**0.6**	<0.10	**2200**	**1300**	**3600**	**0.6**	0.4
Crescent Ave.	2	1	**0.6**	0.8	No flow				20	<10	24	0.2	0.2	No flow				
Eastern Ave. & Central St.	4	4	**0.7**	0.6	**370**	190	**0.5**	0.3	30	30	**550**	**0.4**	0.3	**1700**	**480**	**610**	**0.3**	0.4
Fenno & Columbus NE	Outfall not yet identified				Outfall not yet identified				No flow					**14000**	**13000**	**3700**	0.2	0.4
Fenno & Columbus SW	Outfall not yet identified				Outfall not yet identified				No flow					**29000**	**1200**	**3100**	0.2	0.5
Fenno & Columbus 12-inch	Outfall not yet identified				Outfall not yet identified				Outfall not yet identified					Outfall not yet identified				
Fenno & Columbus 6-inch	Outfall not yet identified				Outfall not yet identified				Outfall not yet identified					Outfall not yet identified				
Gillooly Rd.	**240**	28	**0.5**	**2.7**	170	170	**0.3**	**1.3**	200	110	**460**	**0.3**	**3.4**	**550**	**490**	**190**	0.2	**3.6**
Gillooly Rd. North	Outfall not yet identified				Outfall not yet identified				Outfall not yet identified					Outfall not yet identified				
Griffin Way	35	13	0.2	**2**	**1400**	90	**0.3**	1.0	**1100**	**930**	**1600**	**0.7**	1.0	**1500**	**670**	**280**	**0.7**	**1.1**
Guam Road	Outfall not yet identified				Outfall not yet identified				No flow					No flow				
Highland Street	Outfall not yet constructed				Outfall not yet constructed				Outfall not yet constructed					**7300**	**4400**	**3400**	**0.8**	0.9
Locke St. (24")	80	15	0.3	0.2	No flow				No flow					No flow				
Locke St. (12")	No flow				No flow				No flow					No flow				
Marginal & Eastern	1	1	**0.5**	**2.0**	**4700**	**400**	**0.6**	**1.6**	100	100	120	**0.3**	**1.9**	**2400**	**1900**	**430**	**0.5**	**1.2**
Route 1 ramp	No flow				No flow				100	60	**320**	0.2	0.4	**4700**	**440**	**1000**	**0.5**	0.5
Washburn St.	**2200**	<1	0.2	0.6	**450**	180	0.2	0.8	**21000**	**16000**	**580**	0.1	0.3	**8200**	**6700**	**350**	**0.4**	0.7
Webster Ave. & RBP	Believed stagnant				Believed stagnant				No sample possible from DMH					**53000**	**4200**	**720**	**0.4**	0.9
Winnisimmet St. (CHE003)	8	No data	**0.4**	0.2	30	30	0.2	0.4	80	50	1	**0.3**	0.3	50	<10	20	0.5	0.2

Location	2008										2009							
	Dry					Wet					Dry				Wet			
	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Fecal (cfu/100ml)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)
Beacham & Market IE-3	**400**	120	30	**0.6**	0.3	NA	<10	**6100**	**0.3**	<0.10	**600**	**11000**	**0.6**	**1.9**	20	10	**0.9**	<0.1
Beacham & Market IE-5	**3500**	**1000**	63	0.2	**3.6**	NA	<10	**250**	0.1	0.2	**7900**	**>24000**	**0.3**	**5.0**	**1400**	80	**0.6**	1.0
Broadway (CHE-002)	Outfall not yet identified					Outfall not yet identified					20	41	**0.5**	0.1	**390**	**200**	**1.1**	<0.10
Broadway @ Mill Creek	130	**130**	10	**0.6**	0.7	NA	<10	**9200**	0.2	0.3	160	75	**0.5**	0.8	210	**160**	**0.9**	0.7
CHE-008 Outfall (Gulf)	60	50	<10	**0.7**	**1.2**	NA	<10	**9800**	**0.4**	0.3	60	**110**	**0.4**	**1.6**	**3200**	**160**	**0.8**	0.9
Clark Ave.	Not inspected					Not inspected					No flow				No flow			
Commandant's Way	**6400**	**1000**	52	**0.5**	0.3	NA	<10	**5500**	<0.1	0.2	**4800**	**880**	**0.4**	0.4	150	<10	**0.7**	<0.1
Crescent Ave.	No flow					NA	<10	**10000**	0.1	0.2	No flow				No flow			
Eastern Ave. & Central St.	<10	<10	<10	**0.6**	0.2	NA	<10	**8200**	0.1	<0.10	40	<10	**0.4**	0.4	110	80	**0.8**	0.2
Fenno & Columbus NE	No flow					NA	<10	**16000**	0.2	<0.10	No flow				**980**	30	**0.3**	0.3
Fenno & Columbus SW	No flow					No flow					No flow				No flow			
Fenno & Columbus 12-inch	No flow					NA	<10	**4600**	<0.1	<0.10	No flow				No flow			
Fenno & Columbus 6-inch	Outfall not yet identified					Outfall not yet identified					Outfall not yet identified				No flow			
Gillooly Rd.	**300**	100	<10	**0.4**	**4.6**	NA	<10	**11000**	0.2	0.6	20	10	**0.4**	**3.4**	**1500**	10	**0.7**	**3.6**
Gillooly Rd. North	Outfall not yet identified					Outfall not yet identified					20	31	**0.5**	**7.6**	50	50	**0.8**	**4.7**
Griffin Way	**1000**	**700**	10	**0.8**	**1.9**	NA	<10	**2300**	0.2	0.3	**880**	**220**	**0.3**	**4.0**	**860**	40	**1.0**	0.6
Guam Road	No Flow					NA	<10	**610**	0.2	0.3	No flow				50	10	**0.3**	0.2
Highland Street	**5100**	**5100**	20	**0.9**	0.5	NA	<10	**>24000**	**0.4**	0.4	70	**220**	**0.6**	0.2	40	30	**1.2**	<0.10
Locke St. (24")	No Flow					NA	<10	**>24000**	0.1	0.1	10	10	<0.1	0.2	No flow			
Locke St. (12")	No Flow					NA	20	**4900**	0.1	0.2	No flow				30	100	**0.5**	**1.1**
Marginal & Eastern	130	90	10	**0.4**	**2.1**	NA	<10	**7700**	0.1	0.4	10	84	0.1	**2.5**	**4000**	**720**	**0.9**	0.1
Route 1 ramp	No Flow					No flow					150	**120**	**0.5**	0.6	No flow			
Washburn St.	**5500**	**5400**	<10	0.2	<0.10	NA	<10	**1900**	0.1	0.3	**1800**	**140**	**0.3**	0.6	**380**	40	**0.4**	<0.10
Webster Ave. & RBP	**14000**	**900**	10	0.2	0.5	NA	<10	**4900**	0.1	0.2	**350**	**200**	**0.7**	0.2	**680**	**350**	0.2	<0.10
Winnisimmet St. (CHE003)	<10	<10	20	**0.3**	0.2	NA	<10	**140**	**0.4**	<0.10	20	10	0.1	0.3	**420**	90	**0.8**	<0.10

Location	2010								2011							
	Dry				Wet				Dry				Wet			
	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)
Beacham & Market IE-3	50	74	**0.3**	**1.8**	**2300**	**4100**	0.1	<0.10	**710**	**530**	**6.8**	**0.70**	**7700**	**6600**	**0.5**	<0.10
Beacham & Market IE-5	<10	10	**0.4**	0.2	**4700**	**6500**	**0.3**	<0.10	**610**	52	<0.10	**0.60**	**4400**	**7100**	**0.3**	0.23
Broadway (CHE-002)	<10	98	**0.5**	<0.1	**4500**	**4900**	0.2	0.43	60	**600**	<0.10	0.20	**5800**	**350**	0.2	<0.10
Broadway @ Mill Creek	**400**	30	**0.3**	**1.2**	**11000**	**7300**	<0.1	0.22	**1300**	**120**	**0.49**	**0.50**	**12000**	**5800**	0.2	0.16
CHE-008 Outfall (Gulf)	30	63	**0.3**	0.8	**2200**	**11000**	0.2	0.26	90	<10	**2.7**	**0.30**	**1900**	70	0.2	0.45
Clark Ave.	No flow				No flow				No flow				No flow			
Commandant's Way	**24000**	**1300**	0.1	**1.4**	**7800**	**2800**	0.1	0.23	Outfall submerged at low tide				**15000**	**710**	0.1	0.99
Crescent Ave.	No flow				**3300**	**6500**	0.2	0.16	No flow				**4100**	**2600**	0.2	0.22
Eastern Ave. & Central St.	20	20	**0.5**	0.7	**800**	**910**	0.2	0.16	Outfall not accessible				Outfall not accessible			
Fenno & Columbus NE	No flow				No flow				No flow				No flow			
Fenno & Columbus SW	No flow				No flow				No flow				No flow			
Fenno & Columbus 12-inch	No flow				No flow				No flow				No flow			
Fenno & Columbus 6-inch	No flow				No flow				No flow				No flow			
Gillooly Rd.	**280**	**150**	**0.4**	**1.4**	**1400**	**1700**	**0.3**	<0.10	130	**110**	**3.8**	**0.30**	**1300**	**1900**	0.2	0.68
Gillooly Rd. North	No flow				**900**	**8700**	<0.1	0.64	No flow				**250**	**1100**	0.2	**2.50**
Griffin Way	190	75	**0.5**	0.4	**6800**	**11000**	0.2	0.22	**8900**	**25000**	**3.2**	**0.40**	**3700**	**140**	0.2	0.35
Guam Road	**420**	**120**	<0.1	0.3	Unable to Access				Outfall not accessible				**3300**	**870**	0.2	0.21
Highland Street	**2300**	41	**0.6**	0.2	**12000**	**>24000**	0.2	0.37	30	**130**	<0.10	**0.60**	**4900**	<10	**0.7**	0.25
Locke St. (24")	No flow				No Flow				No flow				No flow			
Locke St. (12")	No flow				**500**	**2600**	<0.1	0.21	No flow				**1700**	**1500**	0.1	0.22
Marginal & Eastern	80	<10	**0.4**	**1.8**	**1100**	**2800**	0.2	0.35	200	**310**	**2.2**	**0.30**	**5200**	<10	<0.1	0.15
Route 1 ramp	<10	<10	**0.3**	0.4	Pipe Submerged				**9300**	**780**	0.9	**0.70**	**9200**	<10	**0.3**	0.62
Washburn St.	<10	<10	0.2	0.2	**1000**	**13000**	<0.1	0.24	**7700**	**1500**	0.1	**0.30**	**11000**	**5300**	0.1	0.22
Webster Ave. & RBP	**300**	**170**	<0.1	<0.10	**3800**	**7700**	0.2	0.20	**760**	**280**	<0.10	0.20	**12000**	**7000**	0.2	0.13
Winnisimmet St. (CHE003)	**380**	<10	**0.3**	0.2	**3700**	**7700**	0.2	0.33	**420**	**2800**	<0.10	0.20	**12000**	**7600**	**0.3**	0.17

* **Bold** indicates a value that exceeds EPA benchmarks: Fecal coliform (through 2008) >200 cfu/100mL; E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0mg/l); chlorine >0.01mg/l.
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight
** Thermometer broke; no data.
OR = over range of multi meter

Exceedances all or almost all sampling rounds.
Exceedances in some sampling rounds.
Exceedances only during wet-weather rounds.
Only 1-2 exceedances
No flow or no exceedances.
Determined to be not City-owned.

* **Bold** indicates a value that exceeds EPA benchmarks: Fecal coliform (through 2008) >200 cfu/100mL; E-coli >235
>0.5 mg/l (previously 1.0mg/l); chlorine >0.01mg/l.
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight
** Thermometer broke; no data.
Exceedances all or almost all sampling rounds.
Exceedances only during wet-w
Exceedances in some sampling rounds
Only 1-2 exceedances

Location	2012 Dry						2012 Wet					
	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)
Beacham & Market IE-3	300	ND	1.10	<0.10	72	0.00	100	400	0.52	0.1	68	0.00
Beacham & Market IE-5	19800	14200	0.82	5.8	74	0.11	600	9100	0.23	0.3	68	0.00
Broadway (CHE-002)	No Flow						No Flow					
Broadway @ Mill Creek	ND	ND	0.65	0.9	76	0.00	900	7800	0.20	<0.10	70	0.03
CHE-008 Outfall (Gulf)	ND	100	0.60	2.1	73	0.00	2900	8800	0.26	0.8	68	0.00
Clark Ave.	No Flow						1200	3100	0.19	0.3	68	0.00
Commandant's Way	4300	1400	0.65	1.1	72	0.06	9500	12100	0.16	0.7	66	0.11
Crescent Ave.	No Flow						No Flow					
Eastern Ave. & Central St.	ND	ND	0.96	<0.10	72	0.08	7200	9900	0.37	<0.10	66	0.10
Fenno & Columbus NE	No Flow						No Flow					
Fenno & Columbus SW	No Flow						No Flow					
Fenno & Columbus 12-inch	No Flow						No Flow					
Fenno & Columbus 6-inch	No Flow						No Flow					
Gillooly Rd.	400	800	0.49	3.3	66	0.03	4200	5900	0.16	0.6	65	0.02
Gillooly Rd. North	No Flow						300	6100	0.24	3.5	65	0.00
Griffin Way	7500	100	1.10	1.0	72	0.11	4100	3900	0.23	0.3	67	0.00
Guam Road	1000	400	<0.10	0.2	73	0.01	1000	3800	0.17	0.3	67	0.08
Highland Street	100	400	1.00	0.3	72	0.01	No Flow					
Locke St. (24")	No Flow						No Flow					
Locke St. (12")	No Flow						200	2300	<0.10	0.4	74	0.00
Marginal & Eastern	ND	100	0.74	1.4	72	0.00	2200	4600	0.21	0.5	71	0.01
Route 1 ramp	No Flow						No Flow					
Washburn St.	1900	100	<0.10	<0.10	68	0.00	8800	8900	<0.10	0.4	68	0.04
Webster Ave. & RBP	400	500	<0.10	<0.10	72	0.04	2100	7500	<0.10	<0.10	72	0.09
Winnisimmet St. (CHE003)	ND	ND	0.45	<0.10	72	0.11	200	1400	0.52	<0.10	66	0.00

Location	2013 Dry						2013 Wet					
	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)
Beacham & Market IE-3	612	646	0.82	0.9	64	0.10	120	720	0.11	0.1	58	0.00
Beacham & Market IE-5	1088	884	0.68	3.4	64	0.00	30	650	0.13	0.1	59	0.10
Broadway (CHE-002)	No Flow						690	8700	0.10	0.1	59	0.20
Broadway @ Mill Creek	782	850	0.76	0.4	82	1.10	2700	6100	0.10	0.3	**	0.40
CHE-008 Outfall (Gulf)	16	ND	0.42	2.1	60	0.00	24000	24000	0.22	0.1	60	0.10
Clark Ave.	No Flow						380	3300	0.10	0.1	60	0.00
Commandant's Way	Not Enough Flow to Sample						1200	9800	0.34	0.2	58	0.20
Crescent Ave.	66	56	<0.1	0.2	80	0.70	6100	1900	0.13	0.1	**	1.10
Eastern Ave. & Central St.	8	12	0.84	0.1	58	0.00	1500	2200	0.44	0.1	55	0.10
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	No Flow						590	1900	1.00	0.13	**	0.20
Fenno & Columbus 12-inch	No Flow						No Flow					
Fenno & Columbus 6-inch	No Flow						No Flow					
Gillooly Rd.	544	580	0.35	2.7	70	0.00	1100	2000	0.10	0.1	60	0.00
Gillooly Rd. North	26	62	0.75	7.8	70	1.10	60	320	0.10	0.1	**	0.00
Griffin Way	1495	544	0.54	2.9	60	0.20	990	5200	0.10	0.1	57	0.00
Guam Road	No Flow						2600	4900	0.10	0.1	59	0.00
Highland Street	1836	920	0.78	0.4	62	0.00	24000	24000	0.22	0.2	58	0.00
Locke St. (24")	No Flow						1400	5800	0.10	0.1	**	0.60
Locke St. (12")	No Flow						200	250	0.10	0.1	**	0.00
Marginal & Eastern	2040	140	0.55	1.4	58	0.00	16000	10000	0.10	0.2	59	0.30
Route 1 ramp	ND	ND	<0.1	0.6	60	0.90	No Flow					
Washburn St.	2820	782	0.21	0.6	68	0.00	1100	10000	0.10	0.1	**	1.10
Webster Ave. & RBP	3140	986	0.54	0.4	78	0.70	3900	7700	1.00	0.2	**	0.10
Winnisimmet St. (CHE003)	6	30	0.31	0.2	56	0.10	9200	9200	0.17	0.2	59	0.40

Location	2014 Dry						2014 Wet					
	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)
Beacham & Market IE-3	2419	2419	1.20	0.5	65	0.20	594	3076	0.49	0.2	64	0.05
Beacham & Market IE-5	87	770	0.96	4.5	65	0.00	546	1281	0.36	0.4	64	0.06
Broadway (CHE-002)	No Flow						1467	5794	0.55	0.3	64	0.04
Broadway @ Mill Creek	No Flow						11199	24196	0.59	0.2	51	0.06
CHE-008 Outfall (Gulf)	2420	345	0.51	2.4	64	0.00	4611	3873	0.39	0.3	65	0.14
Clark Ave.	No Flow						341	1674	0.24	0.2	50	0.10
Commandant's Way	1553	1986	0.81	0.6	63	0.20	14136	6488	0.30	0.3	65	0.15
Crescent Ave.	No Flow						2755	7701	0.50	0.2	51	0.06
Eastern Ave. & Central St.	1046	93	1.10	0.1	65	0.10	1160	4884	0.57	0.2	65	0.04
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	No Flow						15531	17329	0.43	0.1	52	0.01
Fenno & Columbus 12-inch	No Flow						No Flow					
Fenno & Columbus 6-inch	No Flow						No Flow					
Gillooly Rd.	2420	1120	0.86	2.6	47	0.03	7270	4352	0.41	0.3	52	0.00
Gillooly Rd. North	921	1	0.69	6.5	48	0.00	3076	2613	0.22	0.4	51	0.03
Griffin Way	2420	162	0.64	1.2	64	0.00	5172	1374	0.36	0.3	65	0.06
Guam Road	1553	1046	0.26	0.2	65	0.00	4611	6867	0.42	0.1	65	0.08
Highland Street	298	602	1.00	0.3	65	0.10	3654	17329	0.71	0.1	65	0.00
Locke St. (24")	2420	2420	0.82	0.4	50	0.00	12033	11199	0.39	0.2	51	0.17
Locke St. (12")	No Flow						332	556	0.22	0.2	52	0.01
Marginal & Eastern	91	345	1.00	0.2	65	0.10	7701	9203	0.32	0.2	65	0.00
Route 1 ramp	No Flow						No Flow					
Washburn St.	No Flow						11199	17329	0.34	0.3	52	0.15
Webster Ave. & RBP	No Flow						3441	4352	0.35	0.2	51	0.14
Winnisimmet St. (CHE003)	15	23	0.86	0.1	65	0.00	5172	12997	0.52	0.2	64	0.05

Location	2015 Dry						2015 Wet					
	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/100ml)	Enterococcus (MPN/100ml)	Surfactants (mg/l)	Ammonia-Nit. (mg/l)	Temperature (°F)	Chlorine (mg/L)
Beacham & Market IE-3	7701	63	0.75	0.2	74	0.03	14136	14136	0.42	0.2	62	0.10
Beacham & Market IE-5	6867	97	0.74	11.0	72	0.10	8704	17329	0.38	0.4	64	0.00
Broadway (CHE-002)	No Flow						Could not Sample					
Broadway @ Mill Creek	No Flow						19863	24196	0.17	0.1	68	0.03
CHE-008 Outfall (Gulf)	51	10	0.49	2.1	68	0.00	7701	3255	0.19	0.6	64	0.20
Clark Ave.	No Flow						8164	12997	0.10	0.7	68	0.03
Commandant's Way	19863	3784	0.78	1.1	66	0.05	>24196	15531	0.45	0.7	64	0.00
Crescent Ave.	No Flow						>24196	19863	0.52	0.2	69	0.05
Eastern Ave. & Central St.	10	10	0.71	0.3	69	0.25	Could not Sample					
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	No Flow						No Flow					
Fenno & Columbus 12-inch	No Flow						No Flow					
Fenno & Columbus 6-inch	No Flow						No Flow					
Gillooly Rd.	1483	644	0.38	2.6	68	0.00	8164	9804	0.24	0.2	68	0.03
Gillooly Rd. North	852	10	0.54	7.5	72	0.00	>24196	>24196	0.10	0.4	65	0.09
Griffin Way	109	10	0.19	0.9	68	0.04	8664	9804	0.15	0.3	62	0.10
Guam Road	9804	2481	0.11	0.2	68	0.02	>24196	19863	0.18	0.2	64	0.00
Highland Street	1077	63	0.84	0.4	70	0.03	>24196	>24196	0.38	0.3	64	0.10
Locke St. (24")	422	218	0.26	0.5	74	0.20	>24196	19863	0.14	0.2	66	0.19
Locke St. (12")	No Flow						15531	5172	0.10	0.2	66	0.02
Marginal & Eastern	63	75	0.55	1.4	69	0.05	12997	14136	0.16	0.2	64	0.00
Route 1 ramp	No Flow						7701	8164	0.21	0.2	64	0.00
Washburn St.	No Flow						19863	19863	0.12	0.2	64	0.03
Webster Ave. & RBP	No Flow						7556	12033	0.16	0.1	67	0.06
Winnisimmet St. (CHE003)	10	31	0.64	0.1	68	0.00	15531	>24196	0.41	0.2	64	0.00

; cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N

* **Bold** indicates a value that exceeds EPA benchmarks: Fecal coliform (through 2008) >200 cfu/100mL; E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0mg/l); chlorine >0.01mg/l.
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight
** Thermometer broke; no data.

eather rounds.

No flow or no exceedances.
Determined to be not City-owned.

Exceedances all or almost all sampling rounds.
Exceedances in some sampling rounds.

Exceedances only during wet-weather rounds.
Only 1-2 exceedances

No flow or no exceedances.
Determined to be not City-owned.

2016

Location	Dry E-coli (cfu/100ml)	Dry Enterococcus (MPN/100ml)	Dry Surfactants (mg/l)	Dry Ammonia-Nit. (mg/l)	Dry Temperature (°F)	Dry Chlorine (mg/L)	Wet E-coli (cfu/100ml)	Wet Enterococcus (MPN/100ml)	Wet Surfactants (mg/l)	Wet Ammonia-Nit. (mg/l)	Wet Temperature (°F)	Wet Chlorine (mg/L)
Beacham & Market IE-3	**238**	63	**1.10**	<0.20	44	0.00	52	**183**	**0.70**	0.2	54	--
Beacham & Market IE-5	**275**	20	**0.91**	**6.4**	45	0.01	**663**	**1616**	**0.70**	**2.8**	56	**0.10**
Broadway (CHE-002)	No Flow						199	**285**	**0.28**	**3.5**	59	**0.10**
Broadway @ Mill Creek	No Flow						**364**	**414**	**0.47**	<0.40	54	0.00
CHE-008 Outfall (Gulf)	**488**	<10	**0.62**	**2.4**	45	0.00	**1178**	**107**	**0.44**	**1.3**	59	0.00
Clark Ave.	No Flow						No Flow					
Commandant's Way	**5172**	**613**	**1.10**	0.3	50	**0.04**	**>24196**	**14136**	**0.45**	**4.7**	52	0.00
Crescent Ave.	No Flow						Could not Sample					
Eastern Ave. & Central St.	31	<10	**1.10**	<0.20	44	**0.09**	**581**	**1726**	**0.44**	<0.20	52	0.00
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	No Flow						No Flow					
Fenno & Columbus 12-inch	No Flow						Could not Sample					
Fenno & Columbus 6-inch	No Flow						No Flow					
Gillooly Rd.	**332**	**145**	**0.56**	**2.3**	47	0.00	**934**	**332**	**0.28**	**1.4**	57	**0.20**
Gillooly Rd. North	52	20	**0.72**	**8.5**	48	0.00	**243**	<10	**0.63**	**5.0**	55	0.00
Griffin Way	**845**	<10	**0.70**	**2.4**	42	**0.03**	**5794**	**703**	**0.30**	**0.6**	52	0.00
Guam Road	**3076**	**836**	0.14	0.4	42	**0.04**	**>24196**	**19863**	0.22	0.5	58	--
Highland Street	116	**613**	**1.20**	0.4	42	**0.09**	Could not Sample					
Locke St. (24")	No Flow						**2282**	**404**	0.21	0.4	52	0.00
Locke St. (12")	**>241960**	**32230**	**4.80**	**37.0**	54	0.00	**>24196**	**17329**	**1.60**	**15.0**	58	0.00
Marginal & Eastern	>10	20	**0.38**	**2.2**	42	0.01	**7270**	**1565**	**0.30**	0.4	60	0.00
Route 1 ramp	**36540**	**7270**	**0.52**	**2.1**	44	0.00	**262**	**206**	0.24	0.3	54	0.00
Washburn St.	No Flow						**1539**	**428**	0.15	**0.7**	56	0.00
Webster Ave. & RBP	No Flow						No Flow					
Winnisimmet St. (CHE003)	41	<10	**0.73**	0.2	42	**0.03**	63	63	**0.84**	0.3	52	0.00

2017

Location	Dry E-coli (cfu/100ml)	Dry Enterococcus (MPN/100ml)	Dry Surfactants (mg/l)	Dry Ammonia-Nit. (mg/l)	Dry Temperature (°F)	Dry Chlorine (mg/L)	Wet E-coli (cfu/100ml)	Wet Enterococcus (MPN/100ml)	Wet Surfactants (mg/l)	Wet Ammonia-Nit. (mg/l)	Wet Temperature (°F)	Wet Chlorine (mg/L)
Beacham & Market IE-3	**1011**	64	**0.90**	<0.2	64	**0.05**	**6488**	**9208**	**0.26**	<0.2	62	**0.02**
Beacham & Market IE-5	**5748**	**517**	**0.84**	**5.5**	58	**0.10**	**5475**	**8164**	**0.31**	**0.8**	62	**0.04**
Broadway (CHE-002)	No Flow						**2755**	**12997**	0.20	<0.2	63	**0.05**
Broadway @ Mill Creek	**1986**	**727**	**0.88**	**1.10**	71	**0.36**	**2419**	**8664**	**0.32**	<0.2	66	0.00
CHE-008 Outfall (Gulf)	Could Not Sample						Could Not Sample					
Clark Ave.	No Flow						**5475**	**19863**	**0.32**	0.4	66	**0.08**
Commandant's Way	**2723**	**1,203**	**0.89**	0.2	64	**0.03**	**>24196**	**10462**	0.20	0.3	62	0.01
Crescent Ave.	No Flow						No Flow					
Eastern Ave. & Central St.	**>24196**	**2,851**	**1.80**	**3.5**	68	0.00	**4884**	**6867**	0.15	<0.2	68	0.00
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	No Flow						No Flow					
Fenno & Columbus 12-inch	No Flow						No Flow					
Fenno & Columbus 6-inch	No Flow						No Flow					
Gillooly Rd.	**>24196**	**>24196**	**2.50**	**13.0**	70	0.00	**11199**	**>24196**	0.19	0.4	67	**0.29**
Gillooly Rd. North	No Sample						**4884**	**517**	**0.36**	**3.8**	62	0.00
Griffin Way	**9804**	**365**	**0.48**	**1.9**	62	**0.02**	**>24196**	**6488**	0.21	**0.6**	70	0.00
Guam Road	**2420**	**8,164**	0.18	<0.2	68	**0.02**	**>24196**	**>24196**	**0.50**	**2.2**	69	0.00
Highland Street	51	**1,553**	**1.10**	<0.2	68	**0.02**	**2359**	**9804**	**0.80**	<0.2	70	**0.05**
Locke St. (24")	No Flow						**14136**	**24196**	0.21	<0.2	64	**0.21**
Locke St. (12")	No Flow						**>24196**	**>24196**	0.10	0.2	64	0.01
Marginal & Eastern	**1046**	67	**0.59**	<0.2	68	**0.03**	**>24196**	**>24196**	**0.40**	**1.4**	70	**0.17**
Route 1 ramp	No Flow						**3448**	**8164**	0.14	<0.2	68	**0.05**
Washburn St.	No Flow						**17329**	**>24196**	**0.43**	0.3	64	**0.03**
Webster Ave. & RBP	**9208**	**867**	0.22	0.39	69	**0.03**	**1119**	**15531**	0.10	<0.2	66	0.00
Winnisimmet St. (CHE003)	64	21	**0.98**	<0.2	65	**0.04**	**1259**	**2481**	**0.74**	<0.2	67	**0.11**

2018

Location	Dry E-coli (cfu/100ml)	Dry Enterococcus (MPN/100ml)	Dry Surfactants (mg/l)	Dry Ammonia-Nit. (mg/l)	Dry Temperature (°F)	Dry Chlorine (mg/L)	Wet E-coli (cfu/100ml)	Wet Enterococcus (MPN/100ml)	Wet Surfactants (mg/l)	Wet Ammonia-Nit. (mg/l)	Wet Temperature (°F)	Wet Chlorine (mg/L)
Beacham & Market IE-3	**1421**	**657**	**0.89**	0.24	76	**0.07**	**2247**	**6200**	0.11	<0.20	**	0.00
Beacham & Market IE-5	**2755**	**350**	**0.65**	**2.3**	66	0.00	**529**	**2046**	0.10	0.20	**	0.00
Broadway (CHE-002)	Too Little to Sample						**4106**	**8664**	0.11	<0.20	**	0.00
Broadway @ Mill Creek	No Flow						**4352**	**1396**	<0.10	<0.20	44	0.00
CHE-008 Outfall (Gulf)	**1670**	<10	**0.39**	**2.30**	78	0.00	Could Not Sample					
Clark Ave.	No Flow						**990**	**12033**	<0.10	<0.20	43	0.00
Commandant's Way	**1529**	**173**	**0.66**	<0.20	62	**0.08**	Could Not Sample					
Crescent Ave.	Could Not Sample						Could Not Sample					
Eastern Ave. & Central St.	**288**	<10	**0.86**	<0.20	76	**0.08**	**677**	**1354**	<0.10	<0.20	**	**0.19**
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	Could Not Sample						Could Not Sample					
Fenno & Columbus 12-inch	Could Not Sample						Could Not Sample					
Fenno & Columbus 6-inch	Could Not Sample						Could Not Sample					
Gillooly Rd.	**620**	**228**	**0.46**	**0.8**	64	**0.06**	**1081**	**2481**	<0.10	0.27	64	**0.06**
Gillooly Rd. North	183	<10	**0.57**	**9.40**	67	0	**4106**	**109**	0.11	**0.80**	46	0.00
Griffin Way	**3873**	20	0.20	**1.3**	82	**0.81**	**988**	**670**	<0.10	0.23	**	**0.10**
Guam Road	**12997**	**1,616**	0.12	<0.2	78	**0.15**	**17230**	**7701**	0.11	<0.20	52	**0.11**
Highland Street	**>24196**	**>24196**	**0.55**	**3.5**	72	0.00	**19863**	**30760**	0.10	0.27	**	0.01
Locke St. (24")	No Flow						**1169**	**1250**	<0.10	<0.20	54	0.00
Locke St. (12")	No Flow						**591**	**591**	<0.10	<0.20	52	0.00
Marginal & Eastern	Could Not Sample						**2282**	**3282**	0.10	<0.20	**	**0.33**
Route 1 ramp	41	20	<0.1	<0.20	78	**1.39**	**6131**	**2247**	<0.10	<0.20	51	0.00
Washburn St.	Too Little to Sample						**6867**	**11199**	0.11	<0.20	44	0.00
Webster Ave. & RBP	**932**	**279**	0.20	<0.20	**68**	**0.03**	**2481**	**4884**	<0.10	<0.20	52	**0.08**
Winnisimmet St. (CHE003)	97	**323**	**0.41**	<0.20	72	**0.07**	**98040**	**72700**	0.10	0.21	**	**0.08**

2019

Location	Dry E-coli (cfu/100ml)	Dry Enterococcus (MPN/100ml)	Dry Surfactants (mg/l)	Dry Ammonia-Nit. (mg/l)	Dry Temperature (°F)	Dry Chlorine (mg/L)	Wet E-coli (cfu/100ml)	Wet Enterococcus (MPN/100ml)	Wet Surfactants (mg/l)	Wet Ammonia-Nit. (mg/l)	Wet Temperature (°F)	Wet Chlorine (mg/L)
Beacham & Market IE-3	52	**246**	**0.65**	<0.20	73	**0.07**	**2382**	**6488**	0.19	0.40	68	0.00
Beacham & Market IE-5	60	**121**	**0.70**	**3.8**	73	0.00	**6488**	**68670**	0.23	**0.82**	64	0.00
Broadway (CHE-002)	109	**209**	**0.29**	<0.20	70	**0.10**	**8664**	**11199**	<0.10	0.41	64	0.01
Broadway @ Mill Creek	75	98	**0.71**	**0.51**	77	**0.23**	**7270**	**15531**	0.11	<0.20	70	**0.12**
CHE-008 Outfall (Gulf)	**1565**	**341**	0.17	**1.30**	70	0.00	**6131**	**12033**	<0.10	**0.52**	64	0.00
Clark Ave.	41	**331**	**0.50**	<0.20	74	**0.10**	**2143**	**3448**	<0.10	<0.20	68	0.00
Commandant's Way	N/A	N/A	N/A	N/A	N/A	N/A	**6867**	**3640**	0.19	0.42	64	**0.09**
Crescent Ave.	Could Not Sample						Could Not Sample					
Eastern Ave. & Central St.	116	20	**0.48**	<0.20	69	**0.05**	**11199**	**4245**	0.12	0.39	62	0.00
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	Could Not Sample						Could Not Sample					
Fenno & Columbus 12-inch	Could Not Sample						Could Not Sample					
Fenno & Columbus 6-inch	Could Not Sample						Could Not Sample					
Gillooly Rd.	74	**345**	**0.40**	**2.7**	68	**0.05**	**6488**	**2143**	<0.10	<0.20	68	**0.04**
Gillooly Rd. North	122	86	**0.58**	**8.50**	70	0	**1664**	63	0.11	**1.10**	67	0.00
Griffin Way	**24196**	**6131**	**0.32**	**4.2**	71	**0.11**	N/A	N/A	N/A	N/A	N/A	N/A
Guam Road	**38730**	**2755**	0.14	**0.7**	72	**0.04**	**5794**	**2224**	<0.10	0.38	68	0.00
Highland Street	128	**173**	**0.78**	<0.20	71	**0.13**	**20980**	**36540**	0.15	0.50	66	0.00
Locke St. (24")	**771**	**512**	0.18	0.33	75	**0.02**	**8164**	**5794**	<0.10	0.40	70	**0.28**
Locke St. (12")	20	**185**	**0.40**	**5.20**	74	0.00	**1956**	**7270**	<0.10	0.39	67	**0.12**
Marginal & Eastern	75	**488**	**0.29**	**1.20**	69	0.00	**6488**	**12997**	0.18	0.46	66	0.00
Route 1 ramp	185	**272**	0.22	**0.80**	61	0.00	**41060**	52	<0.10	0.40	68	**0.25**
Washburn St.	**663**	**201**	0.15	<0.20	69	**0.10**	**19863**	**24196**	<0.10	**0.55**	68	0.00
Webster Ave. & RBP	N/A	N/A	N/A	N/A	N/A	N/A	**5172**	**19863**	<0.10	**0.73**	68	**0.05**
Winnisimmet St. (CHE003)	N/A	N/A	N/A	N/A	N/A	N/A	185	**933**	0.13	0.36	64	0.00

* **Bold** indicates a value that exceeds EPA benchmarks: Fecal coliform (through 2008) >200 cfu/100mL; E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0mg/l); chlorine >0.01mg/l.
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight
** Thermometer broke; no data.

* **Bold** indicates a value that exceeds EPA benchmarks: Fecal coliform (through 2008) >200 cfu/100mL; E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0mg/l); chlorine >0.01mg/l.
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight
** Thermometer broke; no data.

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Exceedances in some sampling rounds.
Exceedances only during wet-weather rounds.
Only 1-2 exceedances
No flow or no exceedances.
Determined to be not City-owned.

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Only 1-2 exceedances
No flow or no exceedances.
Determined to be not City-owned.

2020

Location	Dry: E-coli (cfu/100ml)	Dry: Enterococcus (MPN/100ml)	Dry: Surfactants (mg/l)	Dry: Ammonia-Nit. (mg/l)	Dry: Temperature (°F)	Dry: Chlorine (mg/L)	Wet: E-coli (cfu/100ml)	Wet: Enterococcus (MPN/100ml)	Wet: Surfactants (mg/l)	Wet: Ammonia-Nit. (mg/l)	Wet: Temperature (°F)	Wet: Chlorine (mg/L)
Beacham & Market IE-3	No Flow						**>2419.6**	**Present**	0.10	0.00	75	0.01
Beacham & Market IE-5	No Flow						**>2419.6**	**Present**	0.19	**1.90**	75	**0.02**
Broadway (CHE-002)	**1000**	**Present**	**0.80**	**1.10**	70	0.00	No Flow					
Broadway @ Mill Creek	**>2419.6**	**Present**	**2.27**	**1.10**	66	**0.22**	**>2419.6**	**Present**	0.19	**0.80**	74	0.00
CHE-008 Outfall (Gulf)	**600**	**Present**	0.12	**1.90**	70	**0.02**	**>2419.6**	**Present**	0.16	**1.60**	72	**0.11**
Clark Ave.	**1000**	**Present**	0.07	0	72	0.00	**>2419.6**	**Present**	0.14	0.0	74	**0.07**
Commandant's Way	**>2419.6**	**Present**	0.07	**0.80**	69	**0.10**	No Flow					
Crescent Ave.	Could Not Sample						Could Not Sample					
Eastern Ave. & Central St.	**820**	**Present**	**0.25**	**0.80**	72	**0.06**	**1400**	**Present**	0.09	0.00	72	0.00
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program											
Fenno & Columbus SW	Could Not Sample						Could Not Sample					
Fenno & Columbus 12-inch	Could Not Sample						Could Not Sample					
Fenno & Columbus 6-inch	Could Not Sample						Could Not Sample					
Gillooly Rd.	**>2419.6**	**Present**	**0.28**	**7.2**	68	**0.06**	**>2419.6**	**Present**	0.11	**0.80**	70	**0.05**
Gillooly Rd. North	**2400**	**Present**	**0.29**	**5.00**	66	0	**>2419.6**	**Present**	**0.33**	**4.00**	68	0.00
Griffin Way	**>2419.6**	**Present**	0.14	**4.5**	72	**0.00**	1700	**Present**	0.16	**2.40**	74	**0.07**
Guam Road	No Flow						No Flow					
Highland Street	**>2419.6**	**Present**	0.08	0.00	75	0.00	**2400**	**Present**	0.06	0.00	74	0.00
Locke St. (24")	**>2419.6**	**Present**	**0.30**	0.00	72	**0.07**	**>2419.6**	**Present**	0.10	0.00	76	0.00
Locke St. (12")	**1700**	Absent	0.09	**0.53**	72	0.00	No Flow					
Marginal & Eastern	**>2419.6**	**Present**	0.16	**1.10**	72	**0.02**	**2400**	**Present**	0.11	**0.80**	74	0.00
Route 1 ramp	No Flow						**>2419.6**	**Present**	0.15	**0.53**	78	**0.09**
Washburn St.	**>2419.6**	**Present**	**1.57**	**4.5**	72	0.00	**>2419.6**	**Present**	0.12	0.00	71	**0.03**
Webster Ave. & RBP	**>2419.6**	**Present**	**0.96**	**1.1**	68	0.00	**>2419.6**	**Present**	0.19	0.00	74	0.00
Winnisimmet St. (CHE003)	**>2419.6**	**Present**	**0.85**	**0.80**	72	**0.05**	Too Little To Sample					

2021

Location	Dry: E-coli (cfu/100ml)	Dry: Enterococcus (MPN/100ml)	Dry: Surfactants (mg/l)	Dry: Ammonia-Nit. (mg/l)	Dry: Temperature (°F)	Dry: Chlorine (mg/L)	Dry: Salinity (ppt)	Dry: Conductance (ms/cm)	Wet: E-coli (cfu/100ml)	Wet: Enterococcus (MPN/100ml)	Wet: Surfactants (mg/l)	Wet: Ammonia-Nit. (mg/l)	Wet: Temperature (°F)	Wet: Chlorine (mg/L)	Wet: Salinity (ppt)	Wet: Conductance (ms/cm)
Beacham & Market IE-3	Too little to sample								No Flow							
Beacham & Market IE-5	Too little to sample								Too little to sample							
Broadway (CHE-002)	61	**595**	<0.05	<0.5	67.6	**0.08**	2.60	4.88	**1300**	**2360**	<0.05	<0.5	65.7	0.04	2.30	3.94
Broadway @ Mill Creek	**276**	**520**	0.08	<0.5	73.0	**0.07**	**OR**	**OR**	**461**	**1850**	0.08	<0.5	68.8	0.00	1.60	3.12
CHE-008 Outfall (Gulf)	Tide too high								**921**	**464**	<0.10	**2.90**	66	0.00	1.40	2.4
Clark Ave.	No Flow								No Flow							
Commandant's Way	<1	<10	<0.05	<0.5	67.5	**0.45**	OR	OR	**>2420**	**3080**	<0.05	<0.5	65.1	0.02	4.70	7.0
Crescent Ave.	Could Not Sample								No Flow							
Eastern Ave. & Central St.	**>2420**	**443**	<0.05	<0.5	69	**0.04**	OR	17.22	**>2420**	**402**	<0.05	<0.5	66.6	0.00	2.5	4.31
Fenno & Columbus NE	Not City-Owned; Removed from Monitoring Program															
Fenno & Columbus SW	No Flow								**579**	**712**	<0.05	<0.5	68.5	0.04	1.00	2.00
Fenno & Columbus 12-inch	No Flow								No Flow							
Fenno & Columbus 6-inch	No Flow								No Flow							
Gillooly Rd.	57	10	0.24	**8.21**	67.7	0.01	3.30	5.43	**921**	**464**	<0.10	**2.9**	66.5	0.00	1.5	2.88
Gillooly Rd. North	187	**978**	0.15	<0.5	66.9	0.00	3.10	5.21	**866**	10	**0.32**	**5.1**	65.6	0.00	2.8	5.2
Griffin Way	**>2420**	**>24200**	0.06	**2.26**	70.1	**0.23**	**OR**	18.40	**866**	10	**0.32**	**5.10**	67.8	0.00	2.3	3.94
Guam Road	**>2420**	**959**	<0.05	<0.5	70.0	0.00	0.80	1672 µS/cm	No Flow							
Highland Street	**1990**	**771**	<0.05	<0.5	69.4	**0.03**	OR	OR	**>2420**	**368**	<0.05	<0.5	67.2	0.00	-	-
Locke St. (24")	**326**	**368**	<0.05	<0.5	67.9	**0.06**	2.00	3.50	**1986**	**439**	<0.05	<0.5	67.6	0.00	0.50	1.15
Locke St. (12")	**>2420**	278	0.08	<0.5	68.1	**0.07**	1.50	2.61	**291**	**480**	0.10	**6.20**	66.9	0.00	0.80	1.55
Marginal & Eastern	**326**	**1720**	<0.05	<0.5	69.0	**0.00**	**3.40**	6.25	**>2420**	**>24,000**	<0.05	<0.5	67.6	0.03	1.00	1.85
Route 1 ramp	**>2420**	**8660**	<0.05	**0.57**	72.9	0.00	3.10	5.63	**>2420**	**1660**	<0.10	<0.5	69.5	0.02	0.70	1.27
Washburn St.	**613**	**305**	<0.05	<0.5	67.4	0.00	0.80	1602 µS/cm	**>2420**	**368**	<0.05	<0.5	65.5	0.00	0.70	1.53
Webster Ave. & RBP	No Flow								**>2420**	**2010**	<0.05	<0.5	68.2	0.00	0.60	1.20
Winnisimmet St. (CHE003)	55	**473**	<0.05	<0.5	67.6	0.05	9.20	15.68	**461**	**1850**	0.08	<0.5	65.0	0.03	4.50	7.42

2022

Location	Dry: E-coli (cfu/100ml)	Dry: Enterococcus (MPN/100ml)	Dry: Surfactants (mg/l)	Dry: Ammonia-Nit. (mg/l)	Dry: Temperature (°F)	Dry: Chlorine (mg/L)	Dry: Salinity (ppt)	Dry: Conductance (ms/cm)	Wet: E-coli (cfu/100ml)	Wet: Enterococcus (MPN/100ml)	Wet: Surfactants (mg/l)	Wet: Ammonia-Nit. (mg/l)	Wet: Temperature (°F)	Wet: Chlorine (mg/L)	Wet: Salinity (ppt)	Wet: Conductance (ms/cm)
Beacham & Market IE-3	**1300**	31	<0.05	0.10	73.20	0.00	OR	OR	Outfalls Abandoned							
Beacham & Market IE-5	**579.0**	<10	0.06	0.10	73.00	0.00	OR	OR	Outfalls Abandoned							
Broadway (CHE-002)	No Flow								**>2420**	**1010**	0.19	<0.2	65.2	0.00	0.20	477.00
Broadway @ Mill Creek	**1414**	**183**	0.11	0.31	81.3	**0.33**	**OR**	**OR**	**>2420**	**>2420**	0.09	<0.2	63.5	**0.02**	0.00	157.80
CHE-008 Outfall (Gulf)	**1046**	**203**	0.09	**1.92**	72.0	0.0	3.6	66.5	**>2420**	**>2420**	**0.26**	<0.2	64.0	0.00	0.00	65.6
Clark Ave.	**1553**	**1660**	0.12	0.45	**72.80**	**0.09**	**OR**	**OR**	**>2420**	**>2420**	0.12	<0.2	65.0	0.00	0.2	401
Commandant's Way	Tide Too High								Tide Too High							
Crescent Ave.	<1	<10	<0.10	0.15	69.1	**0.15**	1.30	2.31	1200 MPN	**>2420**	<0.05	<0.2	63.60	0.00	1.00	18.61
Eastern Ave. & Central St.	168	**410**	0.05	**0.58**	73.4	0.0	OR	OR	**>2420**	**1010**	0.11	<0.2	64.0	**0.13**	0.1	281.0
Fenno & Columbus NE																
Fenno & Columbus SW																
Fenno & Columbus 12-inch																
Fenno & Columbus 6-inch																
Gillooly Rd.	**1140**	**980**	0.15	**2.42**	68.7	**0.085**	9.30	14.56	**>2420**	**>2420**	<0.05	<0.2	64.0	0.00	0.0	41.10
Gillooly Rd. North	**649**	30	**0.46**	**8.84**	71.6	**0.09**	1.90	3.33	**>2420**	**>2420**	<0.05	<0.2	64.5	0.00	0.0	137.7
Griffin Way	No Flow								**>2420**	**>2420**	<0.05	<0.2	64.9	**0.06**	0.1	2.40
Guam Road	No Flow								**>2420**	**>2420**	<0.05	<0.2	64.60	0.01	0.00	90.80
Highland Street	**1300**	52	<0.1	0.06	74.0	**0.02**	OR	OR	**>2420**	**>2420**	<0.05	<0.2	64.4	0.00	0	90.00
Locke St. (24")	50	41	<0.05	0.23	74.0	**0.04**	1.70	2.99	Could Not Sample							
Locke St. (12")	No Flow								**>2420**	**691**	0.10	<0.2	65.0	0.00	0.00	98.90
Marginal & Eastern	**>2420**	20	0.09	0.12	73.6	**0.07**	**OR**	OR	**>2420**	**>2420**	<0.05	<0.2	64.8	0.00	0.00	87.90
Route 1 ramp	No Flow								No Flow							
Washburn St.	**1553**	**1860**	<0.05	0.13	71.7	0.01	0.40	0.808	**>2420**	**>2420**	0.10	0.22	64.0	**0.03**	0.00	98.10
Webster Ave. & RBP	**>2420**	**504**	0.06	0.47	73.8	**0.05**	0.9	1.566	**>2420**	**>2420**	<0.05	<0.2	65.0	0.00	0.00	105.40
Winnisimmet St. (CHE003)	No Flow								**>2420**	**>2420**	**0.262**	<0.2	64.0	0.00	0.00	65.6

* **Bold** indicates a value that exceeds EPA benchmarks: Fecal coliform (through 2008) >200 cfu/100mL; E-coli >235 cfu/100mL; Enterococcus >104 cfu/100 mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0mg/l); chlorine >0.01mg/l.
(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight
** Thermometer broke; no data.

Legend		
Exceedances all or almost all sampling rounds.	Exceedances only during wet-weather rounds.	No flow or no exceedances.
Exceedances in some sampling rounds.	Only 1-2 exceedances	Determined to be not City-owned.

Table 4
City of Chelsea, Massachusetts
Illicit Discharge Detection & Elimination Program - IDDE Status & Field Investigation Summary

Last revision: 7/31/2022

Outfall	Receiving Water	Indication from Sampling (2006-2021)	IDDE Status	Next Steps
Beacham (IE-3)	Island End River	Repeated problem.	TV of drain completed but inconclusive. Segment isolation completed at key manholes; no intermittent flow upstream of DMH #2391; visual observation of growth/color identify likely source as connection from #307 Beacham. Dye testing done by City and owner showed dyed connections to sewer; however, a manager stated that potential other connections exist. Two rounds of dry-weather outfall sampling completed by MyRWA have shown acceptable results.	Comprehensive sewer separation and utility replacement under design. Should ID and address any remaining illicits.
Beacham (IE-5)	Island End River	Repeated problem.	TV of drain complete, but inconclusive. #350/360 Beacham & #95/105/125 Market dye confirmed to sewer. Dye at #370 Beacham to unknown location; City notified owner to investigate. Segment isolation completed at key manholes; no intermittent flow upstream of DMH #2302, but sandbag at 2397 fell out; no intermittent flow DMH 2394-2397; intermittent flow captured at DMH 2394 showed contaminants. Segment isolation completed 4/30/13; however, fire service to 100 Justin Dr. drained into CBs during isolation. Repeat drain segment isolation in DMHs 2394 and 2397 found contaminants in drains on Beacham & Market; however, tidal backwater likely impacted isolation (i.e., tide flows over sandbags). Cannot plug outfall due to poor condition. CCTV w/o pre-clean completed in four segments in an effort to track continuous dry-weather flow to source; pipes too filled with debris. Most recent MyRWA dry-weather sampling indicated no contaminants above benchmark criteria; possible tidal backwater contamination? Two rounds of dry-weather outfall sampling completed by MyRWA have shown acceptable results.	Comprehensive sewer separation and utility replacement under design. Should ID and address any remaining illicits.
Broadway (CHE-002)	Mystic River	Mostly wet-weather.	Annual monitoring is beginning to show low-level contamination. CSO eliminated on CSO CHE002 completed 12/04/14.	Annual monitoring.
Broadway @ Mill Creek	Mill Creek	Repeated problem.	Portions TV complete minus unable to TV; clear obstructions; TV remaining. Segment isolation completed with no intermittent flow upstream of DMH 975 and no identified connections except CBs between DMH 975 and outfall. Segment isolation completed in DMHs 975, 3048, 3049, 3051, 3052, and 3053; intermittent flow sampled in DMHs 3048 and 3049; results indicated contaminants just in structures on the bridge. Possible illicit or backwater contamination from Mill Creek? CCTV completed of drains on bridge; possible white staining present at one infiltrating joint; however, no known sewers or septic systems in the area. 2014 outfall sampling performed during astronomically low tide; no flow present; possible contamination of outfall from tidal backwaters.	Review results of CCTV; revisit next steps.
Carter St. Pump Station (discharge inside Everett arch culvert)	Island End River	NA	Prior TV reviewed; follow-up DMH inspections and TV performed. Three illicit discharges identified to date. Illicits removed; still dry-weather flow in pump station. Continuous flow traced upstream from Pump Station; no large flow sources identified; flow looks like sewage up through Everett Ave and as of Beech is clear w/very high mineral deposits. Samples 4-4-13 seemed to indicate contaminants downstream of Everett Avenue; however, sampling completed 7-15-13 showed very high contamination throughout (Rt. 1 ramp to PS). CCTV of Carter St. sewer Rt. 1 to Everett Ave attempted Sept. 2014; heavy debris prevented CCTV. 2001 CCTV of sewer reviewed; reference to "DMH" ~130LF downstream of SMH 25-0060; could be potential cross connection. Sampling completed 7-11-14 indicates high E.coli and NH4 upstream beyond Rt. 1 ramp, possibly from CHS or park. Sampling 8-27-14 shows contamination from Park and up Carter St. Investigation/sampling at CHS showed no contamination. Replacement of Carter St. sewer btw Blossom and Everett, and CIPP of sewers on Blossom and Everett, has been completed. Sampling completed 6-2-16, 8-30-16, 8-31-16 shows continued contamination from Beech Street to the Carter Street pump station. High concentrations of E. Coli were found on Carter Street from Third. Possible connection from State Garden. Sampling completed 7-21-17, 9-28-17 , 11-29-17 shows continued contamination from Addison Street to Carter Street pump station. Direct connection found from One North apartment building to DMH 4776.	Procure outside contractor to heavy clean line between SDMH 411400 and SDMH 414100 and CCTV. Resample and perform segment isolations where necessary.
CHE008	Chelsea River	Repeated problem.	6/28/18 Rapid Flow CCTV'd starting at SMH 26-0040, a service connection manhole from State Garden. The contractor was able to TV the full length of 72' downstream and 140' upstream before the TV was abandoned due to an obstruction in the pipe. It was observed that the flow in this manhole was flowing upstream from SMH 26-0040 to SMH 26-0050. 6/29/18 Rapid Flow CCTV'd starting at SMH 26-0050 but was unable to TV due to an obstruction in the pipe. After clearing debris from the bar rack at the PS, water levels decreased and Rapid Flow was able to TV drain line between DMH 2734 and DMH 2736. A 10" CP service connection was discovered 210' up from DMH 2734 discharging significant flow into drain line. The flow resembled "sewer like" flow. This service line is connected to	
Clark	Mill Creek	Wet-weather bacteria.	Drain segment isolation completed at key junction manholes; narrowed sources. Isolation continued on Louis & Washburn (DMH 994-998); flow sampled at DMHs 997 & 998; results indicated likely presence of an illicit. Isolation continued on Eastern Avenue - west drain (Spencer to Willoughby); high ammonia found in DMH 593-592 and DMH 590-589; bacteria increase DMH 400-3206; car wash drain connects at DMH 3206 adds continuous flow + chlorine (city to notify owner); no flow behind sandbags for all DMH connections to this drain other than mainline & car wash. Isolation continued on Eastern - east drain (Crescent to Willoughby), but most DMH covers were not able to be opened; continuous flow at DMH 3223 showed low-level contaminants.	Work with City to open DMH covers on east drain & re-investigate. Review results of CCTV; revisit next steps.
Commandants'	Island End River	Bacteria.	Outfall flowing for first time during wet-weather 2012; continue to monitor. Inspection of upstream DMHs indicated probable obstruction in outfall pipe. CCTV Sept. 2013 showed pipe is not obstructed; outfall is submerged causing surcharging.	Annual monitoring.
Crescent	Mill Creek	Variable results.	Greasy material found in connection to city DMH from private drainage system at 220-240 Second Street. Dye testing completed at #220 and #260 confirmed to sewer; no access gained to #240. CCTV and smoke testing of sewers in catchment area completed under separate project; no direct connections identified; however, three possible indirect cross connections based on "trace" smoke in catch basins (Everett btw Ash/Arlington, Spruce btw Everett/Third ROW, and Arlington btw Everett/Third ROW); mapping issues require connectivity investigation on Second btw Spruce/Arlington. Sampling completed 11-29-17 to investigate possible cross connection, no contaminants were found. Illicit discharge connection from Carter Street Pump Station.	Work with owner of 240 Second Street to gain access and dye test drains and sewer. Investigate sewer/drain connectivity on Second and Spruce/Arlington. Trace dry weather flow from outfall. Sampling results have shown improvement; still exceeding benchmarks consistently
Eastern & Central	Chelsea River	Elevated surf.; wet-weather hits.	Annual monitoring does not indicate priority need for IDDE.	Annual monitoring.
Fenno/Columbus NE	Mill Creek	NA	Segment isolation at key manholes initiated; indicated low-level contaminants in drains on Eastern tributary to DMH 673 (both directions). Bridge construction prevented access; field investigation stopped. Follow-up isolation found contaminants in last DMH upstream of outfall, no flow behind	Repeat isolation of DMHs 673, 3189 and 680.
Fenno/Columbus SW	Mill Creek	Wet-weather bacteria.	TV complete; owned by Chelsea; no evidence of need for IDDE.	Annual monitoring.
Fenno/Columbus 12"	Mill Creek	One wet-weather bacteria; possible x-contamination.	TV complete; no evidence of need for IDDE.	Annual monitoring.
Fenno/Columbus 6"	Mill Creek	No flow observed to date.	Annual monitoring indicates no need for IDDE.	Annual monitoring.

Table 4
City of Chelsea, Massachusetts
Illicit Discharge Detection & Elimination Program - IDDE Status & Field Investigation Summary

Last revision: 7/31/2022

Outfall	Receiving Water	Indication from Sampling (2006-2021)	IDDE Status	Next Steps
Gillooly	Mill Creek	Repeated problem.	MH inspection narrowed likely source to segment btw DMH at Stockton & DMH at #79 Gillooly; prior TV shows two 8" connections from direction of #60 Gillooly (Dever Park). Area inspected for sewer/drain structures and ZoomCAM video taken of one identified structure - negative. Review of historic plans completed, but no origin/potential pollutant source identified. Possible need for lateral launch TV; however, isolate/confirm prior due to cost of LLTV. Sanitary sewer is believed to be in poor condition. Follow-up inspection found white staining in drain; followed from outfall to 121 Webster Ave.; illicit identified; City contacted owner; awaiting results of investigation. 11-14-17 Stockton Street sanitary sewer replacement is complete and could have eliminated exfiltration of sewage to Gillooly outfalls. 11/14/2021 Conducted segment isolation and sampling of dry-weather flow. Sample results did not indicate the threshold exceedances seen during annual sampling in July 2021.	Post construction evaluation indicates this outfall continues to exceed benchmarks. Complete drain segment isolation and re-evaluate outfall.
Gillooly North	Mill Creek	High NH4.	Outfall of unknown origin; review of historic plans provided no information. CCTV attempted, but could not be performed.	Clean and re-attempt CCTV.
Griffin Way	Chelsea River	Repeated problem.	Portions CCTV complete; buried DMHs; further CCTV needed. Small volume of continuous dry-weather flow on Griffin Way with low-level contamination; substantial difference in volume of flow between Griffin Way and outfall, as well as increase in contamination, but lack of access to downstream DMHs hindering investigation. Small volume of continuous dry-weather flow on Griffin Way with low-level contamination; substantial difference in volume of flow between Griffin Way and outfall, as well as increase in contamination, but lack of access to downstream DMHs hindering investigation. Continuous flow traced back from outfall; no obvious large flow increase. White growth at outfall & inlet to DMH 2231B on Gulf property. Sampling of continuous flow indicated contaminants are present by DMH 388, but no access to city-owned portion of drain at 388A or 449.	Uncover buried DMHs on Eastern Avenue (DMHs 386 and 387) and resume IDDE. Contact MWRA for access to next upstream DMH (on MWRA property).
Guam	Mill Creek	Repeated problem.	Annual monitoring moved to upstream DMH; likely contaminants. Segment isolation and sampling of continuous dry-weather flow 7/10-11/14 found significant volume of dry-weather flow, with E.coli of 10000MPN/100mLs at interconnection from City of Everett; findings relayed to the City of Everett.	Resample Interconnection
Highland	Chelsea River	Repeated problem.	TV complete; no direct illicit discharges found; possible NPS contamination from #150 Marginal; continue to pursue owner.	Continue to pursue private owner; re-assess after removal.
Locke 12"	Mill Creek	Wet-weather; new dry in 2014; new dry in 2016	Annual monitoring indicates new need for IDDE. White staining found at invert of outfall. E.coli levels >24196 MPN/100mLs recorded during dry and wet weather sampling. Field investigation found no flow through 1st upstream catch basin. 7/27/21 Segment isolation and sampling of dry-weather flow narrowed likely source of illicit connection between #6 and #8 Summit Avenue. A 6"	Conduct dye testing on Summit Avenue to confirm four lateral connections between CB-13209 and CB-13290.
Locke 24"	Mill Creek	Wet-weather only.	Annual monitoring indicates no priority need for IDDE.	Revisit upstream structure, review mapping of MWRA sewer.
Marginal & Eastern	Chelsea River	Dry NH4/surf.; wet-weather.	Segment isolation completed at key manholes; no intermittent flow upstream of DMH #796; small amount of continuous flow downstream through to DMH #619; DMHs #632-#658 surcharged; substantial increase in flow between #619 and outfall. Isolations indicated possible source of contamination on Willow. Additional investigation found more access points and tide gates. Surcharging in DMHs 658 & 658A hinders investigation; however, unable to find cause of surcharging. CCTV on Willow from Central to Maverick attempted, but only 2 of 3 segments completed; no connections and no evidence of illicits.11/14/2019 - CCTV performed on Marginal from 01-0075 to M&E outfall. An unnumbered catch basin at the median of Marginal was found to be abandoned and the only connection to DMH 658, which was not surcharged. MH4058 was found to be surcharged. Bypass was performed at MH4048 to reveal a further connection to an unnumbered manhole located at just northwest of the fence at the driveway leading to the outfall. This pipe segment was lower than all adjacent segments and was surcharged quickly with the tides indicating deficiency in the tide gate located just downstream of CB-12936. >2' of debris was removed from unnumbered manhole by the fence. CCTV showed no indication of illicit connections or structural deficiencies in the pipes.	Repair/replace tide gate. Continue IDDE investigations directly upstream of 01-0075 and CB-12412.
Route 1 Ramp	Mill Creek	Variable results.	Annual monitoring of outfall moved upstream to avoid backwater/surcharged conditions. Continue to monitor for possible IDDE need.	Annual monitoring.
Washburn	Mill Creek	IDDE complete; continued problem.	Dye, TV and drain repair complete; continued bacteria problem. Segment isolation complete; no intermittent flow upstream of DMH at Washburn and Clinton; small continuous flow source next downstream segment, but sample results did not indicate contamination. CCTV completed in drain across Clinton Street from Irish Club to Washburn; two joints have significant mineral encrustation and infiltration weep, but no visible evidence of contaminants. 2014 outfall sampling performed during astronomically low tide; no flow present; possible contamination of outfall from tidal backwaters.	Annual monitoring.
Webster @ RBP	Mill Creek	Dry-weather flow ceased.	Sampling of continuous flow indicated high chlorine at interconnection with City of Everett. Contacted Everett Water & Sewer Dept. Water main repaired Dec. 2012. Re-sampling completed 3/27/13; results inconclusive. Re-sampling completed 07/17/13; results indicated that flow from Everett appears to have been removed and that there is evidence of an illicit discharge between the #350 Washington Avenue and #200 RBP sampling sites. CCTV from outfall upstream attempted Sept. 2013; only 68LF completed with no obvious IDDE concerns. Continuous dry-weather flow sampled at culvert access points three times 2013; results show high bacteria and chlorine, spotty ammonia, from Everett city line downstream. Field investigation 7/11/14 found no dry-weather flow in this drainage area from Everett City line thru outfall. 2015 dry-weather sampling found no flow at Everett city line or Washington Avenue; flow at 200 RBP, but could not sample due to low flow/flat bottom; no flow at outfall same day.	Flows indicate exceedances. This culvert is located by homeless camp, discuss with City options to remediate.
Winnisimmet (CHE003)	Chelsea River	CSO. Slightly elevated surfactants; wet bacteria.	2018 Annual monitoring wet-weather, showed high levels of contamination.	Monitor for highlevel of exceedences, to determine if it is a reoccuring issue.

Table 5
Chelsea, Massachusetts
2022 Stormwater Outfall Monitoring Summary - Inter-municipal Connections

DRY WEATHER — **Date of Sampling: 08/02/22** — **Time of Low Tide: 9:09 AM** — **Date of Last Precipitation: 8/01/2022 0.01 inches**

Location	Outfall		Inspection								Sampling							Comments
	Pipe Mat.	Dia. (in)	Time	Flow?	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	Solids	Sample Time	Sampler	E-coli (cfu/ 100ml)	Ammonia-Nitrogen (mg/l)	Surfact. (mg/l)	Temp. (°F)	Chlorine (mg/L)	
Second Street	RC	18	10:25 AM	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not inspect
Springvale @ Brook	Brick	42	9:26 AM	Y	10-15	Sewer	Cloudy/Grey	None	None	None	11:44 AM	CLR	**1203**	0.50	0.08	74.5	**0.08**	MH cover labeled as "Everett Sewer"
Third Street	RC/VC	18	9:55 AM	N	2	None	None	None	None	None	12:12 PM	RM	-	-	-	-	-	No flow
Union Street	Brick	36	9:52 AM	N	2-5	None	None	None	None	None	9:52 AM	CLR	-	-	-	-	-	No flow
Vale Street	RC	18	10:40 AM	N/A	7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not visit

WET WEATHER — **Date of Sampling: 10/14/22** — **Time of Low Tide: 8:49 AM** — **Date of Last Precipitation: 10/14/2022 0.45 inches**

Location	Outfall		Inspection								Sampling							Comments
	Pipe Mat.	Dia. (in)	Time	Flow?	Est. Flow (gpm)	Odor	Color	Turbidity	Floatables	Solids	Sample Time	Sampler	E-coli (cfu/ 100ml)	Ammonia-Nitrogen (mg/l)	Surfact. (mg/l)	Temp (°F)	Chlorine (mg/L)	
Second Street (1)	RC	18	11:15 AM	N/A	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Did not inspect
Springvale @ Brook	Brick	42	7:49 AM	Y	10-15	None	Cloudy	None	None	None	11:15 AM	LKO	**>2420**	<0.2	<0.05	64.6	0.00	
Third Street	RC/VC	18	10:55 AM	Y	5	None	None	None	None	None	11:26 AM	CLR	**>2420**	<0.2	<0.05	64.7	**0.15**	
Union Street	Brick	36	7:32 AM	Y	3-5	None	None	None	None	None	11:38 AM	LKO	**>2420**	<0.2	<0.05	65.0	**0.15**	
Vale Street	RC	18	7:25 AM	N	5	None	None	None	None	None	11:12 AM	CLR	-	-	-	-	-	Submerged to top of MH

*Chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by R.I Analytical (analysis date, time, & analyst on lab report).

(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight.

Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l; chlorine >0.01mg/l.

Table 6
Chelsea, Massachusetts
2022 Stormwater Outfall Monitoring Summary - Inter-municipal Connections
Comparison of 2009 - 2022 Results

Location	2009						2010						2011						2012										2013									
	Dry			Wet			Dry			Wet			Dry			Wet			Dry					Wet					Dry					Wet				
	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)
Second	No flow			840	0.3	5.00	2300	0.23	4.70	3100	0.4	2.10	670	0.30	4.0	620	0.40	1.3	100	0.19	2.5	74	0.13	1200	0.28	2.1	72	0.09	134	0.1	2.9	58	0.10	410	1.90	0.5	60	0.90
Springvale	<10	0.1	0.27	420	0.3	0.38	<10	0.17	0.35	14000	0.2	0.22	10	0.20	0.2	4700	0.10	<0.10	ND	0.24	0.3	72	0.19	ND	0.12	0.3	74	0.24	1972	0.3	1.1	72	0.10	2100	0.10	0.1	**	0.10
Third	No flow			No flow			No flow			1000	0.1	0.21	210	0.40	2.6	10	0.30	0.2	No Flow					300	<0.10	0.2	72	0.14	too little to sample					DMH Surcharged				
Union	No flow			<10	0.1	0.21	<10	<0.1	0.22	<10	<0.1	0.23	30	0.10	0.3	940	<0.1	0.3	ND	<0.10	0.6	72	2.61	ND	<0.10	0.3	74	2.40	No Flow					3300	0.10	0.1	**	1.10
Vale	No flow			No flow			No flow			No flow			No flow			No flow			No Flow					No Flow					1158	0.2	6.5	56	0.10	DMH Surcharged				

* Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by ChemServe Environmental Analysts (analysis date, time, & analyst on lab report).

(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight.

Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0 mg/l); chlorine >0.01mg/l.

** Thermometer broke; no data.

Table 6
Chelsea, Massachusetts
2022 Stormwater Outfall Monitoring Summary - Inter-municipal Connections
Comparison of 2009 - 2022 Results

	2014										2015										2016										2017									
	Dry					Wet					Dry					Wet					Dry					Wet					Dry					Wet				
Location	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**	**E-coli (cfu/ 100ml)**	**Surf. (mg/l)**	**Ammonia-N (mg/l)**	**Temperature (°F)**	**Chlorine (mg/L)**
Second	**2420**	0.16	**2.9**	66	**0.10**	**10462**	**1.40**	**2.5**	66	**0.20**	**2481**	**2.20**	0.2	70	**0.02**	**>24196**	**0.84**	**1.5**	69	0.00	**467**	0.11	**0.7**	50	**0.09**	**3448**	0.16	**2.6**	56	--	No Flow					**24196**	**0.49**	**1.8**	68	0.00
Springvale	**2420**	0.16	0.4	52	**0.02**	**6488**	**0.47**	0.2	65	**0.06**	**6488**	**0.37**	0.1	71	0.00	**>24196**	0.15	0.4	68	**0.04**	**2247**	0.18	0.4	69	**0.07**	**>24196**	**0.58**	<0.20	56	**0.06**	**7270**	0.23	0.3	70	**0.06**	**>24196**	**0.54**	**1.1**	67	**0.25**
Third	No Flow					**836**	**0.45**	0.2	65	**0.05**	40	0.25	0.2	74	**0.03**	**645**	**0.37**	0.1	65	0.00	<10	<0.10	<0.20	50	0.01	DMH Submerged					3	0.11	<0.2	72	**0.07**	205	<0.10	<0.2	72	**0.22**
Union	No Flow					**9804**	**0.40**	0.3	**68**	**0.11**	No Flow					**8164**	0.13	0.1	69	**0.06**	No Flow					No Flow					No Flow					Could not Sample				
Vale	No Flow					No Flow					No Flow					No Flow					No Flow					DMH Submerged					24	**0.57**	**7.2**	72	**0.09**	**1986**	**0.32**	**5.0**	62	**0.05**

* Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by ChemServe Environmental Analysts (analysis date, time, & analyst on lab report).

(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight.

Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0 mg/l); chlorine >0.01mg/l.

** Thermometer broke; no data.

Table 6
Chelsea, Massachusetts
2022 Stormwater Outfall Monitoring Summary - Inter-municipal Connections
Comparison of 2009 - 2022 Results

Location	2018										2019										2020									
	Dry					Wet					Dry					Wet					Dry					Wet				
	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)
Second	No Flow					**129970**	**0.78**	**0.59**	54	0.00	**650**	0.16	**4.80**	70	**0.07**	**12033[1]**	**0.27**	<0.20	66	**0.11**	**>2419.6**	0.17	**4.00**	73	**0.04**	**>2419.6**	0.09	**0.53**	74	**0.12**
Springvale	**4611**	<0.20	<0.10	70	**0.08**	**3874**	**0.26**	<0.10	45	**0.32**	**24196**	0.15	0.41	72	**0.03**	**7270**	<0.10	0.38	68	**0.05**	**>2419.6**	**0.88**	0.40	68	0.00	**>2419.6**	0.12	0.00	70	**0.03**
Third	No Flow					Could not Sample					41	**0.74**	**1.10**	77	**0.15**	**5794[1]**	**0.27**	<0.20	65	0.00	Could not Sample					Could not Sample				
Union	No Flow					Could not Sample					N/A	N/A	N/A	N/A	N/A	**2489**	0.12	0.39	68	**0.03**	**2400**	**0.54**	**0.67**	62	0.00	Could not Sample				
Vale	No Flow					Could not Sample					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Could not Sample					Could not Sample				

* Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by ChemServe Environmental Analysts (analysis date, time, & analyst on lab report).

(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight.
Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0 mg/l); chlorine >0.01mg/l.
** Thermometer broke; no data.

Table 6
Chelsea, Massachusetts
2022 Stormwater Outfall Monitoring Summary - Inter-municipal Connections
Comparison of 2009 - 2022 Results

Location	2021										2022									
	Dry					Wet					Dry					Wet				
	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)	E-coli (cfu/ 100ml)	Surf. (mg/l)	Ammonia-N (mg/l)	Temperature (°F)	Chlorine (mg/L)
Second	104	0.06	<0.5	70.1	**0.04**	**1733**	0.10	**3.0**	69.7	**0.03**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Springvale	**>2420**	<0.05	<0.5	70.0	**0.05**	**>2420**	<0.05	<0.5	66.5	0.00	**1203**	0.08	0.50	74.5	**0.08**	**>2420**	<0.2	<0.05	64.6	0.00
Third	155	0.14	**2.10**	75.1	**0.03**	**270**	0.06	1.80	70.4	0.00	-	**-**	-	-	**-**	**>2420**	<0.2	<0.05	64.7	**0.15**
Union	**>2420**	**0.08**	**<0.5**	71.4	0.00	**>2420**	<0.05	<0.5	66.6	**0.08**	**-**	**-**	**-**	-	-	**>2420**	<0.2	<0.05	65.0	**0.15**
Vale	8	0.17	5.27	73.0	0.00	29	0.13	**4.90**	63.9	**0.04**	N/A	N/A	N/A	N/A	N/A	**-**	**-**	-	-	**-**

* Temperature analyses done on site with laboratory-grade thermometer and chlorine analysis done on site with Hach Colorimeter DR 820 (analysis date, time, & analyst on inspection sheets); all others done by ChemServe Environmental

(1) Ecoli and/or Enterococci - Samples analyzed outside of 8-hour holding time due to laboratory oversight.
Bold indicates a value that exceeds EPA benchmarks: E-coli >235 cfu/100mL; surfactants >0.25 mg/l; ammonia-N >0.5 mg/l (previously 1.0 mg/l); chlorine >0.01mg/l.
** Thermometer broke; no data.

APPENDIX A

DRY-WEATHER INSPECTION & LABORATORY REPORTS

Dry-Weather Inspection Reports

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Beacham & Market (IE-3) Pipe Diameter: 12 Pipe Material: CMP

Descriptives: IE-3 is on west bank beside large culverts (left side when facing outfalls).

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 8:20 AM Flow Observed? Yes X No If yes, Estimated Flow: 3 gpm

Inspector: RLM

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	8:20 AM	RLM	
Enterococcus			08/02/22	8:20 AM	RLM	
Surfactants & Specific Conductance			08/02/22	8:20 AM	RLM	
Ammonia-nitrogen			08/02/22	8:20 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	8:20 AM	RLM	08/02/22	8:23 AM	RLM	73
Chlorine (mg/L)	08/02/22	8:20 AM	RLM	08/02/22	8:23 AM	RLM	0.00
Conductivity (mS/cm)	08/02/22	8:20 AM	RLM	08/02/22	8:23 AM	RLM	OR**
Salinity (ppt)	08/02/22	8:20 AM	RLM	08/02/22	8:23 AM	RLM	OR**

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Beacham & Market (IE-5) Pipe Diameter: 12 Pipe Material: RCP

Descriptives: IE-5 is on east bank beside large culverts (right side when facing outfalls).

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 8:25 AM Flow Observed? Yes X No If yes, Estimated Flow: 5 gpm

Inspector: RLM

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	8:25 AM	RLM	
Enterococcus			08/02/22	8:25 AM	RLM	
Surfactants & Specific Conductance			08/02/22	8:25 AM	RLM	
Ammonia-nitrogen			08/02/22	8:25 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	8:25 AM	RLM	08/02/22	8:28 AM	RLM	73
Chlorine (mg/L)	08/02/22	8:25 AM	RLM	08/02/22	8:28 AM	RLM	0.00
Conductivity (mS/cm)	08/02/22	8:25 AM	RLM	08/02/22	8:28 AM	RLM	OR**
Salinity (ppt)	08/02/22	8:25 AM	RLM	08/02/22	8:28 AM	RLM	OR**

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Broadway CHE002 Pipe Diameter: 30 Pipe Material: RCP

Descriptives: Discharges in NW wall of Chelsea Yacht Club; below green CSO sign.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 10:16 AM Flow Observed? Yes No X If yes, Estimated Flow: None gpm

Inspector: RLM

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Broadway & Mill Creek Pipe Diameter: 18 Pipe Material: RCP

Descriptives: Off side of bridge; downstream side.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:54 AM Flow Observed? Yes X No If yes, Estimated Flow: <1 gpm

Inspector: CLR

Observations:

General: Bubbles at the bottom of flow from outfall; possible soap

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	9:54 AM	CLR	
Enterococcus			08/02/22	9:54 AM	CLR	
Surfactants & Specific Conductance			08/02/22	9:54 AM	CLR	
Ammonia-nitrogen			08/02/22	9:54 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	9:54 AM	CLR	08/02/22	N/A	CLR	81
Chlorine (mg/L)	08/02/22	9:54 AM	CLR	08/02/22	N/A	CLR	0.33
Conductivity (mS/cm)	08/02/22	9:54 AM	CLR	08/02/22	N/A	CLR	OR**
Salinity (ppt)	08/02/22	9:54 AM	CLR	08/02/22	N/A	CLR	OR**

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: CHE-008 Pipe Diameter: 48 Pipe Material: RCP

Descriptives: Access through Gulf Oil. Must be sampled at dead low tide.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:13 AM Flow Observed? Yes X No If yes, Estimated Flow: 10 gpm

Inspector: RLM

Observations:

General: White milky color

Odor: None

Color: White-ish

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	9:13 AM	RLM	
Enterococcus			08/02/22	9:13 AM	RLM	
Surfactants & Specific Conductance			08/02/22	9:13 AM	RLM	
Ammonia-nitrogen			08/02/22	9:13 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	08/02/22	9:13 AM	RLM	08/02/22	9:16 AM	RLM	72
Chlorine (mg/L)	08/02/22	9:13 AM	RLM	08/02/22	9:16 AM	RLM	0.00
Conductivity (mS/cm)	08/02/22	9:13 AM	RLM	08/02/22	9:16 AM	RLM	6.65
Salinity (ppt)	08/02/22	9:13 AM	RLM	08/02/22	9:16 AM	RLM	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Clark Ave Pipe Diameter: 15 Pipe Material: CPE

Descriptives: Behind Walgreens.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 8:22 AM Flow Observed? Yes X No If yes, Estimated Flow: <1 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	8:22 AM	CLR	
Enterococcus			08/02/22	8:22 AM	CLR	
Surfactants & Specific Conductance			08/02/22	8:22 AM	CLR	
Ammonia-nitrogen			08/02/22	8:22 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	8:22 AM	CLR	08/02/22	8:25 AM	CLR	73
Chlorine (mg/L)	08/02/22	8:22 AM	CLR	08/02/22	8:25 AM	CLR	0.09
Conductivity (mS/cm)	08/02/22	8:22 AM	CLR	08/02/22	8:25 AM	CLR	OR**
Salinity (ppt)	08/02/22	8:22 AM	CLR	08/02/22	8:25 AM	CLR	OR**

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Commandant's Way Pipe Diameter: 84 Pipe Material: RCP

Descriptives: At Yatch Club; in large concrete vault; 2-60" tidegates.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:53 AM Flow Observed? Yes X No If yes, Estimated Flow: 2 gpm

Inspector: RLM

Observations:

General: Too little flow to sample

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	9:53 AM	RLM	
Enterococcus			08/02/22	9:53 AM	RLM	
Surfactants & Specific Conductance			08/02/22	9:53 AM	RLM	
Ammonia-nitrogen			08/02/22	9:53 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	9:53 AM	RLM	08/02/22	N/A	RLM	N/A
Chlorine (mg/L)	08/02/22	9:53 AM	RLM	08/02/22	N/A	RLM	N/A
Conductivity (mS/cm)	08/02/22	9:53 AM	RLM	08/02/22	N/A	RLM	N/A
Salinity (ppt)	08/02/22	9:53 AM	RLM	08/02/22	N/A	RLM	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Crescent Ave Pipe Diameter: 12 Pipe Material: RCP

Descriptives: Thru housing authority.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 8:38 AM Flow Observed? Yes X No If yes, Estimated Flow: 2-3 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	8:38 AM	CLR	
Enterococcus			08/02/22	8:38 AM	CLR	
Surfactants & Specific Conductance			08/02/22	8:38 AM	CLR	
Ammonia-nitrogen			08/02/22	8:38 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	08/02/22	8:38 AM	CLR	08/02/22	8:41 AM	CLR	69
Chlorine (mg/L)	08/02/22	8:38 AM	CLR	08/02/22	8:41 AM	CLR	0.15
Conductivity (mS/cm)	08/02/22	8:38 AM	CLR	08/02/22	8:41 AM	CLR	2.31
Salinity (ppt)	08/02/22	8:38 AM	CLR	08/02/22	8:41 AM	CLR	1.30

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Eastern & Central | Pipe Diameter: 24 | Pipe Material: RCP

Descriptives: Thru fenced grass lot north of bridge.

Inspection:

Date: 08/02/22 | Date Last Precipitation: 8/1/2022 | Time of Low Tide: 9:09 AM

Time: 8:45 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 2 gpm

Inspector: RLM

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	8:45 AM	RLM	
Enterococcus			08/02/22	8:45 AM	RLM	
Surfactants & Specific Conductance			08/02/22	8:45 AM	RLM	
Ammonia-nitrogen			08/02/22	8:45 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	8:45 AM	RLM	08/02/22	8:48 AM	RLM	73
Chlorine (mg/L)	08/02/22	8:45 AM	RLM	08/02/22	8:48 AM	RLM	0.00
Conductivity (mS/cm)	08/02/22	8:45 AM	RLM	08/02/22	8:48 AM	RLM	OR**
Salinity (ppt)	08/02/22	8:45 AM	RLM	08/02/22	8:48 AM	RLM	OR**

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Everett Interconnection @ Second | Pipe Diameter: 18 | Pipe Material: RCP

Descriptives: Pipe entering DMH in direction parallel to Second Street.

Inspection:

Date: 08/02/22 | Date Last Precipitation: 8/1/2022 | Time of Low Tide: 9:09 AM

Time: 12:20 PM | Flow Observed? Yes ____ No X | If yes, Estimated Flow: None gpm

Inspector: CLR

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Everett Interconnection @ Springvale | Pipe Diameter: 42 | Pipe Material: Brick

Descriptives: Across from House #141 in sidewalk (MH cover says sewer).

Inspection:

Date: 08/02/22 | Date Last Precipitation: 8/1/2022 | Time of Low Tide: 9:09 AM

Time: 11:44 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 20 gpm

Inspector: CLR

Observations:

General: None

Odor: Sewer Smell

Color: Cloudy/Gray

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	11:44 AM	CLR	
Enterococcus			08/02/22	11:44 AM	CLR	
Surfactants & Specific Conductance			08/02/22	11:44 AM	CLR	
Ammonia-nitrogen			08/02/22	11:44 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	08/02/22	11:44 AM	CLR	08/02/22	11:47 AM	CLR	75
Chlorine (mg/L)	08/02/22	11:44 AM	CLR	08/02/22	11:47 AM	CLR	0.08
Conductivity (mS/cm)	08/02/22	11:44 AM	CLR	08/02/22	11:47 AM	CLR	1.14
Salinity (ppt)	08/02/22	11:44 AM	CLR	08/02/22	11:47 AM	CLR	0.60

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Everett Interconnection @ Third Pipe Diameter: 18 Pipe Material: RCP

Descriptives: DMH in sidewalk.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 12:12 PM Flow Observed? Yes X No If yes, Estimated Flow: <1 gpm

Inspector: RLM

Observations:

General: Too little flow to sample

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	12:12 PM	RLM	
Enterococcus			08/02/22	12:12 PM	RLM	
Surfactants & Specific Conductance			08/02/22	12:12 PM	RLM	
Ammonia-nitrogen			08/02/22	12:12 PM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	12:12 PM	RLM	08/02/22	N/A	RLM	N/A
Chlorine (mg/L)	08/02/22	12:12 PM	RLM	08/02/22	N/A	RLM	N/A
Conductivity (mS/cm)	08/02/22	12:12 PM	RLM	08/02/22	N/A	RLM	N/A
Salinity (ppt)	08/02/22	12:12 PM	RLM	08/02/22	N/A	RLM	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Everett Interconnection @ Union Pipe Diameter: 36 Pipe Material: Brick

Descriptives: DMH in front of #12 Silver Street.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 12:02 PM Flow Observed? Yes ____ No X If yes, Estimated Flow: None gpm

Inspector: CLR

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Everett Interconnection @ Vale Pipe Diameter: 18 Pipe Material: RCP

Descriptives: DMH in street between Carter Street and Boston Road next to Stop & Shop.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 12:20 PM Flow Observed? Yes No If yes, Estimated Flow: N/A gpm

Inspector: RLM

Observations:

General: Could not open

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

No Photo Taken

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Fenno & Columbus SW Pipe Diameter: 36 Pipe Material: CMP

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall SW is left large pipe.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:10 AM Flow Observed? Yes No If yes, Estimated Flow: N/A gpm

Inspector: CLR

Observations:

General: Could not access

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

No Photo Taken

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Fenno & Columbus 12" Pipe Diameter: 8 Pipe Material: CMP

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, smaller pipe on left.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:10 AM Flow Observed? Yes No If yes, Estimated Flow: N/A gpm

Inspector: CLR

Observations:

General: Could not access

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

No Photo Taken

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Fenno & Columbus 6" Pipe Diameter: 6 Pipe Material: VC

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, 6-inch is on far right.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:10 AM Flow Observed? Yes No If yes, Estimated Flow: N/A gpm

Inspector: CLR

Observations:

General: Could not access

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

No Photo Taken

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Giloolly Rd. Pipe Diameter: 24 Pipe Material: RCP

Descriptives: In wooded area off end of Gillooly Rd.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 8:42 AM Flow Observed? Yes X No If yes, Estimated Flow: 3-4 gpm

Inspector: CLR

Observations:

General: Gray growth on pipe

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	8:42 AM	CLR	
Enterococcus			08/02/22	8:42 AM	CLR	
Surfactants & Specific Conductance			08/02/22	8:42 AM	CLR	
Ammonia-nitrogen			08/02/22	8:42 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	08/02/22	8:42 AM	CLR	08/02/22	8:45 AM	CLR	69
Chlorine (mg/L)	08/02/22	8:42 AM	CLR	08/02/22	8:45 AM	CLR	0.09
Conductivity (mS/cm)	08/02/22	8:42 AM	CLR	08/02/22	8:45 AM	CLR	14.56
Salinity (ppt)	08/02/22	8:42 AM	CLR	08/02/22	8:45 AM	CLR	9.30

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Giloolly Rd. North Pipe Diameter: 10 Pipe Material: RCP

Descriptives: ~ 100 ft upstream of private Giloolly outfall.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 10:31 AM Flow Observed? Yes X No If yes, Estimated Flow: 3-5 gpm

Inspector: CLR

Observations:

General: White/gray growth on downstream rocks.

Odor: Sewer Smell

Color: Cloudy/Gray

Turbidity: None

Flotables (solid/liquid): Rags

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	10:31 AM	CLR	
Enterococcus			08/02/22	10:31 AM	CLR	
Surfactants & Specific Conductance			08/02/22	10:31 AM	CLR	
Ammonia-nitrogen			08/02/22	10:31 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	10:31 AM	CLR	08/02/22	10:34 AM	CLR	72
Chlorine (mg/L)	08/02/22	10:31 AM	CLR	08/02/22	10:34 AM	CLR	0.09
Conductivity (mS/cm)	08/02/22	10:31 AM	CLR	08/02/22	10:34 AM	CLR	3.33
Salinity (ppt)	08/02/22	10:31 AM	CLR	08/02/22	10:34 AM	CLR	1.90

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Griffin Way Pipe Diameter: 18 Pipe Material: DI

Descriptives: Off end of seawall in bus parking lot. Outfall now has hole behind wood pier, so can no longer access to sample. Sampling from DMH btw guar

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 11:20 AM Flow Observed? Yes ____ No X If yes, Estimated Flow: None gpm

Inspector: RLM

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Guam Rd. Pipe Diameter: 48 Pipe Material: RCP

Descriptives: Outfall always submerged; sampling upstream DMH behind Chelsea Housing Authority.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 11:35 AM Flow Observed? Yes No X If yes, Estimated Flow: None gpm

Inspector: RLM

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Highland Street | Pipe Diameter: 36 | Pipe Material: RCP

Descriptives: Across from Highland St. in riprap slope.

Inspection:

Date: 08/02/22 | Date Last Precipitation: 8/1/2022 | Time of Low Tide: 9:09 AM

Time: 10:30 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 3 gpm

Inspector: RLM

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	10:30 AM	RLM	
Enterococcus			08/02/22	10:30 AM	RLM	
Surfactants & Specific Conductance			08/02/22	10:30 AM	RLM	
Ammonia-nitrogen			08/02/22	10:30 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	10:30 AM	RLM	08/02/22	10:33 AM	RLM	74
Chlorine (mg/L)	08/02/22	10:30 AM	RLM	08/02/22	10:33 AM	RLM	0.02
Conductivity (mS/cm)	08/02/22	10:30 AM	RLM	08/02/22	10:33 AM	RLM	OR**
Salinity (ppt)	08/02/22	10:30 AM	RLM	08/02/22	10:33 AM	RLM	OR**

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Locke Street (24") Pipe Diameter: 24 Pipe Material: RCP

Descriptives: At back corner of Home Depot; behind fence.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 10:50 AM Flow Observed? Yes X No If yes, Estimated Flow: 2-3 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	10:50 AM	CLR	
Enterococcus			08/02/22	10:50 AM	CLR	
Surfactants & Specific Conductance			08/02/22	10:50 AM	CLR	
Ammonia-nitrogen			08/02/22	10:50 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	08/02/22	10:50 AM	CLR	08/02/22	10:53 AM	CLR	74
Chlorine (mg/L)	08/02/22	10:50 AM	CLR	08/02/22	10:53 AM	CLR	0.04
Conductivity (mS/cm)	08/02/22	10:50 AM	CLR	08/02/22	10:53 AM	CLR	2.99
Salinity (ppt)	08/02/22	10:50 AM	CLR	08/02/22	10:53 AM	CLR	1.70

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Locke Street (12") Pipe Diameter: 12 Pipe Material: RCP

Descriptives: At back corner of Home Depot; behind fence.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 10:50 AM Flow Observed? Yes No X If yes, Estimated Flow: None gpm

Inspector: CLR

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Marginal & Eastern Pipe Diameter: 18 Pipe Material: DI

Descriptives: In block wall downstream (SW) of Chelsea Street Bridge.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 11:00 AM Flow Observed? Yes X No If yes, Estimated Flow: 3 gpm

Inspector: RLM

Observations:

General: None

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	11:00 AM	RLM	
Enterococcus			08/02/22	11:00 AM	RLM	
Surfactants & Specific Conductance			08/02/22	11:00 AM	RLM	
Ammonia-nitrogen			08/02/22	11:00 AM	RLM	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	11:00 AM	RLM	08/02/22	11:05 AM	RLM	74
Chlorine (mg/L)	08/02/22	11:00 AM	RLM	08/02/22	11:05 AM	RLM	0.07
Conductivity (mS/cm)	08/02/22	11:00 AM	RLM	08/02/22	11:05 AM	RLM	OR**
Salinity (ppt)	08/02/22	11:00 AM	RLM	08/02/22	11:05 AM	RLM	OR**

No Photo Taken

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Rt 1 Ramp Pipe Diameter: 18 Pipe Material: RCP

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall SW is left large pipe.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 9:20 AM Flow Observed? Yes ____ No ____ If yes, Estimated Flow: N/A gpm

Inspector: RLM

Observations:

General: Could not locate

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

No Photo Taken

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Washburn Street | Pipe Diameter: 8 | Pipe Material: PVC

Descriptives: At Naturalization Club.

Inspection:

Date: 08/02/22 | Date Last Precipitation: 8/1/2022 | Time of Low Tide: 9:09 AM

Time: 9:22 AM | Flow Observed? Yes X No | If yes, Estimated Flow: <1 gpm

Inspector: CLR

Observations:

General: Sump discharging beside outfall

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	9:22 AM	CLR	
Enterococcus			08/02/22	9:22 AM	CLR	
Surfactants & Specific Conductance			08/02/22	9:22 AM	CLR	
Ammonia-nitrogen			08/02/22	9:22 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	08/02/22	9:22 AM	CLR	08/02/22	9:25 AM	CLR	72
Chlorine (mg/L)	08/02/22	9:22 AM	CLR	08/02/22	9:25 AM	CLR	0.01
Conductivity (mS/cm)	08/02/22	9:22 AM	CLR	08/02/22	9:25 AM	CLR	0.81
Salinity (ppt)	08/02/22	9:22 AM	CLR	08/02/22	9:25 AM	CLR	0.40

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Webster @ RBP Pipe Diameter: 4' x 5' Pipe Material: RCP

Descriptives: Adjacent to RBP near Webster in grass strip.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 11:11 AM Flow Observed? Yes X No If yes, Estimated Flow: 2-3 gpm

Inspector: CLR

Observations:

General: Homelss Camp

Odor: None

Color: None

Turbidity: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			08/02/22	11:11 AM	CLR	
Enterococcus			08/02/22	11:11 AM	CLR	
Surfactants & Specific Conductance			08/02/22	11:11 AM	CLR	
Ammonia-nitrogen			08/02/22	11:11 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	08/02/22	11:11 AM	CLR	08/02/22	11:14 AM	CLR	74
Chlorine (mg/L)	08/02/22	11:11 AM	CLR	08/02/22	11:14 AM	CLR	0.05
Conductivity (mS/cm)	08/02/22	11:11 AM	CLR	08/02/22	11:14 AM	CLR	1.57
Salinity (ppt)	08/02/22	11:11 AM	CLR	08/02/22	11:14 AM	CLR	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Dry Weather

Outfall:

Outfall Name: Winnisimmet Street (CHE-003) Pipe Diameter: 30 Pipe Material: RCP

Descriptives: Recent demolition on site made outfall accessible; sample now from outfall, not up stream DMH.

Inspection:

Date: 08/02/22 Date Last Precipitation: 8/1/2022 Time of Low Tide: 9:09 AM

Time: 10:05 AM Flow Observed? Yes No X If yes, Estimated Flow: None gpm

Inspector: RLM

Observations:

General: None

Odor: N/A

Color: N/A

Turbidity: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Dry-Weather Laboratory Report

RP220809057

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine Certification # NH01005
Vermont State Certification # VT1005
www.nelsonanalytical.com

Client: Weston & Sampson:

09 August 2022

55 Walkers Brooks Drive Reading MA , 01867:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
122080249.01	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**IE-3**	Surface Water	02-Aug-22 08:20	02-Aug-22 15:00
122080249.02	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**IE-5**	Surface Water	02-Aug-22 08:25	02-Aug-22 15:00
122080249.03	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**CHE-008**	Surface Water	02-Aug-22 09:20	02-Aug-22 15:00
122080249.04	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Highland St.**	Surface Water	02-Aug-22 10:30	02-Aug-22 15:00
122080249.05	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Eastern & Central**	Surface Water	02-Aug-22 10:45	02-Aug-22 15:00
122080249.06	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Marginal & Eastern**	Surface Water	02-Aug-22 11:00	02-Aug-22 15:00

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP220809057

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Manchester, NH 03109
(603)622-0200

NH ELAP Accreditation #NH1005
Maine State Certification #NH01005
Vermont State Certifcation #VT1005
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Date Reported : 09-Aug-22 11:47

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 08:20

122080249.01

Chelsea, MA Stormwater Sampling, Chelsea, MA

IE-3

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.10	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1300**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	31	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	<0.05	0.05	mg/L	08/03/2022 23:45	SM 5540C	SUB8

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RP220809057

Date Reported : 09-Aug-22 11:47

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 08:25

122080249.02

Chelsea, MA Stormwater Sampling, Chelsea, MA

IE-5

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.10	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**579**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	<10	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.06	0.05	mg/L	08/03/2022 23:46	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:47

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 09:20

122080249.03

Chelsea, MA Stormwater Sampling, Chelsea, MA

CHE-008

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	1.92	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1046**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**203**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.09	0.05	mg/L	08/03/2022 23:48	SM 5540C	SUB8

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RP220809057

Date Reported : 09-Aug-22 11:47

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 10:30

122080249.04

Chelsea, MA Stormwater Sampling, Chelsea, MA

Highland St.

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.06	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1300**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	52	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	<0.10	0.05	mg/L	08/03/2022 23:49	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:47

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 10:45

122080249.05

Chelsea, MA Stormwater Sampling, Chelsea, MA

Eastern & Central

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.58	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**168**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**410**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.05	0.05	mg/L	08/03/2022 23:50	SM 5540C	SUB8

NELSON ANALYTICAL LAB

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Date Reported : 09-Aug-22 11:47

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 11:00

122080249.06

Chelsea, MA Stormwater Sampling, Chelsea, MA

Marginal & Eastern

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.12	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**>2420**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	20	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.09	0.05	mg/L	08/03/2022 23:50	SM 5540C	SUB8

NELSON ANALYTICAL LAB

490 East Industrial Park Drive
Manchester, NH 03109
Phone:(603)783-9097
Fax:(603)622-0200
E-Mail: info@nelsonanalytical.com

Lab ID #: 12208-249 1-6
8/2/22 1500
Date Rec'd: Time Rec'd: Temp Rec'd: 15.7
Rec'd by: MAS Location: FC
Cooler: (Y) N Ice: (Y) N
Chlorine: Pos Neg (N/A)
Bottles: 40ml HCL__40ml MeOH__4oz. Glass__
1L Amber HCL__MIN__250ml__LC__
Other: 12 FC bottles

Turnaround Requirements

Please inquire about rush service. If we are able to meet your needs, we will not charge a rush fee. Please call for prior approval.

Same day
One Day
Two Day
Three Day
Normal

Project Information

Project #: Chelsea, Ma Stormwater Sampling
Project Name:
Town/Site: Chelsea, MA
Sampler: BLM
Company: Weston + Sampson

Project Manager: Laura Toscano
Report to: Chelsea Roberge
Invoice to: Invoices@WSEinc.com
Phone: 603 732 8922
E-Mail: RobergeC@WSEinc.com

Receipt Conditions (Lab Use Only):

Laboratory Supplied Containers? ___Yes ___No
Containers Intact/Properly Labeled? ___Yes ___No
Were samples delivered on ice? ___Yes ___No
Brought directly from field? ___Yes ___No

Sample storage requirements:
ROOM TEMP / FREEZER/ REFRIGERATOR

Detection Requirements

Please specify any detection requirements:

Sample Matrix Key

Please Indicate the sample matrix in the sample matrix column by using the respective codes below:

S Soil **DW** Drinking Water **GW** Groundwater **WW** Wastewater **SW** Surface Water **O** Oil **X** Other (specify):

Project Requirements: Quote #:
NH Odd Fund: Y / N MCP: Y / N
Notes:

Sample Information

Sample ID	Collection Date/Time	Sample Matrix (see key)	# of Containers	Surfactants	Ammonia - Nitrogen	E Coli	Enterco	Laboratory ID
IE-3 8/2/2022	9:20		4	X	X	X	X	1
IE-5	9/2/22 9:35		4	X	X	X	X	2
CHE-008	9:20		4	X	X	X	X	3
Highland St	10:30		4	X	X	X	X	4
Eastern / Central	10:45		4	X	X	X	X	5
Marginal / Eastern	11:00		4	X	X	X	X	6

Relinquished by:	Date: 8/2/22 Time: 2:00p	Received by: Dana Savino 8/2/22 2:00pm
Relinquished by:	Date: Time:	Received by:
Relinquished by:	Date:	Received by:

NOTES:

RP22080957

RP220809058

NELSON ANALYTICAL LAB

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(603)622-0200

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Maine Certification # NH01005
Vermont State Certification # VT1005
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Client: Weston & Sampson:

09 August 2022

55 Walkers Brooks Drive Reading MA , 01867:

Enclosed are the results of analytical testing performed on the following samples:

Laboratory ID	Client Sample ID	Sample Location	Sample matrix	Date sampled	Date received
122080250.01	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Clark Avenue**	Surface Water	02-Aug-22 08:22	02-Aug-22 15:00
122080250.02	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Gillooly Road**	Surface Water	02-Aug-22 08:42	02-Aug-22 15:00
122080250.03	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Crescent Avenue**	Surface Water	02-Aug-22 09:02	02-Aug-22 15:00
122080250.04	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Washburn**	Surface Water	02-Aug-22 09:22	02-Aug-22 15:00
122080250.05	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Broadway @ Mill Creek**	Surface Water	02-Aug-22 09:54	02-Aug-22 15:00
122080250.06	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Gillooly North**	Surface Water	02-Aug-22 10:31	02-Aug-22 15:00
122080250.07	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Lock Street 24"**	Surface Water	02-Aug-22 10:50	02-Aug-22 15:00
122080250.08	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Webster@ RB Parkway**	Surface Water	02-Aug-22 11:11	02-Aug-22 15:00
122080250.09	Chelsea, MA Stormwater Sampling, Chelsea, MA:	**Everett Interconnect @ Springvale**	Surface Water	02-Aug-22 11:44	02-Aug-22 15:00

The results in this report relate only to the submitted samples. If you have any questions concerning this report, please feel free to contact us at (603)622-0200.

Approved By:

Andrew Nelson Laboratory Director

NELSON ANALYTICAL LAB

RP220809058

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 08:22

122080250.01

Chelsea, MA Stormwater Sampling, Chelsea, MA

Clark Avenue

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.45	0.10	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1553**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**1660**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.12	0.05	mg/L	08/03/2022 23:37	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 08:42

122080250.02

Chelsea, MA Stormwater Sampling, Chelsea, MA

Gillooly Road

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	2.42	0.10	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**980**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**1140**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.15	0.05	mg/L	08/03/2022 23:39	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 09:02

122080250.03

Chelsea, MA Stormwater Sampling, Chelsea, MA

Crescent Avenue

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.15	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	<1	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	<10	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	<0.10	0.10	mg/L	08/03/2022 23:39	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 09:22

122080250.04

Chelsea, MA Stormwater Sampling, Chelsea, MA

Washburn

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.13	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1553**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**1860**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	<0.05	0.05	mg/L	08/03/2022 23:40	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 09:54

122080250.05

Chelsea, MA Stormwater Sampling, Chelsea, MA

Broadway @ Mill Creek

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.31	0.10	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1414**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**183**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.11	0.05	mg/L	08/03/2022 23:41	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 10:31

122080250.06

Chelsea, MA Stormwater Sampling, Chelsea, MA

Gillooly North

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	8.84	0.10	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**649**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	30	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.46	0.05	mg/L	08/03/2022 23:42	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 10:50

122080250.07

Chelsea, MA Stormwater Sampling, Chelsea, MA

Lock Street 24"

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.23	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**50**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	41	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	<0.05	0.05	mg/L	08/03/2022 23:44	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 11:11

122080250.08

Chelsea, MA Stormwater Sampling, Chelsea, MA

Webster@ RB Parkway

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.47	0.05	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**>2420**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**504**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.06	0.05	mg/L	08/03/2022 23:44	SM 5540C	SUB8

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Date Reported : 09-Aug-22 11:48

REPORT OF ANALYSIS

sampled Date: 02-Aug-2022 11:44

122080250.09

Chelsea, MA Stormwater Sampling, Chelsea, MA

Everett Interconnect @ Springvale

Ammonia

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Ammonia as N	0.50	0.10	mg/L	08/06/2022 12:00	E350.1	SUB8

E.Coli Water

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
E. coli Bacteria	**1203**	1	mpn/100mL	08/02/2022 16:05	SM 9223B	KLW

Enterococcus

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Enterococci	**1780**	10	mpn/100mL	08/02/2022 17:30	Enterolert	KLW

MBAS

Analyte	Result	Reporting Limit	Units	Analyzed	Method	Analyst
Surfactants	0.08	0.05	mg/L	08/03/2022 23:45	SM 5540C	SUB8

NELSON ANALYTICAL LAB

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Phone:(603)783-9097
Fax:(603)622-0200
E-Mail: info@nelsonanalytical.com

36

Lab ID #: 12208-250 1-9

8/2/22 1500 15.7
Date Rec'd: Time Rec'd: Temp Rec'd:
Rec'd by: MS Location:
Cooler: (Y) N Ice: (Y) N FC
Chlorine: Pos Neg (N/A)
Bottles: 40ml HCL 40ml MeOH 4oz. Glass
1L Amber HCL MIN 250ml LC
Other: 1-250ml

Turnaround Requirements

Please inquire about rush service. If we are able to meet your needs, we will not charge a rush fee. Please call for prior approval.

Same day
One Day
Two Day
Three Day
Normal

Project Information

Project #: Chelsea, MA Stormwater Sampling
Project Name:
Town/Site: Chelsea, MA
Sampler: R L M
Company: Weston & Sampson

Project Manager: Laurie Toscano
Report to: Chelsea Roberge
Invoice to: invoices@wseinc.com
Phone:
E-Mail: roberge@wseinc.com

Receipt Conditions (Lab Use Only):

Laboratory Supplied Containers? ___Yes ___No
Containers Intact/Properly Labeled? ___Yes ___No
Were samples delivered on ice? ___Yes ___No
Brought directly from field? ___Yes ___No

Sample storage requirements:
ROOM TEMP / FREEZER/ REFRIGERATOR

Detection Requirements

Please specify any detection requirements:

Sample Matrix Key

Please Indicate the sample matrix in the sample matrix column by using the respective codes below:

S Soil **DW** Drinking Water **GW** Groundwater **WW** Wastewater **SW** Surface Water **O** Oil **X** Other (specify):

Project Requirements: Quote #:
NH Odd Fund: Y / N MCP: Y / N
Notes:

Sample Information

Sample ID	Collection Date/Time	Sample Matrix (see key)	# of Containers	MBAS	Ecoli	Entero	Ammonia-N	Laboratory ID
Clark Ave	8/2 8:22			1				1
Gilloody Rd	8:42			1				2
Crescent Ave	9:02			1				3
Washburn	9:22			1				4
Broadway @ Mill Creek	9:54						1	5
Gilloody North	10:31			1				6
Locke Street 24"	10:50			1				7
Webster @ RR Parkway	11:11			1				8
Everette Interconnect @ Springvale	11:44			1				9

Relinquished by:	Date: 8/2/22 Time: 2:00p	Received by: Dawn Severin 8/2/22 2:00pm	NOTES:
Relinquished by:	Date: Time:	Received by:	
Relinquished by:	Date: Time:	Received by:	

RP22080958

APPENDIX B

WET-WEATHER INSPECTION & LABORATORY REPORTS

Wet-Weather Inspection Reports

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Beacham & Market (IE-3) Pipe Diameter: 12 Pipe Material: CMP

Descriptives: IE-3 is on west bank beside large culverts (left side when facing outfalls).

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: N/A Flow Observed? Yes No X If yes, Estimated Flow: N/A gpm

Inspector: N/A

Observations:

General: Outfalls Abandoned

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Beacham & Market (IE-5) Pipe Diameter: 12 Pipe Material: RCP

Descriptives: IE-5 is on east bank beside large culverts (right side when facing outfalls).

Inspection:

Date: N/A Date Last Precipitation: N/A Time of Low Tide: N/A

Time: N/A Flow Observed? Yes No X If yes, Estimated Flow: N/A gpm

Inspector: N/A

Observations:

General: Outfalls Abandoned

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Broadway CHE002 Pipe Diameter: 30 Pipe Material: RCP

Descriptives: Discharges in NW wall of Chelsea Yacht Club; below green CSO sign.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 8:25 AM Flow Observed? Yes X No If yes, Estimated Flow: 8-10 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	8:25 AM	CLR	
Enterococcus			10/14/22	8:25 AM	CLR	
Surfactants & Specific Conductance			10/14/22	8:25 AM	CLR	
Ammonia-nitrogen			10/14/22	8:25 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	10/14/22	8:25 AM	CLR	10/14/22	8:28 AM	CLR	65
Chlorine (mg/L)	10/14/22	8:25 AM	CLR	10/14/22	8:28 AM	CLR	0.00
Conductivity (mS/cm)	10/14/22	8:25 AM	CLR	10/14/22	8:28 AM	CLR	0.48
Salinity (ppt)	10/14/22	8:25 AM	CLR	10/14/22	8:28 AM	CLR	0.20

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Broadway & Mill Creek Pipe Diameter: 18 Pipe Material: RCP

Descriptives: Off side of bridge; downstream side.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 9:10 AM Flow Observed? Yes X No If yes, Estimated Flow: 10-15 gpm

Inspector: LO

Observations:

General: None

Odor: None

Color: Cloudy

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	9:10 AM	LO	
Enterococcus			10/14/22	9:10 AM	LO	
Surfactants & Specific Conductance			10/14/22	9:10 AM	LO	
Ammonia-nitrogen			10/14/22	9:10 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	9:10 AM	LO	10/14/22	9:13 AM	LO	64
Chlorine (mg/L)	10/14/22	9:10 AM	LO	10/14/22	9:13 AM	LO	0.02
Conductivity (mS/cm)	10/14/22	9:10 AM	LO	10/14/22	9:13 AM	LO	0.16
Salinity (ppt)	10/14/22	9:10 AM	LO	10/14/22	9:13 AM	LO	0.02

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: CHE-008 Pipe Diameter: 48 Pipe Material: RCP

Descriptives: Access through Gulf Oil. Must be sampled at dead low tide.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 9:20 AM Flow Observed? Yes X No If yes, Estimated Flow: 5-8 gpm

Inspector: CLR

Observations:

General: Grey/Black Water

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter			Date	Time	Person	Preservative
E-coli			10/14/22	9:20 AM	N/A	
Enterococcus			10/14/22	9:20 AM	N/A	
Surfactants & Specific Conductance			10/14/22	9:20 AM	N/A	
Ammonia-nitrogen			10/14/22	9:20 AM	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	9:20 AM	N/A	10/14/22	9:23 AM	N/A	64
Chlorine (mg/L)	10/14/22	9:20 AM	N/A	10/14/22	9:23 AM	N/A	0.00
Conductivity (mS/cm)	10/14/22	9:20 AM	N/A	10/14/22	9:23 AM	N/A	0.22
Salinity (ppt)	10/14/22	9:20 AM	N/A	10/14/22	9:23 AM	N/A	0.10

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Clark Ave Pipe Diameter: 15 Pipe Material: CPE

Descriptives: Behind Walgreens.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 7:50 AM Flow Observed? Yes X No If yes, Estimated Flow: 0-3 gpm

Inspector: N/A

Observations:

General: None

Odor: None

Color: Clear

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	7:50 AM	N/A	
Enterococcus			10/14/22	7:50 AM	N/A	
Surfactants & Specific Conductance			10/14/22	7:50 AM	N/A	
Ammonia-nitrogen			10/14/22	7:50 AM	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	7:50 AM	N/A	10/14/22	N/A	N/A	65
Chlorine (mg/L)	10/14/22	7:50 AM	N/A	10/14/22	N/A	N/A	0.00
Conductivity (mS/cm)	10/14/22	7:50 AM	N/A	10/14/22	N/A	N/A	0.40
Salinity (ppt)	10/14/22	7:50 AM	N/A	10/14/22	N/A	N/A	0.20

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Commandant's Way | Pipe Diameter: 84 | Pipe Material: RCP

Descriptives: At Yatch Club; in large concrete vault; 2-60" tidegates.

Inspection:

Date: 10/14/22 | Date Last Precipitation: 10/14/2022 | Time of Low Tide: 8:49 AM

Time: 8:12 AM | Flow Observed? Yes ____ No X | If yes, Estimated Flow: N/A gpm

Inspector: CLR

Observations:

General: Water level too high to sample

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Crescent Ave | Pipe Diameter: 12 | Pipe Material: RCP

Descriptives: Through housing authority.

Inspection:

Date: 10/14/22 | Date Last Precipitation: 10/14/2022 | Time of Low Tide: 8:49 AM

Time: 8:28 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 0-3 gpm

Inspector: LO

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	8:28 AM	LO	
Enterococcus			10/14/22	8:28 AM	LO	
Surfactants & Specific Conductance			10/14/22	8:28 AM	LO	
Ammonia-nitrogen			10/14/22	8:28 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	8:28 AM	LO	10/14/22	8:31 AM	LO	64
Chlorine (mg/L)	10/14/22	8:28 AM	LO	10/14/22	8:31 AM	LO	0.00
Conductivity (mS/cm)	10/14/22	8:28 AM	LO	10/14/22	8:31 AM	LO	0.02
Salinity (ppt)	10/14/22	8:28 AM	LO	10/14/22	8:31 AM	LO	1.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Eastern & Central Pipe Diameter: 24 Pipe Material: RCP

Descriptives: Thru fenced grass lot north of bridge.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:06 AM Flow Observed? Yes X No If yes, Estimated Flow: 10-20 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	10:06 AM	CLR	
Enterococcus			10/14/22	10:06 AM	CLR	
Surfactants & Specific Conductance			10/14/22	10:06 AM	CLR	
Ammonia-nitrogen			10/14/22	10:06 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	10/14/22	10:06 AM	CLR	10/14/22	10:09 AM	CLR	65
Chlorine (mg/L)	10/14/22	10:06 AM	CLR	10/14/22	10:09 AM	CLR	0.13
Conductivity (mS/cm)	10/14/22	10:06 AM	CLR	10/14/22	10:09 AM	CLR	0.28
Salinity (ppt)	10/14/22	10:06 AM	CLR	10/14/22	10:09 AM	CLR	0.10

Chelsea, Massachusetts
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Wet Weather

Outfall:

Outfall Name: Everett Interconnection @ Second Pipe Diameter: 18 Pipe Material: RCP

Descriptives: Pipe entering DMH in direction parallel to Second Street.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 11:37 AM Flow Observed? Yes X No If yes, Estimated Flow: 2-4 gpm

Inspector: N/A

Observations:

General: Unable to access flow

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	11:37 AM	N/A	
Enterococcus			10/14/22	11:37 AM	N/A	
Surfactants & Specific Conductance			10/14/22	11:37 AM	N/A	
Ammonia-nitrogen			10/14/22	11:37 AM	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	11:37 AM	N/A	10/14/22	N/A	N/A	N/A
Chlorine (mg/L)	10/14/22	11:37 AM	N/A	10/14/22	N/A	N/A	N/A
Conductivity (mS/cm)	10/14/22	11:37 AM	N/A	10/14/22	N/A	N/A	N/A
Salinity (ppt)	10/14/22	11:37 AM	N/A	10/14/22	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
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Wet Weather

Outfall:

Outfall Name: Everett Interconnection @ Springvale Pipe Diameter: 42 Pipe Material: Brick

Descriptives: Across from House #141 in sidewalk (MH cover says sewer).

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 11:15 AM Flow Observed? Yes X No If yes, Estimated Flow: 15 gpm

Inspector: LO

Observations:

General: None

Odor: None

Color: Slightly Cloudy

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	11:15 AM	LO	
Enterococcus			10/14/22	11:15 AM	LO	
Surfactants & Specific Conductance			10/14/22	11:15 AM	LO	
Ammonia-nitrogen			10/14/22	11:15 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	11:15 AM	LO	10/14/22	11:18 AM	LO	65
Chlorine (mg/L)	10/14/22	11:15 AM	LO	10/14/22	11:18 AM	LO	0.00
Conductivity (mS/cm)	10/14/22	11:15 AM	LO	10/14/22	11:18 AM	LO	0.14
Salinity (ppt)	10/14/22	11:15 AM	LO	10/14/22	11:18 AM	LO	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
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Wet Weather

Outfall:

Outfall Name: Everett Interconnection @ Third Pipe Diameter: 18 Pipe Material: RCP

Descriptives: DMH in sidewalk.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 11:26 AM Flow Observed? Yes X No If yes, Estimated Flow: 15-20 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	11:26 AM	CLR	
Enterococcus			10/14/22	11:26 AM	CLR	
Surfactants & Specific Conductance			10/14/22	11:26 AM	CLR	
Ammonia-nitrogen			10/14/22	11:26 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	11:26 AM	CLR	10/14/22	11:29 AM	CLR	65
Chlorine (mg/L)	10/14/22	11:26 AM	CLR	10/14/22	11:29 AM	CLR	0.13
Conductivity (mS/cm)	10/14/22	11:26 AM	CLR	10/14/22	11:29 AM	CLR	0.09
Salinity (ppt)	10/14/22	11:26 AM	CLR	10/14/22	11:29 AM	CLR	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Everett Interconnection @ Union Pipe Diameter: 36 Pipe Material: Brick

Descriptives: DMH in front of #12 Silver Street.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 11:38 AM Flow Observed? Yes X No If yes, Estimated Flow: 0-3 gpm

Inspector: LO

Observations:

General: None

Odor: None

Color: Slightly Cloudy

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	11:38 AM	LO	
Enterococcus			10/14/22	11:38 AM	LO	
Surfactants & Specific Conductance			10/14/22	11:38 AM	LO	
Ammonia-nitrogen			10/14/22	11:38 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	11:38 AM	LO	10/14/22	11:41 AM	LO	65
Chlorine (mg/L)	10/14/22	11:38 AM	LO	10/14/22	11:41 AM	LO	0.15
Conductivity (mS/cm)	10/14/22	11:38 AM	LO	10/14/22	11:41 AM	LO	0.05
Salinity (ppt)	10/14/22	11:38 AM	LO	10/14/22	11:41 AM	LO	0.00

Chelsea, Massachusetts
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Wet Weather

Outfall:

Outfall Name: Everett Interconnection @ Vale | Pipe Diameter: 18 | Pipe Material: RCP

Descriptives: DMH in street between Carter Street and Boston Road next to Stop & Shop.

Inspection:

Date: 10/14/22 | Date Last Precipitation: 10/14/2022 | Time of Low Tide: 8:49 AM

Time: 11:12 AM | Flow Observed? Yes ____ No X | If yes, Estimated Flow: N/A gpm

Inspector: CLR

Observations:

General: Submerged to rim of DMH

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Fenno & Columbus SW Pipe Diameter: 36 Pipe Material: CMP

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall SW is left large pipe.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:42 AM Flow Observed? Yes ____ No X If yes, Estimated Flow: N/A gpm

Inspector: LO

Observations:

General: Cannot Access

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Fenno & Columbus 12" Pipe Diameter: 8 Pipe Material: CMP

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, smaller pipe on left.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:42 AM Flow Observed? Yes No X If yes, Estimated Flow: N/A gpm

Inspector: LO

Observations:

General: Cannot Access

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
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Wet Weather

Outfall:

Outfall Name: Fenno & Columbus 6" Pipe Diameter: 6 Pipe Material: VC

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall, 6-inch is on far right.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:42 AM Flow Observed? Yes No X If yes, Estimated Flow: N/A gpm

Inspector: LO

Observations:

General: Cannot Access

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Giloolly Rd. Pipe Diameter: 24 Pipe Material: RCP

Descriptives: In wooded area off end of Gillooly Rd.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 9:40 AM Flow Observed? Yes X No If yes, Estimated Flow: 15 gpm

Inspector: LO

Observations:

General: None

Odor: None

Color: Cloudy-gray

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	9:40 AM	LO	
Enterococcus			10/14/22	9:40 AM	LO	
Surfactants & Specific Conductance			10/14/22	9:40 AM	LO	
Ammonia-nitrogen			10/14/22	9:40 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	9:40 AM	LO	10/14/22	9:43 AM	LO	64
Chlorine (mg/L)	10/14/22	9:40 AM	LO	10/14/22	9:43 AM	LO	0.00
Conductivity (mS/cm)	10/14/22	9:40 AM	LO	10/14/22	9:43 AM	LO	0.07
Salinity (ppt)	10/14/22	9:40 AM	LO	10/14/22	9:43 AM	LO	0.00

Chelsea, Massachusetts
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Wet Weather

Outfall:

Outfall Name: Giloolly Rd. North Pipe Diameter: 10 Pipe Material: RCP

Descriptives: ~ 100 ft upstream of private Giloolly outfall.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:09 AM Flow Observed? Yes X No If yes, Estimated Flow: 10 gpm

Inspector: LO

Observations:

General: White growth on pipe; pipe 50% submerged

Odor: None

Color: Slightly Cloudy

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	10:09 AM	LO	
Enterococcus			10/14/22	10:09 AM	LO	
Surfactants & Specific Conductance			10/14/22	10:09 AM	LO	
Ammonia-nitrogen			10/14/22	10:09 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	10:09 AM	LO	10/14/22	10:12 AM	LO	65
Chlorine (mg/L)	10/14/22	10:09 AM	LO	10/14/22	10:12 AM	LO	0.00
Conductivity (mS/cm)	10/14/22	10:09 AM	LO	10/14/22	10:12 AM	LO	0.14
Salinity (ppt)	10/14/22	10:09 AM	LO	10/14/22	10:12 AM	LO	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Griffin Way | Pipe Diameter: 18 | Pipe Material: DI

Descriptives: Off end of seawall in bus parking lot.

Inspection:

Date: 10/14/22 | Date Last Precipitation: 10/14/2022 | Time of Low Tide: 8:49 AM

Time: 10:29 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 10-20 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	10:29 AM	CLR	
Enterococcus			10/14/22	10:29 AM	CLR	
Surfactants & Specific Conductance			10/14/22	10:29 AM	CLR	
Ammonia-nitrogen			10/14/22	10:29 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	10:29 AM	CLR	10/14/22	10:33 AM	CLR	65
Chlorine (mg/L)	10/14/22	10:29 AM	CLR	10/14/22	10:33 AM	CLR	0.06
Conductivity (mS/cm)	10/14/22	10:29 AM	CLR	10/14/22	10:33 AM	CLR	0.00
Salinity (ppt)	10/14/22	10:29 AM	CLR	10/14/22	10:33 AM	CLR	0.10

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Guam Rd. Pipe Diameter: 48 Pipe Material: RCP

Descriptives: Outfall always submerged; sampling upstream DMH behind Chelsea Housing Authority.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:58 AM Flow Observed? Yes X No If yes, Estimated Flow: 20-30 gpm

Inspector: CLR

Observations:

General: None

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	10:58 AM	CLR	
Enterococcus			10/14/22	10:58 AM	CLR	
Surfactants & Specific Conductance			10/14/22	10:58 AM	CLR	
Ammonia-nitrogen			10/14/22	10:58 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	10:58 AM	CLR	10/14/22	N/A	CLR	65
Chlorine (mg/L)	10/14/22	10:58 AM	CLR	10/14/22	N/A	CLR	0.01
Conductivity (mS/cm)	10/14/22	10:58 AM	CLR	10/14/22	N/A	CLR	0.09
Salinity (ppt)	10/14/22	10:58 AM	CLR	10/14/22	N/A	CLR	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
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Wet Weather

Outfall:

Outfall Name: Highland Street | Pipe Diameter: 36 | Pipe Material: RCP

Descriptives: Across from Highland St. in riprap slope.

Inspection:

Date: 10/14/22 | Date Last Precipitation: 10/14/2022 | Time of Low Tide: 8:49 AM

Time: 9:38 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 20-30 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: Gray/Black

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	9:38 AM	CLR	
Enterococcus			10/14/22	9:38 AM	CLR	
Surfactants & Specific Conductance			10/14/22	9:38 AM	CLR	
Ammonia-nitrogen			10/14/22	9:38 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	10/14/22	9:38 AM	CLR	10/14/22	9:41 AM	CLR	64
Chlorine (mg/L)	10/14/22	9:38 AM	CLR	10/14/22	9:41 AM	CLR	0.00
Conductivity (mS/cm)	10/14/22	9:38 AM	CLR	10/14/22	9:41 AM	CLR	0.09
Salinity (ppt)	10/14/22	9:38 AM	CLR	10/14/22	9:41 AM	CLR	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Locke Street (24") Pipe Diameter: 24 Pipe Material: RCP

Descriptives: At back corner of Home Depot; behind fence.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:30 AM Flow Observed? Yes No X If yes, Estimated Flow: N/A gpm

Inspector: LO

Observations:

General: Pipe submerged

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Locke Street (12") Pipe Diameter: 12 Pipe Material: RCP

Descriptives: At back corner of Home Depot; behind fence.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:30 AM Flow Observed? Yes X No If yes, Estimated Flow: 5 gpm

Inspector: LO

Observations:

General: Grey growth on pipe

Odor: None

Color: Slightly Discolored

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	10:30 AM	LO	
Enterococcus			10/14/22	10:30 AM	LO	
Surfactants & Specific Conductance			10/14/22	10:30 AM	LO	
Ammonia-nitrogen			10/14/22	10:30 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	10:30 AM	LO	10/14/22	10:33 AM	LO	65
Chlorine (mg/L)	10/14/22	10:30 AM	LO	10/14/22	10:33 AM	LO	0.00
Conductivity (mS/cm)	10/14/22	10:30 AM	LO	10/14/22	10:33 AM	LO	0.10
Salinity (ppt)	10/14/22	10:30 AM	LO	10/14/22	10:33 AM	LO	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Marginal & Eastern Pipe Diameter: 18 Pipe Material: DI

Descriptives: In block wall downstream (SW) of Chelsea Street Bridge.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 9:54 AM Flow Observed? Yes X No If yes, Estimated Flow: 20-30 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	9:54 AM	CLR	
Enterococcus			10/14/22	9:54 AM	CLR	
Surfactants & Specific Conductance			10/14/22	9:54 AM	CLR	
Ammonia-nitrogen			10/14/22	9:54 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	9:54 AM	CLR	10/14/22	9:57 AM	CLR	65
Chlorine (mg/L)	10/14/22	9:54 AM	CLR	10/14/22	9:57 AM	CLR	0.00
Conductivity (mS/cm)	10/14/22	9:54 AM	CLR	10/14/22	9:57 AM	CLR	0.09
Salinity (ppt)	10/14/22	9:54 AM	CLR	10/14/22	9:57 AM	CLR	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Rt 1 Ramp Pipe Diameter: 18 Pipe Material: RCP

Descriptives: Thru fence at Fenno/Columbus; 4 outfalls under concrete blocks; facing outfall SW is left large pipe.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:48 AM Flow Observed? Yes ____ No X If yes, Estimated Flow: N/A gpm

Inspector: CLR

Observations:

General: None

Odor: N/A

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	9:57 AM	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	9:57 AM	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	9:57 AM	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	9:57 AM	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Washburn Street | Pipe Diameter: 8 | Pipe Material: PVC

Descriptives: At Naturalization Club.

Inspection:

Date: 10/14/22 | Date Last Precipitation: 10/14/2022 | Time of Low Tide: 8:49 AM

Time: 8:48 AM | Flow Observed? Yes X No | If yes, Estimated Flow: 10-15 gpm

Inspector: LO

Observations:

General: None

Odor: None

Color: Clear

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	8:48 AM	LO	
Enterococcus			10/14/22	8:48 AM	LO	
Surfactants & Specific Conductance			10/14/22	8:48 AM	LO	
Ammonia-nitrogen			10/14/22	8:48 AM	LO	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	10/14/22	8:48 AM	LO	10/14/22	8:51 AM	LO	64
Chlorine (mg/L)	10/14/22	8:48 AM	LO	10/14/22	8:51 AM	LO	0.03
Conductivity (mS/cm)	10/14/22	8:48 AM	LO	10/14/22	8:51 AM	LO	0.10
Salinity (ppt)	10/14/22	8:48 AM	LO	10/14/22	8:51 AM	LO	0.00

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Webster @ RBP Pipe Diameter: 4' x 5' Pipe Material: RCP

Descriptives: Adjacent to RBP near Webster in grass strip.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 10:50 AM Flow Observed? Yes ____ No X If yes, Estimated Flow: N/A gpm

Inspector: LO

Observations:

General: Pipe submerged

Odor: N/A

Color: N/A

Flotables (solid/liquid): N/A

Settleable Solids: N/A

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			N/A	N/A	N/A	
Enterococcus			N/A	N/A	N/A	
Surfactants & Specific Conductance			N/A	N/A	N/A	
Ammonia-nitrogen			N/A	N/A	N/A	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (ºF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorine (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Conductivity (mS/cm)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Salinity (ppt)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Chelsea, Massachusetts
Illicit Discharge Detection & Elimination
2022 Stormwater Outfall Monitoring
Wet Weather

Outfall:

Outfall Name: Winnisimmet Street (CHE-003) Pipe Diameter: 30 Pipe Material: RCP

Descriptives: Recent demolition on site made outfall accessible; sample now from outfall, not upstream DMH.

Inspection:

Date: 10/14/22 Date Last Precipitation: 10/14/2022 Time of Low Tide: 8:49 AM

Time: 8:50 AM Flow Observed? Yes X No If yes, Estimated Flow: 8-10 gpm

Inspector: CLR

Observations:

General: None

Odor: None

Color: None

Flotables (solid/liquid): None

Settleable Solids: None

Sampling (laboratory)

Parameter	Bottle	Type	Date	Time	Person	Preservative
E-coli			10/14/22	8:50 AM	CLR	
Enterococcus			10/14/22	8:50 AM	CLR	
Surfactants & Specific Conductance			10/14/22	8:50 AM	CLR	
Ammonia-nitrogen			10/14/22	8:50 AM	CLR	

Sampling (field)

Parameter	Sample			Analysis			Results
	Date	Time	Person	Date	Time	Person	
Temperature (°F)	10/14/22	8:50 AM	CLR	10/14/22	8:53 AM	CLR	64
Chlorine (mg/L)	10/14/22	8:50 AM	CLR	10/14/22	8:53 AM	CLR	0.00
Conductivity (mS/cm)	10/14/22	8:50 AM	CLR	10/14/22	8:53 AM	CLR	0.07
Salinity (ppt)	10/14/22	8:50 AM	CLR	10/14/22	8:53 AM	CLR	0.00

Wet-Weather Laboratory Report

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Thursday, October 27, 2022

Chelsea Roberge
Weston and Sampson
55 Walkers Brook Drive, Suite 100
Reading MA 01867

Project Name: Chelsea Stormwater Sampling
Project #: N/A
Project Location: Chelsea, MA
Control #: 120827, 120828, 120829

Lab ID: 22100173
Date Received: 10/14/2022

Dear Chelsea Roberge

Enclosed please find the laboratory results for the above referenced samples that were received by the ChemServe sample custodian on the above referenced date. Any abnormalities to the samples upon receipt would be noted on the enclosed chain of custody document. This report is not valid without a completed chain of custody with the corresponding control number, attached.

All samples analyzed by ChemServe are subject to quality standards. These standards are as stringent or more stringent than those established under NELAC, 40 CFR Part 136, state certification programs, and corresponding methodologies. ChemServe has a written QA/QC Procedures Manual that outlines these standards, and is available for your reference, upon request. Unless otherwise stated on the Chain of Custody or within the report, all holding times, preservation techniques, container types, and analytical methods are analogous with those outlined by NELAC. All units are based on “as received” weight unless denoted “dry”.

Residual chlorine, sulfite and pH are intended to be performed as an immediate field analysis. Should any of these analyses be performed in the lab instead of in the field it will result in those analyses being performed out of holding time.

Acrolein and 2-chloroethylvinyl ether require an additional analysis with an un-preserved sample.
If unpreserved vials were not submitted for these compounds then acrolein and 2-CEVE are not reported due to not meeting method requirements, but may be reported as estimated upon request for EPA 624.1 or EPA 524.2.

I certify that I have reviewed the above referenced analytical data and state forms, and I have found this report within compliance with the procedures outlined within NELAC. ChemServe’s certified parameter list can be found at http://www.chemservelab.com/Laboratory-Information-and-Documentation.aspx

Dr. Jamie Fitzgerald PhD
President/Laboratory Director

NELAP ACCREDITED TNI LABORATORY

Certificate Number 1008

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Weston and Sampson
Chelsea Roberge
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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Lab ID: 22100173
Date: 10/27/2022

Lab ID: 22100173

Sample Receiving and Comment Summary

Were samples received with a chain of custody?	Yes
Do all samples received match the chain of custody?	No
Were all samples received within applicable holding times?	Yes
Were all containers intact when received?	Yes
Were samples for volatile organic analysis free of headspace (per method)?	N/A
Was there evidence of cooling or submitted the same day as sampling?	Yes
Were samples collected with appropriate preservative if required?	Yes
Were samples for dissolved metals already filtered by the client or field sampling?	N/A
Were samples for O-phos filtered in the field?	N/A
Were samples received in the appropriate containers?	Yes
Were samples acceptable per any temperature requirements?	Yes

Sample	Method	Client Identity	Matrix	Analyst
22100173-001	SM 4500-NH3-D	Broadway @ Mill Creek	Groundwater	HeatherS

Comment: no comment

**** Blank comment sections denote "No Comment"***

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Weston and Sampson
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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-001	Broadway @ Mill Creek	10/14/2022 9:10:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 9:10:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.088 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-002	Crescent Ave	10/14/2022 8:28:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 8:28:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	1200 MPN Index/100ml		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-003	Everett @ Union	10/14/2022 11:38:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 11:38:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-004	Everett @ Springvale	10/14/2022 11:15:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 11:15:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-005	Webster @ RBP	10/14/2022 10:50:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 10:50:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-006	Washburn	10/14/2022 8:48:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 8:48:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.095 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	0.22 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-007	Gillooly North	10/14/2022 10:09:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 10:09:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-008	Gillooly	10/14/2022 9:40:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 9:40:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-009	Clark Ave	10/14/2022 7:50:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 7:50:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.120 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Weston and Sampson
Chelsea Roberge
55 Walkers Brook Drive, Suite 100
Reading MA 01867

Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-010	Locke St 12 Inch	10/14/2022 10:30:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 10:30:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.101 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	691 MPN Index/100ml		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-011	Eastern + Central	10/14/2022 10:06:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 10:06:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.107 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	1010 MPN Index/100ml		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-012	CHE-002	10/14/2022 8:25:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 8:25:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.189 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	1010 MPN Index/100ml		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-013	CHE-003	10/14/2022 8:50:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 8:50:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.262 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-014	Gulf	10/14/2022 9:20:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 9:20:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	0.064 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-015	Highland	10/14/2022 9:38:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 9:38:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-016	Marginal + Eastern	10/14/2022 9:54:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 9:54:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-017	Griffin Wy	10/14/2022 10:29:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 10:29:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Analytical Results

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-018	Guam	10/14/2022 10:58:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 10:58:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	>2420		10/14/2022 2:30:00 PM	1	LauraB

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Analytical Results

Control #: 120827, 120828, 120829
Project Number: N/A
Project Name: Chelsea Stormwater Sampling
Project Location: Chelsea, MA

Lab ID: 22100173
Date: 10/27/2022

Sample	Client Sample Identity	Start Date/Time Sampled:	Matrix
22100173-019	Int @ 3rd	10/14/2022 11:26:00 AM	Groundwater

Composite Start Date and Time 10/14/2022 11:26:00 AM **Composite End Date and Time**

Parameter	Method	Result	Qualifier	Date/Time Analyzed	RDL	Analyst
Surfactants	EPA 425.1	< 0.05 mg/L		10/14/2022 2:15:00 PM	0.05	HeatherS
Ammonia-N	SM 4500-NH3-D	< 0.2 mg/L		10/26/2022	0.2	HeatherS
E. Coli	SM 9223B	>2420		10/14/2022 1:50:00 PM	1	LauraB
Enterococci	SM 9230D - Enterolert	1010 MPN Index/100ml		10/14/2022 2:30:00 PM	1	LauraB

Qualifier:	Description:
B-	Method blank contaminated with target analyte.
B1-	BOD had total oxygen loss. Result reported as ">"the highest dilution.
B2-	BOD had no oxygen loss. Result reported as "<" the lowest dilution.
G-	Reporting limit elevated due to matrix interference.
H-	Method prescribed holding time exceeded.
J-	Indicates an estimated value. Value is less than the quantitation limit.
IL-	Internal Standard(s) recovery was low due to matrix. Result may be biased high.
IH-	Internal Standard(s) recovery was high due to matrix. Result may be biased low.
LH-	Laboratory control spike(s) was high. Results may be biased high.
LL-	Laboratory control spike(s) was low. Results may be biased low.
MH-	Matrix spike recovery high due to matrix. Results may be biased high.
ML-	Matrix spike recovery low due to matrix. Results may be biased low.
N-	Non-target compound. Reported as a TIC.
NC-	Spike recovery was not calculated due to the concentration of the analyte being >4 times the concentration of the spike added.
R-	RPD outside acceptable recovery limits.
RO-	Sample received out of holding time.
SH-	Surrogate recovery high due to matrix
SL-	Surrogate recovery low due to matrix
U-	BOD/CBOD blank had an oxygen depletion greater than the suggested amount of 0.200.
V-	Sample pH for analysis was not within the required range when checked at time of analysis.
Z	Too numerous to count (TNTC)

An "A" in the result column on the report indicates absent for presence/absent bacteria and a "P" indicates present for presence/absent bacteria.

Chain of Custody No: 120821
Multiple COC's (Yes) No 1/3

ChemServe
ENVIRONMENTAL ANALYSTS

CHAIN OF CUSTODY

317 Elm Street Milford, NH 03055
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A CUSTOMER INFORMATION

CUSTOMER: Weston + Sampson
ADDRESS: 55 Walkers Brook Dr
CITY/STATE/ZIP: Reading, MA
TELEPHONE: (978) 532-1900
REPORT TO: Chelsea Roberge
EMAIL TO: robergec@wseinc.com

B PROJECT INFORMATION

JOB NAME: Chelsea Stormwater Sampling
JOB NUMBER:
LOCATION: Chelsea, Ma
INVOICE EMAIL: invoices@wseinc.com
INVOICE TO:
P.O. NUMBER:

C SAMPLE INFORMATION

TURNAROUND TIME: (CIRCLE ONE:)
10 DAY STANDARD RUSH (MUST BE PRE-APPROVED)
7day 5 day 4 day 3 day 2 day 1 day Same Day
MCP ☐ YES ☐ NO ☐ GWI ☐ GW2 ☐ GW3

STATION # D	SAMPLE IDENTIFICATION & LOCATION E	COLLECTED F DATE	COLLECTED G TIME	GRAB H	COMP H	MATRIX I SOLID (S) GROUND WATER (G) DRINKING WATER (D) WASTE WATER (W)	# OF CONTAINERS J	CONTAINER AND PRESERVATIVE K: MBAS	E. Coli	Enterco	Ammonia	ANALYSIS L
	Broadway @ mill Creek	10/14/22	9:10	X		SW	4					
	Crescent Ave		8:28									
	Everett @ Union		11:38									
	Everett @ Springvale		11:15									
	Webster @ RBP		10:30									
	Washburn		8:48									
	Gillooly North		10:09									
	Gillooly		9:40									

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M CUSTODY
SAMPLER: Chelsea Roberge (print name)
SIGNATURE:

	DATE	MILITARY TIME
RELINQUISHED:	10/14/22	13:32
RECEIVED:	DATE	TIME
RELINQUISHED:	DATE	TIME
RECEIVED FOR LAB:	DATE	TIME
	14 Oct 22	13:50

SAMPLE CHECK LIST:
RECEIVED WITHIN HOLD TIME (YES) OR NO
RECEIVED IN GOOD CONDITION (YES) OR NO
TEMP BLANK 12.6 °C
SHIPPED OR (HAND) DELIVERED
SAMPLES WERE PROPERLY PRESERVED (YES) NO N/A
SAMPLES WERE FILTERED IN FIELD LAB (N/A)
IF NO EXPLAIN:
10/28
GROUP # 22100173

FIELD READING(S) & COMMENTS:

Chain of Custody No: 120626

Multiple COC's (Yes) No 2/3

ChemServe ENVIRONMENTAL ANALYSTS

CHAIN OF CUSTODY

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A CUSTOMER INFORMATION

CUSTOMER:

ADDRESS:

CITY/STATE/ZIP other

TELEPHONE: see COC

REPORT TO:

EMAIL TO:

B PROJECT INFORMATION

JOB NAME:

JOB NUMBER:

LOCATION:

INVOICE EMAIL:

INVOICE TO:

P.O. NUMBER:

C SAMPLE INFORMATION

TURNAROUND TIME: (CIRCLE ONE:)

10 DAY STANDARD - RUSH (MUST BE PRE-APPROVED)

7day 5 day 4 day 3 day 2 day 1 day Same Day

MCP ☐ YES ☐ NO ☐ GWI ☐ GW2 ☐ GW3

STATION # D	SAMPLE IDENTIFICATION & LOCATION E	COLLECTED F DATE	COLLECTED G TIME	SAMPLE TYPE H GRAB	SAMPLE TYPE H COMP	I MATRIX (SOLID (S) GROUND WATER (G) DRINKING WATER (D) WASTE WATER (W))	J # OF CONTAINERS	K CONTAINER AND PRESERVATIVE: MBAS	ECOLI	ENTERO	AMMONIA	L ANALYSIS
	clark Ave	10/14/22	7:50	X		SW	4					
	Locke St 12"		10:30									
	Eastern + Central		10:06									
	CHE-002		8:25									
	CHE-003		8:50									
	Gulf		9:20									
	Highland		9:38									
	Marginal + Eastern		9:54									

M CUSTODY

SAMPLER: (print name) Chelseg Roberge

SIGNATURE:

	DATE	MILITARY TIME
RELINQUISHED:	10/14/22	13:32
RECEIVED:	DATE	TIME
RELINQUISHED:	DATE	TIME
RECEIVED FOR LAB:	DATE	TIME
	14oct22	13:50

SAMPLE CHECK LIST:

RECEIVED WITHIN HOLD TIME YES OR NO

RECEIVED IN GOOD CONDITION YES OR NO

TEMP BLANK 12.6 °C

SHIPPED OR HAND DELIVERED

SAMPLES WERE PROPERLY PRESERVED YES NO N/A

SAMPLES WERE FILTERED IN FIELD LAB N/A

IF NO EXPLAIN:

GROUP #

FIELD READING(S) & COMMENTS:

Chain of Custody No. 120829

Multiple COC's (Yes) No 3/3

ChemServe ENVIRONMENTAL ANALYSTS

CHAIN OF CUSTODY

317 Elm Street Milford, NH 03055
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A CUSTOMER INFORMATION

CUSTOMER:

ADDRESS: other

CITY/STATE/ZIP: 54

TELEPHONE: COC

REPORT TO:

EMAIL TO:

B PROJECT INFORMATION

JOB NAME:

JOB NUMBER:

LOCATION:

INVOICE EMAIL:

INVOICE TO:

P.O. NUMBER:

C SAMPLE INFORMATION

TURNAROUND TIME: (CIRCLE ONE:)

10 DAY STANDARD RUSH (MUST BE PRE-APPROVED)

7day 5 day 4 day 3 day 2 day 1 day Same Day

MCP ☐ YES ☐ NO ☐ GW1 ☐ GW2 ☐ GW3

STATION # (D)	SAMPLE IDENTIFICATION & LOCATION (E)	COLLECTED DATE (F)	COLLECTED TIME (G)	SAMPLE TYPE GRAB (H)	SAMPLE TYPE COMP (H)	MATRIX (I) SOLID (S) GROUND WATER (G) DRINKING WATER (D) WASTE WATER (W)	# OF CONTAINERS (J)	CONTAINER AND PRESERVATIVE (K) MBAS	E.Coli	Enterco	Ammonia	ANALYSIS (L)
	Griffin Wy	10/14/22	10:29	X		SW	4					
	Guam		10:58									
	Int. @ Vale		11:12									
	Int @ 3rd		11:26									

Page 24 of 24

M CUSTODY

SAMPLER: (print name) Chelsea Roberge

SIGNATURE:

	DATE	MILITARY TIME
RELINQUISHED:	10/14/22	13:32
RECEIVED:	DATE	TIME
RELINQUISHED:	DATE	TIME
RECEIVED FOR LAB:	DATE	TIME
	14 Oct 22	13:50

SAMPLE CHECK LIST:

RECEIVED WITHIN HOLD TIME YES OR NO

RECEIVED IN GOOD CONDITION YES OR NO

TEMP BLANK 12.6 °C

SHIPPED OR HAND DELIVERED

SAMPLES WERE PROPERLY PRESERVED YES NO N/A

SAMPLES WERE FILTERED IN FIELD LAB N/A

IF NO EXPLAIN:

GROUP #

FIELD READING(S) & COMMENTS:

OUTFALL MAP

Legend

- (Outfall) Chelsea
- (Outfall) Revere
- Private outfalls from My RWA Shoreline Survey
- Stormwater Interconnection

FIGURE 1

CITY OF CHELSEA, MASSACHUSETTS
STORMWATER OUTFALL SAMPLING

LOCATIONS
OF OUTFALLS

OCTOBER 2021 SCALE: NOTED

Weston & Sampson