

**MEMORANDUM**

**TO:** Landis Hershey, Conservation Agent/Stormwater Coordinator, Town of Walpole

**FROM:** Alex Duryea, MESM; Stefan Bengtson, MS, MESM; William Guenther, MS

**DATE:** September 9, 2021

**RE:** Dry-Weather Outfall Screening Results

This memo summarizes the results of dry-weather outfall screening inspections and sampling, conducted by Fuss & O'Neill, to assist the Town in its compliance with the 2016 Massachusetts Municipal Separate Storm Sewer System (MS4) permit. Dry-weather conditions were defined as less than 0.1 inches of rain within the previous 24-hour period and no snowmelt. Inspections occurred on the following dates:

**Table 1: Dry weather inspection dates.**

2018	2019	2020	2021
October: 18, 19, 22, 29 November: 2	October: 15, 22, 24, 29, 30 November: 11	January: 1 June: 11, 16, 17	April: 7 May: 7, 13, 14, 18, 19, 25, 28 June: 2, 4, 7, 8, 11, 17, 18, 21

As specified in the IDDE Plan, antecedent weather conditions were determined at the Norwood Memorial Airport, roughly 7 miles to the northeast of Walpole.

Based on the Town's stormwater system mapping, Fuss & O'Neill staff assessed each outfall for dry-weather flow and any visual or olfactory evidence of illicit discharges. Following the Town's IDDE plan, where outfalls were inaccessible or inundated by the receiving water, the first upstream structure was assessed, where feasible. For each outfall, information was collected on visual and olfactory indicators of potential non-stormwater discharges and outfall physical dimensions, including images of the outfalls and any notes on unique conditions or needed maintenance. Outfalls observed to be damp or actively flowing were revisited so samples could be collected. Where outfalls were flowing during a subsequent field visit, a sample of flow was collected and analyzed for parameters listed in *Table 2* and pollutants of concern listed in *Table 2*. E. coli and any pollutants of concern were analyzed at New England Testing Laboratory in West Warwick, RI. All other parameters were analyzed using field test kits or calibrated meters, following all manufacturer instructions. All samples were delivered to the laboratory or tested in the field within specified hold times.

**Table 2: Sampling parameters and pollutants of concern**

Parameter (units)	Permit Threshold
Temperature (°C)	None specified
Conductivity (µS/cm)	
Salinity (PPT)	
Ammonia (mg/L)	≥0.5 mg/L
Surfactants (mg/L)	≥0.25 mg/L
Chlorine (mg/L)	>0.02 mg/L
E. coli (MPN/100mL)	235 MPN/100 mL

**Table 3: Impaired or TMDL Waterbodies in Walpole<sup>1</sup>, and Required Monitoring Parameters<sup>2</sup>**

Waterbodies	Impairment	Required Monitoring Parameters
Neponset River	Dissolved oxygen	Dissolved oxygen
		Temperature
		BOD5
	Total Phosphorous	Total Phosphorous
	Nutrient/Eutrophication Biological Indicators	
	Escherichia Coli (E. Coli)	E. Coli
Mine Brook	Dissolved oxygen	Dissolved oxygen
		Temperature
		BOD5
		Total Phosphorous
Cobbs Pond	Dissolved oxygen	Dissolved oxygen
		Temperature
		BOD5
	Nutrient/Eutrophication Biological Indicators	Total Phosphorous
	Transparency/Clarity	Total Suspended Solids
Stop River	Dissolved oxygen	Dissolved oxygen
		Temperature
		BOD5
	Total Phosphorus	Total Phosphorous

<sup>1</sup> Massachusetts Year 2016 Integrated List of Waters

<https://www.mass.gov/doc/final-massachusetts-year-2016-integrated-list-of-waters/download>
<sup>2</sup> Appendix G of the MA MS4 General Permit

<https://www3.epa.gov/region1/npdes/stormwater/ma/2016fpd/appendix-g-2016-ma-sms4-gp.pdf>



**Results:**

Sixty-four outfalls were observed to have flow under dry-weather conditions during screening visits. Samples were collected during follow-up visits on the following dates:

**Table 4: Dry weather sampling dates**

2021
May: 7, 13, 14, 18, 19, 25, 28
June: 4, 7, 11, 17, 18, 21

Sixty-five outfalls had visual evidence of a potential illicit discharge and ten outfalls had olfactory evidence of a potential illicit discharge. Results of the dry-weather screening and sampling outfall investigations are included in *Attachment 1*.

**Recommendations:**

The screening and sampling work summarized here satisfies the Town's MS4 permit requirements under permit section 2.3.4.7.b. Based on the results in *Attachment 1* and visual and olfactory evidence of illicit discharges, we make both specific and general recommendations for IDDE activities. We have divided our general recommendations into four categories based on the type and severity of the issues identified during screening and sampling (*Table 5*). These recommendations apply to catchment investigations. All catchment investigations must be completed by June 30, 2028.

*Pet Waste:*

Numerous pet waste bags were found at outfalls 14-0000-0002 and 55-0000-0002. Pet waste bags were also observed at outfalls 18-0000-0001, 26-0000-0008, 33-0000-0003, and 39-0000-0003. We recommend targeting neighborhoods in or near these catchments with educational campaigns (e.g., flyers, letters, etc.) explaining correct pet waste disposal practices and the path that discarded pet waste bags take into local water bodies.

*Trash:*

At the time of inspection, the following outfalls, or their upstream structures, were observed to have excessive amounts of trash: 06-0000-0002, 07-0000-0001, 14-0000-0002, 26-0000-0017, 41-0000-0001, 42-0000-0004, 46-0000-0009. We recommend providing educational messaging in these outfall catchments, or town-wide, explaining the impact of litter on local water bodies and how it ends up in storm drains and outfalls.

**Table 5: Categorization of outfalls based on findings**

Category	Description
1	Recommend moving these outfalls/catchments to the top of the High Priority ranking for catchment investigations.
2	Recommend moving these outfalls to the High Priority list for catchment investigations.
3	No obvious IDDE concerns. Maintain original ranking.
4	Data management and/or maintenance issue.

### Category 1

We recommend moving these outfalls to the top of the High Priority Outfalls category for catchment investigations. Then, as expeditiously as possible, at the outfalls listed in ***Error! Reference source not found.***, commence catchment investigations to identify and eliminate the source of any potential illicit discharge or other stormwater pollutant sources, as defined in the Town's IDDE plan.

**Table 6: Recommended Outfall Catchment Investigation Priority for Category 1 Outfalls**

<b>Outfall ID</b>	<b>Current Ranking</b>	<b>Recommended Ranking</b>
06-0000-0002	Low	TOP of High
08-0000-0006	Low	TOP of High
14-0000-0002	Low	TOP of High
14-0000-0003	Low	TOP of High
14-0000-0008	Low	TOP of High
17-0000-0011	Low	TOP of High
18-0000-0001	Low	TOP of High
18-0000-0006	Low	TOP of High
20-0000-0007	High	TOP of High
20-0000-0011	Low	TOP of High
25-0000-0015	TOP of High	No Change
34-0000-0011	Low	TOP of High
34-0000-0013	Low	TOP of High
39-0000-0003	Low	TOP of High
46-0000-0002	Low	TOP of High
46-0000-0009	Low	TOP of High
55-0000-0002	Low	TOP of High
55-0000-0006	Low	TOP of High

### *Likely sewer input:*

While no sampling results indicate outfalls with likely sewer input, the following outfalls were observed to have sewage odor: 06-0000-0002, 17-0000-0011, 20-0000-0011, 25-0000-0015, 38-0000-0006, and 46-0000-0002. Visual evidence of sanitary waste was observed at outfalls 46-0000-0009 and 55-0000-0006. This visual and olfactory evidence meets the permit criteria for likely sewer input.

### *Elevated E. coli Levels:*

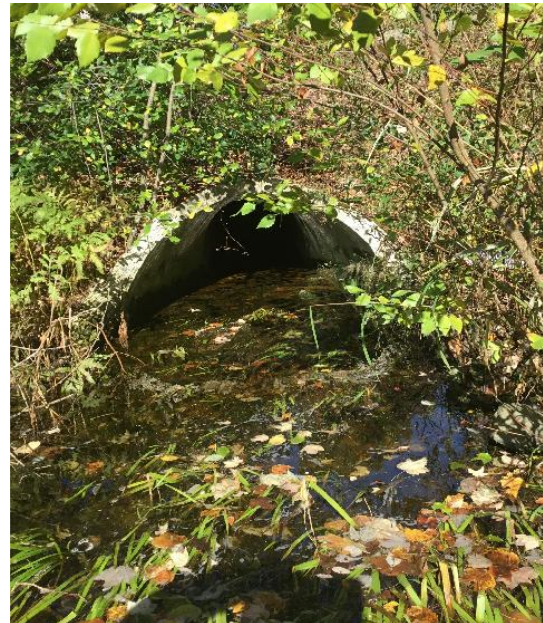
Sampling results at outfalls 14-0000-0003, 20-0000-0007, 34-0000-0011, and 34-0000-0013 indicate elevated levels of *E. coli*. In addition, surfactants were detected at outfalls 14-0000-0003 and 34-0000-0013 and chlorine was detected at outfall 20-0000-0007. Although these results do not meet the permit definition of likely sewer input, the higher *E. coli* concentrations indicate a higher priority level is warranted in catchment investigations.

*Other outfalls of concern:*

Samples from outfall 08-0000-0006 showed elevated surfactant levels, with visual observations of foam and excessive algae. Samples collected from outfall 14-0000-0008 detected chlorine and had excessive algae growth both inside and downstream of the outfall. A significant amount of algae and an oily sheen were observed downstream of outfall 18-0000-0006.



Trash at outfall 06-0000-0002



Excessive algal growth and foam at outfall 08-0000-0006





Pet waste bags and trash at outfall 14-0000-0002



Algae at outfall 14-0000-0003



Excessive algal growth at outfall 14-0000-0008





Pet waste bags and algae at outfall 18-0000-0001



Excessive algae and visible sheen at outfall 18-0000-0006





Algae at outfall 34-0000-0011



Algae and a pet waste bag found in the outfall pipe at outfall 39-0000-0003





Visible sheen and foam at outfall 46-0000-0002



Trash in the upstream structures and a visible sheen at outfall 46-0000-0009

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Pet waste bags at outfall 55-0000-0002



Oily sheen at outfall 55-0000-0006



### Category 2

We recommend increasing the catchment investigation priority for the outfalls listed in *Table 7*. Observations and sampling results at these outfalls suggest that a higher priority during catchment investigations is warranted, but the results do not suggest the same need for more immediate action as in Category 1. Outfalls listed in this category typically have sampling results with an exceedance of permit thresholds for at least one parameter, often chlorine, or included visual or olfactory observations that are potentially, but not definitively, naturally occurring.

**Table 7: Recommended Outfall Catchment Investigation Priority for Category 2 Outfalls**

Outfall ID	Prior Ranking	Recommended Ranking
04-0000-0001	Low	High
05-0000-0001	Low	High
07-0000-0001	Low	High
10-0000-0003	High	No Change
12-0000-0008	Low	High
12-0000-0019	Low	High
13-0000-0001	High	No Change
17-0000-0014	High	No Change
19-0000-0003	High	No Change
19-0000-0005	High	No Change
20-0000-0012	Low	High
20-0000-0016	High	No Change
26-0000-0008	High	No Change
26-0000-0017	High	No Change
29-0000-0003	Low	High
32-0000-0001	Low	High
33-0000-0003	High	No Change
33-0000-0011	High	No Change
34-0000-0017	High	No Change
41-0000-0001	Low	High



Excessive algal growth at outfall 04-0000-0001



Visible sheen at outfall 05-0000-0001



Trash and algae at outfall 07-0000-0001







Algae at outfall 10-0000-0003



Algae and foam at outfall 12-0000-0008





Excessive algal growth at outfall 12-0000-0019



Algae and foam at outfall 13-0000-0001



Algae at outfall 17-0000-0014



Algae at outfall 19-0000-0003





Algae at outfall 19-0000-0005



Algae at outfall 20-0000-0016



Pet waste at outfall 26-0000-0008





Algae and a visible sheen at outfall 29-0000-0003



Algae at outfall 32-0000-0001



Pet waste at outfall 33-0000-0003



Algae at outfall 34-0000-0017



Algae, trash, and foam at outfall 41-0000-0001



### Category 3

Field observations for the outfalls listed in *Table 7* originally indicated a visual or olfactory indicator of an illicit discharge. Subsequent review of sampling results and photographs taken during outfall investigations did not support the same conclusion of the presence of an illicit discharge. These outfalls were typically noted as having algae or an oily sheen, which generally appeared to be naturally occurring. Sample results from those outfalls with observed flow were at or below permit thresholds. These results indicate that a lower priority is warranted for these outfalls.

**Table 5. Recommended Outfall Catchment Investigation Priority for Category 3 Outfalls**

<b>Outfall ID</b>	<b>Prior Ranking</b>	<b>Recommended Ranking</b>
05-0000-0003	Low	No Change
06-0000-0001	Low	No Change
12-0000-0007	Low	No Change
12-0000-0009	Low	No Change
12-0000-0013	Low	No Change
12-0000-0014	Low	No Change
12-0000-0017	Low	No Change
13-0000-0003	Low	No Change
14-0000-0004	Low	No Change
26-0000-0004	Low	No Change
26-0000-0005	Low	No Change
26-0000-0007	Low	No Change
26-0000-0010	Low	No Change
26-0000-0019A	High	Low
27-0000-0003	Low	No Change
27-0000-0009	Low	No Change
27-0000-0017	Low	No Change
27-0000-0018	Low	No Change
28-0000-0004	Low	No Change
29-0000-0001	Low	No Change
34-0000-0001A	Low	No Change
34-0000-0006	High	Low
46-0000-0008	Low	No Change
55-0000-0005	Low	No Change
55-0000-0007	Low	No Change



#### Category 4

During outfall investigations, maintenance or mapping issues were occasionally identified (*Table 8*). The most common maintenance issue was a partially or completely buried outfall, which can limit flow from the outfall, potentially causing street flooding upstream. Common mapping issues include culverts mapped as outfalls. In a case where a storm drain connects to a culvert, the point where the connection occurs is the outfall. We recommend addressing maintenance issues and updating mapping to indicate the correct location of outfalls.

**Table 8: Summary of maintenance or data management issues identified during outfall investigations**

<b>Outfall ID</b>	<b>Maintenance or Mapping Issue Identified</b>
14-0000-0001	Culvert inlet, not outfall, mapping issues
17-0000-0020	Asphalt partially covering outfall
18-0000-0006	Mapping issues
18-0000-0007	Buried outfall, recommend digging out and assessing need for additional street sweeping in this catchment
19-0000-0002	Culvert, mapping issues
20-0000-0023	Culvert, mapping issues
21-0000-0002	Mapping issues
26-0000-0008	Buried outfall, recommend digging out and looking for sediment sources in catchment
26-0000-0020	Culvert inlet, mapping issues
26-0000-0021	Catch basins full of sediment/water, recommend cleaning and assessing need for additional street sweeping in this catchment
32-0000-0009	Culvert, mapping issues
38-0000-0006	Buried outfall, recommend digging out and assessing need for additional street sweeping in this catchment
42-0000-0004	Buried outfall, recommend digging out and assessing need for additional street sweeping in this catchment
46-0000-0009	Buried outfall, recommend digging out and assessing need for additional street sweeping in this catchment

## **Attachment 1**

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### **Dry-Weather Outfall Screening and Sampling Results**



Outfall ID	First Non-Influenced Structure/ Upstream Structure	Inspection Date	Last Rainfall Date	Last Rainfall Amount (in)	Evidence of IDDE <small>*visual observations are combinations of multiple field visits</small>	Flow Description	Temperature (°C)	pH	Conductivity (µS/cm)	Salinity (ppt)	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100mL)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	BOD5 (mg/L)	Inspection Comments
20-0000-0016		2021-05-14	2021-05-10	0.40	Algae	Moderate	18.8	8.78	1052	0.5	<0.25	<0.25	<0.02	<1						Sample ID: 1630210514-01
20-0000-0023		2021-05-13	2021-05-10	0.40	None	Heavy	13.6	6.36	323	0.2	<0.25	<0.25	<0.02	<1						Possible buried stream. Sample ID: 01391210513-07
21-0000-0002		2021-04-07	2021-04-01	0.57	Foam	Trickle														Drain manhole at mapped outfall location. Catch basins and other manholes in parking lot are not mapped. Not sure where outfall is. Found catch basin at fence behind LA Fitness. Can hear flow and see some foam in catch basin
24-0000-0002	CB-230-1403	2021-06-07	2021-06-04	0.03	None	Trickle	21	5.96	1559	0.8	<0.25	<0.25	0.03	1						Sampling visit: trickle, sample ID: 01667210607-06
25-0000-0014		2021-06-17	2021-06-14	0.65	None	Trickle	19.4	6.22	231	0.1	<0.25	<0.25	<0.02	4						Sampling visit: sampled trickle 11:00 from MH (CB-230-1403). Sample ID: 01667210617-01
25-0000-0015		2021-06-21	2021-06-19	0.09	Sewage odor	Heavy	18.92	5.43	1273.2	0.7	<0.25	0.25	<0.02	13	<0.02	5	30.6	9.78	<4	Sampling visit: lots of orange substance, smells, suspect connection to sewer, sampled. Sample ID: 01667210621-01 and -01D
26-0000-0004		2018-10-22	2018-10-21	0.01	Algae	Dry														The outfall has a small amount of green algae built up on the outlet.
26-0000-0005		2018-10-22	2018-10-21	0.01	Algae	Dry														The outfall has a small build up of green algae.
26-0000-0007		2018-10-22	2018-10-21	0.01	Algae	Dry														The outfall has green algae built up around the outlet.
26-0000-0008	CB-241-1458	2021-06-04	2021-05-31	0.21	Pet waste	Dry														Sampling visit: CB-241-1458 & CB-241-1460 have standing water, no evidence of flow but I cannot see either outfall pipe - either buried or inundated. could come back to screen MH. Also the outfall is a culvert so I'm not sure whether they connect to the culvert. Found a dog poop bag right on top of one of the cbs.
26-0000-0010		2021-05-14	2021-05-10	0.40	Algae	Moderate	15.6	6.28	689	0.3	<0.25	<0.25	0.03	<1						Sample ID: 1630210514-06
26-0000-0017		2018-10-22	2018-10-21	0.01	Trash	Dry														There was household waste surrounding the outfall. The outfall had no sign of illicit discharge
26-0000-0019A	CB-208-1288	2021-06-11	2021-06-09	0.01	Oily sheen	Dry														DPW: CB-208-1288 has water in sump but outfall is dry (see photo) and inlet from cb across street is also dry, oily sheen though, resistant to disturbance
26-0000-0020	CULVERT	2021-05-28	2021-05-27	0.02	Oily sheen	Moderate														Culvert inlet at mapped location. Outlet on other side of street. Catch basins in street appear to connect to culvert. Brown color and oily sheen seen at culvert inlet and outlet. Second culvert inlet near outlet of this culvert
26-0000-0021	CB-207-1286	2021-06-11	2021-06-09	0.01	Oily sheen	Dry														DPW: both cbs filled with water, can't see any pipes
26-0000-0023		2021-05-14	2021-05-10	0.40	None	Trickle	17	7.09	721	0.3	<0.25	<0.25	<0.02	4						Outfall ID: 163210514-07
27-0000-0003		2021-05-14	2021-05-10	0.40	Algae	Trickle	16.8	5.76	373	0.2	<0.25	<0.25	0.04	1						Sample ID: 1630210514-04
27-0000-0009		2021-05-14	2021-05-10	0.40	Algae, Oily sheen	Moderate	15.4	6.53	341	0.2	<0.25	<0.25	<0.02	<1						Sample ID: 1630210514-05
27-0000-0017		2018-10-19	2018-10-17	0.04	Algae	Dry														The outfall has green algae built up on the outlet
27-0000-0018		2018-10-19	2018-10-17	0.04	Algae	Dry														The outfall had a build up of green algae around the outlet. Looks like it could be pollen. This outfall could be from the overflow weir of the detention basin that is part of the stormwater system for the housing development.
28-0000-0004		2021-05-14	2021-05-10	0.40	Algae, Oily sheen	Moderate	17.6	7.29	552	0.2	<0.25	<0.25	0.03	26						Sample ID: 01391210514-03
28-0000-0015		2021-06-04	2021-05-31	0.21	None	Heavy	18.9	7.81	580	0.3	<0.25	<0.25	<0.02	2						Sampling visit: DMH-XXXX-4900 8:00 moderate to heavy flow, sampled. Sample ID: 01667210604-03
29-0000-0001		2021-05-14	2021-05-10	0.40	Algae, Oily sheen	Moderate	17.3	6.62	889	0.4	<0.25	<0.25	<0.02	2						Sample ID: 1630210514-02
29-0000-0003		2021-06-04	2021-05-31	0.21	Algae, Oily sheen*	Trickle	17.2	7.12	303	0.1	<0.25	<0.25	0.09	2						Sampling visit: got sample from outfall. Sample ID: 01667210604-04
32-0000-0001		2021-06-07	2021-06-04	0.03	Algae	Trickle	21.9	7.23	574	0.3	<0.25	<0.25	0.51	3						Sampling visit: opaque layer on top of water, dark brown or black algae? Sample ID: 01667210607-07
32-0000-0009	CULVERT INLET	2020-06-16	2020-06-11	0.80	Foam	Damp														
33-0000-0003	CB-165-995	2020-06-16	2020-06-11	0.80	Pet Waste	Dry														Could not locate outfall. Pipe in catch basin was observed to be filled with leaves and sticks.
33-0000-0007		2021-06-21	2021-06-19	0.09	None	Heavy	19.8	6.45	1131.6	0.6	<0.25	0.25	<0.02	2	<0.02	<2	1.1	9.55	<4	Sampling visit: heavy flow, lots of orange substance. Sample ID: 01667210621-02
33-0000-0011		2021-06-21	2021-06-19	0.09	None	Trickle	20.09	6.72	787.2	0.4	0.50	<0.25	0.23	10	<0.02	2	9.72	9.4	<4	Sampling visit: outfall has some standing water but flow (a trickle) is visible, orange substance, sampled. Sample ID: 01667210621-03
33-0000-0017	DMH-XXX-5415	2021-06-11		0.01	None	Heavy	16.7 / 16.15	5.67 / 5.94	528.9 / 546.9	0.3 / 0.3	<0.25 / <0.25	<0.25 / <0.25	0.03 / <0.02	6 / 101	<0.02 / 0.38	<2 / <2	0.25 / 2.11	8.58 / 8.66	<4 / <4	DPW visit: DMH-XXX-5416 1st upstream structure- both pipes full of stagnant water, 2nd US. DMH-XXX-5416 Same inundation but no flow. Orange foam inside. Picture 8:27am. Other one - return later w/o DPW. DMH-XXX-5415 3rd US along busy road has flow, Heavy flow 12:00 some algae - Sample ID: 01667210611-01, Trickle 9:00 orange substance - Sample ID: 01667210611-02, 3:00 wet with orange substance but no flow evident. Photo 8:36. Values given as -0.1 / -0.2
34-0000-0001A		2021-05-19	2021-05-10	0.40	Algae*	Moderate	17.9	6.55	1092	0.5	<0.25	<0.25	<0.02	<1						
34-0000-0006		2021-05-19	2021-05-10	0.40	Algae	Moderate	17.2	6.7	507	0.2	<0.25	<0.25	<0.02	<1						Sampling visit: able to collect sample. Water is clear. Huge pile of sticks and leaves encroaching on outfall. Sample ID: 01667210519-02
34-0000-0008		2021-05-19		0.40	None	Moderate	17.4	6.24	455	0.2	<0.25	<0.25	<0.02	<1						Sampling visit: water is clear, able to take a sample from outfall pipe Green triangle on map did not have an associated outfall ID so I used the one from the adjacent blue square 34-0000-0008. Sample ID: 01667210519-01 and -01D
34-0000-0011	DMH-XXX-4603	2021-06-04	2021-05-31	0.21	Algae, Musty odor	Heavy	16.9 / 17.7	7.43 / 6.73	541 / 559	0.3 / 0.3	<0.25 / <0.25	<0.25 / <0.25	<0.02 / <0.02	3 / 921						Sampling visit: DMH-XXX-4603, heavy fast flow 1:00 (sample 1 and 1D), pipe has bright orange substance, some dark algae. 10:00 (sample 2) has moderate flow, but pipe is also discharging into relatively full sump,slight orange, some dark algae. 7:00 doesn't appear to be flowing but pipe has water circling around in it, likely from the flow from the other pipes, very slight orange, more algae than others. Outfall bright orange. Sample ID: 01667210604-01, -01D, and -02. Values given as -01 / -02
34-0000-0013		2021-05-28	2021-05-27	0.02	None	Trickle	15.5	7.54	658	0.5	<0.25	0.25	<0.02	2420						Sample ID: 0163020210528-02. Two outfalls at location, both flowing. Sample taken from outfall on the right
34-0000-0014		2021-05-28	2021-05-27	0.02	None	Trickle	14.3	7.48	938	0.5	<0.25	0.25	<0.02	5						Sample ID: 0163020210528-01 and -01D
34-0000-0017	DMH-XXX-4613	2021-05-19	2021-05-10	0.40	Algae	Damp														Sampling visit: lots of green algae, thick coating on surface Standing water in pipe- no clear flow Revisit to check MH
38-0000-0004		2021-06-21	2021-06-19	0.09	None	Trickle	21.78	6.87	622.8	0.3	<0.25	<0.25	0.10	22	<0.02	N/A	1.54	8.64	<4	Screening visit: this is an inlet, water trickling down rocks on hill into outfall (see photo). Opened corresponding MH: trickle from inlet 11:00 sampled, 2:00 dry. Sample ID: 01667210621-04
38-0000-0006	DMH-XXX-4754	2021-05-25	2021-05-10	0.40	Foam, Musty and Sewage odor	Trickle	17.5	6.67	1055	0.7	<0.25	0.25	<0.02	1	0.02	N/A	N/A	N/A	N/A	Sampling visit: outfall inundated Opening and sampling from DMH-XXX-4754, not enough flow to sample from individual pipes (10:00, 12:00, 2:00) so I am sampling from where the three pipes meet and discharge into the pipe that ultimately leads to the outfall 10 is wet/damp, 12 has a clear trickle, 2 has orange brown sludge, there is some white foam between 12 & 2. Sample ID: 01667210525-03

Outfall ID	First Non-Influenced Structure/ Upstream Structure	Inspection Date	Last Rainfall Date	Last Rainfall Amount (in)	Evidence of IDDE <small>*visual observations are combinations of multiple field visits</small>	Flow Description	Temperature (°C)	pH	Conductivity (µS/cm)	Salinity (ppt)	Ammonia (mg/L)	Surfactants (mg/L)	Chlorine (mg/L)	E. coli (MPN/100mL)	Total Phosphorus (mg/L)	Total Suspended Solids (mg/L)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	BOD5 (mg/L)	Inspection Comments
39-0000-0003	DMH-XXX-4759	2021-05-25	2021-05-10	0.40	Algae, Pet waste*	Trickle	15.9	6.06	557	0.3	<0.25	<0.25	<0.02	10	<0.02	N/A	N/A	N/A	N/A	sampling visit: outfall inundated, light oily sheen and some algae - could this be a culvert? Sample ID: 01667210525-02 screened in manhole DMH-XXX-4759, pipe leading from CB-103-605 is damp, other is dry, could not get sample here
41-0000-0001		2021-05-25	2021-05-10	0.40	Algae, Floatables, Foam*	Moderate	16.5	5.79	431	0.3	<0.25	<0.25	<0.02	<1						Sampling visit: green algae coating bottom of outfall pipe, indicates flow has likely been higher, trash near pipe in pond. Sample ID: 01667210525-01 and -01D
42-0000-0004	CB-111-664	2021-05-19	2021-05-10	0.40	Floatables	Damp														Sampling visit: water inside outfall pipe, bottom is obscured either by water or dirt, channel is dry, looks like water would have to travel uphill to leave outfall It is possible it hasn't dried since last rainfall - need to revisit
44-0000-0004		2021-06-21	2021-06-19	0.09	None	Trickle	20.83	6.61	774.2	0.4	<0.25	0.25	0.07	2	<0.02	N/A	3.81	8.86	<4	Sampling visit: trickle, sample ID: 01667210621-05
46-0000-0002	DMH-XXX-3915	2021-05-25	2021-05-10	0.40	Oily sheen*, Foam*, Sanitary waste*, Musty* and Sewage odor	Trickle	22.1	6.3	1706	0.9	1	0.25	<0.02	28						Sampling visit: outfall inundated with red/brown sludge, first structure is CB-76-453 but it looks inundated as well (see photo), revisit with DPW to sample MH
46-0000-0008	CB-93-531	2020-06-11	2020-06-06	1.03	Foam	Dry														Outfall blocked by fence on private property.
46-0000-0009	DMH-XXX-4731	2021-06-17	2021-06-14	0.65	Floatables, Sanitary waste*, Oily sheen*, Musty odor	Damp														Sampling visit: DMH-XXX-4731 can barely see outfall pipe, floatable (packing peanuts, nips, etc.) can barely see the top of the outfall pipe under dirt/water, don't see any other pipes leading in. Next MH DMH-XXX-3530 is also inundated, lots of orange substance (see outfall image).
53-0000-0012	DMH-XXX-4022	2021-06-21	2021-06-19	0.09	None	Heavy	22.03	6.29	1025.5	0.5	<0.25	0.25	<0.02	20	<0.02	<2	0.39	9.32	<4	Sampling visit: DMH-XXX-4022 one drop every few seconds from 11:00, heavy flow from 9:00, sampled from outlet. Sample ID: 01667210621-06
55-0000-0002		2019-10-15	2019-10-11	0.15	Pet Waste	Damp														Many dog waste bags
55-0000-0005		2021-06-17	2021-06-14	0.65	Ammonia odor	Moderate	16.7	7.65	228	0.1	<0.25	<0.25	<0.02	5						Screening/sampling visit: DMH-XXX-3915 sump is all orange liquid, only see two pipes one at 6:00 where sump water is flowing into, believe this is the outfall, lots of orange substance. 1:00 has lots of orange substance, slowly flowing into sump. Sampled. Sample ID: 01667210617-03 and -03D
55-0000-0006		2021-06-17	2021-06-14	0.57	Oily sheen*, Sanitary waste*	Trickle	17.9	6.58	605	0.3	0.50	<0.25	0.03	14						Sampling visit: orange fluffy/chunky substance in pipe and right outside, discharges directly to stream, sampled
55-0000-0007		2021-06-17	2021-06-14	0.65	Algae	Moderate	17.9	6.68	349	0.2	<0.25	<0.25	<0.02	48						Sampling visit: looks like orange sawdust, possible iron, see photo above. Sampled. Sample ID: 01667210617-04

<sup>1</sup> 5-day Biological Oxygen Demand.  
\* Observations made on separate screening visits